The Farmer's Advocate and Home Magazine.

Persevere and Succeed.

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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. Is impartial and independent of all cilques 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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Notice to Prize Winners.

In order to meet the wishes of some of our important stock-breeders and others, we have decided to publish in the November issue a list of those who have obtained prizes at the recent leading Canadian Exhibitions. A nominal fee of 25 cents for each prize will be charged.

As the circulation of the ADVOCATE extends from the Atlantic to the Pacific, and reaches the best class of farmers, exhibitors will at once see the advantages offered.

Those who wish to avail themselves of our next month's issue for this purpose, will please send in their list not later than October 20th,

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.

A prize of $5.00 will be given for the best original essay on the following subject: *Can a Provincial Exhibition, purely Agricultural, be made Successful and Self-supporting?* Essays to be handed in not later than Oct. 15.

A prize of $5.00 will be given for the best original essay on *Winter Care of Cattle*. Essays to be handed in not later than Nov. 15.

Editorial.

On the Wing.

THE EXHIBITIONS.

We left the city of London on the 12th Sept. In this city greater expenditures are being made in the purchase of new exhibition grounds and the erection of new buildings than in any previous year. The new grounds embrace a very handsome and picturesque grove of the natural fine forest, that had been preserved for years; a large proportion of the trees have necessarily been removed, leaving blocks of the large, handsome native trees still remaining. This is a pleasing feature, which adds great beauty to the grounds such as we have not yet seen at any exhibition. This, with the new buildings and the numerous other attractions offered, should ensure a large attendance. In addition to this, the reputation that London has gained of having the best agricultural exhibition ever held on this continent, gives it a prestige which its citizens and the exhibition directors should strive to maintain, as London is near the lakes and is located in 100 square miles of the best agricultural land on this continent.

Duty calls us from personal attendance at this exhibition this year, as we are invited to visit so many in other parts of our Dominion.

We arrive in Toronto at noon. Here the Industrial Exhibition has been held during the past week and will continue the present week. This institution has been managed by an energetic body of directors, supported by the citizens, and this year has received the Dominion grant of $10,000. The highest prizes are awarded here for first-class animals, and the result has been the assemblage of a great deal of the best stock from all parts, even beyond the limits of Ontario. Manitoba and Algoma make large exhibits of their products. Manitoba carried off one of the first prizes for butter, and made a strong fight to capture the spring wheat prize. Prize-winning animals from the Royal Agricultural Exhibition of England were here, and considerable other imported stock, but Canadians have not much to fear from that quarter, for not one-quarter of the stock that is imported would gain a prize at our exhibitions in fair contests. Canada can produce as good stock as can be raised in any part of the world. The exhibition of roots and cereals was not quite as good as usual on account of the unusual drouth of the past season. In fruits, no other country we have ever seen can make such a valuable and varied display of apples combining quality and keeping powers. In grapes, peaches, plums and melons the display was unusually good. At the Hamilton Exhibition the great fruit exhibit of Canada has always been a grand feature, and as it comes later, the fruits will be more fully ripened. The display o agricultural machinery was all that the most fastidious could ask for—astonishing even to those accustomed to exhibitions. Several new improvements were to be seen. The floral display was gotten up with more taste than usual. The attractions were a grand success. The Battle of Pekin, with woodwork 40 ft. high, and paintings to resemble a city fortification, hill, rocks and mountains a thousand feet high, with a real lake dug and vessels on it—this lit up by electricity, fireworks, cannon, etc., greatly pleased the beholders. The zoological exhibit, ladies and gentlemen racing, balloon ascension, acrobatic performances and four bands of music, gave great satisfaction. The crowd was so great that it is deemed necessary to enlarge the grounds. The receipts and attendance were larger than ever before, and the remarks were such as these: "It is the greatest show on earth"; "it beats all—no country can make such a show." An American said: "We are knocked into a cocked hat; we can not get up any such show as this in any part of our country." We will add that in no part of Great Britain or the continent of Europe could you assemble such an intelligent, well-behaved, well-informed or well-dressed mass of people. We moved through among all, and we heard not a single oath, did not see a drunken person, heard of no fight or fuss, and all were orderly as far as we saw.

We left on the 14th. We were at

THE HORTICULTURAL EXHIBITION, MONTREAL,

on the 15th. This exhibition appears to be quite a secluded affair, as we see no bills, posters or hardly any announcement about it, consequently, judging from our mid-day call, the attendance was very small. But the exhibit was very good. Such a fine display of horticultural products is rare in Canada. The wealthiest citizens had loaned from their conservatories, and every admirer of nature's grandeur must have been charmed with the great beauty and rarity of the most beautiful plants from tropical climes. It was worth a trip to Montreal to enjoy such a sight. We may differ from others, but this really pleasurable feast gave us more gratification than any part or all of the exhibitions above alluded to. It is a pity that more could not see it, but crowds would not answer, as the delicacy of the foliage would be apt to be injured, unless protected. We take the evening train for

SHERBROOKE,

101 miles east of Montreal. This is one of the most prosperous cities in Quebec, situated in hat is known as the Eastern Townships. There

is excellent water power and a large number of manufactories here. Much of the land in these townships is admirably adapted to dairying and stock raising, and some of the best stock farms in Canada are located here. The land is much more undulating and picturesque than in the west, with numerous fine streams and fine rich pasture lands. The land, considering the quality and location, appears to us remarkably cheap. If it were located within 30 miles of Toronto or London, it would command double the price that much of it can be purchased for here; and yet this is about 500 miles nearer the seaboard or the markets of the world. Why is this? While we in the west have suffered from drouth the past year, many of the farmers here say they have had an excellent year—plenty of rain. Potatoes are a large crop, but unfortunately they are rotting very badly. We meet friends from New Brunswick, who inform us this has been a fine year for farmers there—plenty of rain, rather in excess than otherwise, while from Maine and New Hampshire we hear that the rain has been so incessant that hay has rotted on the ground. What a diversity from our experience in Ontario.

The exhibition is located on a fine elevated plateau, from which a very pleasing view is obtained, overlooking the city, the hills in the distance and the Memphremagog River, with its cascades and busy mills. In the exhibition are to be seen the products of the different factories and mines, to supply the demands of our western farmers. The fruits are all fine; the cereals are good, but not in such large quantities as in the west. Here is a larger squash exhibited than we noticed at either of the previous exhibitions mentioned. In stock there are many animals here that would have carried off the prizes at the Dominion Exhibition in almost all the classes, but there are many breeders and producers that do not care to go far from home; and in fact some first-class men we know are not exhibiting at any exhibition.

A very sad affair occurred here that threw a damper on the exhibition this year. A fire occurred in one of the horse stalls (said to be attributable to a pipe), which spread with almost lightning rapidity, and burned fifty-two horse stalls, destroying twenty-nine of the most valuable Clydesdale horses in this Province. The fire department, which is very efficient, did almost miraculous work in staying it from doing further destruction. There is a great feeling of sympathy felt for the exhibitors that lost their animals, as many of them were almost entirely dependent on this industry. Some of the best home-bred and imported mares and stallions were destroyed, some of which were estimated worth $2,000. A subscription is being taken up.

The Government are expending a large sum of money for the encouragement of agriculture. If some of it could be directed to the relief of those who have really been doing good, and would do good to our country—a charitable, merciful and beneficial act could be done. The loss is estimated at about $30,000. It means ruin to some; no insurance, and no blame can be attached to the officials or the losers. Let us see what the Government supporters of agricultural expenditures say to this at the next meeting of the Provincial Legislature.

We arrived at Ottawa at noon on the 17th, and drove around and went on to the Dominion Experimental Farm, 2½ miles from the city.

THE PROVINCIAL EXHIBITION.

This exhibition does not appear to be as progressive as the others previously mentioned. A tardiness in preparation and a lack of spirit appears to have been evinced. On the whole, it is hardly equal to its previous exhibits here, although there are many fine exhibits, some of which were not to be seen at any of the other exhibitions. The cheese interest, which this year has been the most profitable, is well represented. Three large ones, weighing over 1000 lbs. each, lead the exhibit, followed by smaller cheese of various qualities to the Stiltons, which can be made in Canada of as good quality as in England. We listened to some discussions, in one of which it was generally conceded that the large expenditure by the Government in butter literature was a waste of money. Another discussion was held about the introduction of our best qualities of cheese into our own country. It is a known fact that nearly all the cheese used in Canada are culls, or those made out of the shipping season; the consequence is that too often at our leading hotels only inferior goods are placed on the table, or sold at stations, etc. This should not be, as to strangers going through our country it gives a bad impression.

The Ontario wheat men were rather exasperated here by the attempt made by Manitobans to capture the first prize for wheat under the name of Imported Russian Wheat. The Ontario wheat men appeared to be satisfied that it was an old, inferior and rejected wheat. The Canada Co.'s prize of $100 was this year awarded to a variety the exhibitor called the Star Wheat. We know of no seedsman that we can remember who ever catalogued the Star Wheat. If $100 is to be given, surely the public might expect some good reliable results or information. Is this Bohemian Oat or Red Lion Wheat fraud to be countenanced, or should the farmers know what the $100 prize is awarded for?

We also paid a visit to the Dominion Experimental Farm here. We may comment in future if we believe any good may be done by our remarks, and we believe there might. But we are on an exhibition tour now, and leave here for Winnipeg, Manitoba, Assiniboia and British Columbia.

We have heard that very great changes are about to be carried out at Guelph. We believe they will be improvements. As soon as we can gain any reliable information direct from any one of these establishments that we have not given, or that we deem will be of any practical value to you, we shall most assuredly give it to you.

The present general rains are gladdening the hearts of our subscribers, as the fall feed now promises to be abundant. This should put our stock in good condition to go into winter quarters. We advise our subscribers to purchase all the feed they may possibly require early, and reduce their stock, so that they will be sure not to be under the necessity of purchasing next spring.

The Agricultural Department at Washington estimates that 10,000,000 acres of forest are used yearly in this country for fuel and lumber. Fires, it is calculated, destroy about 10,000,000 acres more. The forest area of the country is less than 450,000,000 acres, but young forests grow up rapidly.

Caution.

Since going to press with our September issue we are in receipt of one of our most valued eastern exchanges, the Canadian Journal of Commerce, published in Montreal, dated Sept. 2nd, a very influential and valuable publication, patronized by the most wealthy corporations and by Government advertisements, from which we extract the following:

Arrangements have been made by the government of Nova Scotia for importing a supply of seed oats of the kind known in England and the Southern States as *winter oats*. It is thought that if this oat can be successfully grown in Nova Scotia it will prove valuable. Winter oats are preferred in England as horse feed. They are sown early in September, in well prepared land, and as far as possible in fields from which the snow does not readily blow off. This year winter oats were ripe and ready to cut in England before the end of July. The oats ordered are expected to arrive from England in the course of a few days, and will be sold, to those desirous of experimenting, in quantities of not less than one bushel, at about the ordinary market price of common seed oats.

Having tested the sowing of winter oats and winter barley in this locality, we are in a position to pronounce that those that sow this importation in Canada in the fall—unless in a protected place—will never harvest a grain. The fall sowing of oats and barley may answer, and does answer where the frosts are not so severe as in Ontario or the Maritime Provinces. We would suggest that the Government shou'd advise those they supply with these oats to sow only a few ounces to try them; it may save much loss of labor and land. We would advise our subscribers to let others try them.

The recent large and small failures of monetary and limited liability companies, and the immunity from punishment of the defrauders of widows and orphans, and the gigantic and petty swindlers, have caused a lack of confidence in some quarters which is injuriously spreading. The excitement raised among agriculturists and others in regard to political changes affecting agriculturists in different ways, in our different Provinces, forbodes strife, and, in some localities a bitter verbal war. We trust the good judgment of the mass may extend it no further than words. We trust that every real friend of the farmers will use the influence they may have, either on receipt of Government pay or otherwise, to encourage the peaceful and ennobling calling of agriculture, unalloyed by any thing that may be interpreted by either party to foster partyism. We hope the FARMER'S ADVOCATE may not find it necessary to speak more distinctly on this point. If we are led to believe that any plan would tend to the advancement of the agricultural interest we shall be pleased to make it known. It is to be regretted that some interested in directing the minds of agriculturists pay so little attention to facts. To endeavor to convince the most sceptical we have abstained from using our franchise for over 21 years to convince all that we have been independent of party influences.

The number of sheep in Great Britain attacked with sheep scab during 1886 was 23,676, as compared with 23,718 in 1885, the counties infected being 74, while in 1885 the disease was returned from 69.

A Successful Farmer, Breeder and Legislator.

Among the most successful farmers in Ontario, none has secured greater prominence than Mr. John Dryden, Brooklin, Ont., M. P. P. for South Ontario. As well as a farmer and breeder of undisputed ability, he occupies positions of trust in our agricultural affairs, and wields a commanding influence in our legislative halls. He resides upon the farm located by his father a half century ago, when the township in which it is situated was an entire wilderness.

The original homestead consisted of 230 acres. The present occupant has added farm after farm until his acres now number 400. The farm itself is in a very high state of cultivation, and every branch is managed with the most rigid economy and prudence. The yield of grain is always above the average of the neighborhood and well repays the extra labor annually given to the cultivation of the soil. Mr. Dryden's success as a farmer, however, is not confined to grain growing. He has acquired a reputation which has extended beyond the borders of the province for the production of fine stock. At present, prominence is given to breeding three classes of stock, namely :—Clydesdale horses, Shorthorn cattle and Shropshire sheep. In this department Mr. Dryden's experience dates back some twenty-five years. From a small beginning, consisting of the purchase of one heifer, he has gone steadily forward until his herd now attracts attention over the entire province.

Six years ago the breeding of Shropshire sheep was commenced and has been followed with enthusiasm ever since. During the present year large additions to the flock have been made by new importations. Representatives of these have been shown at a number of leading exhibitions, including the Industrial at Toronto and the Provincial at Ottawa. At both of these Exhibitions they carried off the highest honors, and at Ottawa the Prince of Wales' prize of $40 was awarded Mr. Dryden for the best pen of Shropshire sheep.

Our engraving this month represents three of the flock. The ram in the foreground, Brecon Hero, was bred by J. E. Farmer, Ludlow, England, and hired by him for service last year for 30 guineas. He was awarded first prize in Toronto, and stood at the head of the pen winning first. The ewes in the picture were also first winners in Toronto. Daisy, the one in the foreground, bred by Peter Everall, of Shropshire, England, was one of five winning first prize at Wrexham. Queen, the ewe in the background, was bred by William Ward, of Shrawardine, England, and is an extra specimen of this now popular breed. She was one of the winning pair at Toronto, and also one of the pen winning first. Mr. Dryden breeds a flock of about fifty of these sheep, and reports the demand to be constantly increasing.

GROUP OF IMPORTED PRIZE SHROPSHIRES, OWNED BY MR. JOHN DRYDEN, M. P. P., BROOKLIN, ONT.

Farmers, as a rule, spend too little time in the fall cleaning up their premises. The barn-yard, the house-yard, the wells, the stalls, etc., may all require a general overhauling for the sake of your own health and comfort as well as those of your stock. By composting all animal and vegetable refuse, you can make the cleaning up pay its own expenses.

Farmers, Organize!

This is the best time of the year for organizing farmers' clubs. You should not trust your affairs to politicians any longer; if you do not attend to your own agricultural business, nobody else will, although many will pretend that they are doing so, in order to increase the public expenditures. Do not let other farmers do all the organizing, you reaping your share of the rewards and doing nothing to improve our agricultural affairs. This is unmanly. Put your shoulder to the wheel, and let all give one big push together.

When you organize a club in your neighborhood, consider that you can accomplish very little by yourselves, and you should, therefore, amalgamate with some central organization of some kind. There are several of these; choose the one which, in your opinion, will serve our agricultural interests best. By so working together you can accomplish marvellous results financially, educationally, morally and nationally.

Editor and proprietor of the best agricultural paper in our fair Dominion, the FARMER'S ADVOCATE AND HOME MAGAZINE: I have been without the ADVOCATE the past year; I now think I would like to have it again. Please find one dollar for this year.—JAMES A. HERON, Billings Bridge, near Ottawa.

Enclosed find $1, being yearly subscription for FARMER'S ADVOCATE. A year ago I was advised to subscribe for another agricultural paper, which was represented to me as having more than a little merit; I did so, intending to drop the ADVOCATE for a year, but when I got said paper I concluded I could not do without the ADVOCATE. I dropped the journal at the end of a year. You are doing a noble work for the farmer, and I often speak words in your favor. I look for much good to be accomplished by the "Dominion Farmer's Council." I wish you continued success and usefulness.—JAMES SMITH, Owen Sound.

Our Prize Essays.

To our great surprise, and contrary to all precedent, none of our prize essays this month have come up to the standard for publication. We never have such keen competition in the summer as in the winter months, which arises from the fact that our essayists are an industrious class of farmers, and their time during the busy season is fully occupied. The subject for September was an easy one, viz.:—*Fall Work on the Farm*, and we regret that our high expectations have been so badly frustrated, although for the first time.

There is one consolation, however. In nearly every competition it pains us to be under the necessity of rejecting so many brilliant essays which are deserving of prizes, and now we have the pleasure of revising the manuscripts and finding a number of meritorious essays which, although above the standard, had to be rejected for want of space to be then devoted to the subjects in question. The fortunate winner is Mr. S. A. Laidman, who competed for the prize on *Improving the Soil by Green Manuring*, published in our June issue. His essay appears in this issue.

As will be seen by our conditions on the first page, the second prize is given in books, as we are desirous of disseminating useful agricultural literature amongst our farmers, which will prove more profitable to them than their value in money. We hope our readers will continue the good work, and compete for as many prizes as possible.

Dominion Farmers' Council.

This Council, which was adjourned until October, will soon resume its winter session. We are asked to state that the subject of Commercial Union, which was on the program for discussion for the October meeting, has been postponed, as the attention of the first meeting will be fully occupied in discussing plans and laying out work for the winter campaign, no paper being discussed.

For the benefit of new subscribers who have not had the opportunity of reading the interesting reports of the meetings held last winter, published in the Advocate, we may be permitted to state that the Dominion Farmers' Council is a body of intelligent, practical farmers who meet monthly in the City of London for the purpose of discussing questions pertaining to agriculture. The session extends from October till June. The influence and usefulness of the Council are, however, not confined to the county of Middlesex; it has some twelve or fifteen branch organizations in different parts of the province, which were amalgamated with the Council last winter, and the number is rapidly increasing.

Any farmer who is desirous of organizing a farmers' club in his locality, has only to write to the Secretary of the Council, W. A. Macdonald, London, Ont., who will furnish the applicant with the necessary instructions for organizing clubs, and, when the club is formed, each member is entitled, free of charge, to a printed pamphlet containing the constitution and by-laws of the club. Last winter the Council also presented each amalgamated club with an instrument for testing milk, which enabled the farmers, by a very simple process, to test the quality of the milk from each of his cows, thereby enabling him to breed from the best and weed out the worst. When the reports from these clubs come in, we are informed that the Council will discuss the propriety of continuing these presents to newly formed clubs, or the employment of the funds for other purposes; in all cases, the money is to be employed for advancing what the Council considers to be the best interests of agriculture.

Stock-Raising and Grain-Growing in Relation to Soil Fertility and Exhaustion.

No. II.

The assertion of the theorists that the manure is the main factor in stock-raising, beef and dairy products being secondary, leads to the following considerations: First of all, let us locate the "general purpose" animal. A breed fitted for general purposes must produce beef and milk with relative equality of profit; for if one of these merits predominates, there can be no use in retaining the other. It is nonsense to speak of a general purpose animal whose milk is more profitable than its beef, or *vice versa;* but as all milkers must give some beef, and all beefers some milk, the minor characteristics cannot be entirely ignored. The food is converted into beef when beef is the more profitable, and into milk when milk is the more profitable.

But, according to the new theory, another factor is dragged into the issue, viz., the manure, which, in the minds of the theorists, is of greater significance than the other two factors, the manure being absolutely necessary for the purpose of maintaining or increasing the fertility of the land; in other words, the food must be converted into manure, the beef and milk being forced to work out their own salvation. Now it is evident that, under the new theory, there can be no general purpose animal or breed—that is, one equally profitable in beef, milk and manure—for the manure predominates in point of profit, and the beef and milk must therefore be reduced to the lowest minimum.

We now therefore arraign the theorists in the following counts: Professors Shaw and Brown have never advocated the establishment of a herd-book based upon the manurial value of the animals registered; but, on the contrary, the basis has been on the supposed beefing or milking characteristics of the ancestors. Even in the tests for individual merit conducted at the Model Farm and our leading exhibitions, manurial points have been totally ignored, and the other factors have been pushed to the front. The theorists, moreover, have persistently maintained that the common stock of our country consume as abundantly as their aristocratic rivals of recorded fame, without a corresponding increase of beef or dairy products, which means that the "scrub" produces the largest quantity of the richest dung, and yet these brazen-faced theorists have never come forward to espouse the cause of the "scrub" in its miraculous ability to maintain the virginity of our native soil.

These are the conclusions derived from logic: let us now hear the voice of history, practice, science, and book-keeping.

We are forced to combine history with practice for the reason that all practical farmers cannot, within the limited range of their own experience, determine the amount of exhaustion taking place in their soils; for, under a wise system of husbandry upon a deep, fertile soil, the productive capacity may be maintained for more than a generation without extrinsic aid, and we are indebted to science for our knowledge of the extent of the loss of fertility. Some farmers know to their cost that the productiveness of their soils is gradually but surely diminishing, while others maintain and even increase the crop-bearing efficiency. The fact that farmers in a young country like Canada use very little manure from outside sources, either in the shape of purchased foods or commercial fertilizers, is no evidence in support of the theorists; for we find that older countries, originally just as fertile as ours, have to depend not only upon fertility drawn from Canadian and other farms, but the mineral wealth of the fertilizer mines all over the world is rapidly becoming exhausted to maintain fertility even in dairy and stock-raising countries. Britain requires annually between five and six thousand tons of fertilizers from these mines, the Eastern States absorb a similar amount, and Germany strews annually over her soil 550,000 tons of imported fertility in the form of mineral fertilizers, valued at $25,000,000. Now the vast sums expended for these amounts of fertility are voluntarily paid by *practical* farmers, a large majority of whom have no scientific knowledge as to the use of these fertilizers, and cannot therefore apply them to the best advantage. Are these sums spent without necessity? Just as sure as the existing generation of Canadian farmers will pass away, the fertility of their farms will follow them, if they depend entirely upon the resources of their farms for the perpetuation of fertility. This is a fate common to all countries and to all ages of the world, and if Canada is to prove an exception, the burden of proof falls upon the professional theorists. The farmer with the merest practical knowledge of his profession, the theorists excepted, will admit that all farm produce sold off is a part of soil fertility, and the larger the sales the greater the exhaustion. The relation between the quantity and quality of the produce will be treated in the scientific phase of the question.

(To be continued.)

"An Editor's Idea of Fairness."

For those of our readers who have taken an interest in the discussion on "Robbing the Land," we give the following letter which we sent to Mr. Shaw for publication, and which he refused to insert in his journal:

Sir.—In your August issue (p. 562) you made a false accusation against me, which you should promptly retract, if you are the man of honor which you claim to be. You assert that the article published in my columns signed "Subscriber," was written in my office by a member of my staff, and in face of this base charge you attempt to win the sympathy of your readers by assertions and insinuations that I have treated you unjustly. Permit me to inform you that, to the best of my knowledge and belief, I have never seen our correspondent "Subscriber" and I am certain that I am not personally acquainted with him. He is only known to me through his communications published in the Advocate in reply to your article on "Robbing the Land." This statement I can prove, but the onus falls upon you to prove the truth of a falsehood.

Apparently you are unduly excited because I refused to freely advertise your papers or lectures, which I maintain contain erroneous agricultural doctrines, and yet I have generously offered to do so if you prove the truth of your theories. If I did you wrong in striking this advertisement out of your letter, what must you say against yourself for publishing merely such extracts of our letters and those of "Subscriber" as you deemed to be suitable for fanning the flame of prejudice in your readers. Instead of quoting from my June editorial (p. 162), or honestly expressing my meaning in your own words, you unjustly refer to it as "a whole column pouring out abuse on a man whose defence they were afraid to publish." Is there righteousness in that? The editorial contains no abuse; on the contrary, it gives you every opportunity for defending your theories.

With reference to what you call the main issue, viz., that I accuse you of being a confederate of the government, I meant little or nothing more than what you already confessed in my columns to the effect that you are in sympathy with the government, and that you would not be ashamed of being called its confederate. If you now admit the fact that you received consideration from the Provincial treasury for your sympathy or your services, the question of your confederacy, so far as I interpreted it, will be settled.—[W. WELD.

Special Exhibition Notes.

THE WESTERN FAIR.

The new Exhibition Grounds in London, known as Queen's Park, consisting of 36½ acres of land prepared from the primeval pine forest, beautifully situated in the suburbs of the city, and easy of access by rail and street car, with their fine new buildings, spacious groves, and half-mile race-track, naturally attracted a large number of spectators. The grounds are also to be retained as a park for the pleasure-seekers of the city.

The success of the exhibition was beyond the expectations of many, and on the most successful day about 30,000 spectators visited the grounds. The grove-like appearance of the grounds had its natural attractions, but some objections may be urged against the character and arrangement of the buildings. The main building is too small for the present requirements, but an addition is expected to be built. The stock stalls occupy too much space. The poultry house is one of the most elegant and commodious on the continent, but the dairy and apiary accommodation is very defective, and is a disgrace to our western peninsula. Just think of it! In the midst of this magnificent dairy section the dairy building was labelled HONEY, &C., and the stranger was thus led to believe that there was no dairy building or display at all. It serves the management right that the dairy department was a miserable failure. Little or nothing can be urged against the fruit and produce buildings, and the display was splendid. The implement shed, though quite commodious, was inadequate for the magnificent display of implements and machinery. The Western Fair has always been noted for its grand display of implements, London being the hub of farm implement manufacturers as well as of farm produce.

The exhibit of stock of all kinds seen at this fair, as well as at all the other leading exhibitions, was a very pleasing and gratifying sight. The Durham class was strongly represented, far surpassing in number any of the other beefing breeds. The exhibit of the dairy breeds also was a prominent feature both as to excellence and numbers, while the show of draft, general purpose and carriage horses would be difficult to surpass in any country. The sheep exhibit was good, and breeders are finding the demand much better than for a number of years. The show of swine was all that could be expected.

On the whole the Fair was a grand success, a merit due to the energetic management, and it bids fair, the Industrial excepted, to be by far the best agricultural exhibition in Canada. We wish it success, and will do all in our power to help it along, although we reserve the right to criticize its failures, and to suggest improvements.

THE CENTRAL EXHIBITION.

The Central Exhibition, held in Hamilton September 26-30, was, as a whole, a decided success. The number of visitors was large, and the financial outcome, therefore, satisfactory.

The fruit exhibit was the most interesting and attractive on the entire grounds—it was one of the finest we ever saw; the varieties were neatly arranged and correctly named, so that much useful information was easily gained by the visitors. The fine collection of flowers added to the attractiveness of the fruit display. The collections of grains and roots were superior in quantity to the average found at our leading exhibitions, but the quality, owing partly to the adverse season and partly to the neglect in having the best assortments from the best farmers, was not as good as should be desired.

In agricultural implements the display was good, although much inferior to that of the Western Fair. For this line of exhibits, there is the absence of roof accommodation, although the fine weather rendered this failure less objectionable than under more adverse meteorological conditions.

In stock, all the departments were well filled, there being, however, the absence of display in Herefords and Galloways. The old complaints were as lamentable as ever, viz.:—Over-feeding, bad judging, and the lack of opportunity for getting a glimpse of the exhibitors, or their names and addresses. A sight at the horses or their owners, except over the show-ring fence, was virtually prohibitory.

In dairy products the exhibit was a most miserable failure, much inferior to that displayed at the ordinary township exhibition.

For a fair of its pretended dimensions, the exhibit in the main building was quite creditable, and did not fail to attract large crowds of spectators.

MR. ELMES' GRAIN EXHIBIT.

In the testing of grains and the dissemination of the best varieties, probably no man in Canada is doing so much good to our farmers as Mr. Thos. Elmes, Princeton, Ont., and it is doubtful if our government experiment stations, conducted at the public expense, can accomplish half so much. He tests new varieties three years before recommending them, and he never charges fancy prices. He farms 250 acres of land, on which he has two experiment plots, one being a heavy clay and the other a sandy loam. During the past season he sold about 4,000 bushels of fall wheat for seed; he distributes his varieties amongst the farmers, and supplies seed merchants as well. At the Western Fair he exhibited about 200 varieties of grains, clovers, and grasses, for which he was awarded a medal. Our farmers purchase more readily from him at reasonable prices than they receive government seeds for nothing. Farmers are willing to pay moderate prices for new varieties, provided the seed can be relied on, and has no suspicion of boom qualities or boom prices. Mr. Elmes' exhibit consisted of 40 varieties of fall wheat, 38 of spring, 52 of oats, 22 of barley, 14 of peas, 8 of beans, 3 of tares, 8 of clovers, and 14 of grasses. The varieties of FALL WHEAT which have succeeded best with him are Natural Cross (also called Garfield), Bonnell, and Diehl-Mediterranean, their merits being in the order named. SPRING WHEAT: Rio Grand, Silver Chaff, Wild Gors, and Pearl. OATS (white): Early Blossom, Egyptian, Canadian Triumph, and English. OATS (black): Black Tartarian (from imported seed), and Black Champion. BARLEY: Imperial Six-rowed, Peerless Six-rowed, Common Canadian, Empress, Golden Mellow, Chevalier, the last three varieties being two-rowed. PEAS: Egyptian, Golden Vine, and Partridge. BEANS were almost a failure with him this season, and he can hardly decide the merits of the varieties. Of the CLOVERS his preference is Alsike, Lucerne, Red, and Mammoth. GRASSES: Meadow Fescue, Italian Rye, Orchard Grass, Meadow Fox-tail, Kentucky Blue, and Timothy.

THE MANITOBA EXHIBIT.

The agricultural productions of Manitoba were exhibited at our leading exhibitions under the supervision of Mr. Johnstone, of Winnipeg. He showed us specimens of the grains and grasses grown in that Province, which reminded us of the days when the Province of Ontario was young, producing, by a mere tickling of the soil, the most luxuriant harvests. He specially drew our attention to the specimens of prairie grass which, through the common stock of the Province, produced the first prize butter at the Industrial Exhibition, winning this honor from the butter produced in Ontario. This grass is native to the highland prairie districts, and emits a sweet fragrance. The pea vine or vetch exhibited grows in the bluffs, and is eaten readily by the stock. Specimens of wild hemp and wild flax were also on exhibition. The leading varieties of wheat grown in the Province are the Red and White Fyfes, and the White Russian (Defiance). A new Russian variety of wheat was introduced last season, called Kaubanka, which ripens ten days earlier than the Red Fyfe, but it is premature to say much about its other qualities. White oats (Egyptian) and common six-rowed barley were exhibited, and presented a splendid appearance. Most all kinds of roots, especially cauliflowers and pumpkins, grow to prefection in that Province, the latter taking the first prize at the Industrial, the turnips also taking first. Green corn flourishes, but the nights are too cool for successful ripening. In the past season wheat averaged 35 bushels per acre, and oats about 70. Prepared specimens of the native wild animals were quite interesting. There were the moose, the reindeer, the elk, the gopher, the antelope, the black-tailed jumping deer, the mountain goat, the beaver, the lynx (wild cat), the prairie wolf, etc., and skins of the black and the brown bear, the silver-grey fox (worth $75 dollars each), the beaver, the wolverine, the Arctic fox, the link, etc., were also exhibited.

FRUITS FROM CANADA SOUTH.

Many people wonder where Pelee Island is, the place where all those delicious fruits come from which are found in our markets especially during the early part of the season. Pelee Island is the most southern point in Canada, and is one of the townships of Essex County. It is about 22 miles in circumference, and contains about 11,000 acres; population, 500. The Island is situated 15 miles from the main land. Most all descriptions of fruit flourish there, and even sweet potatoes and cotton. In earliness of its productions it compares favorably to the State of Ohio. Grapes ripen 10 to 12 days earlier than in our famous Niagara district, and about two weeks earlier than in the London district. Early grapes are shipped all over the Province. The Isabella, Virginia Seedling, and Catawba varieties of grapes, which are ordinarily a failure in other sections of the Province, ripen here. The Island is almost free from insect pests. There was a fine display of Pelee Island fruits at the Industrial.

MUSKOKA AND HALIBURTON EXHIBITS.

This northern section of our Province rivals Manitoba in the luxuriance of its agricultural productions. The exhibit at the Industrial attracted immense throngs of farmers to witness the display, tastefully arranged, under the direction of Mr. P. M. Shannon, President of the Muskoka Agricultural Society. The exhibit comprised grains, grasses, fruits and vegetables. Every product spoke louder and more eloquently than penned words can express of the extraordinary fertility of this region.

The Farm.

Look Out for Your Wells.

It becomes more and more evident each year that much of the sickness prevalent in the country is directly attributable to the quality of the water. By carefully studying the matter it is found that in nine cases out of ten typhoid fevers originate in families whose water supply is from a well, into which impure water comes. This may be from the farm yard, and quite generally such is the case. For some years the water in the well near the house may be pure and wholesome, but by-and-by the soil between it and the barnyard will become so impregnated with pollution that an unhealthy quality will be imparted to it, and disease will result from its use. This is almost sure to be the case when the distance between the two is not great, because as a general thing, the bottom of the well is lower than the yard, and the drainage from the latter will extend in all directions through the most porous strata of soil, and when it reaches the well it will naturally flow into it as a reservoir. No matter how pure the water may have been when the well was first dug, sooner or later it will be contaminated by water flowing through the soil from barnyards and cesspools located anywhere near it. We have in mind a case in which four children died from diphtheria. An examination by the physician proved that the slops from the kitchen had so filled the soil for a distance of twenty feet between the back door, out of which they were thrown, and the well, that the water in the latter was polluted by foul gases, and from the use of it diphtheria had certainly resulted. When making a well have it, if possible, above the barnyard, and let the drainage be from it rather than into it. Arrange a place for slops, with a cement bottom and sides, from which glazed pipes, cemented together, allow the unhealthy matter to flow off and away from the well.—[Am. Agriculturist.

Some Principles in Wheat Growing.

Having spoken in our last issue of the influence of climate upon plants, which in a large degree also applies to wheat, we will now say something about its feeding habits.

Wheat, like most other cereals, is very thankful for a dressing of nitrogenous manures. Although it contains less than half the amount of nitrogen that leguminous crops do, it is more benefited by a dressing of nitrogenous fertilizers, such as sulphate of ammonia, nitrate of soda, dried blood or farm-yard manure.

Some very valuable information on this subject may be obtained from the experiments conducted by Sir. J. B. Lawes, at Rothamsted. One of these was to sow wheat year after year on the same ground. One plot (No. 3 in the following table) received no manure; on another (No. 2), 33,600 lbs. (14 English tons) of farm-yard manure were spread every year. No. 5 was dressed with a mixed mineral fertilizer composed of superphosphate of lime, sulphate of soda, sulphate of magnesia, and sulphate of potash. Plots 17 and 18 were manured alternately, one year with 405 lbs. of sulphate of ammonia and the succeeding year with the same mixed mineral manures as were applied to plot 5. The year that one of these was fertilized with the mineral manures, the other received the ammonia fertilizer. On plot 16 the same quantity of mixed mineral manures as sown on plot 5 was sown with the addition of 810 lbs. of sulphate of ammonia for 13 successive years, after which no fertilizers were applied for the remaining 19 years. Two other plots, 10a. and 10b., were both manured with 405 lbs. of sulphate of ammonia, with the only exception that in their previous manuring one received slightly more mineral fertilizers than the other, the result of which was felt for more than 32 years, by giving an average increase of 2¾ bushels per acre each year for that length of time. In the following table we only give one of these last plots, for they had an almost constant relation to each other:

TABLE SHOWING THE RESULTS OF FERTILIZERS FOR 32 YEARS.

Year Harvested.	No Manure.	Farmyard Manure, 33,600 lbs. per acre.	Mixed Mineral Manures alone.	Mixed Mineral Manures and 405 lbs. Sulphate of Ammonia, alternately.		Mix. Min. Man. and 810 lbs. Sulph. of Ammonia for 1st 13 yrs. No man. after that	4 5 lbs. Sulphate of Ammonia.
....	plot 3. bush.	plot 2. bush.	plot 5. bush.	plot 17. bush.	plot 18. bush.	plot 16. bush.	plot 10. bush.
1852	13⅞	27⅝	16⅞	*24⅞	14¾	28½	22⅛
1853	5⅞	19⅛	10⅓	8⅝	*19¼	25⅛	15½
1854	21⅛	41⅛	24¼	*44¼	23⅞	49⅞	39¼
1855	17	34⅝	18¼	18	*33¼	32⅞	28⅛
1856	14½	36¼	19½	*31	17⅞	37⅞	27¾
1857	20	41¼	23¾	26¼	*40½	49⅜	34½
1858	18	38¾	18⅛	*33½	21¾	41⅞	27¾
1859	18⅜	36¼	20⅝	2 ½	*32⅝	34⅝	25½
1860	12⅞	32¼	15⅞	*25¼	15¾	32⅝	18⅝
1861	11⅜	34⅞	15⅛	18¾	*32⅞	37	16
1862	16	38⅜	17¾	*27¾	18½	36¼	24⅛
1863	17¼	44	19⅝	21¼	*46¼	55⅞	43⅝
1864	16¼	40	16⅞	*36⅛	17⅝	51⅛	38¼
1865	13⅜	37⅛	14¼	17	*31⅜	+32⅜	30½
1866	12⅛	32⅝	13¼	*26½	12⅝	17⅜	28½
1867	8⅞	27½	9¼	10¾	*23⅝	14⅝	19⅜
1868	16⅝	41¾	17⅝	*37⅜	18⅝	22¾	27¾
1869	14¼	38¼	15¾	16⅛	*22⅞	16⅛	19⅛
1870	15	36½	18⅞	*34⅜	19	18¼	23¼
1871	9⅜	39	11⅞	16	*28⅜	13½	10
1872	10¾	31⅜	12¾	*25⅛	13	13⅛	18⅜
1873	11¾	26¾	12¾	11¾	*20⅜	12¼	20⅝
1874	11½	39¼	13	*33¼	14	11⅞	27¼
1875	8⅝	28⅞	9¼	11⅝	*25⅝	10⅛	14⅝
1876	8⅛	23⅞	10½	*26½	10⅜	11	14½
1877	8⅞	24⅛	11⅝	10	*12⅝	9⅞	18¼
1878	12⅜	28¼	14¾	*29	15¼	13⅝	29⅞
1879	4¾	16	5⅝	3⅛	*20⅜	4⅞	4⅝
1880	11½	38⅜	17¾	*32¾	15	14⅝	13½
1881	13¾	30¼	12¾	13¼	*32	13½	19¾
1882	11	32¾	12½	*31	15⅝	10¾	26⅛
1883	13⅞	35¼	15¾	15⅜	*38¼	15⅞	18⅜
Av.	1 ⅛	33½	15¼	15⅝	*30	++	23¼

* Sulphate of Ammonia

\+ Commencement of No Manure.

++ The average for the 13 fertilized years is 39½ bushels per acre; for the remaining 19 unmanured years, 14⅝ bushels.

From the above table we learn that 405 lbs. of sulphate of ammonia applied on a soil rich in mineral constituents gave a very marked increase in the yield of a wheat crop, on the average about twice as much as plots having only the mineral manures. This is seen by comparing the yields obtained on plots 17 and 18 when manured with sulphate of ammonia, marked in table by a star, with plot 5 which received mineral manures only. The action of the nitrogen fertilizers is, however, nearly, or entirely, confined to the year in which they have been sown; for the year following its application in plots 17 and 18 the yield was nearly the same as that of plot 5, which had received no sulphate of ammonia. The average of plots 17 and 18 for the years they received the mineral fertilizers was 15⅝ bushels, only ⅜ of a bushel ahead of plot 5. This shows that the nitrogen applied the previous year had lost its effect. The best results were obtained from plot 16 during the time it was fertilized, which by an application of 810 lbs. of sulphate of ammonia, together with the mineral fertilizer applied to plot 5, gave a decidedly better crop than the 14 tons of farm-yard manure did on plot 2. The plot rapidly increased its yields of wheat during the time it was fertilized, but when the manuring stopped it rapidly declined until it dropped below the yield of plot 5. This was no doubt due to the want of nitrogen. In another table we find that 43 lbs. of nitrogen, applied as 202⅝ lbs. of sulphate of ammonia, in addition to the amount of mineral fertilizers applied to plot 5, gave, on the average of 32 years, 8¾ bushels increase over the yield of plot 5. An addition of 86 lbs. of nitrogen, as 405 lbs. of sulphate of ammonia, to the mineral fertilizer, gave an increased yield of 17½ bushels per acre. One hundred and twenty-nine pounds of nitrogen (811 lbs. of sulphate of ammonia) added to the mineral fertilizers, gave an increase of 21 bushels to the acre over plot 5. By adding 86 lbs. of nitrogen, as 538 lbs. of nitrate of soda, the yield was increased 21 bushels. The same amount, 538 lbs., of nitrate of soda applied without the mineral fertilizers, gave on the average 8¼ bushels more than the mineral fertilizers did.

Not one-half of the nitrogen applied to plots 17 and 18 of the above table was taken up by the crops, the remainder being partially lost by drainage and partially by sinking into the subsoil below the reach of the roots before the succeeding crop could catch it. In another experiment, the same experimenters discovered that the more nitrogen is taken up by the crop, the more is left in the surface soil for the succeeding crop and the less is lost. They also found that the more complete the fertilizer (that is, the more of the necessary elements of plant food it contained), the more of a definite amount of nitrogen applied to the field found its way into the crop, the more was deposited in the surface soil, and the less was lost by drainage, &c.

These experiments were conducted, as far as we can learn, on a clay soil, but numerous other experiments conducted in different parts of England and on sandy soils gave substantially the same results.

Reducing Animal Refuse.

Not only bones, but animal substances of every kind, may be converted into valuable manure by either of the following methods. Hoofs, horns, woolens of every kind, and even old leather, may be converted into manure instead of burning the material and filling the whole neighborhood with their offensive odor. Any material that gives the smell of burnt feathers in combustion contains nitrogen—the most costly manurial element—and should be given to the field rather than to the fire. If bones are boiled for a few hours with twice their volume of fresh wood ashes and enough water to make the mixture semi-fluid, the bones will break down to a fine mass in consequence of the solvent action of the carbonate of potash on the organic matter of the bones. If wood ashes cannot be obtained, one part of carbonate of soda —common salsoda of the shops—and one part of quick-lime may be boiled with five parts of bones, with sufficient water, till the bones break down completely. If the bones broken up by either process be mixed with five times their bulk of dry loam or muck and intimately incorporated, a valuable manure will be secured.

If too large a quantity of bones to be treated by the process of boiling, the bones coarsely broken may be mixed with three or four times their volume of wood ashes on a floor and sheltered from rain; the whole moistened with water to make a strong lye to act on the bones, but not enough water to leach away. The mass should be wet but not dripping. Turn or shovel over every two weeks till the bones readily crush under a blow from the shovel, then break up and dry off with two or three times its volume of loam or muck. A dressing of twenty-five to thirty bushels of such mixture to the acre will be a sufficient dressing. Another process is by fermentation. Soak the bones in water till wet through; then place a layer two or three inches thick on top of a layer of fresh horse dung six to eight inches thick. Build up a compact heap of alternate layers of bones and horse dung. Then wet down the pile with dung water, urine, or even water, till you secure enough moisture to promote heating or fermentation and prevent fire fanging. If an odor of ammonia be perceptible, cover the heap with a foot of loam or muck. It is important to keep the pile quite moist during the whole time. In six to nine months the bones will become broken down and the whole may be shovelled over and mixed ready for use.—[Dr. R. C. Kedzie, in N. Y. Tribune.

June Grass for Dairy Pasture.

As a plant for grazing, *Poa pratensis*, or June grass, has great significance with the dairy interest, says Prof. Arnold in the National Live-Stock Journal. It grows with a very light stem, its herbage being nearly all leaves that are narrow, long, soft, and rich in the elements of butter and cheese. Under favorable circumstances, they grow vigorously, and at lower temperatures than the leaves of most other grasses, starting early in the spring and continuing late in the fall. They remain fresh and green a long time under the attacks of drought and frost. June grass is one of the most hardy grasses, and grows in almost all latitudes and all places, and under the most unfavorable circumstances. In the eastern and middle States and Canada it is known as June grass; in the south and west, as blue grass, or Kentucky blue grass.

Besides being rich in nutriment, it is invaluable on account of the fine aroma and nutty flavor it gives to butter and cheese. It also imparts the same fine flavor to beef and mutton. Though it yields a delicious butter, its best effects are seen in the cheese dairy. The cheesy matter derived from it is not only highly flavored, but its peculiar soft texture renders it especially susceptible to the action of the cheesy fermentation. Curd derived from blue grass changes more easily and rapidly into rich, salvy, soluble cheese, than that obtained from other grasses, thus rendering successful cheese-making less difficult.

There are several other species of *Poa* that are pretty widely diffused, but they do not equal the *pratensis* in usefulness. *P. annua*, a low spear grass, grows everywhere in cultivated grounds, along paths, etc., as a weed, and is an annual that ripens early and drops its seed in time to mature a second crop each season. *P. compressa*, a blue jointed wire grass, very common, and a favorite of sandy soils, is very tenacious of life, and has small, pale, hard, innutritious stems that grow in a decumbent tuft.

Foul meadow-grass (*P. serotina*) and rough meadow grass (*P. trivialis*) make excellent butter and cheese, and good meadow and pasture in moist, rich soils; but lacking the hardiness of *pratensis*, they soon run out on dryer grounds.

The hardiness of June grass is owing to its peculiar mode of growth. It does not, like the other species of *Poa*, have the division between root and stem at the surface of the ground, exposing all its green herbage to the weather; but it sends out from the parent root, stems that spread in all directions below the surface, as strawberry runners and white clover do above it. These subterranean stems strike out at every joint and throw up stems and leaves to the surface, covering it with a thin mat. They cross and recross each other in every direction, making a strong turf, that tears as if formed of a web and woof. These underground stems, protected from drought and frost, ready to send up new shoots should all the herbage above ground be destroyed by these influences, give June grass a never-dying hold on the soil, and enable it to spread and flourish where other grasses would run out. A fire may even run over the ground and burn everything green from the surface without doing it any serious injury; for the stems below will quickly send out new shoots. Among the few plants favored with this system of underground stems, are the Canada thistle, milk weed, quack grass, and drop seed, or as some call it, Nimble Will (*Mulenberghia Mexicana*); hence the great difficulty in eradicating them when once fairly established. But tenacious as these pests are, June grass will crowd them out and hold sole possession of the ground.

In the south, June grass, or as it is there called, blue grass, is often propagated by sowing the seed. In the north this is very rarely done, but pasture and meadow are mainly seeded with timothy and red clover. Limited quantities of several other grass seeds are also occasionally sown. Red clover is a perennial only under favorable conditions, and a few dry summers, and hard, open winters, soon nearly obliterate timothy. As they die out, the indigenous June grass constitutes the bulk of the pasturage, coming in like the white clover that usually accompanies it, from nature's seed, which, after lying in the ground an indefinite time dormant, springs into active growth under favorable circumstances. When once it gets a fair footing in the soil, nothing but the plow will subdue it. Therefore it forms a leading element in all permanent pastures, and controls the quality of their products.

No locality becomes distinguished for the excellence of its dairy products, especially of its cheese, until this grass becomes the principal occupant of its pastures. True, there are grasses that will give even larger yields, but they die out too soon to give a permanent reputation to any considerable extent of country.

Although scabby potatoes have been grown in soil in which no wire worms could be found, the Rural New Yorker affirms that on their experimental grounds these insects were the cause of scab.

The Importance of Humus in the Soil.

Many farmers go to the expense of applying manures or fertilizers to their soil when all that is wanted is a change of its physical condition. The soil is perhaps too loose, too firm, too coarse, or too wet. When any one or more of these conditions exists, it is folly to place much dependence upon manures. Of the three materials of which mostly all soils are mainly composed, viz., clay, sand, and decomposed vegetable matter (humus), a certain relation amongst them must exist before the proper mechanical texture can be obtained. This texture also plays an important part in the capillary action of the soil; that is, the power by which a given fineness enables the moisture to ascend in dry weather in opposition to the power of gravitation. Much has been written on this subject, but we know of nothing more to the point than that contained in the tenth edition of "Practical Manuring," by Emil Wolff, from which we make the following translation about his remarks on humus:

The retentive power which a fruitful soil possesses for the more important plant-foods is partly dependent upon the humus; also, even to a larger extent, upon the clayey admixture and the composition thereof. Humus plays a material part in maintaining the productiveness of the soil for a considerable length of time, all the more on account of its slow but constant decomposition, whereby the vegetation is supplied with the necessary quantity of food during all the seasons of its growth. It is the part of the intelligent farmer, according to the composition of the soil and the manures applied, in connection with the climatic conditions, to hasten or retard the decomposition of the organic matter by all appropriate methods, in order to obtain a luxuriant and highly profitable crop, and at the same time to utilize to the best advantage the manures applied and the natural fertility of the soil, the loss of the most valuable plant foods being largely averted.

But the greatest advantage of humus lies in the property, which it usually possesses, of improving the *physical* condition of the soil. By means of a fitting percentage of humus, that peculiar friable, mellow property is brought about, that medium physical condition which induces a luxuriant growth of the crop, assures the perfect utilization of the manures mixed with the soil, and, above all, fits the land for a profitable and intensive system of farming. Clay is made friable by the influence of humus, thereby also rendered more porous for the reception of moisture, air, and warmth, as well as for the expansion of the roots; puddling and the crusting of the surface are prevented, the percolating of the superfluous water into the subsoil and the ascent of moisture during periods of drouth are facilitated, the action of the weather upon the rocky particles and decomposition of the organic matter are intensified, thereby making the plant food more available, the absorptive process and the ingress of the sun's warmth into the deeper strata are expedited, and the activity of the soil, for the benefit of the crop in all its functions is quickened. On the other hand, dry, sandy, and calcareous soils are bound more firmly together by the addition of a certain percentage of humus, preventing their drying out too quickly, for it holds large quantities of water within the pores, which diminishes the evaporation; in this manner the soil remains longer in a moderately moist condition, in which its chemical activity favors luxuriant vegetation, the supply of plant food being most hastily developed without loss, and the soil is fitted for the absorption of certain constituents of fertility from the surrounding air.

However, an excess of humus impairs the physical condition of the soil, makes it spongy, wet, and cold. By the presence of stagnant water the so-called "sour humus" is formed, that quality which acts like poison upon all cultivated plants, developing only a luxuriant growth of swamp or moor plants. Such a soil should first of all be drained. By the rapid admission and changing of air, by marling, by liberal applications of lime and ashes, by spreading over it the powdered remains of old stone buildings, all kinds of sandy substances, etc., a sour humus becomes gradually converted into a mellow and fruitful soil, and is fitted for a highly profitable state of cultivation.

For the treatment of soils lacking in vegetable matter, the reader should peruse the article on humus published in our last issue, also the prize essay on green manuring found in another column. The humus in a soil may be increased by the application of barnyard manure or by plowing under green crops. In future issues we shall speak of sand and clay soils.

Regulating the Hours of Work on the Farm.

It is agreed by some that the hours on the farm can be regulated as easily as those in manufacturing and other industries. The latter have their busy seasons as well as the farmers; the manufacturer often receives more orders than he can promptly fill, necessitating night work, and the merchant has his seasons of stock-taking, business rush, etc., which either calls for extra labor or the engaging of extra help.

The difference with farming is that extra help cannot always be so readily obtained as in the business centres, where there is usually a large number of workmen out of employment. In other respects, there is little difference between the natural hours of the farmer and those of the manufacturer or the merchant. The main reason why the hours on the farm are not so systematically regulated as those in other industries is that the farm laborers are not organized to protect their interests; and, owing to their isolated condition, it is not easy for them to organize. But the question arises, could the farmer improve his condition, or obtain more of the real comforts of life, by regulating his working hours and those of his laborers more systematically than is done under average circumstances? We know sections in this province where the hours are quite regular all the year round, except on extraordinary occasions, and the system seems to work very satisfactorily.

The first principle to be laid down is that a man should do as much work as he can perform without injury to his health. Some men reach this limit by working about ten hours per day, and accomplish more than others who work twelve or fourteen hours. This is simply a problem in mechanics; the energy employed multiplied by the time occupied, gives the momentum, or amount of work accomplished. By this rule, the man who performs hard labor—in other words, uses up a large amount of energy in a short time—should work shorter hours than the man who performs lighter work. A modification of the rule is this, that the same man, if constantly employed at the same job, expends more vital energy than when he is constantly changing his work, even though if, in the latter case, each of the various jobs are as hard as in the former case where the same job is constantly followed. This arises from the fact that certain muscles, or portions of the body, when kept in a state of constant exertion, become easily debilitated, while other portions may not receive sufficient exerciee to preserve them in a state of vigor. The most work is therefore accomplished by changing the employment as often as possible, except in cases where he laborer is only adapted for a special kind of work. In fact, the exercise of the mind and suitable recreations also help the bodily exertions, and we often find that the men who accomplish most are those who divide their time more or less equally between mental and physical exertions, making due allowance for sleep and other forms of recuperation. Thus drudgery becomes eliminated from life's program, the true meaning of rest being a healthful change of exercise.

While we have no sympathy for those who attempt to make cast-iron rules for the regulation of farm work, yet we think that a great deal could be accomplished not only by a more systematic regulation of the hours of work, but also a more even distribution of the work throughout the various seasons of the year. But if the time gained under this rule is to be employed in idleness, intemperance, or folly, it is better that the existing state of affairs should continue. If the farmer improved his mental as much as his physical energies, he would to-day be the driver instead of the driven, and the classes of the community which now tyrannize over him would tremble under the very sway of his imperious sceptre.

SECOND PRIZE ESSAY.

Improvieg the Soil by Green Manuring.

BY S. A. LAIDMAN, BINBROOK, ONT.

There are two ways of doing everything. There is the *good* way and the *bad* way. In many instances there are more than two ways. For instance, in the case of soil improvement, there are many ways that are good and profitable, and there are ways that are very unprofitable. By improving the soil, we mean making the soil better, and if the soil does not become more fertile year by year, we are certainly not improving it a great deal.

Now, how can the soil be improved? There are several ways in which a soil may be improved, but any way that will improve the *texture* and the *fertility* is a good way of improvement. Some soils may be improved by one line of treatment, while others require a very different line of treatment. What is good for a stiff clay is not good for a light sand, and what is good for a loam will not always be good for a clay.

Nature, which is the "great renovator," always does her work wisely and well, and it is only when man tries to interfere with the course of nature that the soil requires to be improved. In the natural order of things plants grow, ripen, die, and decay in the place where they sprang up, and all the food they have drawn from the soil is returned to it, with interest from the air. Man, on the other hand, removes the crop from the field, and makes frequently no return at all, or, at most, a little artificial manure at intervals of six or eight years. Now, it does not take much reasoning to show that the natural course is the wiser one. The great plea against green manuring is that it wastes (does it?) a great deal of good fodder. Now, in many places where the plan has been tried, it has been found that the waste is in omitting to apply green manure.

Light soils are particularly improved by green manuring. If other manures are applied the rain very frequently washes them entirely out of the reach of the growing crop, but if green manure be applied the crop is ready to receive it as fast as it is ready for use. The texture of stiff clays is wonderfully improved by green manuring, and steep hill-sides can be manured in this way more economically than in any other. It is often the case that a heavy rain comes just after the manure has been applied, and then all that falls on the slopes rushes down the sides, carrying with it all the strength of the manure.

There is a difference of opinion as to what is the best crop for green manuring, some preferring one crop and some another. If the following rules be followed there can be no mistake made in that matter:—First, a crop is required that *grows rapidly*; secondly, one that *covers the ground well*; thirdly, one that *feeds largely on the atmosphere*; and fourthly, one that has *long and numerous roots.*

Buckwheat and white mustard are both used to some extent, but *clover* is the one that is best adapted to all soils and localities. Its wide-spreading top, its rapid growth, its habit of getting food from the air, and its large, long and spreading roots, all combine in making it the most suitable crop for green manuring.

But, the reader may ask, "How is best to apply it?" In all cases it should be plowed down. The best time to plow it in is just before the time of flowering, as the plant then has nearly its full growth, and has about stopped taking nourishment from the air. If the system of summer-fallowing is used, the clover will be ready to plow under about the middle of June, when there is usually a slack time from other work. It is best to plow it in during the heat of summer, so that it will decay rapidly and be ready for the use of the wheat in the fall. If summer-fallowing is not adopted, the clover may be plowed down in the fall to advantage. If the crop is very heavy it may be found advantageous to roll it before plowing; and if the field is plowed in ridges it is better to allow the "off horse" to walk on the edge of the furrow, so that the plow will follow in the same direction that it has been rolled. If a "skimmer" be used on the plow, there will be little of the crop remain in sight. A chain may also be used with good results.

The *effects* of green manuring on the soil are manifold. In light soils the decay of the plant adds a great deal of humus to the soil and makes it firmer, besides greatly enriching it. In dry climates, or in dry seasons, the decaying vegetable matter retains a great deal of moisture, and thus keeps the growing crop looking fresh and healthy, when it would otherwise be parched and withered. The manure decays gradually, and the crop is supplied with food just as it requires it, and none of the manure is wasted, as it would be if it were all ready for use at once. The clover, when growing, brings up a great deal of food out of the soil and prepares it for use in the following crop. The clover thus gathers up the food for the next crop, and gives it to it all ready to use in building up its structure. There can be no doubt then that the green manure has a great effect on the soil.

Plowing in clover is one of the best manures that can be applied to stiff clay soils. In improving clay, the object is to make it more friable and easy to work. This is done very effectually by clover. The roots push their way down below the depth of the plow, and loosen the subsoil almost as well as a subsoil plow. Then while the clover is decaying the soil is kept up loose and open, so that the air has full access to the lower portions of it. When the soil is thus kept open, the growing crop can send its rootlets into every corner in search of food, and for a great many years the soil will laugh over the clover crop that was plowed under.

Having thus briefly considered the subjects, let us ask the question, "Does it pay to use green manure?" and we will draw out a few conclusions from what we have learned. We have found that the green crop intended for manure gets a great deal of food from the air, which otherwise might not enter the soil at all. It also gets a great deal from the subsoil, which otherwise would remain there. It also prepares the food in the soil for the wants of other crops. It saves manure by supplying the crop just as it requires it, and holds the rest for future use. It retains the moisture in the soil during a dry season. It makes a light soil more firm and rich. It makes a stiff clay more porous and friable. Canadian farmers, as a rule, have large farms, can not manure more than a few acres every year with farm-yard manure, or artificial manure, but they can plow in a crop of clover without a great deal of expense and no loss of time. Therefore, we are forced to come to the conclusion that green manuring is a very economical and a very profitable way of improving the soil. Farmers! try it if you have not already done so.

The Dairy.

Probabilities in our Butter Industry.

The advance which has been made in the science and art of butter-making leads to a few suggestions in this important branch of our industry. We would also make a few predictions if we could forsee whether our farmers are to be passively controlled by booms or actively grapple with the situation and thus be governed by the scientific progress of the age. In this article we shall suppose that our exhibitions, our agricultural press, our agricultural colleges and experiment stations, and other educational institutions, will adopt a high tone, and that our farmers will thus, being educated in the truths pertaining to that profession, utilize such means as will be to their greatest advantage, financially and morally. The other side of the question will make ample material for a separate article.

That Canada's natural destiny is largely dairying—both butter and cheese—there can be no doubt. Any country that is well adapted for cheese can also make a fine quality of butter, and a fine butter country or district is also admirably adapted for cheese making. In the old countries of the old world, where agricultural industries are not greatly diversified, and specialties are the order of the day, it seems desirable that this state of affairs should continue, but in new countries greater diversities seem natural and are therefore admissable. We see no reason whatever why certain districts in Canada should be blocked out for cheese and certain others for butter, for such is not a natural diversity, but induced rather by education and experience. We have no sympathy with those who divide cows into milk, butter and cheese breeds. Nature knows no such divisions, and we would therefore grapple with the subject scientifically, and pay for milk according to its quality and not according to its bulk, by which system all distinction between dairy breeds becomes obliterated. Under such a system, the cheese-factory is not located in one county and the creamery in another, but both may be advantageously placed under the same roof, operated by experts skilled in butter, cheese and milk, the factory running throughout all seasons of the year. For the complete success of this system, it is only necessary that the patrons should raise larger herds, and become more skilful in the arts of feeding and management. Each patron can choose whether his milk shall be turned into butter or cheese. When butter yields the larger profits, this will be the leading article of manufacture; so also with cheese, when its price is relatively higher. At seasons of the year when the milk is heavy, thus yielding a small percentage of butter, it can be converted into cheese; and when a patron has a number of calves from choice cows, and desires to raise them, he can patronize the butter department of the factory, raising the calves on sweet skim-milk. A great deal will also depend upon the number of boys and girls who leave the farm, and the wages paid to the hired man.

These remarks are introductory to the main question, viz: Should the butter or the cream be sent to the factory? This also depends almost exclusively upon the intelligence of our coming farmers, and the source of their education. Assuming, as before, that intelligence is to prevail over ignorance, politics and prejudice, the question will be easily answered. Amongst all the inventions of modern times, there has been nothing more revolutionary than the cream separator, and the hand separator is to the small dairyman what the steam or horse-power separator is to the large dairyman. Numerous tests have been made to show the relative efficiency of the separator skimming compared with ordinary methods, and it has been found that the efficiency of the hand separator is equal to that of the one operated by steam or horse-power. What is meant by efficiency is the skimming co-efficient; that is to say, the percentage of butter-fat in the milk which is separated. The higher this percentage, the smaller is the percentage left in the skim-milk. Dr. Vœlcker, who made tests at the Kilborn Show for the Royal Agricultural Society of England, found the skimming co-efficient of the separator to be 93 percent against 78½ percent by the ordinary method of skimming. Tests made at the London Dairy Show produced even better results for the separator, nearly four times as much butter-fat having been left in the skimmed as in the separated milk. Two horses, or a two horse power engine, have ample power to run the large separators.

In Germany the tests have been still more numerous. In actual practice the skimming co-efficient of separators in that country ranges between 90 and 96 percent, whereas, comparing these results with the most favorable of the other systems, namely, the Holstein, where the milk is set in shallow pans at 50° to 60° and allowed to stand 36 to 48 hours, the skimming co-efficient ranges between 75 and 80 percent.

Recent experiments made in Germany with the hand separator, gave the results shown in the following table:

No. of Test.	No. of turns per minute.	Temperature of milk (°Fahr.)	Milk skimmed per hour. lbs.	Yield of Cream. Gallons (Imp.)	Yield of Cream. percent	Skim-milk percent.	Percent of Fat. In whole milk	Percent of Fat. In skim milk.	Skimming co-efficient.
1	40	88	316	7.0	23.6	76.4	5.72	0.25	96.6
2	38-40	86	313	6.9	22.8	77.2	5.72	0.32	95.6
3	40	86	324	6.9	22 1	77.9	5.72	0.34	93.3
4	40	86	328	5.6	14.7	85.3	4.19	0.29	94.0
5	40	86	335	6.2	19.0	81.0	4.19	0.29	94.3
6	40	86	304	5.3	17.9	82.1	4.19	0.30	94.1
7	40	77	333	6.8	21.2	78.8	4.19	0.46	91.3
8	40	77	322	5.6	18.0	82.0	4.19	0.45	90.1
9	40	77	302	3.6	12.5	87.5	4.19	0.46	90.3
10	40	88	306	4.0	13.3	86.7	3.81	0.27	93.8
11	40	86	285	5.0	18.0	82.0	3.81	0.35	92.4
12	36	77	293	4.3	15.1	84.9	3.81	0.43	90.4
13	36	77	240	3.0	12.8	87.2	3.81	0 40	90.8
14	36	86	286	3.4	12.6	87.4	4.01	0.35	92.1
15	40	87	303	3.8	12.8	87.2	4.01	0.30	93.4

From the above table it will be seen that 90.1 to 96.6 percent of the butter-fat was separated from the milk, accomplished by 36 to 40 turns of the crank per minute, and that an average of over 300 lbs. of milk passed through the separator per hour. This quantity is about one-third more than can be separated by the machine already described in the ADVOCATE, and yet it is so easily turned that any person of ordinary strength can turn it with one hand, while separating the milk, for two to three hours at a stretch without feeling tired. The morning's or the evening's milk of ten ordinary cows can be skimmed in about 20 minutes, and the efficiency is so much greater than that of the ordinary method of skimming—an average of about 15-18 percent more of butter-fat—that the machine will pay its own cost in about three years. In order to save the labor and expense of heating, the cream is most advantageously separated as soon as possible after milking, and, to make the finest quality of butter, the cream should be immediately cooled, churned into granular form, and then sent to the factory, where it is graded and packed. This plan need not interfere with sending cream or butter to the factory, obtained by other methods of skimming, but the latter would be classified as an inferior grade.

While the ordinary methods of setting possess no advantage over the separator, apart from the original cost, the latter has the following superior advantages:

1. Independence from all external influences, safety and complete control of all the conditions.
2. Complete control of the skimming co-efficient, a larger or smaller percentage of fat being taken from the milk at the will of the operator.
3. A larger yield of butter—15 to 20 percent larger.
4. Perfectly sweet cream, skim and buttermilk, which can be more economically used.
5. All the dirt is removed from the milk and cream, the dirt remaining in the separator.
6. The operator can make the cream of any desired consistency, thin or thick, according to the uses intended, and the milk and cream are sufficiently aired while passing through the separator.
7. There is a saving of time, labor, utensils, and milk cellars.

A Few Pointers about Cheese Making.

There is a good deal of truth in the saying that farm produce is dear when farmers have nothing to sell. The excessive drought which has prevailed during the past season has reduced our cheese production 30 to 50 percent, and the rise in price will not compensate for this rapid falling off. For example, a factory that made 20 cheese per day in June, average weight 65 lbs. each, price 10c. per lb., would realize $130, while 13 cheese (a reduction of one-third) at 12c. per lb., would only realize $100 in round numbers, or 10 cheese (a reduction of one-half) at say 12½c., would only realize about $81. In order to make up for the average falling off in production, cheese ought to bring nearly 17c. per lb. It may be said that with the lesser production there is less labor and less soil exhaustion, but the injury done to the cows and their offspring through underfeeding and improper management outweighs these considerations. We know some factories where the reduced production has been a mere trifle, only 10 to 15 percent, but in such cases soiling crops, especially corn, have been liberally fed, and the cows have not been permitted to stand out all day in the blazing sun in search of scanty grass. An investment of about $15 in a soiling crop would have saved at least $50 on every herd of 10 cows in the country—a clear gain of 333 percent on the transaction, besides leaving the cows in a good healthy condition for winter and for future use. But the effects of a drought cannot always be completely evaded. In districts where water is naturally scarce or poor, the full effects of soiling cannot be realized. Corn and Hungarian grass are the best soiling crops, and if the season turns out favorable, these crops not being needed for feed, the latter can be profitably plowed under as green manuring, but corn is not well adapted for this purpose, unless plowed under during the early period of its growth.

Drought has also the effect of reducing the quality of the cheese. This state of affairs would not be so pitiable if all the farmers delivered the same quality of milk and did their best under the unfavorable circumstances. But those farmers who have good water and an abundance of feed are compelled to compete with those who are reckless, uncleanly and indifferent. A single can of bad milk may play havoc with a whole vat, and it is also well known that the reckless farmers are most apt to adulterate their milk by watering or skimming, or both. This is one of the evils of the co-operative system. This condition of affairs is still more deplorable in those sections where there are a large number of small factories. The competition for milk is so keen that neither the cheese-maker nor the directors are in a position to chide the farmer who delivers tainted or adulterated milk, for fear of losing the patron or creating a stir in the neighborhood, the result being that an undue weight of responsibility rests upon the already everworked cheese-maker, who toils unreasonably long hours in the attempt to make a cheese that will pass inspection. Not only is the cheese-maker's reputation at stake, but, under his terms of contract, he is personally responsible for all cheese that do not bring the highest market price. All this annoyance may be caused by less than half a dozen of slothful or uncleanly farmers, who are usually so inquisitive about the condition of the other patrons' milk.

It has required an unusually large quantity of milk to produce a pound of cheese, often 11 and even over 12 pounds, the consequence being that adulterations on a large scale have been suspected. When the yield of milk is reduced one-third to one-half, the temptation to adulterate is very great, but the trouble has not been entirely due to ordinary adulterations. When the cows are compelled to stand all day in the burning sun at a temperature of 10 to 15 degrees above blood heat, their milk cannot be so healthy or productive as that produced under normal conditions. The structure of the butter-fat is impaired at high temperatures, and the evening's milk should be cooled to about 70°. The high temperature at which the milk has been delivered is one cause of the large percentage of milk required for a given quantity of cheese, as well as the adulterations practiced, and the injurious effects of abnormally high temperature upon the milk secretion. The use of cold water or ice for reducing the temperature of the milk, and providing shade and appropriate food and water for the cows will mitigate the evil; but these precautions will not be of much benefit unless all the patrons combine to deliver milk of uniform quality.

The cheese reputation of our country is at stake; and if our farmers wish that their cheese should bring the highest prices, they should be up and doing. It is a pity if Canada, being one of the best dairy countries in the world, should retrograde owing to the carelessness and indifference of some farmers.

It is impossible to carry on both beef-production and dairying at the same time, and excel in both. One can not get a herd of cows that are superior in both directions. One or the other must get the preference or both will be a failure.

The Law Relating to Milk Adulterations.

There is not a greater farce in our Statutes than the "Act to Protect Cheese and Butter Manufacturers" (Revised Statutes of Ontario, page 1432.) Granting that it does protect our cheese and butter makers, how does it serve our farmers?

The act imposes a penalty in money or imprisonment upon milk "diluted with water or in any way adulterated, or milk from which any cream has been taken, or milk commonly known as 'skimmed milk,' or whoever keeps back any part of the milk known as 'strippings,' or whoever knowingly or fraudently sells, sends, brings, or supplies to any cheese or butter manufactory, milk that is tainted or partly sour from want of proper care, in keeping pails, strainers, or any vessel in which said milk is kept clean and sweet, after being notified of such taint or carelessness, either verbally or in writing, shall for every offence forfeit and pay a sum not less than $1.00 and not more than $50.00, in the discretion of the justices before whom the case is heard."

Moreover, the act states that the penalty may be imposed "upon the oath of one or more credible witnesses." That is to say, any man who has a spite against his neighbor may make oath that the milk of the latter is adulterated and involve an innocent farmer to the tune of $50 or imprisonment. Where the biggest farce comes in is that no standard of quality is adopted, and the cheese and butter makers have no instruments that can, with any degree of certainty, determine adulterations. A cheese-maker may involve an innocent farmer, not through any spite or ill-feeling, but through too much reliance upon his instruments, or any other method of determining adulterations. In some cheese factories, the business has become a game of grab; the cheese-maker, surrounded by complaints as to the large quantity of milk required to make a pound of cheese, takes refuge in subtracting a few pounds from each mess of milk which he suspects of being adulterated, and the patron knowing this to be the case, is strongly tempted to adulterate in order to make up for the loss of weight.

We pointed these and other defects to leading dairymen, and we hear that a committee has been appointed to revise the act, and endeavor to place the law on a more modern footing. We hope the results will be in the interests of the farmers as well as those of the cheese and butter makers; we shall see to it, if such will not be the case.

A correspondent of the Southern Cultivator says: During a recent visit to Mr. Sterling B. Johnson's, in Carroll county, says the Nashville (Tenn.) *Wheel*, we noticed a lot of pigs yoked in a novel manner for the purpose of preventing trespass on the cornfields. His wife, "aunt Sallie," claims the honor of the invention, and as a safe, simple and successful means of controlling mischievous pigs we give our readers the benefit of it. Take corn-cobs and break them into sections of three inches in length and burn or bore out the pith, and then run a strong twine through them and tie them around the pig's neck. It will require a very large opening to accommodate a pig with this yoke, and there is no possible danger of becoming fastened in the fence as in the old-fashion switch yoke.

Stock.

A Chatty Letter from the States.

[From our Chicago Correspondent.]

The corn or maize crop of the United States will probably be much less than last year, though the acreage planted was much larger than ever before. The crop, however, is extremely uneven. On some farms, where soil is light and the lay of the land is such as to shed water freely, it has been a complete failure, while may be on the adjoining farm, mainly on low land and with soil suited for retaining moisture, the crop is above the average.

But the drouth, besides directly injuring the corn crop, has probably done nearly as much damage indirectly. It so shortened the grass that farmers were compelled to "cut up" their corn before it was ripe, in order to supply green food for their animals. An old farmer, who has lived in one county in Illinois for over forty years, told the writer that he had never before seen such vast quantities of corn cut up for green feed. He was questioning whether in the long run it would pay, as it would necessitate the purchase of grain from other sections during the winter; but he said it was a rule of his never to let cattle get in poor condition at this season. "For," said he, "if they lose flesh now the winter's feed will be wasted on them, because they will not do well until spring comes again." He was right. It takes a good deal less to keep a fattening animal in a thrifty, improving condition than it does to build him up after he has commenced to lose flesh. The same farmer said that the drouth of the past year had been a severe tax upon the farmers, but it had taught them, as nothing else could, that in years of abundance they were shamefully wasteful of feed.

Since my last letter some fancy high-grade Shorthorn, Hereford, and Polled Angus beeves have sold here as high as $5.35 to $5.50. Only a few days since, when $4.75 was buying good fat 1,500 to 1,600 lb. bullocks, a lot of 1,282 lb. Herefords, averaging about two years old, sold at $5.40. These cattle were half-blood Herefords, were bred and fed by Mr. L. Lewis, of New Boston, Ill., who was justly proud of his work. The youngsters were carefully fed, and, as Mr. L. expressed it, "never allowed to get very hungry."

The course of the cattle market has been upward for good to choice stock, but the continued excessive supplies have not allowed the market for common to fair kinds to improve. Fairly good 1,100 to 1,200 lb. beeves have sold at $3.00 to $3.25; native cows at $1.25 to $2.75; and store cattle, averaging 500 to 1,100 lbs., at $1.50 to $3.00 per cwt.

New York and Pennsylvania dairy calves have been coming to Chicago in fair numbers, but the demand is very limited, as those who would ordinarily want such stock are short of feed, and have not much confidence in the future of the cattle trade. The Eastern dairy calves are more plentiful than usual, but are said to be of poorer quality. The dairymen are said to have paid little or no attention to the quality of the bulls.

Speaking of the over-production of cattle, a practical feeder and farmer says, "we shall have to raise fewer and better cattle."

In Nebraska it is reported that stockmen will not feed one steer this winter where they fed ten last, and this is the condition in a good many sections of the country.

Breeding stock, in sympathy with the beef market, is in small demand this fall, and prices are low.

Americans are great for rushing from one extreme to another. Whenever any article of production becomes unprofitable in the market from over-production, they drop it, and drop it so generally as soon to cause a natural reaction as the other extreme. It is better not to rush into or out of any line of work quite so precipitously.

The claim that a million and a half of range cattle were frozen and starved to death on the plains last winter may be exaggerated, but the amount of "refrigeration" on the plains was simply appalling; and that, together with all of the other potent influences that have been at work to reduce the production and number of cattle in the land, must tend to make the supplies of the future unequal to the demand.

On the theory that when everybody wants to buy is a good time to sell, and when everybody wants to sell is a good time to buy, the present ought to be a fine time to get into the cattle business. There has been almost a stampede to get out of the business the past year or so.

Shall We Grow Fat or Lean Meats.

A few weeks ago we published an article from Sir. J. B. Lawes on "The Pig of the Future," in which he showed the change that is coming over the people of England, in regard to the quality of the pork they consume. As Great Britain is one of the principal markets for American hog products, the opinions of such an observer as Mr. Lawes are of great value. He says the taste for excessively fat pork is dying out, and consumers are demanding more lean and less fat. This demand will very likely have an important influence in the future in deciding upon the relative merits of the various breeds of hogs as well as the system of feeding them. Instead of the quiet hog, which turns everything to fat, with the lighest possible bone to support the carcass, we shall be looking for a more active animal with a certain amount of muscle and plenty of bone to carry him around. The corn crib hog will have to be discarded, and his place supplied with a hog of less size, less fat, more lean meat, and whose early days were spent in a clover or pasture field. But Mr. Lawes' statement will apply with equal force to the United States. The demand for light pork has grown with each year, and the big six or eight hundred monstrosity which delighted the pork grower twenty years ago is not wanted. People are using more butter and less lard. Their pork must be mixed with lean meat or they leave it alone. And it is not only so in pork but also in beef and mutton. The big bullock loaded with fat excites admiration at a fair or a fat stock show, but the butcher knows a large proportion of the carcass will reach the rendering tank and only sell as tallow. The fat sheep for which England has long been famous, find few admirers on this side of the Atlantic, and within two years the demand has turned very decidedly to lean mutton. And it is better that it is so. Fat contains little nourishment as compared with lean meat. Fat supplies heat, but adds nothing to the bone and muscle of the consumer.

The future hog must have more flesh and less fat. It must not be a mere lard keg. It must be fed upon flesh forming foods until grown and then fattened. It means that more clover, peas, oats, milk, and such articles of diet must be used, and less corn. We will then have healthier and more palatable pork, and hog cholera will become a thing of the past.—[Mich. Farmer.

Cooking Food for Stock.

About two years ago we published an article giving substantial arguments against the cooking of food for stock, and gave the results of some experiments which supported our views, although many other experiments appeared to prove the contrary. A correspondent of the Breeders' Gazette, named F. A. George, asks the views of Professor Henry, of the Wisconsin Experiment Station, and the following is the Professor's reply:

Mr. George will find, if he will look up the authorities, that about twenty-five years ago there was a craze for cooking feed which had its day and ceased. The most positive statements as to the benefits of cooked food for stock were made by scores of reliable men, among whom were Prof. E. W. Stewart, Geo. Geddes, Prof. Mapes, and many others. But the boom passed quietly away, very few keeping up the practice for any length of time. I doubt if there are a dozen farmers in the country to-day who steam feed for stock where there were hundreds, if not thousands, years ago.

The reasons for this decline are, first, it costs a great deal to thoroughly steam corn fodder for a herd of cows. Mr. George would find that his Purinton steamer would hardly warm the mass, let alone steaming it, for to thoroughly cook the food for a herd of forty cows would require a steamer of say six-horse-power boiler capacity, I think, to do the work in reasonable time. At the Station we have run this steamer to its full capacity for two years to thoroughly cook a tub of meal—say two bushels. In the second place, I feel quite confident from results obtained in cooking feed for swine, that there is a positive loss resulting from cooking; that is, a hundred pounds of uncooked food is worth more than the same would be cooked. This may be heresy, but we have done too much cooking feed for hogs at the Experiment Station not to have some positive ideas at this date. So, once again I say, let cooking food for stock alone. Cut it fine; give warm water to drink; feed abundantly of good, healthy food, in warm, dry quarters, and you have done all for your cattle that they can ask at your hands.

Care of Stock in the Fall.

After the close of the cheese season, many farmers manufacture butter from the milk for family use or for sale, or both. In order to obtain the cheapest product of the best quality, the luxuriant autumn grasses, which at this season possess the highest nutritive properties, and make the finest flavored butter, should be utilized as extensively as possible, especially when it is also considered that much of this fragrant and delicious food would otherwise go to waste.

In order to attain these results, a hardy class of dairy cows is indispensable, owing to their ability to withstand lower temperatures than the fancy breeds without interference with their vital functions. Hardiness is determined by the range of temperature within which the animal feels comfortable, which is also a characteristic of health and vigor. The necessary exercise involved, and the cool, bracing atmosphere, have a tendency to develop the muscular and nervous temperaments which are absolutely necessary for all good milkers. This condition again reacts upon the health, vigor, and hardiness. A hardy animal also withstands the heat and drouth of summer, the muscular temperament also developing good foraging qualities.

On the contrary, stall confinement, which condition has built up our fancy breeds, produces the very reverse effects—fatty degeneration, diminution of fecundity, softening of the muscular tissue, and debilitating the nervous energy, inducing a tendency to all classes of disease. Such animals flourish within a very limited range of temperatnre.

Cows, and indeed all classes of domestic animals, should gradually change from the soft, succulent, laxative food of the pasture to the harder, drier, and more constipating stall rations. The first rations fed in the stall should possess some laxative properties, such as bran and oil-cake, after which they may become gradually accustomed to the coarser foods. This quality of hardiness also fits the possessor for enjoying many a fresh sun-bath during the winter days while its companion of aristocratic notoriety is compelled to breathe the close, vitiated atmosphere of the stable.

Hardiness is not so essential for animals intended for the block as for those calculated to be serviceable for a series of years, such as dairy stock. Fattening steers should be stalled earlier than dairy cows, for with them the development of hard muscular tissue is not so desirable, a more tender muscle, interposed with fatty tissue, being the aim of the feeder in accordance with the existing demands of the consumer.

The latest craze is to provide the building with stoves for the double purpose of heating the stalls and furnishing warm drinking water for the cows. Hardy animals withstand a wide range of temperature in the water they drink as well as in the air they breathe, and flourish under these conditions. It is said that this system of management improves the milk production, but this temporary gain is more than offset by submission to the conditions which have built up (?) our fancy breeds.

We are by no means advocates of cold stables or straw-stack accommodation; all we wish to insist upon is that hardiness is a desirable quality for our climate, and our dairy stock should not therefore be made accustomed to a limited range of temperature.

Save Pork from Spoiling.

In summer time, especially when the air is murky, the pork is apt to spoil. Some of the fat or oil in the pork will dissolve, and the softer the pork the more of its oil will separate and permeate the brine. This fat and the particles of meat rise to the top when the brine is undisturbed and remain there in the form of a scum. The air comes in contact with this matter and putrefaction begins. So if a portion of the pork be allowed to remain above the brine and exposed to the air it will become rancid and spoil the whole barrel after a while. An open barrel is more likely to spoil, for obvious reasons. When pieces of pork are frequently taken from the barrel the fat and particles of meat are submerged, and in this way putrefaction is prevented.

Stirring the brine often—every day or two—would produce the same result, but the safest way to make sure of good pork and no loss, is to take it all up by May 1st, boil the brine and carefully skim off all of the floating particles and scum. The salt at the bottom should be washed and then put back. Some persons imagine that if they put enough salt in the cask with the meat that is sufficient. This is a mistake, as only so much salt will dissolve, and when the brine is of such a degree no more salt is required,' except at the bottom to keep the meat from resting on the wood. Making bacon of all thin pork is a more desirable form for it for food, and it will also keep better. Many people will relish bacon who will not eat pork when pickled, as the common practice is.—[F. D. Curtis, in N. Y. Tribune.

Horses and Mules for the British Army.

It is authoratively reported that the British Government have decided, for the present, to discontinue the importation of Canadian horses for the army. In a previous issue we illustrated and described the classes of horses demanded for the British army, and showed that suitable animals were extremely scarce. The consignments from Canada already made have given excellent satisfaction; but the present complaint is that our horses are too dear. One cause of the high price is the expense incurred in travelling over so large a territory for so small a number of suitable horses.

What we desire specially to urge is that our farmers should not relax their efforts in breeding the classes of horses required for army purposes, for such animals are also best suited for all other purposes, except as heavy drafts, and there will always be an active demand for them whether required for the British army or not. Even granting that a good class of horses is bred, which is not suitable for cavalry or artillery purposes, a demand for army horses would leave a vacancy which could readily be filled from the class unsuited for the army, the consequence being that the prices of all classes of light horses would advance.

We fear our farmers are going too far in the encouragement of heavy drafts. Lighter horses can be raised more cheaply, and are likely to command a higher price. It is to be regretted that horse breeding is not engaged in more extensively than it is. A horse can be raised as cheaply as a steer or a cow, and who does not know the difference in price? Another advantage in horse breeeding is that the army officers seldom ask for the pedigree of the horse; individual merit settles every point, hardiness, freedom from disease, and suitable contour and action being the special requisities.

The weakness of constitution in many desirable-looking horses, caused by over-feeding and excessive attention in high-priced strains, has reduced their vitality to such an extent that the number of suitable horses has become limited, and mules are now in demand for transport purposes. An English journal makes the following allusion to the subject:

Mr. Northcote informed Dr. Cameron, in the House of Commons on Friday evening, that 96 mules had recently been brought from Egypt for regimental transport purposes. They were ordered of the size for pack duty, and were reported to be good, well-bred, small mules, well adapted for conveying infantry ammunition to the amount of 200 lbs., and some of them could be utilised for carrying mountain guns. The average cost of transport was £7 per head. The mules had not, strictly speaking, been kept in quarantine at Woolwich; but it had been thought advisable to keep them under observation for a month before distributing them over the country. No expense had been incurred beyond the ordinary cost of feeding them.

It is a little surprising that the mule, the animal whose name breeds contempt amongst the admirers of stylish horses, should be thought of for such purposes. But it is to be remembered that the mule stands exclusively upon his individual merit. Breeding he has none whatever, and may therefore be regarded as the truest type of the "scrub." There are about a million of them in the United States and they are extensively used where endurance is required, and where profit is mainly sought for in the expenditure of power. A heavy demand for mules for artillery or transport purposes will throw our custom into the United States and other countries. How would it do for our farmers to discuss mule breeding? We have observed the mule in every phase of his character, and we agree with the following extract taken from the Rural New Yorker:

The mule is everywhere hardier than the horse, matures considerably earlier, is subject to fewer diseases, is more sure-footed and therefore better adapted to travelling in a rugged, trackless country, much less fastidious as to food, more muscular in proportion to its weight, and is usually able to work twice as long. To Darwin the mule always appeared "a surprising creature." "That a hybrid," says he, "should possess more intelligence, memory, obstinacy, social affection and power of muscular endurance than either of its parents, seems to indicate that art has outmastered nature." A well-bred mule is as spirited and equally active or even quicker than a horse. It walks fast and pulls even more steadily. Cuvier says a jack has a much heavier brain than the best thoroughbred horse, and mules are remarkably intelligent, so that they can very readily be trained either to the line or to the word. Moreover, while a horse that has once run away is never safe afterward; a mule that has done so once rarely does so again; his nature does not incline him to such tricks.

How to Judge the Age of a Horse.

In the horse, as well as in most other animals, the age can frequently be approximately judged by the general appearance, the countenance, the position assumed, the gait, the retreating (falling in) of the temples and anus, and other indications. All these indications are, however, only general appearances, being liable to considerable variations in different individuals, especially if they are of different temperaments, and are therefore not reiable guides. To judge the age correctly, the organ or structure by which it is judged must be of uniform appearance; but no structure in the horse's body presents exactly the same appearance in all horses of the same age, and we cannot therefore tell the *exact* age of *all* horses with certainty.

The appearance of the teeth is, however, uniform enough to admit of a comparatively certain determination of the age of the horse up to its eighth year. The principal point of difference in horses' teeth arises from their unequal wear. Horses grazing on short, sandy pastures wear off their front teeth much faster than those fed on soft foods in the stable, and will therefore look older, judging by their teeth, than those of the same age fed in the stall.

The teeth by which the horse's age is generally judged are the front teeth of the lower jaw. These, when newly cut, have their front or outside edge longer than their hinder or inner edge. Their upper surface, or that one coming in contact with the teeth of the upper jaw, has a funnel-shaped, dark colored depression called mark, which, in the ordinary sized permanent teeth, is about ⅓ of an inch deep. This mark is of great importance in judging the age of the horse, and must not be confounded with a much smaller dark spot—the continuation of the mark—which can be seen in the tooth long after the mark has disappeared. The teeth of the upper jaw resemble those of the lower, with the exception that their mark is twice as deep.

The central two of the front teeth are called nippers; the next two, one on each side of these, are called middle or intermediate teeth; and the remaining two, those on the corners, corner teeth. In the horse or gelding of five years or over, the next pair is termed the hooks. Following these, one on each side, making a pair, are, in their order, the first to the sixth pair of molars or grinders. The teeth of the upper jaw are named like those of the lower, and those of the mare like those of the horse, with the exception that in her the hooks are generally wanting.

A colt, when born, may have no teeth at all, but generally has the first and second pair of grinders, and sometimes the third pair together with the central incisors or nippers cut through. As a general rule, these latter appear from 10 to 12 days later. When the colt is from 4 to 6 weeks old, the intermediate teeth appear. The corner teeth break through about 6 to 9 months after birth. All these teeth are called temporary, foal, or milk teeth, and will, in the course of 5 years, be replaced by permanent or horse teeth. The main difference between temporary and permanent teeth is that the latter are larger and harder.

A year-old colt has lost its marks in the nippers and intermediate teeth. At two years all the marks are worn out, the front teeth (incisors) being perfectly level on their upper surface. At two and-a-half to three years, the nippers are shed and replaced by larger permanent teeth, which can be easily identified by their edges not being worn, and their having a well defined mark; while the intermediates and corners are smaller and have no marks. At three and-a-half to four years, the intermediate teeth are replaced, and present the appearance of new teeth, while the central ones have already been worn on the in and the outside. The corner teeth are still the same, but are replaced when five years old by permanent teeth. At this age the centrals and intermediates show more wear than at four, but still the so called marks are not entirely worn. At six years of age, the teeth have all been worn to some extent. The marks of the intermediate are smaller than those of the corners, but larger than the centrals. In these latter the marks proper are worn out, and the black spots remaining will diminish very slowly in size. When seven years old, the spots on the intermediates will be of practically the same size as those of the centers, the corners still being larger. These will become the same size as the remainders when the horse approaches its eighth year. The marks in the corner teeth of the upper jaw may still be seen at the age of ten, but disappear before the age of eleven is reached. The older the horse is, the more worn the teeth become, the narrower and thicker, and the more triangular the surface of the teeth will become, until, at the age of twelve, the teeth have the same thickness as breadth, and at twenty-four the thickness of the teeth is equal to twice their breadth.

At one and-a-half years old, the fourth pair of molars appear; at two and-a-half the first pair is replaced; at three and-a-half the second pair is replaced, and the fifth pair appears; at four and-a-half the third pair of molars is replaced, and the sixth pair appears. The molar teeth are, however, rarely examined to determined the age, as they are more difficult to examine.

Sometimes marks are cut into the teeth of an old animal to make it appear young, but the triangular form of the teeth betrays the fraud.

Garden and Orchard.

Ontario Fruit Growers' Association.

The autumn meeting of the above association was held in the town of Grimsby on the 28th and 29th ult., the President Mr. A. McD. Allan in the chair.

After routine, the members of the Association formed themselves into a procession of carriages and visited some of the leading vineyards in the neighborhood; also Grimsby Camp, which is now one of our most popular watering places. The procession drove through the orchard and vineyard of Mr. Linus Woolverton, Secretary of the Fruit Growers' Association, situated about two miles west of Grimsby. These grounds are very extensive, and the trees and vines appear to be in a thrifty condition. Thence the procession drove through the vineyard of Mr. E. J. Woolverton, who has the finest Pocklington grapes in Canada, which variety is almost as profitable to him as the Niagara. The next vineyard visited was "Mountain Valley," owned by Mr. Murray Pettit, who may be regarded as the grape king of Canada. He has fourteen acres of vines, embracing over 80 varieties. Here the members of the procession sampled four-year-old wine, manufactured by Mr. Pettit himself. Mr. Pettit went very extensively into the cultivation of peaches, for which this section is also distinguished, but has suffered reverses on account of the yellows having destroyed the trees. Thence the procession wended its way up the mountain, which is supposed to be much inferior in fruit culture to the valley below, in which the vineyards just described, as well as many others, are situated. The valley is a strip of land situated along the lake shore, between it and the Hamilton escarpment, which high ridge protects the valley on the north side. This valley is regarded as the fruit garden of Canada, and land is worth about $500 per acre. Notwithstanding the prejudice against the mountain tops as a fruit district, we saw some very fine fruit gardens, and the procession paid a special visit to the vineyard of Mr. A. G. Muir, who has an excellent collection of Niagara grape vines, and the fruit, as well as that of other leading varieties, was choice in quality as well as abundant in quantity. He protects a large number of bunches in paper bags, which improves the appearance and quality, and brings an extra two cents per pound. The processionists rambled along the banks of "Fairview," where they enjoyed the magnificent sights of the surrounding country, and especially of the valley and lake below. On the return stretch from the camp grounds, two miles east of Grimsby, the company enjoyed the hospitality of Mr. W. D. Kitchen, and sampled some bottles of his eighteen-year-old wine. The town of Grimsby itself may be aptly described as a fruit garden interspersed with houses and walks. It is one of the oldest towns in the Province, records being traced back a hundred years; it has a population of about 900, and has one of the finest public libraries in Ontario. The inhabitants are noted for their hospitality.

President Allan's address was one of unusual interest, and displayed marked care and ability. We regret that, owing to the meeting being held so late in the month, we are unable to provide space for a synopsis of it in this issue.

On the evening of the 28th, a music program, interspersed by addresses, attracted a large and appreciative audience.

An interesting paper on "Farm Mortgages in Ontario," was read by Mr. F. G. Pattison, a fruit grower near Grimsby. Mr. Pattison is an English barrister, and a graduate of Cambridge University, who travelled extensively through this Province, and made a special study of this subject. He contended that three-fourths of our farms carried a mortgage to the extent of one-half of the value of the property mortgaged. He traced the origin of these mortgages to four causes, viz., (1.) The results of extravagance; (2.) Citizens of cities purchasing farms at unwarrantably high prices; (3.) Family mortgages, or those descended from the father to the son; (4.) Mortgages incurred by hard working farmers, who were too eager for land, and paid very little ready cash. He attributed the grabbing of too much land on the part of the farmer to a desire to be his own "boss," but he considered the mortgage to be the severest of all bosses. The result of mortgages incurred in the purchase of too much land was neglect of proper cultivation, whereby the soil was not made sufficiently productive for profitable farming. There was no use in preaching drainage, fertilizers, more thorough cultivation, etc., so long as the land was so heavily mortgaged.

Prof. Brown read a paper on specimens of the Walnut and the Larch grown on the Model Farm, 850 feet above Lake Ontario. The walnuts planted in 1882, although not native in Guelph, now measured twelve inches in circumference at the base. He said that trees four to six inches circumference were worth a good deal for various purposes. He planted the trees seven feet apart each way, and thinned them out occasionally, as they grew larger. He made an estimate showing that an acre of walnuts would realize $18,350 in fifty years, being a mean annual income of $322. Mr. Thomas Beall, Lindsay, who has considerable experience in growing walnuts, said that this sum was a low estimate. He once calculated the revenue obtained from a 100-acre farm, one walnut tree being planted in each fence corner, and his estimate was greater than that of Prof. Brown. He said he successfully grew black raspberries six feet from the trees, and apples twenty feet distant also flourished. Some speakers gave it as their experience that walnut trees destroyed vegetation for some distance, one speaker stating that it had destroyed a hedge clear across the road. Mr. Beall replied that the growth of the roots depended largely upon the character of the soil. In his soil, a deep clay, the tap root went straight down, and was as thick as the tree three feet below the ground. Dr. Burgess said a tap root grew straight down in a loamy soil, and adjacent vegetation did not suffer much from the spreading roots.

In a discussion on our best markets for apples, the question of auction sales in England was introduced. President Allan stated that there were several kinds of brokers, some of whom were to be evaded, but there were also several reliable firms. Our fruits must be sold by brokers immediately on arrival, there being no storage; but some large firms had immense storehouses, and only sold the culls by auction, the best grades being sold by private sale, at more satisfactory prices. Mr. P. C. Dempsey stated that the Association should regard themselves as sort of joint stock company, and they should see that no inferior or badly packed fruit should be shipped abroad, as it injured the reputation of the Association and the country. The best dealers in England looked sharply after the brands, and many a shipper lost his reputation by shipping a single barrel of inferior fruit. He had been successful in shipping four to six varieties of apples in one barrel, some of the varieties being longer keepers than others. President Allan stated that the King apple brought a high price in all the leading markets of Britain. He said there was a craze for large varieties, irrespective of quality; these were used to be rented out, as it were, to be used for decorating dinner tables, and were not eaten. As much as a guinea per night was charged as rent for large apples. The transportation rates were being somewhat reduced, and some steamship companies gave a rebate at the end of the season to large shippers. He was going to try the experiment of shipping apples to India, via the C. P. R. The future possibilities of this trade were a demonstrated success. He hoped to see fruits shipped in cold blasts to aid their keeping qualities, and with this process, apples would carry to India as well as to Liverpool.

Mr. Murray Pettit exhibited 60 or 70 varieties of grapes, and delivered quite an instructive address, pointing out the varieties, and describing the good and bad points of each. He said that the Niagara grape had scarcely a fault, and that it could be grown cheaper at two cents per pound than any other variety at three cents. He praised Roger 4 (Wilder) and Roger 44 (Herbert) as the best black varieties; and also spoke highly of Roger 9 (Lindley) and Roger 15 (Agawam) as the best of the reds. He did not know of any varieties that could supplant these Rogers.

There were about 50 varieties exhibited from the Model Farm, but the quality was very inferior, proving that Guelph, lying so high above the level of the lake, is not a grape-growing district.

In a discussion on preserving grapes, several members gave their experience. Some were successful in putting them in baskets and keeping them in a cool place. Others buried them in the earth, where they kept well till February. Another plan mentioned was packing them in hardwood sawdust—in baskets, first allowing the stems to get dry before packing. Another success mentioned was packing the grapes in a box with sawdust, then glueing strong brown paper around the box to keep out the air.

President Allan pointed out the prospects of a market for our grapes in Scotland, providing the shipping companies could be induced to handle fruits more carefully. Several varieties had already been shipped in excellent condition. Mr. M. Pettit mentioned the following varieties as the best keepers: Diana, Isabella, Salem, Lindley, Virgennes, Niagara, and Agawam.

The meeting at Grimsby was one of the best that we have had the pleasure of attending. It was a fruit exhibition as well as a public meeting, and, the varieties being labelled, farmers had an opportunity of learning the names of the varieties and testing their quality.

A correspondent of the Horticultural Times says: Some years ago I buried a quantity of crab-apples; everybody knows what a biting twang a crab-apple has. But when my buried fruit was taken out in spring it was certainly much improved, softened, made milder, the acid not so sharp, color deep yellow; in fact these crab-apples were fit to eat when taken out of the pit. There can be no doubt that apples in pits will save as well as by any other method. The air is excluded, so is light, and the fruit is left to the slow process of ripening under conditions very favorable to its preservation. I put up apples wrapped singly in paper.

Winter Storage for Vegetables.

At this season of the year the question is again asked, What is the best way to store our vegetables for the winter? This depends upon a number of circumstances, but above all upon the kind and quantity of the vegetables to be stored.

Potatoes, carrots, turnips, mangels, &c., may be either kept in a root-house or a pit. In both, the same conditions should be aimed at; these are: Have the storing place well ventilated, dry, dark, and of a uniform temperature, near the freezing point.

To obtain these ends in a root-house it may be either built on the surface or partially below it, with a hollow or double wall, *i. e.*, one having a dead air space between it, or embanked on the outside, or both. Perhaps the best plan, where thorough drainage can be obtained, is to build it partially into the ground, and use the excavated earth to bank up on the outside. Lay a tight floor on the joist overhead, and either lay the shingles in mortar or line the inside of the rafters with matched lumber. This will, if the gable ends are air-tight, make a dead air space above, and prevent the frost from coming in, or rather the warmth from going out. Put a ventilator in the floor (ceiling) overhead, and also one in the top of the roof, or better still, one in each gable end. Provide all the ventilators with tightly fitting doors or covers. Keep an air space around the bins below, so that the air may pass all around through them, and do not make them large, for in large bins the roots are liable to sweat and decay. If roots are to be preserved in pits, it is necessary to select a dry, high position, if possible on a light porous soil, and to put in the roots perfectly dry. If the pits are large, it is advisable to divide the contents into a number of small heaps, for a large mass of roots is liable to heat and decay. A good and convenient way to accomplish this, if the roots are all to be taken out at the same time, is to put in layers of brush at every 1½ to 2 feet. If the roots are to be taken out in small portions at a time, perpendicular earth partitions, dividing the pit transversely into a number of smaller pits, are preferable, for then a portion of the roots can be removed without exposing the remainder. At the ridge of the pit a serviceable ventilator can be made with a sheath of straw, by setting it upright, with its butt end on the roots, leaving its top to project out of the earth covering.

The advantages of a well-built pit are that the roots remain fresher and better flavored; while in a root cellar they are safer, easier stored away and easier taken out again. They are safer because the temperature in the cellar can be regulated with the ventilators; they can be easily examined, and, if necessary, the heap can be shoveled or picked over easier.

Cabbages are very rarely taken into the cellar, for here, besides taking up too much room, they do not keep as well as when pitted outside. A very convenient and effective way is to pull them up with their roots, late in the season, shortly before the heavier frosts set in. A slight snap of frost does not hurt them. Select a dry spot, and there place them, with their root ends up, side by side, so that they form a close bed about six to seven feet wide. Then cover the heads about one inch deep with loose, dry soil, packed tightly around them. As the weather gets colder, keep covering them up until the roots are nicely buried. Before leaving the pit, have a trench dug around it to insure thorough drainage, and cover it up with leaves or straw to prevent the earth from freezing so hard that the cabbage cannot be got out during the winter months. Sometimes, after the cabbage has been pulled and placed in rows close together, it is left without a covering for some time in order to dry, after which the full depth of earth is put on at once. Another method is to dig a pit, plant its bottom closely with solid heads, entirely burying the stalk and roots, so that the head rests on the ground at the bottom of the pit. In the spaces between the heads of the first layer plant another layer of solid cabbages, the roots of which will be partially buried in the soil. On the top of these lay, with their roots upward, a layer of softer heads. Cover these lightly with straw, leaving the roots to project out, then put on a layer of earth.

Celery is preserved for winter use either in narrow trenches or boxes. The former method is employed when large quantities are to be stored away, and the latter when smaller quantities for family use are to be preserved. For the trench system a narrow trench, about ten inches wide and as deep as the celery is long, is dug in a light, well drained soil, in which no water will lodge at any time in the bottom of the trench. The celery is dug up and placed upright in this trench, as closely together as possible without bruising the plant. The time at which this is done depends upon the time when it is to be used. If it is to be set on the table at the commencement of December, the end of October will be the proper time to pit it, to have it blanched by that time. And if it is to be used at the approach of spring, the later it is trenched the better, as long as it is not subjected to more than 10° or 13° of frost. If the celery is frozen it should not be touched until it is thawed out again, otherwise it is very likely to rot. Trenches that are to be kept through the severe winter months should be covered with straw, a thin layer being laid on at a time. Another method to cover the trenches is to put sticks across them; on these lay one or two boards to cover the trench, cover these and the ground two or three feet to either side with chaff or straw one foot deep, and cover this again with earth. For family use enough celery may be preserved in a narrow box, about eight or ten inches wide, with sides nearly as high as the length of the celery, and the bottom covered with a few inches of loose soil. Place this box in a dark, cool cellar, and put in the celery the same as in the trench system.

Onions should be harvested as soon as they are ripe, for if left in the soil after the tops have withered they are liable to sprout again, and thereby injure the crop. Before taking the onions to their winter quarters, thoroughly dry them, which is best done by leaving them in rows on the field, and turn them frequently. When thoroughly dry, remove the wilted tops. Then take them to their winter quarters, a dry, airy, frost proof, but cool place, having shelves made out of narrow slats, with small spaces between them. Put the onions on these shelves, not more than six to eight inches deep. Should the onions freeze at any time, do not touch them until they are again thoroughly thawed out.

Enclosed please find $2, one dollar for my subscription for the coming year, and one dollar for a new subscriber which I have procured for your valuable paper. I have taken your paper for fifteen years, and find I cannot do without it.—G. O. TAYLOR, Aylmer, P. Q.

Poultry.

Poultry at the Exhibitions.

THE INDUSTRIAL.

The Industrial Exhibition at Toronto has long had the name of being the best poultry show in Canada, and this season it has not allowed its reputation to wane. Some eighteen hundred entries were made, or at least eighteen hundred birds were entered. In most cases each bird constituted an entry, but there were thirty-six breeding pens, consisting of four birds each, thus making the total number of entries sixteen hundred and ninety. The birds were not in good condition as to feathers, but this, of course, could not be expected at this season of the year, when they are almost all in full moult. An English breeder exhibited 50 birds, chiefly Minorcas, although there were some Andalusians and a few pairs of Derbyshire Red Caps. The latter were an object of curiosity to most Canadians, although some of the English gentlemen present had known them in their native land, and were very enthusiastic over them. We regard them for our cold climate superior to the Minorcas, as the comb, although large (thus giving them this name), is rose or double and close to the head, and there is little doubt that it could very soon be bred down to a fair size, and while this would detract from its peculiarity, and those fond of oddities might say from its beauty, yet it would add to its utility with us.

A Pennsylvania breeder sent about two hundred birds, some of which were very fine, notably the Light Brahmas and some of the Games. The manager informed us that they hatch about five hundred stock and exhibition birds every season under hens, and about two thousand broilers in incubators, but most of both are raised in brooders. He did not give any satisfactory reason why part were hatched in incubators and part under hens, and we failed to see the object in so doing.

On Wednesday of the Exhibition, Mr. W. H. Doel, who has long been an active worker in the poultry interest, gave a dinner to some of his friends. We give in another column his experience with Minorcas and Langshans as layers.

While the management deserve the thanks of poultrymen for the liberal prize list, we would recommend them to go just a little further and provide a better building for this exhibit, the present one being rather dark and the coops too small, and a floor equal to the sands of Arabia for dust.

THE WESTERN FAIR.

The assertion that the present exhibit exceeds all previous ones, has become almost a subject of derision. However, no other words would express the facts in reference to the above exhibit. There was scarcely a section of any of the classes that was not well represented, and both in quantity and quality. This was especially the case in Dark Brahmas, Wyandottes, Games, Plymouth Rocks, Langshans and Leghorns. In turkeys, geese and ducks the exhibit was small and in some cases only fair in quality, but on the whole good. Messrs. L. S. Jarvis, Port Stanley, and Eli Griffiths, of this city, adjusted the prize tickets, and if there are any parties dissatisfied with the awards, they should visit a few shows where other judges were employed, and learn that while all are liable to err, Messrs. Griffiths and Jarvis are as near models as judges are likely to be.

The management of the fair are deserving of the thanks of all poultry exhibitors for the excellent building provided for this exhibit, and but for the very low prizes offered the poultry at the Western Fair would excel in numbers and quality any poultry exhibit in Canada.

THE GREAT CENTRAL FAIR, HAMILTON.

Hamilton may well feel encouraged to extend her poultry building on the fair ground, as is proposed, as the display at the late fair compared favorably with any ever made in Canada, so far as quality is concerned. In Light Brahmas there were thirty-one pens on exhibition, and in Dark, twenty-one, both classes being composed of good birds, with very few exceptions. The prizes on the Light variety were properly pinned ; on the Darks the reverse was the case, the first prize cock and the first prize pullet being among the poorest on exhibition. Plymouth Rocks were out in large numbers, thirty-one pens in all, some very fine birds and some very inferior ones ; the prizes were not placed where they belonged in all cases, and indeed it was hard to place them among so many worthy competitors. Twelve pairs of Wyandottes were shown ; in young birds the first prize was given where the second should have been, and *vice versa*. In old birds the first prize was given to the poorest pair shown, but the second was in the right place. We particularize only on the breeds in which farmers are most interested, as space forbids us going through the whole list. The judging throughout was a farce. We are not prepared to question the honest intentions of the judge further than that he should not have undertaken to judge Hamilton and Brampton shows (which he did) on almost the same date, thus being obliged to judge some fourteen hundred fowls in four hours (as it was about two o'clock when the doors were closed, and he had to finish that night), when an expert could not do it properly in less than twelve.

The Association has an invaluable superintendent in this department, being energetic, courteous and careful to all, and dispensing special favors to none, but there is great room for an improvement in his assistants, and especially when the exhibits are in excess of the accommodation, as was the case this year.

There is considerable discussion at the present time as to the advisability of putting the names on the coops at the exhibitions. We are decidedly in favor of doing so, as most exhibitors exhibit as an advertisement, and there is very little benefit derived if visitors do not have this means of ascertaining who owns the specimens on exhibition, and the idea that a more honest award is given by withholding the name of the exhibitor is a fallacy.

We were shown by Mr. Howard, of Exeter, a Plymouth Rock cock of gigantic proportions; he weighed when last on the scales twelve and-a-half pounds, and is not only the largest but the best P. Rock cock we have ever seen. He was bought by Mr. H. at the Western Fair last fall, where he won first prize, although mated with an inferior hen. The price paid would make most farmer folk stare, viz., ten dollars, but we consider him worth the money.

Mr. W. H. Doel, who may fairly be called the veteran poultry-man of Ontario, tells us that for the sake of testing the merits of the new craze, the Minorcas, he set Minorca eggs and Langshans in the same nests, both in June and July of 1886, and in both cases the Langshans laid before the Minorcas, and in the July chick fully a month earlier ; and in the latter case the Langshan laid eighty eggs while the Minorca was laying sixty. This is not saying as much for the Minorcas as some claim for them, and as the word of Mr. Doel is above suspicion it may be considered as correct.

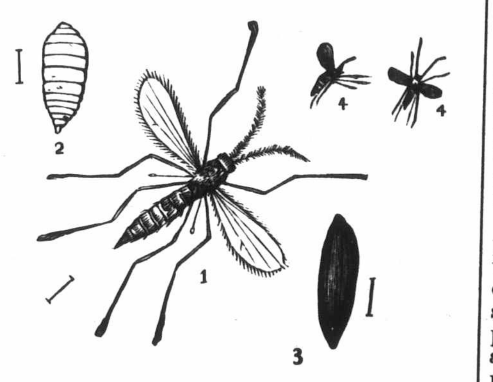
Entomology.

The Hessian Fly.

This insect (*Cecidomyia destructor*) has lately made its appearance in England, where it has caused considerable harm and excitement for the past two seasons.

It received its name, Hessian Fly, from the belief that it was introduced to this continent by the Hessian troops, during the revolutionary war in the United States. This belief arose from it being first noticed on Long Island, near a Hessian camp, in the year 1776. From here it spread over the other States of the Union and to Canada, appearing at Quebec in 1816, and in Ontario 30 years later. Some individuals still entertain the idea that this plague was imported to this continent, but the majority of entomologists now think that America is its natural home, and that it was exported from here to the European continent about 50 years ago.

The Hessian Fly belongs to the order of two winged flies, to which also belong our common house fly and the wheat midge. With this latter insect the Hessian Fly has much resemblance ; the main difference, to the naked eye, is that the wings of this insect are dark, while those of the wheat midge are transparent. The Hessian Fly, shown in our cut largely magnified at 1,



1.—The perfect insect. 2.—The larva. 3.—The pupa. 4, 4.—The perfect insect in its natural size, side and top view respectively. The lines show the natural size of 1, 2 and 3.

and in its natural size (side and top view respectively) at 4, 4, is about $\frac{1}{8}$ of an inch long and $\frac{1}{4}$ of an inch measured across the expanded wings. Its body is brown, head and chest somewhat darker than the remainder. Its wings are of a dusky grey color, fringed at their margin, and rounded at their tips. Its legs are pale brown, and its antennæ (feelers) are dark colored and hairy. The female is much more numerous, not so slender, somewhat larger, and darker in color than the male.

In Canada there are two broods a year, one in spring and the other in autumn. The spring brood appears early in the year, from April to the end of May. The female deposits her eggs on the ends of the leaves of wheat, barley or rye. In from 4 to 10 days, according to the temperature, the larvæ, wrinkled yellowish maggots without legs, are hatched from these eggs. After being hatched they crawl down between the stem and the encircling leaf to the node or joint (generally the first or second one from the bottom), where they anchor themselves and suck the sap out of the tender stem. When full grown, about 4 to 6 weeks after being hatched, the larvæ (shown at 2 in the cut) are about $\frac{1}{8}$ of an inch in length, possess a clouded white color, and have faint greenish stripes. At this stage they form what is called the flax-seed stage (shown at 3 in our cut), so named from the resemblance the insect at that period has with the seed whose name it bears. In this stage they are most frequently found, and may be seen by carefully removing the lowest two or three leaves encircling the stem of an infected cereal. They are generally more or less embedded in either the stem or the sheath forming leaf, and present an oval, cylindrical, smooth form, of a chestnut brown color. From this flax-seed stage the perfect fly escapes from the end of August to the commencement of October, and again lays her eggs on the newly-sown fall wheat or rye that may be above the ground. The eggs are hatched, the larvæ descend to the joints, where they form the flax-seed stage the same as before. They pass the winter in this stage, and appear as the perfect fly in the spring, to again lay their eggs on the leaves of the cereals on which they fed the previous fall, and upon such spring wheat, rye or barley that may be far enough out of the ground. Some entomologists claim that the second brood of larvæ attacks the roots of the plant instead of the stem.

In the fall the presence of the insect may be noticed by more or less of the wheat plants turning yellow and dying. The suspicion is confirmed if, on examining the plants, either the larval or flax-seed stage is found. The presence of the spring brood is seen by the infected stalks bending down, forming a sharp angle just above the joint at which the insect harbors. The ears are short and badly filled, and the grain is shrivelled. Two or three larvæ are sufficient to kill the plant, or at least so weaken it that it is unable to bear even the small head that may be formed, and bends down, in the manner described, with a slight wind or rain shower.

Some authorities have advised to closely pasture the fields attacked by the Hessian Fly in the fall. But by so doing the crop may be largely or entirely destroyed by winter-killing, if the season is unfavorable. The advisability of this plan depends upon the extent to which the insect attacks the crop. If the attack is bad, and the probabilities are that the crop will be largely destroyed by the combined force of the two generations, the pasturing can be no risk ; it will destroy a large number of the insects, prevent their spread, and may save a large proportion of the crop, besides being food for the stock pastured upon it. If the attack is noticed in spring, nothing of material advantage can be done till harvest time. When cutting the grain cut high, if possible above the second joint in the stem. This prevents the insect being brought into the barn, where it will escape destruction, unless the wheat is threshed very early, and the chaff and tailings carefully examined, and if they contain any of the flax-seed stages, either feed immediately or burn them. Burn the stubble of infected fields immediately after harvest, if possible, or plow the field deep right after harvest with a "jointer plow." This will ensure all the stubble being covered, and with it all the insects that they contain. If covered deep enough, it will prevent the fly from being formed, and even if covered comparatively shallow, it will be effective, for although the moth will be formed, it will be unable to penetrate the earth covering it. The sowing of a small strip of grain early in the season acts as a trap for the fly, for she lays her eggs on this early grain, which should be plowed down shortly before sowing, late in the season, the main crop say at the end of September. Strong, vigorous varieties of grain, with flinty stems, are not so subject to an attack of the Hessian fly.

Several parasites attack this insect and keep it considerably in check. Thorough tillage and manuring of the soil cause a strong and vigorous growth of plants, which enables them to overcome and repel the attack of this insect, as well as that of many others, when they would otherwise perish.

Veterinary.

Thrush.

This diseased condition of the frog is caused by compelling the horse to stand in filthy, wet places without afterwards cleaning his feet; or, letting it stand in wet stalls improperly cleaned out; or from stables in which a portion of the excrements have passed below the floor, where they have accumulated and emit a foul irritating odor; this is especially noticed in old buildings having their floor close to the ground. Sand, gravel, or some other irritant in the cleft of the frog; improper shoeing, as burning or paring the frog, or preventing it from touching the ground; navicular disease, or a constitutional taint, are also causes of this disease.

The severity of the disease varies very much, in some cases being so slight that it can hardly be noticed, while in others it is difficult to distinguish it from canker, into which it may develop. In mild cases, the symptoms are a slight exudation moistening the frog, with a more or less fetid odor. In the more advanced stages, there is a decided fetid discharge from the cleft of the frog, and, according to its severity, more or less tenderness and lameness. The first steps in the treatment of this disease, as well as that of all others, is to remove the cause. Then remove all loose and ragged pieces of horn; cleanse the part well by syringing it out with water; then dust some powdered calomel into the cleft, after which press in some tow, which serves to keep out the dirt and retain the powder in its place. Instead of calomel, powdered sulphate of copper (blue-stone, blue-vitriol) or sulphate of zinc may be used. Carbolic acid or tar moistened on the outside with a little sulphuric acid will answer the purpose. It is also necessary to create some frog-pressure either by removing the shoe, putting on a bar-shoe, or by using a common shoe thin enough to allow the frog to bear some of the patient's weight. If the disease is in the hind feet, it is generally due to some external cause and is likely to yield readily to the above treatment. But if it is on the front feet it is very likely due to some intrinsic cause and the treatment will be more difficult.

Indigestion in Hogs.

This disease is one of common occurrence amongst swine, and occasionally causes alarm when no fear need be entertained. Its symptoms are, in its first stage, loss of appetite and attempting to vomit, in which they are sometimes successful. When of longer standing, the animal becomes sluggish in movement, has a capricious appetite, inclines to eat soiled litter or lime, drinks the drainage from the manure pile, and occasionally gives a deep sigh. Its excrements are sometimes hard, somtimes soft, slimy, acid, or foeted, with sometimes slight bloating. The most productive causes of this disease are overfeeding, feeding of indigestible, or easily fermenting, or decayed foods, feeding out of dirty or soured troughs, or out of troughs containing decomposing remnants of food. A sudden change of food may also cause it. When treated in time, the best remedy is to mix 8 to 16 grains (according to size) of white helebore with sweet milk and allow the patient to drink this. If it refuses to drink this, mix another dose with syrup and smear this on its tongue. If the patient does not "throw up" inside of an hour, give another dose and let it fast for 24 hours. If the disease is of longer standing, mix equal parts of chalk, common salt and gentian, and give three times a day for one week, a tablespoonful mixed with syrup. Its food should be reduced two-thirds, only one-third of the usual quantity being given in four meals daily, and the trough, if necessary, thoroughly cleaned. Gradually increase the food until the full ration is reached, and by adding chalk or powdered acorns to the feed, the natural strength of the stomach will soon be regained.

The Apiary.

The Dominion and Toronto Industrial Exhibitions.

It was at the Toronto Industrial Exhibition that the bee-keeping department, or "Apiarian Department," first received a distinct place upon the prize list of any association in Canada or America. Generally it is classed with "Dairy Products," although it would be somewhat difficult to explain the relationship between the cow and the bee.

Owing to the extremely dry season, the honey crop throughout the Dominion has been far below the average, and bee-keepers generally expected but an inferior display of honey, both as to quality and quantity. To the credit of all it may, however, be said such was not the case. The display, as to quantity, was fully equal to that of former years; the comb honey was very good, extracted also. This display was due to the appearance of several new exhibitors. Quite a quantity of honey was shown in its granulated condition in glass, and the public are buying honey in the granular state much better than formerly. This is gratifying, as bee-keepers have had so much difficulty in former years to convince the public generally that this change is a fine test of the purity of honey. The competition in bee-keepers' supplies was very keen, there being as high as seven entries in some sections. There is very little which is new in the hive line. One hive, of which the sides are moveable, and which has a skeleton board under it, claims to be a great advantage, but it is doubtful if the frame-work upon which the super rests will be strong enough to stand removal when the bees attach it to various parts of the hive. An invertible and reversible hive is shown by a bee-keeper near Stratford. It certainly is a great improvement on the Heddon hive, but its utility has yet to be tested by practical experience.

During the second week of the exhibition a special meeting of the Ontario Bee-keepers was called at Toronto. Its object was to meet Mr. Thos. Wm. Cowan, of England, and Mr. Ivar S. Young, of Christiania, Norway. Mr. Cowan has a world-wide reputation as a bee-keeper. He has travelled over many countries, making a study of this industry, and is editor of The British Bee Journal. Mr. Young has been sent to Canada and the United States by the Norwegian Government to try and gain information which may be of benefit to Norwegian bee-keepers. This gentleman is also editor of the Norwegian Bee Journal. There was a very good attendance of bee-keepers. Mr. Cowan's microscope, which is the best instrument in America, gave those present glimpses into the bee-keeping world which were interesting, useful and instructive. Mr. Cowan was presented with a handsome gold-headed cane, and Mr. Young with a meerschaum pipe, as a souvenir of their meeting with Ontario Bee-keepers. Mr. Cowan gave an interesting account of the working of the British Bee-keepers' Association. Their aim was to improve the condition of the laboring classes, and they sought to induce these to keep a few colonies, and give them such help and information as would lead to success in keeping them. The association numbers some 10,000 members. The question of Commercial Union, as affecting bee-keepers, will be brought up at the coming meeting of the Ontario Bee-keepers' Association, at Woodstock.

The display of honey at the Western Fair was decidedly inferior, owing to the small sums given in prizes. The exhibitors were local men. The Western part of Ontario has not given even as good a yield as the Eastern, and consequently the display suffered. One lot of comb honey, six hundred pounds, was very good, and took first prize. The display of extracted (1,200 pounds) which took first prize was very fair. Only two lots of vinegar were entered, and were so inferior that they received only a second and third prize. For the prizes on bee-keepers' supplies there were three competitors.

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.

Wild Oats—Twitch Grass.—Can you furnish me with information: 1st, how to eradicate "Wild Oats" and 2nd, "Twitch Grass."—R. C., Eramosa.

[1. When trying to get rid of wild oats, like in any other annuals, prevent them from going to seed, by sowing in the infested field a crop that ripens before them. Wild oats ripen before the cultivated varieties of oats, but later than barley, and therefore the latter is a good crop to sow in fields infested with wild oats. Another point to observe is that when seeds have fallen on the ground not to bury them too deeply. For if buried deeply they will not germinate until they again come nearer the surface, and as these seeds retain their vitality for over eighteen years, they will be a constant trouble after wards. Immediately after the crop is taken off, cultivate or harrow the field. Then they will have time to sprout and will be killed by the fall plowing or by the winter's frost. If wild oats are seen amongst a crop that ripens later than they do, pull them out, or if in too large numbers to do this, it is better to cut the field as a green crop than to allow the wild oats to ripen. If wild oats get into the barn be careful that they do neither pass into the manure pile nor get into the seed grain. Before feeding grain containing wild oats, run it through the "chopper," for seeds may maintain their vitality even if they have passed through the animal system. 2. Twitch Grass is fully detailed on page 166 in our June issue of this year.]

Burlington and Vicinity.—We have not seen in any part of this or any other country a place to compare with that lying along the lake from Hamilton to Oakville. For beauty of scenery it is unsurpassed; for yield of grain, where cultivated for that purpose, it is second to but few sections, if any, and for fruit products it holds its own with the Niagara District. In company with our old time friend, Mr. Jacob Peart of Burlington, we visited some of the leading farmers of this section, all of whom seemed prosperous. Mr. Wood Freeman and Messrs. Fothergill (of this section) turn their attention largely to Clydesdale horses, in which they are certainly successful, if success consists in owning fine specimens. Mr. J. S. Freeman has fruit trees to the number of about two thousand, about half of which are pears, the remainder apples, and we do not know how many outside this number, as we figured the matter for ourselves while driving past this one orchard. His near neighbor, Mr. H. S. Heard, has fourteen acres of onions and forty acres of cucumbers; do not set this down for a mis-print, we *mean* forty acres. There are many fine orchards in this section, and on towards Toronto, but the finest we saw were in the vicinity of Oakville. We called on the two largest fruit growers in the vicinity to get some idea of the extent of their operations. Mr. Alex. Robertson has some thirty acres under cultivation, on which he has twelve hundred pear trees, seven hundred of which are Beurre D'Anjou, the remainder being composed of Bartlett, Clapp's Favorite, Keiffer's Hybrid, Doyenne, Bussock, and a few of other varieties. Of these Mr. Martin prefers Doyenne, Bussock and Beurre D'Anjou. He thinks the Keiffer's Hybrid (of which we have heard so much of recent years in nursery catalogues), a complete failure for his section, the fruit being almost worthless. On the other hand it has been with him an early and abundant bearer, and he thinks it would grow some places when other more valuable sorts might fail. Mr. R. grows apples quite largely; he showed us some very fine specimens of Duchess of Oldenburg, which for some unknown reason ripens two weeks later with him than his neighbors. Mr. R. a few years ago raised a thousand bushels of strawberries off three acres. Across the road from this prolific farm is that of Mr. Wm. Martin, who has fifty acres of land, all in fine condition and well fenced; Mr. M. has great faith in underdraining and has his farm thoroughly drained. He has a very fine vineyard, consisting of six hundred Concords and four hundred Niagaras, and has some years received over three thousand dollars for small fruits. As the chief product of the farm is fruit, there is naturally a dearth of manure; to supply this cattle, are bought in the fall, and hay and grain bought to feed them; this Mr. M. claims is profitable if he can clear the manure, which he always does. This might be worthy of consideration by farmers that sell their hay and rough feed.—RAMBLER.

Floors for Stables.—Which is the cheapest and best floor for horses and cattle—plank, stone, or cedar blocks (set on end)? Hemlock lumber can be bought here for $7 per thousand; cedar, such as posts, for $6 per hundred, and stone for nothing. Would it be well to use cement in laying the stone? Do you know of any book that treats on the finishing of stables, &c?—D. B., Kincardine, Ont.

[This question has frequently been discussed in the ADVOCATE. See back numbers in our correspondence columns. The objection to wood floors—either planks or cedar blocks—is that they absorb large quantities of urine, which makes the stable unhealthy, and with cedar blocks it is also difficult to get a surface sufficiently smooth to allow the urine to run off. In laying a stable floor, you should not look entirely to the first cost, for it may be very costly in the end, both with reference to lack of durability and the healthfulness of the stock. When stone is used, it should be laid in cement; but the objections to such floors are (1) it is difficult to get a smooth surface, except when flag-stones are used, and (2) stone is liable to make the floor damp. There is nothing equal to a good cement floor, which can be built by any good stone mason. It covers all the objections referred to, and has also this advantage, that the fall from the manger to the gutter need not be so much on this smooth surface. Stock cannot stand with ease for a considerable length of time, when their fore feet are much higher than their hind feet. For horses, this difficulty is frequently got over by making the passage behind the gutter on a level with the centre of the stall floor, so that the horse, when standing back, is on a level. We know of no book specially devoted to stable matters.]

Cut-worms.—During the past two summers I have been troubled with cut-worms in the garden, and also in spots in the grain field. Will you kindly let me know the best methods of preventing and stopping their ravages. I have been told that salt is a good thing. How and when should I apply it to the land, and what quantity per acre?—R. M. P., Oak Bank, Man.

[An effective and easy method to destroy these worms is to poison them with poisoned cabbage, turnip leaves, or clover. Dip these fresh, succulent, green leaves or plants into a pail of water into which a tablespoonful of Paris green has been thoroughly stirred; or moisten them on one side, and dust on Paris green or London purple, thoroughly mixed with twenty parts of flour. Put these poisoned baits fifteen to twenty feet apart each way on the thoroughly cultivated field or plot in which the worms are to be destroyed, before seeding or planting. The worms finding nothing else to eat, will readily partake of the poisoned leaves and be destroyed. The nearer the baits are placed together the quicker and more effective the cure will be. A field badly infested with the cut-worms was entirely freed from them during two dark days with these poisoned baits, placed at the above intervals. An application of salt sown broad-cast over the field in fall or spring, destroys a large number of different larvæ and grubs, amongst which the cut-worms are included. An effective dressing is from three to four bushels per acre.]

Uses of Salt and Lime—Commercial Fertilizers—Summer Fallowing for Potatoes—Green Manuring—Oat vs. Wheat Straw.—1. The farm I work is composed in part of dark, heavy sandy loam; the grain is liable to fall when scarcely ripened. Would lime and salt help? What quantity and when put on? 2. What artificial manure would help potatoes on sandy land, to be put on the time of planting or after? 3. How would summer fallowing a clover sod do for potatoes, if limed? When is the best time to put on the lime? 4. I want to turn down rye or buckwheat for green manure. What is the best artificial manure to stimulate growth? How and when to apply? 5. Which will furnish the most manure, or the most valuable for crop, the oat straw or other straw fed to cows, and their manure, liquid and solid, applied to land; or the same weight of straw saturated with hog manure, after having been used for pig bedding?—A SUBSCRIBER, Goderich, Ont.

[1. If we understand your description, your soil is very rich in decayed vegetable matter, which soils are most benefited by the application of lime. Salt would give precarious results. The quantity per acre varies from 800 to 1,600 pounds, according to percentage of humus in the soil; the more humus the more lime required. The lime may be applied in autumn, the land being plowed shallow immediately after the application, or it may be applied in spring as soon as the soil gets dry. (For further details refer to our issue of last March, page 73). 2. Potatoes are potash feeders, so that unleached ashes produce excellent results, especially on sandy or vegetable soils. The application may be made either in the fall or early in the spring, as long as possible before the potatoes are planted, the object being to mix them with the soil as thoroughly as possible and obtain the benefits of the rains to distribute the potash through the soil. Where ashes are not obtainable, use other potash fertilizers, such as the muriate or the sulphate of potash. However, as sandy soils are usually deficient in all kinds of plant food, you should also use small quantities of phosphates and nitrogen in some form; but potash is the main thing. 3. This practice would be unprofitable. The liming would depend upon the composition and physical character of the soil. (See answer to question No. 1.) 4. Clover, preceded by a dressing of gypsum, is the best system of green manuring. (See our January issue, 1887, page 1.) The fertilizers for rye and buckwheat depend upon the character of the soil; in fact, these plants do not require much manure. For a sandy soil, apply a general fertilizer. 5. If you can utilize the straw in your feeding rations, by feeding it with highly concentrated foods, your most profitable plan is to do so; otherwise it would be more profitable to use it as hog litter. Oat or other straw, to be of much value for feeeing, should be cut on the green side, and well secured from the weather. Of course, there is more manurial value in straw before it is fed than after it appears as manure, and it also helps to save the liquid manure of your hogs; this will be another gain.]

Velvet Grass.—Inclosed you will find the head, root, and part of stalk, of a kind of grass that has been coming into our land about Yarmouth for the last 5 or 6 years. It is a very sweet and tender grass, and the cattle seem to be very fond of it. It is green late in fall and early in spring. I cannot find out the name, as no person around here seems to know it. Kindly name it in your next issue.—G. F. A., Yarmouth, N. S.

[The botanical name is *Holcus lanatus*, and it enjoys all the following common names: Velvet Grass, Meadow Soft Grass, Woolly Soft Grass, Down Soft Grass, Yorkshire Fog, Yorkshire White, Salem Grass, White Timothy, and Velvet Mesquite Grass. Owing to its handsome velvety appearance, Velvet Grass is a very suggestive name. It is often mistaken for Orchard Grass, which it somewhat resembles. It is commonly asserted that cattle do not eat it readily; but with reference to nutritive value based upon chemical analysis, it is somewhat superior to our native June grass. It is not generally recommended to be sown, but we should like to have some more of your experience with regard to it.]

Early Oats.—Mr. Wm. Kidd, near Exeter, Ont., received four years ago from a friend at a distance eight grains of oats. As they were very plump and full of meat, with a moderately light husk, Mr. K. thought it worth his while to propagate them. Accordingly he planted them in his garden two seasons, and then in his field. Last year he had four bags; this season he sowed three bags, and gave one to a friend to sow. They still retain their characteristics of plumpness and light husk, and have ripened ten to twelve days earlier than the common varieties under similar conditions; in fact, sown at the same time they ripen fully as soon as barley. The name of the oats is unknown.—[RAMBLER.

Ration for Milch Cows or Fattening Steers.—1. How much bran would I have to feed a beast of 1,000 pounds, instead of the turnips, in a ration of 90 pounds turnips, nine pounds pea-meal, ten pounds of straw (cut)? 2 Origin of the Bronze turkey?—W. J. B., Banda, Ont.

[1.—With reference to feeding value, 10 pounds of bran are about equivalent to 90 pounds of turnips. The ration would, however, be improved by feeding 25 to 30 pounds of turnips, and five or six pounds of bran, retaining the given quantity of straw and peas. Ninety pounds of turnips per day are too much in any ration. It is desirable to change all rations occasionally, which changes should be left to the judgment of the feeder, especially giving more or less laxative foods, according to the condition of the animal's bowels. 2. Cross between the wild turkey and the Narraganset.]

Gooseberries — Bees — Duty on Plants.—Please answer the following questions through the columns of your valuable paper.—1. When is the proper time to cover the tips of black-caps and gooseberries? 2. What varieties of plums best withstand the black knot? 3. At how low a temperature may brood be taken out of bee-hives without danger of chilling? 4. Do Canadian purchasers have to pay duty on plants received from the United States.—J. M. M., Embro, Ont.

[1.—As soon as branches bearing no leaves at their tips appear, their tips should be covered. If the bush has been pinched back about midsummer, these branches will appear about August or September. Gooseberries are generally propagated by cuttings As soon as the leaves get ripe, select new, vigorous shoots, of one season's growth, cut these into pieces about six inches long, plant them in rows, leaving two inches between the cuttings, and about one and one-half feet between the rows: cover them in fall with straw, remove this in the spring, and keep them well cultivated through the summer. In the fall they will have taken root nicely. 2.—The healthfulness and vigor of the tree determines the resistance to the black-knot more than the variety. All varieties are subject to this disease. 3.—It is not safe to expose them to a temperature below 70° F. 4—The duty varies according to the kind of plant. Cherry, peach and pear trees are four cents each; plum trees and rose bushes, five cents each; blackberry and raspberry bushes, one cent each; grape vines, three cents; apple trees and gooseberry bushes, two cents; quinces, two and one-half cents]

Ice House.—Could you give me any suggestions, or tell me where I could get any information, on the building of an ice house, with refrigerator attached? I want it chiefly for butter.—R. N., Longwood.

[A good and serviceable ice house may be built at very little cost It is but an ordinary frame building, with its sills resting on the ground, and the spaces between the studding filled out with sawdust. Use 2x6 inch studding; line them on both sides—leaving a space for a door—fill up the space between the lining with dry sawdust Then put on the rafters, 2x6 inch scantling, sheet them closely on the inside, then sheet on the outside, filling up the space between the two sheetings with dry sawdust—as you go up. Then shingle the roof, laying the shingles, if possible, in mortar. Hang the door; if of a small house, a double one, with space between it, is necessary; if the house is larger, a single door is sufficient. Then put about eight or ten inches of sawdust on the natural earth floor of the house. The best location is a shady place; if possible, let it be a lean-to on the north side of some larger building. Cut the ice with a common cross-cut saw, into equal sized squares, with perpendicular sides. When filling the house, put down a layer of ice as closely together as possible, leaving, however, a space, ranging from one to two feet, between the ice and the outside wall; this space, as well as the crevices between the ice, must be filled up with sawdust before putting in the second layer, which is treated in the same way as the first. When the ice house is small, it is well to fill the crevices between the blocks tightly with snow, instead of sawdust; level the surface of the layer, if uneven, also with snow, then moisten it and let it stand over night to freeze firmly together. Then put in the second layer in the same manner. When all the ice is in the house, cover the top with about a foot of sawdust. We know of instances where ice, frozen together as above described, to form one solid block containing less than 400 cubic feet, has been preserved through the heat of two summers; whereas the same bulk of ice, kept in the same ice house, when not frozen together, would hardly keep one summer. The larger the ice house, the less care in building it and packing the ice is required. A space left anywhere in the house will answer the purpose of a refrigerator.]

Pruning Gooseberries.—Could you tell me the best time for pruning gooseberry bushes?—J. H., Douglas, N. B.

[We prefer the early spring for pruning, but pruning may be done at any time when the leaves are off the bushes.]

Commercial.

FARMER'S ADVOCATE OFFICE,
London, Ont., Oct. 1, 1887.

While September has been a very pleasant, warm month, yet on the whole it has been much too dry, and in some sections to-day the fall wheat is suffering for want of rain. The farmers also in many sections are still obliged to draw water for their stock, and in many cases for domestic purposes. The same remarks apply to many of the Western States, while in many sections of these States the fall plowing and seeding has been seriously retarded, while a lack of water supply has occasioned inconvenience in various ways in agricultural affairs.

WHEAT.

The movement of wheat the past month has been light, and receipts from farmers are also very light.

In the trade, the tone of the markets has been somewhat better the past week, with some reaction to weakness at the close, but it seems clear that the general sentiment, in this country and abroad, is shaping more to confidence in the future of this grain, but any essential improvement may be deferred a considerable time yet.

The visible supply of wheat decreased 908,000 bushels for the week, which reduction was not generally counted upon by the trade, and this had some stimulating influence upon the markets.

Closing prices of wheat yesterday at Chicago for different months compare with two previous weeks as follows:

	Sept.	Oct.	Dec.	May.
Yesterday	70½	71	73½	78⅛
Week ago	68⅞	69⅜	72¼	77¾
Two weeks ago	68¾	65⅝	72⅝	78½

At corresponding date last year the Chicago market was as follows: September 72¾, October 73¼, May 83½.

Beerbohm's London corn trade list, after a lengthy review of the exporting and importing countries of the world, concludes its article as follows:

A retrospective view of the past season is not very cheering. Early in the season the evident shortness of the crops led to a belief that prices would at length be showing some improvement, which was, indeed, the case in the early part of this year; but the unexpected resources of the United States, where the official estimates of the crop had been entirely misleading, and, later on, the unusually brilliant summer, led to an even greater depression in prices than in 1885-86. Large speculative operations for a rise in Chicago, Berlin, San Francisco, and Liverpool, failed of their object, one after the other, and the result is that prices at the beginning of the present season, say on September 2nd, are 2s. 6d. to 5s. per quarter lower than last year; the average price of English wheat is 3s. 2d. lower; No. 2 Calcutta 2s. 6d. lower; red winter is obtainable at about 4s. less, and Chilian at about 3s. less. During the last three months of the season the liberal imports, added to the unbroken fine weather for the harvest in the United Kingdom, as well as in most of the European countries, had a very depressing effect. In fact, it may be said that the good crops this year in Europe were fully discounted almost before the harvest had been commenced. The result of this harvest hardly justifies the early expectations formed of it, and more mature reflection will at least demonstrate that the season of 1887-88 has opened at a level of values, the extreme lowness of which should insure its safety. There is, in fact, no expectation of that abundance which characterized the seasons of 1882-83 and 1884-85; stocks too are low generally speaking. and the potato crop is a very short one; so that the only conclusion to be arrived at is that the outlook for the new season, from the present price basis, is by no means so desponding as it once seemed.

CORN.

As this is a very important factor in the production and price of the meat products of the West, we give below a few figures. The total crop is estimated at 1,510,000,000 bushels; a shortage of 161,000,000 bushels in seven Western States; a shortage of 203,000,000 bushels in thirteen Western States, and a gain of 58,000,000 bushels in other States.

The result is an indicated shortage of 161,000,000 bushels in the seven surplus States, 203,000,000 shortage in the thirteen detailed States, with an increase of 48,000,000 bushels in other portions of the country, and a shortage of 155,000,000 bushels in the aggregate crop, compared with 1886. The shortage in the seven States in this comparison is 16 percent, for the thirteen States 16 percent, and for the entire country 9¼ percent. As compared with the annual average for the five years period the shortage in the thirteen States is 15 percent, and for the entire country 6¾ percent.

There is also an unusual proportion of the crop of corn this season that will not be saved otherwise than for fodder. This acreage from which no corn will be gathered will reach fully 3,000,000.

CLOVER SEED.

While the crop of clover seed in this country is undoubtedly far short of an average crop, recent reports from the States indicate that there is not the shortage there that was at one time expected. The following is from the Cincinnati Prices Current:

A month ago, with the pastures and clover fields drying up throughout a large portion of the Western agricultural districts, the opinion gained ground that there would be an unusually small gathering of clover seed this season. This view was emphasized by the turning of stock upon clover in many instances where the second growth had been intended to stand for seed. These apprehensions as to the shortage in this product do not seem likely to be fully justified by results. While the plant has been of short growth the clover heads have filled well with seed, and the yield is reported from various localities as excellent in quantity and unusually good in quality. The offerings of seed have enlarged, and dealers who feared supplies would be short are now being offered from the country such quantities that they no longer have any fears, and in fact prices have been gradually settling. Leading receivers in this market now expect an average quantity of clover seed, and as it is an article easily converted into cash, it is expected that the necessities of farmers will lead to an early marketing of this product. This will enable values to become established early in the season with reference to the limits of depression. So far as the near future is concerned no improvement is expected in values, with possibly but little further decline. The trade, however, looks forward with considerable confidence upon a fairly good foreign demand for clover seed, when the season opens, and thus are free buyers of current offerings. The large proportion of choice quality of seed is a strengthening factor in the situation.

BEANS.

The crop of beans in this country is a long way short of an average crop, in fact, in some sections the crop is an entire failure. Prices will rule high, no doubt, as stocks are light and demand likely to be good, both from the lumbermen and also from sections where the potato crop is a short one.

APPLES.

The demand for good winter apples is good, and the country is full of buyers. A large proportion of Ontario apples are going to the Western States and Manitoba. There is a superabundance of fall apples, and these are selling for little or nothing. It seems a pity that farmers should have planted so many fall apples.

The New York Commercial Bulletin says:—The receipts of fall fruit during the past week have been heavy, amounting to between 4,000 and 5,000 bbls., and as they have been largely in excess of the demand, prices have receded to an unprofitably low basis for shippers, sales of car loads having been made at $1.20 to $1.35 for fair to good sound fruit. One car is said to have sold as low as $1.15. These figures will not cover cost laid down here; but what else can be done with fruit that will not keep any length of time? The winter crop of apples is believed to be below an average, and it is thought it will be wanted for export. We received a cable despatch from London a few days since, stating that there were no Canadian apples on that market yet, and that sound American were selling at 17s. to 21s. per barrel. We learn of an order being received from an English house for 1,000 barrels of winter varieties, the terms being private, but the price is believed to be about $2.50.

Apples are quoted at from 10s. to 16s. per barrel, according to the kind and condition of the fruit, with the market tending upward.

BUTTER.

The butter market has ruled quiet, with some shading of prices on the part of the creamerymen. August make is chiefly in their hands still, and to move it they would have to reduce their prices. The Montreal Gazette says: The following are the Montreal prices, Sept. 30th:—

	c. c.
Creamery	21 @23½
Townships	17½@21½
Morrisburg	17 @20½
Brockville	16½@20
Western	15 @18½

CHEESE.

The market for cheese is in a very uncertain state, and many of the buyers are doing little or nothing. A good many August cheese are still for sale, and will have to take a good deal less money than they were at one time offered. Why any factory-man would refuse 12c. to 12¼c. for his August cheese, is something we cannot understand. This is a long way above the average, and that being the case, salesmen should be very careful how they refuse such offers.

A letter from Brockville, signed "Canadian," appears in the London Grocer's Gazette, of which the following is a copy:—"There are about 175 cheese factories in this locality, out of which, up to this date, 149 factories have contracted their August and September makes at 12½c., = 58s. 5d here; 12¾c., = 59s 1d here; but to this must be added freight and charges, which makes the cheese cost, without commission, 63s. 5d. to 64s. 1d. in England. If we reckon each factory's make at only 100 cheese a week—there are, roughly, thirteen weeks between August to the end of October—that gives 1,300 cheese each, and, multiply this by 149, gives 193,700. But many of these factories would make quite 200 to 400 a week. This shows a big interest at stake for high prices.

TORONTO - PRICES AT FARMERS' WAGONS.

Toronto, Sept. 29, 1887.

Wheat, fall, per bushel.	$0 77	0 78
Wheat, red winter, per bushel	0 77	0 78
Wheat, spring, do.	0 77	0 78
Wheat, goose, do.	0 69	0 70
Barley, do.	0 50	0 69
Oats, do.	0 35	0 37
Peas, do.	0 60	0 61
Dressed hogs, per 100 lbs	6 00	6 50
Chickens, per pair	0 40	0 60
Butter, pound rolls	0 22	0 25
Eggs, fresh, per dozen	0 18	0 19
Potatoes, per bag	0 90	1 00
Apples, per barrel	1 00	1 75
Onions, per doz	0 15	0 20
Do. per bag	0 00	2 00
Carrots, per doz	0 00	0 20
Turnips, white, per bag	0 00	0 50
Rhubarb	0 00	0 30
Cabbage, per doz	0 60	1 00
Celery	0 50	0 75
Beets, per doz	0 00	0 20
Radish, per doz	0 00	0 20
Cauliflowers, good	1 00	2 00
Peas, per bag	0 00	1 25
Beans, per bush	0 00	1 50
Tomatoes, per bush	0 75	1 00
Hay, per ton	11 00	15 00
Straw, "	8 00	13 00

LIVE STOCK MARKETS.

Buffalo, N. Y., Oct. 3, 1887.

CATTLE.—Receipts, 12,740 against 12,680 the previous week. The market opened up on Monday with 232 car loads on sale. There was a fair eastern demand and local dealers bought quite freely, prices on all grades averaging fully as high as those of the previous Monday. Good 1,400 to 1,500-lb. steers brought $4 65@$4 95, the bulk of those at the latter price being taken for export; good 1,300 to 1,400-lb. do., $4 10@$4 50; good 1,200 to 1,300-lb. do., $3 90@$4 30; good 1,100 to 1,200-lb. do., $3 60@$4; and fair to good 1,000 to 1,100-lb. do., $3 40@$3 75; mixed butchers' and cows and heifers, $3@$3 50. There were only 8 loads on sale Tuesday, all of common quality, and two loads on Wednesday. The market ruled steady, the offerings selling at $3 @$3 50. For Thursday and Friday but few cattle were offered and the market was unchanged. On Saturday the market was quiet and unchanged, closing at the following

QUOTATIONS:

Extra Beeves—Graded steers weighing 1,300 to 1,450 lbs	$4 75	@5 00
Choice Beeves—Fine, fat, well-formed steers, weighing 1,300 to 1,400 lbs	4 20	@4 50
Good Beeves—Well-fattened steers weighing 1,200 to 1,350 lbs.	3 90	@4 30
Medium Grades—Steers in fine flesh, weighing 1,100 to 1,200 lbs	3 60	@4 00
Light Butchers'—Steers averaging 1,000 to 1,100 lbs, of fair to good quality	3 40	@3 75
Butchers' Stock—Inferior to common steers and heifers, for city slaughter, weighing 900 to 1,000 lbs.	2 25	@3 25
Michigan stock cattle, common to choice	2 50	@2 75
Michigan feeders, fair to choice	2 75	@3 15
Fat bulls, fair to extra.	2 25	@2 75

SHEEP.—Receipts 47,200, against 41,600 the previous week. The offerings of sheep on Monday consisted of 75 car loads. There was a fair demand at about Saturday's prices. Common to fair sheep sold at $3 25@$3 75; fair to good, $3 75@$4 25; good to choice, $4 25@$4 50; fair to good lambs, $4 75@ $5 50. There were 15 loads on sale Tuesday that had been left over from the day previous. They were mostly common and sold at $3 50@$4. Up to Friday the offerings were very light and the market was considered steady at former quotations. Good sheep are scarce and selling strong. On Saturday the demand for sheep was light and the market weak. Common to fair sheep were quoted at $2 15 @$3 75; fair to good, $3 75@$4 25; good to choice, $4 25@$4 50; lambs fair to good, $4 75@$5 50.

HOGS.—Receipts 60,021, against 68,913 the previous week. The offerings of hogs were large on Monday there being 102 car loads on sale. The demand was active up to noon at Saturday's prices, but it weakened and declined 10 cents. Pigs sold at $4 50@$5; light mixed, $5 10@$5 25; selected Yorkers, $5 30@ $5 40; bulk of sale at $5 30@$5 35; selected medium weights, $5 40@$5 50. The market declined 10 cents more on Tuesday and another 5 cents on Wednesday. For the few received on Thursday and Friday the demand was slow, and during the two days 10 cents more was taken off. On Saturday there were good hogs on sale. The market declined 10@15 cents and closed weak. Good to choice Yorkers sold at $4 90@$5; fair do., $4 75@$4 85; selected medium weights, $5@$5 05; pigs, $4 25@$4 75.

Our readers' attention is called to three important stock sales advertised in this issue, which take place this month. Mr. Richard Gibson, of Delaware, is offering the entire number of the noted Belvoir Herd. Mr. Edward Jeffs, of Bond Head, will also sell a large number of young Shorthorns, Southdown sheep and Berkshire pigs. Mr. T. D. Hodgens, of this city, purposes disposing of his entire herd of Shorthorns—13 females and five males, "Bates family;" also 20 head of carriage, thoroughbred and roadster horses, including the imported carriage stallion, Robin Hood. The above sales should be well attended.

The Household.

Our Sleeping Rooms.

It is to be regretted that paperings or carpetings should ever be used in the sleeping room. Alas! what evil is lurking in the area of the four square walls which encompass us! What enemy is that, although trodden upon, yet is not subdued! Let the walls of our sleeping rooms be kalsomined and the carpets removed from the floors. Let the crevices be carefully filled with putty (anyone can do this) and the floor neatly painted or stained. A rug at the bedside, with small ones at the bureau and commode (Kensington rugs), will relieve the nakedness of the floor. These should be carried out weekly, thoroughly shaken, and exposed for an hour to sun and wind. Towels and wash-cloths used during the day should never remain in the room during the night. I have seen wash cloths, used day after day in a sleeping room, become sour and musty, emitting a strong odor both disagreeable and unhealthy. The water-can and the entire toilet-set must be kept perfectly sweet and pure. I do not mean merely clean to the eye, but clean enough for the chemist's use. Attention must also be called to the tooth-brush, which should always be thoroughly cleaned after using, and placed, handle down, in an upright holder. I have found odor enough about one tooth-brush to infect the atmosphere of a common sleeping room. In regard to ventilation, open as many doors and windows as permissible, avoiding a draft; but moving air is indispensable to the health of the sleeper. Let the bed stand as near the center of the room as possible, but on no account close to the wall. No one housekeeper may be able to carry out all these suggestions, but it is the ideal, or housekeeping as it ought to be, which should be held up to the eye of the reader, that each one may choose what she can best carry out in her daily practice.

Wearing a d Rusting.

It is a very common saying that "it is better to wear out than to rust out." Mr. Warter, in his book "An Old Shropshire Oak," has some professional advice to offer on that point. He says; "Bed a rose, prune a tree, dig a trench, or clean a flower-border, and it is astonishing what relief it will give to a troubled spirit." It is obvious that nothing wastes one's strength like idleness.

This truth is admirably re-emphasized in a little poem by Alice Wellington Rollins, wherein she tells of watching a potter at his work, whose one foot was kept with "never slacking speed, turning his swift wheel around," while the other foot rested patiently on the ground.

When he heard the exclamation of sympathy with him in his toil, "how tired his foot must be!" the potter corrected the common mistake as to the real source of weariness.

"Slowly he raised his patient eyes,
With homely truth inspired:
'No, marm, it isn't the foot that *kicks*,
The one that *stands* gets tired.'"

That's it! If you want to save your strength keep using it. If you want to get tired do nothing.

Among new articles in plush there are square mantel valances decorated with clusters of golden Marchal Neil roses and bluebirds. Charming little tables in gilt, with plush tops, are painted with apple blossoms and yellow birds, or a leafless branch of a tree with a flock of snow-birds. A small pair of decorated bellows, with the words "Blow wind, burn fire" on one side of it and a design of flowers on the other, is a favorite parlor ornament for the fire-place.

Family Circle.

MARY HOLT'S ENGAGEMENT:

AN AMERICAN STORY.

BY CATHERINE OWEN.

"And I am really engaged! I can hardly believe it. How often have I thought and wondered who my husband would be, or if I ever should marry. But I suppose all girls have the same thoughts; at all events, my future is now settled. I wonder if Tom will always care as much for me as he does now?"

Mary Holt sat in the bright firelight, watching the flickering flames, and thinking of her new position.

She was very young, inexperienced, and Tom Cowell's declaration of love and somewhat masterful wooing had taken her by storm. She had hardly realised that he was dear to her beyond friendship, when he asked her to be his wife, and, in spite of the suddenness of her betrothal, if the bright, dimpling smile and sunny eyes might be taken as a sign, she was a very happy little woman indeed.

Tom had not been very long in Mapleton when he met and fell in love with Mary, who, for her part, much as she liked his great broad shoulders, and honest, handsome face, was long before she could believe that she, who was said to be the prettiest and most admired girl in that part of Pennsylvania, could ever love such a very different man from the one she had pictured as her conquering hero.

Her ideal had been such a very superior creature —quite unlike good-natured, handsome, but, to Mary's eyes, who judged by the Mapleton standard, somewhat commonplace Tom Cowell.

He had seemed to her, too, to have an unpleasantly good opinion of his own people and his home, which was Limeton—as every one knows, much behind Mapleton in culture and refinement, although it could boast of its greater wealth; but wealth in such a sooty atmosphere lost all attraction for Mary. Yet he quoted Limeton, and what the Limetonians did, thought, and intended to do, and the effect of their intentions on the coming election for President, which was exasperating to Mary, who, like all loyal Mapletonians, was quite sure their own city was the brain of the State, even if Limeton did represent its wealth; so that what the former said and thought was of far more importance to the country, and she would smile at the purse-proud ignorance of Limeton.

Even when she saw Tom's honest admiration for herself, and found that she enjoyed his visits and attentions, she believed it was only the magnetism of his good humor, and breezy, healthy nature that pleased her; she was sure it was nothing more.

And yet the day came, as we see, when she had been brought to know that she loved him, and to look forward to being his wife as her greatest good. But then, in his growing affection for her, and his absorbing anxiety as to its being returned, he had left off quoting "my mother" and Limeton quite so often; and Mary flattered herself it was because he was beginning to see the superiority of Mapleton, and thus tacitly acknowledged it.

A few days after her betrothal she received a letter from Mrs. Cowell, inviting her to go and stay with her for a few weeks, in order that they might become better acquainted.

The letter was kind and motherly, and Mary felt that it was so; but although there were no actual faults of spelling, it was evidently not the production of a cultured woman, and she thought with some dread of her future mother-in-law. It would all be very tolerable if Tom did not think so overmuch of his own kin, but he evidently looked on his women-folk as the most superior of their kind.

However, she had to meet them sooner or later, and as Tom was so anxious, it was best to go.

Tom was delighted when she told him she would accept his mother's invitation. His face glowed with satisfaction as he expressed his thanks.

"You will like my dear mother so much, Mary, and Louise will be a delightful companion for you, darling. She is such a sweet, sensible girl, and a prodigious housekeeper. You will learn a great deal from her."

"I have no doubt I shall like your mother," says Mary, not very enthusiastically, it must be confessed.

Tom's face falls. "And Limeton, Mary: its such a splendid city—quite different from this place."

Mary fancies she detects a slightly depreciatory tone in the way he says "this place."

"Yes, I suppose it is very different. Horridly dirty, isn't it?"

"Not more dirty than a prosperous manufacturing city must inevitably be, and within a mile all round there is the loveliest scenery you can imagine. Our place is about a mile from the city, so the dirt will not annoy you; and you will meet such pleasant people there that you will not mind the smoke. I am sure, Mary, you will come away quite in love with Limeton, and prefer it to this prim old place."

"Prefer it to Mapleton? Never!"

"Well, well, we'll see;" and in his proud confidence he kissed her and left her.

Mary felt indignant. "I'm sure we shall never get along if Tom remains so wrapped up in his mother and sister and Limeton. A great deal from Louise, indeed!"

Mary could not get it through her little Mapleton head but that she was about to honor Limeton infinitely by going there, and that her Mapleton manners and dress would be envied and copied by its unsophisticated people, and now to be told that she was to learn from Louise!

Of course she had a little cry and made several foolish resolutions, and then set about her preparations for an early departure with a heavy heart.

A week later Mary was whirling along to Limeton, wondering what Tom's relations would be like, and whether they were like him—unpolished diamonds. Now that she had left him, she had begun to hope better things of them. Could he think so much of them if they were not very nice? And although all the people she knew from Limeton, except Tom, had been suggestive of petroleum to her, they, surely, would be exceptions.

Mary's heart sank within her as the train neared the depot; such miserable shanties formed the outskirts, such gloom hung in the air, that she shuddered at the thought of having to stay even a week in such a place. Her spirits did not revive when she saw Mrs. Cowell and Louise, who were waiting to receive her, and welcomed her with much cordiality.

As they rode home in the dusty "carry-all," Mrs. Cowell was evidently studying Mary's elegant and expensive travelling dress, from her Russia leather satchel to her dainty boots and gloves; while Mary had taken in at a glance the terrible dowdy appearance of Louise and her mother—the old lady's black alpaca suit, made evidently at home, and Louise's Scotch plaid dress, and dyed, and too scant, silk over-skirt; and yet, with such toilettes, it was a relief to her to find they were not coarse.

As they passed through the town Mrs. Cowell and Louise pointed out the lions, which they considered must astonish their visitor, and were evidently disappointed at the equanimity with which she regarded them. Mary, however, could be very sweet; and although an idea was forming in her mind that Mrs. and Miss Cowell could never become relatives of hers, she exerted herself to charm them, and succeeded. The old lady thought she was a giddy young thing, quite unused to travelling, or she would never wear a dress beautiful enough for gala day attire, on the cars, but that when she became toned down by Louise's example all would come right; but at the same time she determined herself to give her a few hints on extravagance, especially on the folly of wearing an Irish poplin dress to travel in.

The Cowells lived in a large, comfortable house, with fine old trees around it, and Mary began to hope, when she saw the wealth of sylvan beauty, that her visit might not be so unbearable as she had feared.

The interior was not so promising: it was Mrs. Cowell and Louise over again—plain, sensible, thrifty, but perfectly unendurable to luxurious Mary, who was accustomed to elegance, and loved it.

She sighed as she sat on the hard hair-cloth "easy" chair, and, trying the harder sofa, found it utterly impossible to adapt her round little figure to its angles. No wonder Louise was so prim if she had been brought up amid such furniture! And then her thoughts turned to Tom. He was not prim But even in that short time she had came to the conclusion that he was not like the rest of his family. Then why, oh! why, did he quote them so often? Could it be possible that he would expect her to live in a similar fashion? Perhaps that was why he had told her she could learn housekeeping from Louise

Whatever Tom's idea on the subject may have been, it was evident that his mother meant to make her visit an apprenticeship to the future life she expected her son to lead.

Conversation had not been very brisk hitherto, and when tea was announced, Mary, determined to make talk, praised the biscuit, the cake, and the delicious butter.

"Yes, my dear, Louise's butter is excellent, although I say it. I suppose you know how to make butter? But I could take a hint myself from Louise, and it will do you no harm to learn some of her housekeeping wrinkles. Tom has always been accustomed to fine butter, and I hear in Mapleton they churn up the milk with the cream."

"I am sure I know nothing about it," said Mary, forgetting her resolve to be amiable.

However, Mrs. Cowell seemed almost pleased to know that Louise's instructions would be given where they were much needed.

"Never mind, my dear; you are quick, I'll be bound, and we will soon make a good housekeeper of you. There's one thing to begin on: if you travel in your handsome dresses you will never have anything decent to wear. Get yourself a nice, neat black alpaca, that will never show dirt, and last for years."

Mary listened for a moment in speechless indignation, and then said—

"But I wish to be as well dressed when I travel as at home; any lady must do so."

"Ah! you will soon lose that notion when you are married. Limeton ladies are much more sensible."

Mary was prudently silent. It was evidently useless to argue with the old lady. After tea Mrs. Cowell went to sleep in her chair, and Louise took her visitor to Tom's own room, showed her his wonderful juvenile achievemeuts in drawing and caligraphy, and, seeing Mary was somewhat silent, said suddenly—

"You must not mind what mamma says, dear Mary; she is old-fashioned in her ideas, and I have been brought up to be something like her, but we can't expect every one to be cut out after our own pattern. Tom is not."

The intention was, no doubt, very kind, but the tone seemed to Mary one of tolerance. She fancied Louise meant to patronise her, making allowance for her shortcomings, and she could not brook that in her present mood, so she answered somewhat tartly—

"I am afraid I should not meet the expectations of any of you, not having been cut out by any pattern at all, that I know of."

"There, you are offended, and I am sorry. But mamma meant well, and so did I," she added, after a pause.

Now, Mary prided herself upon being exceedingly reasonable, and so she reflected that Mrs. Cowell and Louise had acted according to their lights. It was not to be expected that they should understand her, so she graciously said—

"Don't speak of it any more. We see things from such different points of view, that it is scarcely likely we could agree on such a subject. I can see that you are very kind, Louise," she added, putting fourth her little white hand, which Louise clasped in her shapely brown ones; and then they joined Mrs. Cowell, who just awakened from her nap.

"Let us have some music, daughter."

"With pleasure, if Mary will put up with my simple playing."

Mary protested that she was delighted, liked simple music of all things, and then resigned herself to listen to "Yankee Doodle" with variations, and perhaps, by way of something superfine, "Warblings at Eve."

Louise, however, said—

"I must sing mamma's favorite first, and then you shall hear mine."

Mamma's favorite was "Old Folks at Home," which Louise sang as correctly, and with far more expression than most of Mary's fashionable friends could have done; and then she sang "Auld Robin Gray" with a pathos that brought tears to the eyes of Mary.

It was a revelation to her that a girl who contented herself in a tasteless home and a coarse stuff gown, when she had the means of better, should have soul enough to give expression to the exquisite old ballad.

During the next few days Mary learnt to appreciate the character of Louise, without being in the least desirous of emulating her housewifely virtues. Limeton did not meet with her approval. She could scarcely repress her disgust as she walked the grimy streets, saw the vulgar, over-dressed people, and then thought it might have been her home. To change clean, beautiful Mapleton for Limeton!

Tom had told her he would like their home to be Limeton, but had said that if she would be happier in Mapleton he would forego his wish. His business permitted him to live in either place. Not to be outdone in generosity, Mary had declared her happiness was to be with him, no matter where. The subject had not been renewed, but Mary had now quite decided that Limeton *could never* be her home. She had, indeed, balanced whether Mrs. Cowell could ever be her mother-in-law, but as she thought of Tom, she felt that infliction could be borne—away from Limeton.

Tom was to come the following Saturday, and spend a few days at home before she went back to Mapleton, and she awaited his coming with eagerness. She wanted to let him know that she could never make her home in Limeton, before he could make any plans with his mother.

When Saturday came, she told Louise she thought of going to the depot to meet Tom; and Lousie, with more delicacy than Mary had given her credit for, said—

"Oh! that is just the thing. I have so many things to see that I would rather not go, and yet we could not let him arrive without some of us going."

She also managed to keep Mrs. Cowell at home, felling sure that Tom would enjoy Mary's company alone better than with them.

Mary almost forgot all about Mrs. Cowell in the pleasure of meeting Tom, but after he had asked her a dozen questions about herself, he said—

"And how do you like Limeton, Mary?"

"Oh, perfectly detestable! I cannot think how anybody can live there."

"Ah! I see you still have those Mapleton ideas, Mary. Now, I hate Mapleton and am always glad to get out of it, the people are such snobs. You are the only pleasant person I ever met there. Limeton people are substantial, true-hearted, and—and, in short, Mary I am much disappointed that you don't like the finest city in the Union."

"Finest city in the Union, indeed!" says Mary, stung by his disparagement of her native city. "It is a most unpleasant place, smoky, grimy, and unhealthy, and the people, as far as I have met them, may be substantial enough, but they are dreadfully tiresome and uninteresting. I don't mean you, Tom," she adds, seeing him glare down upon her in angry astonishment.

"I am much obliged, I am sure, that you made an exception in my favor, but I cannot take credit to myself at the expense of mother and Lousie."

"Oh! I like Louise."

"And not my mother, I infer?"

"No."

Mary had not intended to tell him this point-blank, but he had taken such a line with her for not liking Limeton that she felt indignant, and not inclined to mince the facts at all. The result was what might have been expected: Tom stalked on in solemn silence, while she, full of resentment, held her little head very much in the air.

When they arrived at the house, Lousie saw, notwithstanding Mary's unusual animation, that something had gone wrong between them, but chose the wise part of silence. Mrs. Cowell saw nothing but that her son was not much in love, as she feared he would be, with Mary. She had not found the latter as tractable as she had hoped in the way of imitating Louise, and had discovered that she had not that admiration of frugality and thrift that befitted the future wife of her son: therefore she was contented to see that son's cool politeness to Mary, which she took as a proof that he was not likely to be led away by her caprices.

The next morning Tom joined Mary in the garden, and said—

"Under the impression that you would like Limeton, I had written about a place here I wanted to buy, but from what you said last night I conclude that any plan of that sort is useless."

"Quite useless," said Mary decidedly; "and I really think, Tom, that you had better decide your future without reference to me. I—that is—there are several things that would, I think, prevent our being happy together."

"In short, you are tired of your engagement?"

"If you take it that way, yes."

"Oh, you women, you women!" said Tom, bitterly; but Mary had walked off, and he did not follow her.

Later that day Mary said she thought her presence was required at home. Louise looked sad, but no one made any remark on her sudden leave-taking. Only Tom, when he drove her to the depot, talking painfully small talk as they went, to avoid past and gone topics, wringing her hand as the train moved off, said—

"God bless you, Mary; I hope one of your Mapleton fellows will make you as good a husband as I should have wished to be."

"Thank you; I must take my chance," says Mary, forcing back her tears till he is gone; then, dropping her veil, she cries her way home.

* * * * *

A year later Mary is alone in the world. She has lost her father, and as she sits in her mourning dress she thinks of the past, and is not afraid to tell herself now, that but for her own folly she might have had good, true-hearted Tom Cowell to help her in her trouble; that, grieved as she would have been at her father's loss, she could never have been alone in the world so long as Tom had lived; and now she would be alone forever, for, disguise it from herself as she had tried to do, she knew she loved Tom still; all other men seemed poor, weak things to her, and for Tom's sake even Mapleton did not now seem such a very superior place as it had done, and in consequence, Limeton was not so horrible. She knew in her heart she had been somewhat prejudiced, and told herself that the unpleasantness of it should have counted as nothing compared with Tom's love. All this she had seen long before she confessed it even to herself; probably, but for the grief that had lowered her pride, she never would have so confessed.

She sat musing in the firelight as she had done a year ago, when a card was brought to her.

"Mrs. Henry Chrlton! I know no one of that name. Show the lady in."

A lady, dressed handsomely, but with Quaker-like simplicity, then entered, and Mary recognized Lousie Cowell.

After the first embarrassment of meeting had passed, Lousie told Mary of her marriage with one of the "dearest men in the world," that they had just returned from their wedding trip, and had so timed their arrival as to meet Tom on his return from Europe.

"It was only last night we heard of your father's death, and then, dear Mary, I could not refrain from coming to tell you how sorry I am."

Tears filled Mary's eyes at the mention of her father.

"I am very much obliged to you, Lousie, and heartily glad to see you. Are you going to stay here long?"

"Yes, we shall pass the winter in Mapleton, and being a stranger here, I shall often inflict my company on you if you will have me."

"The oftener the better, dear Louise," replied Mary sincerely.

She liked Louise. At the same time, she thought with some trepidation that these visits from Louise must result in her meeting Tom again, which she felt very reluctant to do; but pride came to her aid, and she asked herself why she could not meet a man with indifference, who could so meet her?

And so she resolved to avoid neither Louise nor him.

Perhaps Louise had a little project of her own. At all events she appeared to have much satisfaction when she found Mary did not shrink from the mention of Tom's name, and accordingly he became her chief topic of conversation. She even hinted at his unhappiness, and her fears that his disappointment would be a life-long sorrow.

"Ah! you dear, innocent Louise. Shakespeare knew men better than you, and he says—

"'Men have died from time to time,
And worms have eaten them, but not for love,'

Mary said, with forced gaiety.

At last Tom and Mary did meet, and then Mary found all her fortitude necessary, for Tom evidently had no intention of carrying matters off with dignity, but rather showed her in every word and look that she was the one woman in the world for him.

Can't every one guess the end? That Tom took an early opportunity of calling himself a fool and begging Mary's forgiveness, and Mary contradicted him, and with many tears shed on his waistcoat declared herself an unreasonable little vixen, not worth his love, and that she was willing to live in the very heart of Limeton if necessary.

"Too late, my dear," says Tom merrily, "for I have my eye on a lovely little nest in Mapleton, and am not going to have my plans upset a second time."

Then Louise came into the room.

"'Blessed are the peace-makers,'" said Tom, going to his sister and kissing her.

Enclosed find two dollars, being my subscription, and that of my neighbor, Adam Wood, for 1887. We receive seven papers and magazines, but there is none more welcome than the ADVOCATE. We have been subscribers for eleven years.—JOHN P. MCARTHUR, Paisley, Ont.

Minnie May's Dep't.

SECOND LETTER.

MY DEAR NIECES,—Last month I began a series of letters upon a trip I am taking in England, and left you, if I remember rightly, in Derbyshire. The next place of interest we visited was York, and to the many claims this city has upon one's interest scant justice can be done. It is situated almost midway between London and Edinburgh, in the heart of a rich agricultural district. In age it is perhaps the first, and in rank certainly the second, owing inferiority only to London in the abundance of its famous memories. Then, not to speak of its Roman walls and Norman fortifications, which surround the whole city, it is proud in the possession of one of the grandest gothic cathedrals in the kingdom—in outline magnificent, in proportion harmonious, in composition rich, and withal hoary with the rime of centuries. None who pass beneath its portals can resist its spell, and while to the reverent it is a veritable revelation, to the flippant it is a solemn rebuke.

York was a flourishing city long years before the Christian era, and under the Roman *regime* it was a military station of enormous strength. Early in the sixth century the first Christmas celebrated in Britian was kept here by King Arthur and his knights. In the time of Edward the Confessor, there died here Siward the mighty Earl of Northumbria, whose ficerce onset no foe could resist. It was while Harold was celebrating in this city his triumph over the King of Norway and Tostig, Earl of Northumberland, that the news reached him of William of Normandy's descent upon the coast of Sussex. Two years afterwards, the Conqueror having defeated the last of the Saxon Kings, marched upon York and captured it. From this time down to the reign of James II., the career of the city was the reverse of peaceful. But the most revolting event in its history was the massacre of the Jews, soon after the accession of the first Richard; so far as is known, their sole offence consisted in one of their number, named Benet, having had the bad grace to allow himself to be done to death while on a visit to London. Emulous of this excellent example, a body of armed men made a raid upon his house, putting his wife and children to the sword, and laying hands on everything worth taking away. The next day most of the Jews, who lived together in Jubbergate and Jewbury, sought refuge in the Castle. By order of the authorities the Castle was besieged by the infuriated mob, and at last, seeing that there was no hope of escape, the Jews set fire to the Castle, destroyed as much of their wealth as possible, and then set to work to kill each other. The few survivors offered to surrender and be baptized, but even this failed to satisfy the pious wrath of their virtuous assailants, who butchered them all. Altogether, nearly a thousand men, women, and children perished by fire and sword.

But the most interesting of all York to me was the Minster, which is a beautiful structure; some 250 years were occupied in its erection, so that it is an exemplification of several styles—early English, decorated, early and late perpendicular—but with all this diversity, there is manifest unity of design. When gazing upon the exterior of the noble fabric or upon the interior, and listening to the sweet voiced choristers, one feels impelled to an admiration of which poetry is the only adequate expression.

The old city walls are in almost perfect preservation, and form an unusually fine promenade, from which splendid views of the Minster, the Castle and the surrounding country are commendable.

I must leave this beautiful old city overflowing with interesting history, and pass on to the picturesque scenery and wide ocean views of Scarborough, a favorite resort alike for the health seekers or the votaries of rank and fashion, who congregate in their thousands during the height of the season. Scarborough Castle, Oliver's Mount, the Spa, and Aquarium are but a few of its many attractions.

Our next stopping place was Hull. I must only give a brief description of these places, for I find I am travelling much faster than I can describe them to you. Hull, it will be remembered by some of you, figures in the old Yorkshire proverb, "From Hell, Hull, and Halifax, good Lord, deliver us." The saying, although alliterative, is not destitute of meaning, as quaint old Andrew Fuller shows. "This," he says, "is part of the beggars' and vagrants' litany. Of these three frightful things it is to be feared that they least fear the first, conceiving it the furthest from them. Hull is terrible unto them as a place of good government. Halifax is formidable unto them for the law thereof, whereby thieves taken in the very act of stealing cloth are instantly beheaded with an engine, without any further legal proceedings." This last member of the proverb, by the way, is a sufficiently striking illustration of the "vigour and rigour" which in former days characterized their laws. Visitors are interested chiefly in the docks at Hull, for the relics of antiquity are not numerous, and there is little of the picturesque about the town itself, although it is a goodly sight to see the broad Humber, with its multitude of moving masts. Next to London and Liverpool, Hull is the largest port in the kingdom, its docks being about 150 acres in extent.

The last place I must mention in this letter for want of space is Cambridge. The University with which its name is involuntarily associated all the world over claims a foundation dating as far back as the year 630, when Sigebert, to whom it traces its origin, was regnant over East Anglia. Altogether the University is constituted of seventeen colleges.

Of these the most illustrious is Trinity, founded by Henry VIII. in 1546. Its avenues of limes, its noble gateway tower, its immense court—said to be the largest quadrangle in the world—its Tudor Hall, its splendid library, erected from designs by Sir Christopher Wren, at a cost of £20,000. It is also singularly opulent in associations with men of deathless fame. Upon its roll appear the names of Isaac Newton (whose famous statue by Roubiliac, stands in the ante-chapel), Dryden, Cowley George Herbert, Porson, Macaulay, Byron, Tennyson, with many others; so many, indeed, that it would be tiresome to enumerate them. But beautiful as Trinity College is, it must, in one respect, at least, yield precedence to King's College, whose magnificent chapel is the chief visible glory in Cambridge, with its fine proportions, noble windows, gigantic buttresses, beautiful turrets, and boldly designed parapet, is a truly royal structure. King's College was founded by Henry VI. in 1441. St. Johns is also very important, with its beautiful College Court and Chapel. We attended service in each of these three Chapels I have mentioned; the service was beautiful. Altogether I enjoyed the Sunday spent in Cambridge more than any other spent in England as yet. The walks, which extend for miles and miles in the College grounds, the lazy Cam winding in and around with beautiful bridges crossing over it, the peal of the church bells, are beyond description. Cambridge must be visited to be understood. I am sorry I cannot in this letter give more about the Colleges, where so many thousand students are being educated. Next month I shall try and give you something more interesting. MINNIE MAY.

THIRD LETTER.

Remembering my promise to tell you of other English towns, I will now begin with a description of Eastbourne, one of the most fashionable and popular sea-side resorts in England, situated in Sussex, on the southern coast. The town itself has quite a continental appearance, the streets being planted with trees on either side, which you do not usually see in England, and seems to possess everything to make it a favorite watering place; there are no factories, consequently no smoke or noise of machinery.

The Duke of Devonshire owns nearly all the land on which the town is built; he was at the sole cost of constructing the Esplanade, which consists of rows of splendid mansions with terraces and gardens facing the Grand Parade, which extends over three miles along the sea front.

The principal feature of the neighborhood of Eastbourne is the range of the Southdown hills, the most prominent point in the English Channel being Beachy Head, only three miles to the west of the pier. This fine promontory is about 600 feet above the level of the sea, and when seen to advantage presents a most imposing appearance. Shipwrecks were at one time very frequent off Beachy Head, and at the foot are several caves dug to give a chance of escape to any that might be washed ashore. Directly beneath the lighthouse is a large cavern called "Parson Darby's Hole," said to have been excavated by a clergyman of East Dean for a like purpose, and in which he was fortunate enough to save the lives of twelve Dutchmen, to which Homely Herbert refers in the following lines:

"Westward from Beachy; near four hundred pole
A cave was cut, is now called Darby's hole,
As stately piles oft bear their founders name,
So this same cell perpetuates the same.
A reverend wight, who left his weekly care,
Chose drudging here for drudgery of prayer;
With axe and pick he cleft the rugged rock,
He spared no pains but with his straying flock.
When he had hewn this subterranean cell,
His lonesome fancy led him there to dwell!
But noxious vapors which did here collect
Soon seized the sire and spoiled the architect;
Though one man lost, twelve Dutchmen by it survives,
Being shipwrecked here, with hardship saved their lives."

There are also many pretty drives about Eastbourne; Pevensey and Herstmonceux Castle are within easy distances and afford splendid grounds for picnic parties, etc. These old ruins are extremely interesting, being built by the Romans and Normans hundreds of years ago.

But Eastbourne is full of attractions, especially during the summer season, when thousands of people are daily pouring into the place for their annual holiday; here they flee, away from the heat and dust and clamor of the crowded cities, and revel in all the quietude and beauty of a seaside country; almost every nation is represented here during the season, including many notable people. This year we have the Maharajah of Kuch-Behar, India, his wife and family, and the

Prince and Princess of Saxe-Weimer, the Turkish Ambassador and Suite, the Belgian Minister, Baron Solvyus, wife and family, and many others of equal note. The day is generally spent by first taking a sea-bath and a walk on the parade, where thousands are seated and walking, until one o'clock, when the band whose sweet strains had been filling the air, plays God Save the Queen. Then of course you may imagine there are plenty of little side shows on the beach, darkies singing and dancing, organ grinders, champion swimmers and conjurers, but as no one ever thinks of giving more than a penny to such entertainments in this country, you are not much poorer for listening to them if so inclined. There is plenty of boating and sailing, and steamers coming and going from the pier for Hastings, Brighton or some other adjoining city, yacht races, etc. In the afternoon many go to the Park, where has just been closed one of the most exciting tennis tournaments held in England. The evenings are usually given up to open air concerts, the opera or some other amusements of which there is a choice. The weather has been beautiful ever since I have been in the country until now, when we are getting a few showers.

Recipes.

Cream Rolls.—One cup of sugar, three eggs, beat to a cream, stir in one cup of flour and a teaspoonful of baking powder; spread about a quarter of an inch thick over a square baking tin as for roll cake, and bake in a very slow oven; while baking cut stiff paper into strips six inches long and three deep, pin the longway edges together; when the cake comes from the oven cut in strips as large as the paper, and roll a piece inside each paper case; fill with the following cream: half a pint of milk, three eggs, a tablespoonful of butter, three of sugar, one of cornstarch; stir until thick; add a teaspoonful of essence of vanilla and fill up the cases. This makes a dainty dessert, and though rather tedious to prepare, will repay any trouble.

Constitutional Bread.—When baking set aside one loaf of dough, and when all your loaves are moulded into the pans, work into this one, one cupful of fine cornmeal, knead and let rise very light; bake slowly. This is a pleasant variety of corn bread, and relished by many who cannot eat cornmeal in any other form.—[I. H. F.

Steamed Roll.—Take a piece of bread dough, roll thin, spread thickly with stoned raisins or currants washed and picked, sprinkle with sugar, put into a pudding basin, let rise until light, steam for three hours, or according to size. Serve with sweet sauce.

These recipes have all been tested and found reliable.—[I. H. F.

Mushroom Catsup.—Get fine grown mushrooms, break them up, sprinkle a good handful of salt over each layer. Let them lie for all the juice to run out, stirring them often, but put no water; then strain and boil with a very little ginger and pepper. It is a mistake to give mushroom catsup all kinds of flavorings, as it is the full flavor of the mushroom which is all important to preserve.

Cake without Eggs.—One heaping cup sugar, one cup strong coffee, one scant half cup butter, three not very full cups of flour, two heaping teaspoons baking powder rubbed in flour.

Frosting without Eggs.—One cup granulated sugar and five tablespoons milk, boil five minutes, stir until cold, and put on a cold cake. It is splendid; try it.

Tomato Chowder.—One bushel of green tomatoes chopped fine, one grated horse-radish, one teacup of mustard seed, twelve large onions, two large spoons of cinnamon, two large spoons of cloves, two of allspice, one large spoon of black pepper; bring all to a boil and then drain; heat the vinegar, pour on hot, and twelve green peppers chopped fine.

Spiced Apple.—Eight pounds of apples, pared, 4 pounds of sugar, 1 quart of vinegar, 1 ounce stick cinnamon, ½ ounce cloves. Boil the vinegar, sugar and spices together; put in the apples when boiling, and let them remain until tender; take them out and put into a jar, boil down the syrup until thick, and pour it over the apples.

Mutton Pie with Tomatoes.—Pare and slice six tomatoes, put a layer in a deep pudding-dish, then put in a layer of slices of cold mutton, and dredge in salt, flour and pepper; have the last layer tomatoes, on which sprinkle two rolled crackers; bake one hour, and serve with boiled potatoes, boiled rice and green corn and shelled beans.

Fall and Winter Fashions.

Among the samples of new dress goods are sevaral colors and shades of goods resembling the old style of Reps, Empress and Ottoman cloth, only that it is woven so as to be softer and more flexible than formerly, and it is now most beautiful, having a soft sheen upon the surface, like rich silk. The material is precisely alike on both sides, so that it admits of being turned, and being absolutely all wool, it can be dyed if desired.

There are also armures, ladies' cloth of the firmest and most satiny appearance, and cheviots and checks just as there have been for many seasons, only that these show a heavier twill and are thicker, though very soft and flexible. Indeed it will be long before any more popular material for ordinary wear will be invented.

One of the most attractive and sterling materials is the colored *drap'-d'ete*, which is a real novelty. It drapes in graceful lines, and lends its elegance to the slender figure of a young girl, or its richness to the fuller figure of the matron, and is so durable that it is always a good economy.

There are velvets firm and rich, all silk for those most luxuriously inclined, and others with silk face and cotton back, which, when in colors, is really better to wear than the finer qualities, as they are lighter and more flexible, and do not cease so soon.

There are a number of samples of very brilliant Scotch plaids in velvet in all the peculiar patterns belonging to the different clans, the richest of which was green and blue. Probably all the clans are represented. These are intended for entire costumes, or to be used in combination with some other goods.

There are also other plaids in soft, thick wool, which have an exquisite nap upon them like velvet, and which drapes with unusual elegance and effect. These plaids are for the most part of a beautiful warm brown with different colored checks, sometimes darker and sometimes lighter than the brown.

There are great numbers of styles of plaid silks, the most of them being twilled or surah, only much heavier than those shown in Spring, and instead of being in solid blocks of color, they have the plaids of broken lines, and also of fine lines over large plaids, many of them being regular Scotch plaid pattern.

The goods which are now being bought for Fall and Winter wraps and cloaks resemble the fine beaver cloths and pilot cloth, which have been only used heretofore for men's wear, only these are not quite so heavy. There is a simple chinchilla which is very soft and fine and fleece-lined, which is to be used in short wraps and jackets, some in gray, brown and black, and also there are some of cream color which is a good imitation of the famous Bulgarian white felt-wool, which has the thickness of felt and the appearance of white velvet. This will be mainly used for young girls and children, and for opera wraps. It is double width and has no nap.

Plain black or dark colored velvets will have the preference for handsome cloaks and mantles for late Fall and Winter.

Wraps in most instances will have a sort of basque shaped body, and the sleeve and back will be in the form of a cape, and will be rather more equal in the backs and fronts in length.

The new trimmings for wraps, cloaks and dresses, will consist of beaded bands, and plastrons. Those which are for black garments are made in detached parts, and arranged so that there are shoulder caps, cuffs, pointed vests, revers, lappels and collars all made of gimp, rather stiff and closely woven, and covered with fine beads. Velvet, felt, plush and fur, will be used for bonnets for this season, and the shape is smaller and the trimming does not set so high.

Ostrich feathers in tufts or large plumes are to be very fashionable again and very few small birds will be worn.

Bronze is one of the new colors which will be fashionable, and a peculiar green such as comes on old brass is produced under the name of *vert de gris*, though it is not the old verdigris green. This is very soft, not to say mouldy in appearance.

Velvet ribbon with satin face and picot edge will be used largely as trimmings, as well as double faced velvet ribbon.

Those Shocking Youngsters.

A neighbor of mine has a little girl and also an older daughter who is "in society." The youngster is precocious beyond her years, and demonstrates the old adage about "little pitchers" and "long ears" more aptly than any child I ever saw. Last Sunday night, when young Rocket called, the little girl climbed on his knee and began poking the visitor in the ribs.

"What are you doing, Minnie?" asked Rocket.

"Des pokin' you to see if you's soft," replied the artless infant. "Sister said you were soft's a boiled squash."

Rocket didn't wait to see "sister," and vows he'll never call there again.

Little Hellen E——, aged five years, while visiting a farm, was asked to pick up a large egg plant from which the young farmer had mischievously removed the stem. She tried several times, but her chubby hands continually slipped off the smooth surface. At last she straightened up with a sigh, and said, "I can't lift it, 'cause the how-you-pick-it-up is gone."

Red-Headed Girls and White Horses.

"Here's a red-headed girl, and there's a white horse," remarked Mr. John Mathews, the well-known sporting man, who was walking down Broadway with a reporter.

"What do your mean?" he was asked.

"Didn't you ever hear that before? Every

time you meet a red-headed girl you will see a white horse."

Half a block further another red-headed girl was met.

"Where's your white horse now?" asked the reporter.

"There's one turning the next corner," he replied, and, sure enough, around the corner came a white horse drawing a dray.

"They never fail, I tell you. I have been saying, 'here's a red-headed girl and there's a

white horse,' for fifteen years. I've never got left yet."

After parting, the reporter met one more red-headed girl, and, looking for the white horse, was not surprised to see a car pass drawn by two of them.—*New York Sun.*

A WARNING TO NIBBLERS.—A young man in Healdsburg, the other day, stepped into a business house, and seeing some wheat lying on the counter, picked some up and ate it. Noticing a peculiar taste left in his mouth, he turned to the proprietor and inquired the cause. Imagine his consternation when he was told the wheat had been soaked in a solution of poison for the purpose of killing squirrels. Emetics were quickly administered and the young man's stomach relieved of its dangerous contents before any serious results were experienced. This should be a warning to all those who are in the habit of tasting things carelessly.

TO REMOVE A MOTE FROM THE EYE.—Take a horse-hair and double it, leaving a loop. If the mote can be seen, lay the loop over it, close the eye, and the mote will come out as the hair is withdrawn. If the irritating object cannot be seen, raise the lid of the eye as high as possible and place the loop as far as you can, close the eye and roll the ball around a few times, draw out the hair; the substance which caused so much pain will be sure to come with it. This method is practiced by axe-makers and other workers in steel.

EQUAL TO THE EMERGENCY.—A young lady was sitting with her lover in a charmingly decorated recess. On her knee was a diminutive niece. In an adjoining room, with the door open, were the rest of the company. Says the little niece, in a jealous and very audible voice, "Auntie, kiss me, too." I leave you to imagine what had just happened. "You should say *twice*, Ethel, dear; *two* is not grammar," was the immediate rejoinder. Clever girl, that!

TO CLEAN CANARY BIRDS.—These pretty creatures are often covered with lice and greatly annoyed by them. They may be relieved of them by placing a clean white cloth over their cage at night. In the morning it will be covered by very minute red spots; these are the vermin which give the little songsters so much trouble.

"Ma," said Bertie, "should I say 'pants' or 'trousers?'" "Trousers, my dear," said the mother. "Well, then," said Bertie, "I think Bridget had better give Fido some water; he trousers awfully."

At a mission hall in Pollokshields the clergyman's wife was kindly questioning at the close of a meeting a woman whose husband had been ailing. "What is his trouble, Margaret?" said she. "Weel, ye see mem, it's no very muckle o' 'ony kin' o' trouble. It is just a kin' o' general ability."

A Chicago doctor was about to anæsthetize a patient, when in answer to a question, he informed the victim that he would be entirely unconscious, and know nothing until the offending growth had been removed. The patient accordingly commenced to fish his loose change out of his pocket. "Oh, you need not mind the fee until I am through," remarked the considerate doctor. "I don't intend to pay you yet," returned the patient, "I wish merely to count my money to see how much I have."

Sheridan was much annoyed in the House of Commons by a member who kept constantly crying, "Hear, hear!" The witty orator described a fellow who wanted to play rogue, but had only sense enough to play fool, and exclaimed with great emphasis, "Where shall we find a more foolish knave or a more knavish fool than he?" "Hear, hear!" shouted the troublesome member. Sheridan turned round, and, thanking him for the prompt information, sat down amid a general roar of laughter.

Window Plants in Glazed Pots.

A traveller says: A few years ago I was in Norway, and was particularly struck with the healthy appearance of the fuchsias, pelargoniums and myrtles in the windows of the town houses. These plants were all in glazed pots of the ordinary shape, but colored outside brown, yellow and green, with glaze. Some have a lattice pattern of yellow on a rich brown ground, which looked extremely well; and a rustic pattern was made by putting fine gravel on the glaze while soft, and baking it all together. Saucers were made in same pattern, to correspond. I was so pleased with them that I brought home a dozen with me, and for the past two years have had palms, hyacinths, narcissi, lilies, and other plants growing in them in my sitting-room. These plants have all done remarkably well and the pretty Norwegian pots look much better in the window than our unglazed ones.

For purposes of house culture, a glazed pot has many advantages, and we believe gardeners are prejudiced against glazed pots without much reason. Cheapness surely will in the case of the florist settle the matter, but for house culture the few used render the matter of cost less objectionable.

LIGHT.—The more light admitted to apartments the better for them who occupy them. Light is as necessary to sound health as it is to vegetable life. Exclude it from plants, and the consequences are disastrous. They cannot be perfected without its vivifying influence. It is a plainly demonstrated fact that rooms positively gather elements in darkness which engender disease. Let in the light often, and fresh air, too, or suffer the penalty of aches, and pains, and long doctors' bills, which might have been avoided.

HOW TO CURL AN OSTRICH PLUME.—Have ready some corn-cobs and common salt, and let the fire in the cook-stove burn down till you have a good bed of coals, lay the cobs on and sprinkle them with salt, and shake the feather in the smoke. Add cobs and salt from time to time, and be sure to shake the plume well, turning every part to the smoke. The harder you shake the feather the better it will look. Be careful to keep it far enough from the fire to keep it from burning. The livelier the coals without blaze the better. I have tried to make this plain. I thought my plumes completely spoiled till I tried this recipe. I saw a milliner wash a white plume once and recurl it in this way, and it looked as nice as new. She washed it in suds and rinsed it in clear water, and shook it vigorously until about dry, and then shook it over the smoke.

A SHELF-WARDROBE.—Any one who can use a hammer and saw may make, in a short time, a shelf-wardrobe useful for washing dresses and the like. There are few families, where there are daughters, in which extra cupboard-room for starched dresses would not be a comfort. The two uprights and the top are of boards like the three shelves—eighteen inches is a good width; the shelves rest upon clefts nailed on the uprights, at suitable distances. It should be about five feet high and five feet wide, with curtains of heavy cretonne or of any material preferred, to to keep out the dust. Of course, it may be better made, and suited to a pretty room. Corner shelves, similarly arranged, may often be fitted into a bedroom or upper stair landing to excellent advantage. Where a linen closet is wanted, a case of these shelves will make the best substitute.

The Right Road.

"I have lost the road to happiness—
Does any one know it, pray?
I was dwelling there when the morn was fair,
But somehow I wandered away.

"I saw rare treasures in scenes of pleasures,
And ran to pursue them, when lo!
I had lost the path to happiness,
And I know not whither to go.

"I have lost the way to happiness—
Oh, who will lead me back?"
Turn off from the highway of selfishness,
To the right-up duty's track!

Keep straight along and you can't go wrong,
For as sure as you live, I say,
The fair, lost field of happiness
Can only be found that way.

—*Ella Wheeler Wilcox.*

Buhach Kills Flies.

Prof. W. A. Henry unqualifiedly pronounces buhach the best remedy to clean a house of flies, gnats and spiders. He says: It is one of the best insect remedies for household use with which I am acquainted. It is harmless to man, as I know from actual test, having eaten small quantities repeatedly; but to insect life it is death. A small bellows, costing a "quarter," is necessary to distribute the powder properly. To clear a house of flies, gnats and spiders, shut the doors and windows and with the bellows distribute two or three tablespoonfuls of the powder through the air of the room, and a little on the window sashes. The pests will soon all be down, and should be swept up and burned. This powder is a great help in the sick room, when two or three flies which we can not drive out will annoy the patient greatly. The buhach will kill one or a thousand—all, in fact, that are in the room. Be sure, however, to get good, fresh powder, and keep it in close tin cans, exposing it as little as possible until used. A volatile oil is in the powder that kills the insects. [Buhach is the same as Pyrethrum or Persian Insect Powder.]

SAVORY CALF'S HEAD.—Wash the head well—it should, of course, have been cleaned with the skin on—take out the tongue and brains; boil them in a separate vessel, and keep on ice for to-morrow's soup. Put on the head (the two sides tied into the original shape by a band of tape) in plenty of cold water slightly salt, and cook gently one hour and a half. Take out, wipe dry, score the cheeks in squares, and wash the head on top and sides with beaten egg. Sift over it a mixture of rolled cracker, pepper and salt, and set in a quick oven. In ten minutes baste with melted butter; five minutes later, with a cupful of broth from the pot poured gradually over it. Cover with thick white paper and cook ten minutes longer, then dish, with thin slices of crisped ham laid about it. Thicken the gravy in the pan with browned flour and send up in a boat. Save the pot-liquor for soup, seasoning it and keeping in a cold place.

WESTERN BAKED BEANS.—I am one of those unfortunate individuals born outside of Boston, and yet my friends pronounce my baked beans "utterly delicious." I wash a quart of small, white beans, and put them to soak for the night in two quarts of water and a teaspoonful of soda. In the morning I put them into fresh water, and let them simmer very gently until nearly soft. I then add salt and pepper, half a cup of well-flavored brown sugar, and a lump as large as a Plymouth Rock egg of nice butter, stirring all carefully together so as not to mar the symmetry of a possibly over-soft bean. Then I pour the beans into an earthen baking-dish, press a dainty little silver-skinned onion into the centre, and consign them to an oven that will bake them steadily for an hour, and give them a rich brown over the top. There should not be water enough in them to make them sloppy, but such a quantity as will have evaporated by the time they are done. In place of the immemorial salt-pork, I serve with my baked beans some nicely sliced, cold corned beef; and squares of hot, light, golden, delicately sweet corn-cake, instead of the slightly clammy combination of rye and molasses, over which the Boston palate so fondly gloats.

Women who Work for their Husbands.

If a man is a real man it is safe for a woman to continue earning wages after she is married, but I think that there are hundreds of men to-day, yes, thousands, who have been ruined because they were not compelled to support their wives. If a man who earns small wages marries a woman capable of earning as much as himself, there are nine chances out of ten that he will develop extravagant habits because of the added income of his wife. If they could agree and hold to the decision that they should live on the husband's income and let the earnings of the wife accumulate as capital for a business in which they both could engage, it would be well; but their earnings would probably be largely dissipated in personal adornment, the passion for which, especially among the middle classes, is the bane of the American people. There is one class of women wage earners, to whom I have given much attention, who suffer considerably through their own ignorance. I refer to the married women who work in factories, or at home, making underclothing and other articles, and who supplement their husbands' wages in order to cover their own deficient knowledge of housekeeping. Such women were wage earners before they were married, and never had an opportunity to learn how to manage a house, so that after marriage they have to earn money to supply their want of knowledge, not only of cooking, but of sewing. Such women buy ready-made clothes for themselves and their children, which, of course, are not so durable as could be had for the same money if they made them themselves. Not knowing how to economize in cooking, they spend more money in that way than they should. Out of 300 women wage earners I visited in tenement houses, only five claimed that they were able to make bread and only one really did make it. Only two were able to cut and make garments for themselves and their children. I think that these women are all conscious of their deficiencies, but they do not know how to overcome them. They have some spare time, but they waste it. Their cooking is of the most primitive and unwholesome description, and their meals are supplemented with beer, which is looked upon as just as much of an article of diet as bread.

We have received from Hubbard Bros., Philadelphia, a very interesting book, "Samantha at Saratoga," by Miss Holley, popularly known as Josiah Allen's Wife. Josiah and Samantha are from a retired and inconspicuous village in New York State. The plain, back-country village life and the gay, artificial life are so wide apart that each side becomes ludicrous to the other, and these ludicrous, laugh-provoking contrasts are the dominant features of Miss Holley's book.

Uncle Tom's Department.

My Dear Nephews and Nieces,—Though the present month, with its wealth of wondrously-tinted landscape, is suggestive of sentimental thoughts, it is my intention to write to you concerning matters of a homely, practical nature. I have no doubt many of you visited one or more of our leading fairs, and may, therefore, be interested when I tell you some of the lessons I have learned at fairs. You probably did not think, among the thousands you were seeing, that Uncle Tom might be passing close beside you. His heart warms to country boys and girls wherever he sees them, because he fully believes that these brown-handed children of the field are the hope of Canada, and if he speaks plainly in this letter, do not think he is scolding—it is because he longs to see you following in the footsteps of Him of whom it is written: "He increased in wisdom and stature, and grew in favor with both God and man."

And now for the lessons. I learn that many of my nephews and some of my nieces are quite too negligent of their personal appearance and well-being. I do not mean when I say that, that I would like to see you dudishly inclined—there is a happy medium in all things. As groups of twos, threes, or fours, and more passed, and the frank faces saw something that amused them, the consequent smile or laugh showed teeth that had not made the acquaintance of a brush. Yellow and discolored; instead of being a pleasing feature, they were unsightly. I don't care how brown the hands may be—if browned in honest toil, or merry sport when work was done, 'tis something to be proud of—but is there any good reason why a fair sample of the soil of the farm should remain under the nails when the youthful farmers are out for a day's pleasure? Now, boys and girls, I know all about this neglect—I've graduated, taking the full course—and I speak whereof I know. Some of you would like to keep your teeth clean, but there are several reasons why you do not. You may not have a brush, and it may be you are afraid that some—who ought to have better sense—will laugh at you and say you are getting "toney." Let them laugh—"he laughs best who laughs last," the old proverb says, and some day you may have a quiet chuckle to yourself to see them getting "toney" too. If you have not a brush, use a soft cloth until you get one, and keep your teeth white and clean. Don't forget your finger-nails, either; and it is just wonderful how much carefully combed and brushed hair will improve one's appearance. Attention to these little matters adds to one's self-respect, and anything that does that is worth cultivating.

The next lesson I learned troubled me more than the first. Much as I might wish to do so, I can not shut my eyes to the fact that some of my nephews, and—must I say it—a few of my nieces, show a tendency to become quite "horsey." Do you know what I mean? Well, when a boy talks "horse" all the time, when his text, his firstly, secondly, thirdly, fourthly, and so on to the end, is "horse," I think he is "horsey," quite. When some of my older nieces allow a dashing horse and shining top-buggy to carry more weight with them than a good, staunch character and fixed principles, then I think, too, they are in a painful sense "horsey." Remember, I'm not speaking disparagingly of a good horse and shining buggy, nor of the skill of managing a horse well. I know young men who, in conquering an impatient animal, show so much knowledge that I marvel they have never learned to master themselves. But these matters are of *secondary* consideration.

The third lesson I learned bears more strongly on the fathers than on the sons, but in an incredibly short space of time it will be in the sons' hands. It is this—allow me to emphasize it. *If farmers would but lay aside party prejudice and political bias, no class in the country could be so influential—the power is in their own hands if they would but use it.* Now, is not that a glorious privilege, and why not use it? Just think, ours is the power to make laws that will relieve the oppressed instead of crushing the burdened. Did but our hearts and hands unite—the foul fiend—the destroyer of the happiness of many a home—ALCOHOL—could be banished from our land, while another evil—the name of which shall not pollute our pages—should be so legislated for that the villain who would ruthlessly spoil the fair name, and wreck the happiness of another, should suffer as he would deserve to—even as a *criminal*. You may think my statements ungrounded. Facts bear me out—by far the greater number of the electors in Canada are farmers—rural constituencies every time could "carry the House" if the farmers said it should be so.

Such are a few of the lessons that were learned by Uncle Tom.

Puzzles.

1—Illustrated Rebus.

2—Enigma.

I'm the beginning of summer,
The beginning of autumn,
The beginning of winter,
And the beginning of every spring.

We are useful to all who need us,
From the poorest up to the king,
While carpenters use us deftly
In fashioning many a thing.

Fair Brother.

3—Charade.

One day I took a pleasant stroll,
Went in a shop and bought my whole;
Then around my first my second placed,
And homeward then my way I traced.

Arthur T. Reeve.

4—Diamond.

1, a vowel; 2, a lifetime; 3, to harmonize; 4, past; 5, habit; 6, noblest pursuit of man; 7, to adopt; 8, to make sour; 9, to divert; 10, to furnish; 11, a vowel. Arthur T. Reeve.

5—Transposition.

Hist lordw si tub het gurdeg doar,
Chihw deasl su ot eth githbr beoad
Fo capee beaov;
Os tel su sooehc atht warnor yaw,
Chhiw edsal on 'svaleretr toof ratsay
Morf learsm fo vole.

Henry Reeve.

6—Numerical Enigma.

Total, an old adage.

My 7, 23, 24, 10, 5, 11, 22, 8, 20, 10, means removal.

My 2, 4, 16, 6, 12, 14, is refinement.

My 25, 15, 18, 17, 16, 19, is to pollute.

My 13, 1, 3, is the highest part.

My 21, 9, 26 is an enemy.

Ada Armand.

7—Anagram.

An anagram we have not had,
(At least not very lately)
I think we should not quite ignore
This puzzle species stately.
Our time indeed is precious,
But a thief crept in from afar,
So I sought in haste the station,
And "I ran in to stop car."

Ada Armand.

8—Double Diamond.

Across.—1, a consonant; 2, equal; 3, a weight among jewelers; 4, a kind of basket; 5, inflexible; 6, a kind of fish; 7, a letter.

Down.—1, a consonant; 2, a light cart; 3, a sudden fright; 4, a model; 5, violent; 6, a boy's nickname; 7, a letter. Fair Brother.

9—A Box Puzzle.

Diagram.

```
1 0 0 0 0 0 0 0 2
0 0             0
0 0              0
0  0              0
0   3 0 0 0 0 0 0 0 4
0   0               0
0   0               0
0   0               0
5   0               0
 0  0               0
  0 0               0
   00               0
    6 0 0 0 0 0 0 0 7
```

From 1 to 2 is a four-sided figure.
From 1 to 3 is a wanderer.
From 2 to 4 means anxious.
From 1 to 5 is noted.
From 3 to 6 means pious.
From 4 to 7 means welcome.
From 6 to 7 deliverance.
From 5 to 6 edges of a roof.
From 3 to 4 means what is left.

Louisa F. Redmond.

Answers to September Puzzles.

1—We do not want to fight,
But, by jingo, if we do,
We've got the men, we've got the might,
And we've got the money, too.

2—

```
       S
      Y E
     C O N
    A U N T
   M A I Z E
  O R D A I N
 R H O M B I C
E P I L O G U E
```

3—Oh, fear not in a world like this,
And thou shalt know ere long,
Know how sublime a thing it is
To suffer and be strong.

4—

```
G I A N T
I N D I A
A D D E R
N I E C E
T A R E S
```

5—(*a*) Carrot. (*b*) Parsnip. (*c*) Asparagus. (*d*) Mushroom. (*e*) Spinach. (*f*) Tomato. (*g*) Melon. (*h*) Endive.

6—

```
          C
        L O T
      S M E A R
    W O R R I E D
  M O L E C U L A R
C O E R C I O N A C T
  S O R R O W F U L
    S P I N A C H
      P S A L M
        I C E
          T
```

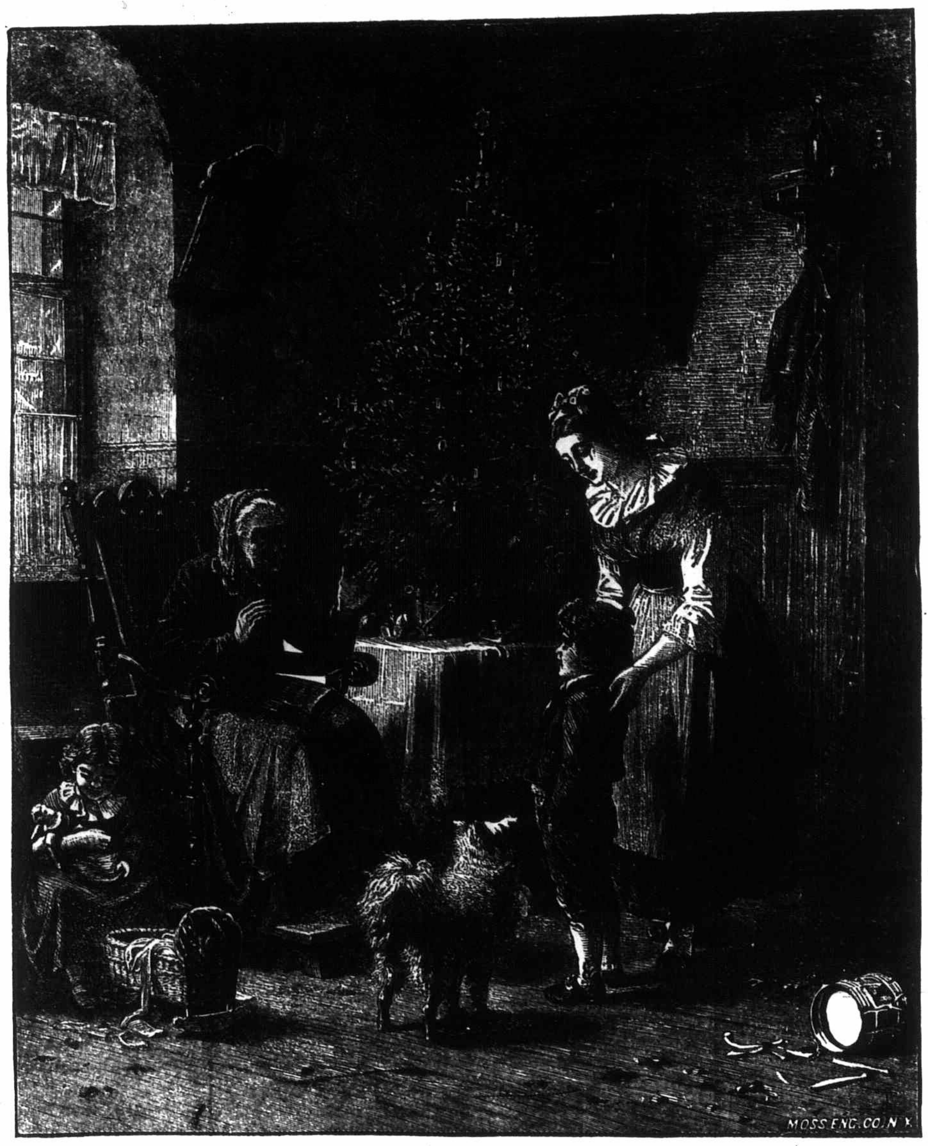
7—Condone.

8—
U
O N E
O N I O N
W A T E R
S W E E T
R I D G E
P A S T E
K A T I E
G R A N D
M A T C H
M A J E S T Y
P R E S U M E

9—
U S E
P A Y
A F T
S E G R E G A T E
S A F E G U A R D
E X C L U S I V E
S U M
A I M
A D A

The First Pair of Trousers.

We have made a man of our little pet. Mother has just finished and put on Bertie's first pair of trousers. Look at grandmamma's delight as the proud mother exhibits her boy. And now, with Bertie's first claims to manliness, should also begin his lessons in politeness to his sisters. Most of mothers allow boys first place in everything. But one of the noblest men I ever knew was one whose mother's motto was "Girls first," and all her sons were manly, unselfish, kind and considerate for others. Man is naturally a selfish animal, and mothers foster their selfishness by every means in their power, forgetting how much or altogether a matter of education all these admirable qualities of heart and mind are, and the lessons cannot be begun too early in life. How many a young man has had the first rudiments of principle instilled into him at school by being soundly thrashed by a class-mate for doing a mean thing, or what is more to a school-boy, avoided by all his associates. Teach your boys, mothers, to think for others first. Your little girls are made help from the time they can do anything, and are expected to be patient and good tempered as well. All that little sisters can do, so can little brothers, mind baby, sweep the floor, feed the chickens, wash dishes, lay the table, and help themselves, instead of asking mother to find things they have carelessly mislaid. During vacations little girls are expected to help mamma, but little boys, though always the healthiest and strongest, are never expected to think for anyone but themselves, and amuse themselves with expeditions into the woods, cricket, base ball, or whatever they choose. This is how selfishness is taught; early lessons are always lasting, and mothers are to blame. Do not allow little boys to push or slap their sisters. Insist upon them giving them first place always, and these early lessons, properly taught, will never be forgotten.



THE FIRST PAIR OF TROUSERS.

Curiosity.

It is safe to conclude that the vices and virtues are distributed more impartially between the sexes than the world has hitherto supposed. That, however, is rather an alarming conclusion, for if all our residences are composed of glass, we shall, to an individual, be obliged to deny ourselves the pastime of throwing stones.

Mr. Joly, a Canadian gentleman, was not long ago the guest of the Duke of Westminster, at whose home a funny incident occurred. There was in his room a curious, old-fashioned Swiss clock. Below it was a printed notice:

"Please do not touch."

The longer Mr. Joly looked at the clock, the more he wondered about the possible reason for this strange request. One day he ventured to ask his hostess for an explanation of the prohibition.

"You are the twentieth gentleman who has put that question," said she. "I find that you are just like the rest of your sex. Women are said to be proverbially curious, and that label was put there to test the extent of the weakness in men. My experience is that they are just as curious as women. I keep a list of the gentlemen who ask me the question you have just put, and I find there has been but one exception."

"Indeed," replied Mr. Joly, "and may I be permitted to ask who that was?"

"Mr. Fawcett, the late postmaster-general, and he, poor man, was blind."

Care and Management of Children.

Only those who watch infants with intelligent discrimination know how often they suffer from fever. With this fever comes *thirst*. What does the mother put into that little dry mouth? Often nothing but milk! When we adults have fever do we find that milk relieves the thirst? Does it not rather increase it? Be assured, it is the same with the baby. With the slightest symptoms of fever, cold water administered with a teaspoon is the prescription of wisdom and mercy.

Mothers, do you know that when your babies are feverish, restless, and sleepless, you have at hand the means to give them relief and refreshing sleep? I do not mean opiates, for in the end *they* add to the fever. I refer to the warm bath. For babies it is a blessed institution. Better than all medicines, it will impart relief and restoration to the feverish and restless little folks. The warm bath is not appreciated. In addition to its charming effect upon the general conditions to which I have alluded, it is well to add there is scarcely a local trouble of a temporary nature, as, for example, pain in the stomach or bowels, which will not give way upon immersing the body in the warm bath. The degree of temperature may be determined by the urgency of the symptoms. The greater the suffering the warmer should be the water, especially if the patient be one of strong constitution. When the little sufferer becomes quiet or the skin moist, it should be taken out, rubbed with soft, warm towels, and wrapped in a fresh warm blanket. During the last five years of my professional management of the sick, I was in the habit of constantly resorting to the warm bath as above advised and always with the most satisfactory results. No other simple means in the treatment of sick children can be compared with it. In teething, the brain irritation and bowel affections are more relieved by a judicious use of the warm bath than by all other means.—*Babyhood.*

Standing before a minister who was about to marry him, a rustic was asked, "Wilt thou have this woman?" etc. The man started in surprise, and replied, "Ay, surely! Why, I cum a-puppus!"

Schoolmaster: "Well, Bobby, my little fellow, what is your eye for?" Bobby: "Seein' wi'." Schooolmaster: "And your ear?" Bobby: "Hearin' we'." Schoolmaster: "And your nose, Bobby?" Bobby, after a pause: "For takin' the cauld wi'."

Notices.

We wish to call the special attention of our readers to the advertisement of T. & A. B. Snider, German Mills, of their stock of Percherons and Coach Horses, and their herd of Short horns. The Messrs. T. & A. B. Snider were among the first who went into importing Percherons to this province extensively, their name having been brought before our readers for a number of years past, as having been the most extensive exhibitors of this grand breed of horses, and to them is due a large percentage of the popularity of Percheron horses in this province. The first of their importations was the grand old horse, Grey Hawk, in the fall of 1877. This horse soon gained a wide-spread reputation, and received patronage 60 and 100 miles distant, through his show career and grand stock getting. He is now 15 years of age, has never been sick, and to-day is as active as a four-year-old. He was succeeded by another called Cæsar, a lighter but fine proportioned, and winner of the races at Illinois, at three years old, trotting two and three-fifth miles in eight minutes. He has also proved himself a fine stock-getter. Next comes probably the most popular of all, Bordine. This horse has been a large prize taker, having taken first and sweepstakes at the Provincial four years in succession. This horse was brought over in 1882, and was followed by a lot of six in 1883, amongst whom was the horse Theaodore, winner of first prize at Caen at four years old; Chamberline, winner of second as three-year-old, 540 horses having shown at this exhibition; also the horse Producture, which afterwards sold to S. S. Dickson, Lanark Co., for $2,800; Metacomet, Risoli and Costoro, all horses of high individual merit. Amongst the females is the mare Myrtle, winner of the first prize three years in succession at the Provincial, weighs 1,700 pounds, and several others of good quality. In the spring of 1886 they brought over from Illinois the Kentucky-bred coach stallion, Smuggler, whose protrait appeared in this paper the same season. His first produce in Canada appeared this season, and are very highly spoken of. The Messrs. Snider have also a number of communications from Kentucky, where this horse made two seasons, all of them saying the colts of Smuggler are turning out grand, being of good size and grand style, and having all the signs of being speedy, a large number of them being double-gaited, trotting and pacing both.

Pure tea is one of those articles which, as a rule, it is hard to obtain. The Ontario Tea Corporation, Toronto, are offering tea from China, India and Japan, in quantities of 5 lbs. and upwards. From our experience of this company, we believe the public can rely upon square dealing, as we have hitherto found the Manager, Mr. J. A. McMurtry, to be a gentleman of good business morals, who claims to be a tea taster and blancher who has few, if any, equals in Canada.

STANDARD AGRICULTURAL WORKS
—FOR THE—
FARM, GARDEN AND HOUSEHOLD

Our subscribers may procure any of these books by sending in the number of NEW subscribers opposite the title of the book, or the amount named in cash, adding 5c. to pay the postage on all books costing under $1.00, and 10c. over $1.00. These figures are the publisher's price in the United States.

PREMIUMS.	$ c.	No. Sub.
Allen's American Cattle: By Lewis F. Allen	2 50	7
American Standard of Excellence in Poultry	1 00	3
Barn Plans and Out-buildings	1 50	4
Bees and Honey, or Management of an Apiary, for Pleasure and Profit, by T. G. Newman	75	3
Cauliflowers, and How to Grow them: By Francis Brill	25	1
Elliott's Lawn and Shade Trees	1 00	3
Farm Drainage: By French	1 50	4
Field Notes on Apple Culture: By L. H. Bailey, jr	75	3
Fuller's Small Fruit Culturist	1 50	4
Fuller's Illustrated Strawberry Culturist	20	1
Fuller's Forest Tree Culturist	1 50	4
Grasses of North America, by W. J. Beal, M. A., M. Sc. Ph. D.	2 50	7
Gregory on Cabbages—How to Grow them.	30	1
" Carrots, Mangold Wurtzels, etc.	30	1
" Onion Raising.	30	1
" Squashes	30	1
Henderson's Gardening for Profit, new edition	2 00	6
Henderson's Gardening for Pleasure	1 50	4
How the Farm Pays: By Wm. Crozier and Peter Henderson.	2 50	7
Harris on the Pig	1 50	4
Harris' Talks on Manures	1 75	5
Hawden's The Horse: How to Buy and Sell.	1 00	3
Hop Culture, by Prof. Geo. Thurber	30	1
Hints on Butter Making: By T. D. Curtis.	50	2
Johnson's Practical Poultry Keeper.	50	2
Jennings' Horse Training Made Easy	1 25	4
Jennings on the Horse and his Diseases	1 75	5
Keeping One Cow Profitably	1 00	3
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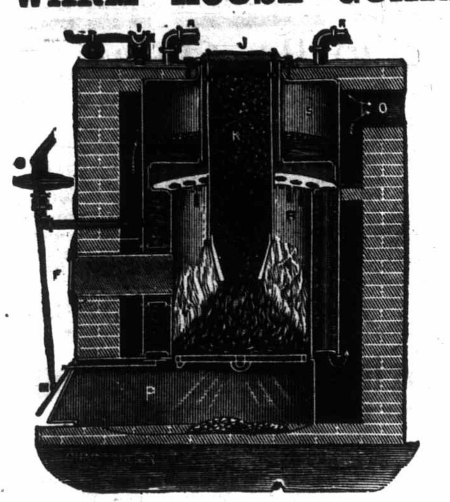

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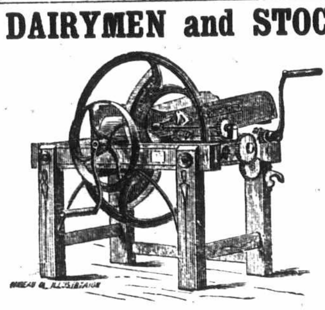

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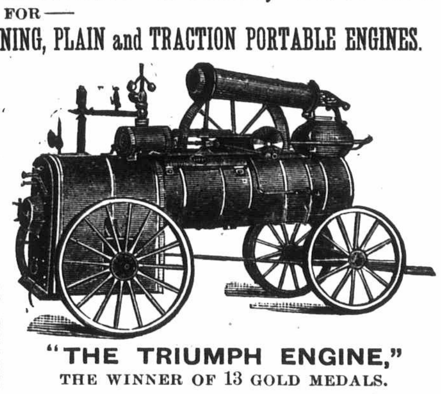

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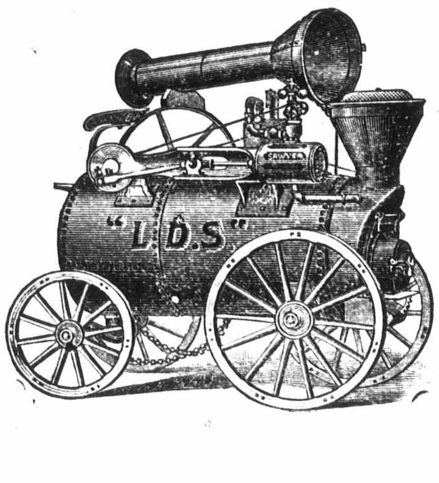

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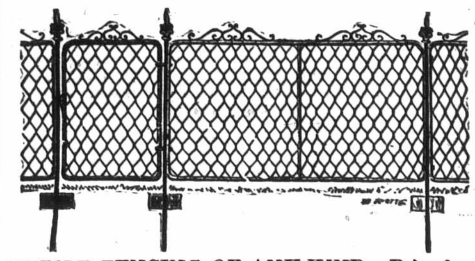

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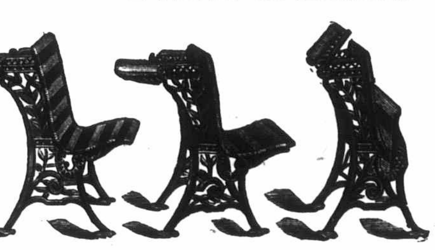

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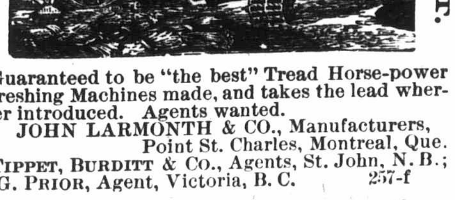

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