

**PAGES  
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# FARMER'S ADVOCATE

AND HOME MAGAZINE.

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## THE FARMER'S ADVOCATE & HOME MAGAZINE

WILLIAM WELD, EDITOR AND PROPRIETOR

THE LEADING AGRICULTURAL JOURNAL PUBLISHED IN THE DOMINION.

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

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360 Richmond Street,  
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## Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

1.—No award will be made unless one essay at least comes up to the standard for publication.

2.—The essays will be judged by the ideas, arguments, conciseness and conformity with the subject, and not by the grammar, punctuation or spelling, our object being to encourage farmers who have enjoyed few educational advantages.

3.—Should one or more essays, in addition to the one receiving the first prize, present a different view of the question, a second prize will be awarded, but the payment will be in agricultural books. First prize essayists may choose books or money, or part of both. Selections of books from our advertised list must be sent in not later than the 15th of the month in which the essays appear. Second prize essayists may order books for any amount not exceeding \$3.00, but no balance will be remitted in cash. When first prize essayists mention nothing about books, we will remit the money.

A prize of \$5 has been awarded to Mr. John Campbell, jr., for the best original essay on the subject: *What is the Average Cost to the Farmer to Rear a Steer to the Age of Thirty Months, said Steer to be Sold Fat at that Age, How Much Profit is Derived? If there is a Profit, How Can it be Increased?*

A prize of \$5 will be given for the best essay on *What Profit is Derived from the Average Canadian Dairy Cow? Can this Profit be Increased? How?* All essays on this subject to be handed in by the 15th of February.

A prize of \$5 will be given for the best essay on *Potato Culture*. The writer must also name the six best varieties suitable to the north; stating the merits and other qualities of each sort. Essay not to occupy more than one page, and to be handed in not later than March 15th.

## Editorial.

### On the Wing.

This year we hope to be able to resume our flights. We commenced on January 2nd by going to Thorndale to attend a meeting of the Farmers' Institute being held there. We also attended the annual meeting of the Western Dairymen's Association. The dairy interests were the principal topics, being most ably treated at both institutions. Prof. Robertson, of the Model Farm, being well posted on the cow and her products. He imparts a lot of very valuable information that should do much good to those that do and those that do not read agricultural publications. Prof. Roberts, of Cornell University, is a walking encyclopedia on dairying, and delighted the Canadian dairymen with his fund of information. The principal change in the instruction given was his depicting from actual tests that matured corn and corn stalks were far more valuable than three or four times the bulk of immature corn; thus corroborating the experience of Mr. Leitch, the late President of the Dominion Farmers' Council, who had from practical experience found that our common Canadian corn, although not producing the bulk per acre obtained from American corn, was of more real value for feed. This should show to farmers the necessity of raising their own seed. This overthrows much of the corn fodder instruction previously given. Prof. Roberts said horns must go, and showed the advantages of dehorning cattle. Mr. Caswell, the retiring President of the Dairymen's Association, suggested the importation of the small common cows from Quebec for dairy purposes.

### Thanks.

It is now our duty to return thanks to our Merciful Protector, who has still spared us. In Dec., 1886 and Jan., 1887, I was prostrated with a fever. In Dec., 1888, a fire destroyed part of our office and very materially affected our exertions, and we have been exposed to the acts of thieves, who have purloined our property. We return thanks to our old subscribers for their prompt renewals, and to all that have aided in sending in new subscribers. We return thanks to the County Council of Middlesex and the Aldermen of the City of London for the following commendations:

"The thanks of the County Council of Middlesex are hereby tendered to Wm. Weld, Esq., of the FARMER'S ADVOCATE AND HOME MAGAZINE, for his personal efforts on behalf of the agricultural and stock interests of this country. We feel that the farmers, as a class, have much to thank him for in what he has done and is now doing in their behalf. The FARMER'S ADVOCATE has ever remained true to the Canadian interests, and we recommend it to farmers everywhere, and to the Canadian public."

Wm. Weld, Esq., City. Dear Sir,—I beg to advise you that the City Council at its last session adopted the following resolution, viz.: "Ald. Callard, seconded by Ald. Winnett, moved that the thanks of this Council, on behalf of the citizens of London, are due to Mr. Weld for his indefatigable and valuable services in advancing the best interests of the city, and we recommend the FARMER'S ADVOCATE AND HOME MAGAZINE to every Canadian for its patriotic, independent and valuable information." Yours truly, C. A. KINGSTON, for City Clerk.

We also return thanks for the kind remarks of Mr. Cargill, M. P. of South Bruce, who said that he considered the agricultural publications of our Dominion were doing more good than the Government expenditure in many ways. We are pleased to inform you that prospects are brighter than they have been for the past six years. That some who may have been misled are returning to the ADVOCATE, finding it the only reliable farmer's friend, the only one that has not some other object to serve in preference to the farmer's interest.

### The Provincial Exhibition.

We have received a great many communications regarding the Provincial Exhibition, but lack of space prevents us from publishing them in this issue. We find the public almost equally divided on the question of discontinuance. Those first replying to our circular were mainly opposed, but those coming in lately are chiefly in favor of its continuance, but all favor its reconstruction. Our next issue will contain several letters from leading farmers, and other matter, concerning the Provincial Fair. The letters in favor of continuing the show now number 113; against the same, 101. In favor of township shows, 137; against same, 57. In favor of supporting and improving county shows, 182; opposed, 23. In favor of special attraction, 83; those opposed, 107.

### To the Stockmen.

We are putting forth every effort to increase our circulation, and thereby make the ADVOCATE a still better advertising medium. Whenever you sell animals to persons who are not subscribers, induce them to subscribe. You will thereby benefit yourself, the buyer and us. We are especially desirous to increase our American circulation.

Send in your stock notes. Let those who have no improved stock see what you are doing, and who the buyers are, they may become interested.

### Agents Wanted.

We want agents in every township in the Dominion to canvass for the FARMER'S ADVOCATE. We give liberal cash commissions. Write for particulars.

### Meeting of the East Middlesex Farmers' Institute at Thorndale.

A pleasing feature in connection with the Farmers' Institute work is that the attendance and interests are steadily increasing; and while they are managed by practical farmers and freedom from all side issues maintained, they must prove highly beneficial.

The first speaker at the above meeting was Prof. Robertson. In opening the meeting he said he was pleased that a feeling of suspicion of one another among farmers was being largely dispelled by their meeting together and discussing subjects of common interest. Referring to the lack of organization among farmers, he showed that while rival business men, among whom increase of business to one meant decrease to the other, had their organizations for mutual benefit and protection. That farmers, who, on the contrary, were benefitted by the prosperity of their neighbors in the same calling, were very careless about organization. Proceeding to the subject of butter-making, he stated that the cow was a machine and would only make use of what was put into her. That wheat was all food, but flour only contained about half the feeding value; and the cow comes to the rescue—converting the straw, bran, etc., into milk, butter and cheese, another form of food. It was much to be regretted that many of these cow machines were not profitable, and were proving only a bill of expense. A good cow should milk ten and a-half months in the year—giving in that time 5,000 lbs. of milk containing 3½ per cent. of butter-fat. When questioned as to the best breed, he said he was past being in love with individual breeds. All were good in their place; but what he wanted was a dairy cow that would produce eighty dollars worth of milk in a season. Such a cow would have good heart-power to circulate the blood, good lung power to purify it, and good digestive power to assimilate the food; also, she must have the power to elaborate milk—as no cow could make milk and beef at the same time. He described, at length, the external signs of these faculties, among which are deep chest; wide nostrils; fine skin; hair lying close and sleek; long deep barrel, ribs wide apart; long from the last rib to the hip bone; long lean face, wide between the eyes; prominent eyes; sharp shoulders; long lean thin neck; back bone sharp and joints wide apart; loins long; rump thin; free from superfluous flesh at the twist and leg; udder long and with extensive surface attachment. Foul air makes bad milk. Clean stables, good ventilation, and use of gypsum gives pure air in the stables. Decaying animal matter, even in the pastures, is very injurious to milk. Corn fodder sown broadcast and thick is full of water and not valuable for milk production; in fact, corn fodder in drills is not good for milk production until the corn is beginning to glaze. That corn fodder in drills, after attaining full growth, increases 300 per cent. in feeding value from that time until the grain begins to glaze. Meal should always be fed on cut fodder or chaff—never alone. Deep setting of milk was best, as the cold water on the exterior of the cans caused a circulation, slow but effective in bringing the cream to the surface. Great care should be taken in churning to have all the cream equally ripe, as the sour cream churns much quicker than the sweet; the latter thus being left in the buttermilk and lost entirely. He further recommended that

cows be bred to drop their calves in late autumn, and that butter be made in the winter and the milk fed to the calves, which would thus be able to live on grass in the spring when the milk could be sent to the cheese factory. In answer to Mr. Weld (FARMER'S ADVOCATE), the Prof. said, the Denmark cow was of medium size, even, not meaty on the leg or twist, but capable of being fattened when dry; they yielded twice as much in a year as our cows, chiefly from superior treatment. A well-kept cow, he claimed, should pay \$15 profit per season.

Mr. J. B. Lane read an excellent paper on "Dairying vs. Grain Farming," in which he gave dairying the preference, but thought every farmer should raise, at least, wheat enough for his own bread. In answer to a question, he said feeding immature green fodder corn was simply an expensive method of giving cows water.

Mr. Weld was very much pleased to see the institutes making such headway, and was sure the information given by previous speakers would prove beneficial to those present. He thought it a grand thing for Canada that there was no embargo on our stock going into other countries; that this privilege had only been preserved for us by keeping our cattle healthy and stamping out contagious diseases at once on their appearance, and that he had long labored in this direction. He cited several instances in which he had, at considerable expense to himself, secured action by the government in stamping out disease in Ontario and other provinces. He explained that while some thought him opposed to the "Model Farm" and "Provincial Exhibition" such was not the case; what he had said he thought to their interest; he thanked them for what good had been accomplished. He was pleased to learn that improvements were in progress there. He also appealed to Hon. Mr. Drury, who was present, on behalf of the city of London, that in view of the fact that the Provincial Exhibition was to be held there this fall, and that as the exhibition had always come to London in debt and gone away with full coffers, that some of the funds should this year be spent in London.

Hon. Chas. Drury was the next speaker. He claimed that farming was the leading industry of our nation. Agricultural depression is felt by all classes. If farmers are in a prosperous condition, other men prosper. Speaking of exhibitions, he regretted that all the large exhibitions, except the Provincial, was under the control of the cities in which they were held, and manipulated by them to the advantage of these cities without regard for the interest of the farmer. He thought cheapening production was the chief subject for our consideration at present; he found many farmers who, notwithstanding the increased expense of living, were making no effort in this direction, being content to move along in the old rut followed by their fathers, and thinking they know it all already. Among the chief benefits derived from the institutes would be to open their eyes to the fact that there was much they did not know. He had no sympathy for a man that could not make a living off a hundred acre farm. He was pleased to know that we were not only the peers of our neighbors across the lines, but ahead of them in agriculture; he quoted statistics to show that our wheat crops were from 10 to 30 per cent. better than in any of the American States. He considered education necessary; if a man were only a ditcher, it was

of benefit to him in his work. He regretted that so many of our best young men drifted into the cities, and thought this came from a false idea of respectability, but the man who labored in moderation with his hands was healthier and better developed physically, and there was no reason why he should not be intellectually, than he who was confined in a lawyer's office or other place of business.

Prof. Robertson gave an excellent address on "Agricultural Education," showing the unpardonable mistake a man is making when he does not develop the intellect of his boys, thus making them not only better qualified to battle with life, but better men in every way. He disapproved of a man being a book-worm weighed down with knowledge, but wanted to see a man with knowledge under him to lift him to a higher plane of life. He considered it a matter of regret that the earliest education of the farmer's son tended to alienate his affections from the farm and prejudice him against agricultural education. He claimed that knowledge was not education, but education was the assimilation of knowledge. A farmer should give his son an education first, and if there was any anything left all right, but first came education. He thought it a great mistake for a farmer not to take at least one agricultural publication, as nothing quickened a boy's ideas of, or inspired him with a love for, farming as much.

#### THE SECOND DAY.

Mr. Vining read a paper on noxious weeds, which was discussed at considerable length, but no new methods of eradication were brought to light.

Mr. J. B. Fram read a paper on the common sense or general purpose cow, but from the opinions expressed in the discussion following, it would seem that the common sense cow and the general purpose cow are not identical.

Prof. Robertson claimed that a good cow should have inherited capabilities and developed power as well. The heifer calf intended for a cow, or the calf intended for a stock bull should be kept thrifty but not fat. The calf intended for beef should be kept fat from the earliest possible moment, and a heifer should drop her first calf at thirty months old.

W. L. Brown read a paper on marketing grain, but which referred chiefly to abuses existing on a local market; his ideas, both as to existing abuses and their remedies, were assented to by many farmers present.

How to succeed in farming was the subject of Mr. Chas. Stewart's paper, and may be summed up in this phrase—"energy and economy."

Prof. Robertson gave an interesting address on "ensilage," the principal part of which appeared in January number of this paper.

#### Send in New Subscribers.

All the money we receive for subscription is spent on the ADVOCATE. We ask every old subscriber to send us one new name for 1889. We want to add 20,000 new subscribers to our list within the next three months. This can be done if our present readers will each send us one new subscriber.

We had a pleasant call from Mr. Henry Wade, Toronto, Secretary of the Agricultural and Arts Association. In the course of conversation Mr. Wade remarked that as a result of our remarks in January issue of the ADVOCATE on agricultural examinations, he had received more applications for information on that subject than from all other sources combined.

**One of Our Leading Agriculturists.**

John Miller, Ontario's veteran stock breeder and farmer, was born May 12th, 1817, near Annan, Dumfries, Scotland. On April 12th, 1835, he left Scotland in a sailing vessel and arrived in Markham, June 1st of the same year. With him he brought some Leicester sheep and pure-bred swine for his uncle, the late George Miller, of Markham, with whom he lived for five years. His father and mother then arrived from Scotland, and for eight years he resided with them and took a leading part in clearing what is known as the "Atha Farm." In 1848, he bought the farm so well known as "Thistle Ha," so called from the bad state of its cultivation when purchased. It originally contained 165 acres, but from time to time more land has been bought, and at the present time the subject of our sketch owns 660 acres, much of which is now in a fine state of cultivation, and 100 acres of cedar land.

In 1836, he showed a young Shorthorn bull against all ages and breeds in a class of eight at Toronto Spring Show, (bulls were not then shown at the fall shows), all were imported but the one he showed, which took first place. When the first Provincial Show was held in London, 1854, the exhibitors from the east went to Hamilton by steamboat, and thence by railroad to London. This year Mr. Miller imported three yearling heifers—two Shorthorns, Louisa and Jane, and one Galloway. The Shorthorns won first and second place in the above show. In 1857, he again showed four two-year-old heifers and a bull "Redkirk;" these, like the first, were bred by R. Syme, of Redkirk, Dumfries, Scotland. They were very successful in all the Canadian show rings—including the Provincial, also at several of the leading State fairs in the U. S. A. At Buffalo, he sold Redkirk for \$300, which was a good price for a young bull in those days. In 1867, Nelly Bly 2nd was bought for \$1000 in Illinois, after she had won first at St. Louis and several other places; she was the first bovine brought to Canada which cost \$1000; her dam was the foundation of Spear's Nelly Bly family, and this heifer is the foundation of the Nelly Bly family now found in Canada. About this time Prince of Bourbon 6060, was bought from R. A. Alexander, of Kentucky; he was followed by Oxford Mazurka 8750, which was shown for five years, and with two exceptions always took first money; he afterwards took first place over the bulls that had previously beaten him; he was injured and had to be killed; his dressed carcass weighed 1870 lbs. The last two years he was in the herd he had for companions Fawsley Chief 1051 and Canadian Prince = 43 =. Fawsley Chief = 107 = was never beaten, though shown at all leading Canadian shows when one, two and three years old. He was imported in 1869 with Ruberta, a renowned show cow which Mr. Miller sold to the Hon. M. H. Cochrane for \$1000, who afterwards sold her to Col. King for \$2000. She has been a successful show cow down to recent years. In 1870 Rose of Strathallan, Cherry Bloom, Cherrybini, Isabella and a number of other very good cows were imported. Before leaving Scotland Rose of Strathallan won many prizes, among which was second as a two-year-old at the Highland Society's show, and first at Dalkeith, 1868, first at the Highland Society's show in 1869, and gold medal at the same show in 1870. The last prize is given to a special class composed of cows which have won first in the cow class at this show, and is, there-

fore, a distinguished honor. Her dam, Rosa Bonheur, won first prize at the Highland Society's show and Perthshire show, including the gold medal at the Highland Society's Glasgow meeting in 1867, and her dam won similar honors. Rose of Strathallan reared ten calves and has been the dam or grand dam of many prize winners. Lord Strathallan was shown all over Canada and was very successful, and eleven times won first at leading American shows. In 1878 three bulls descended from his dam won first, second and third places in Toronto, and the year following one of them took the sweepstakes at the same place. A year or so after Crown Prince of Strathallan 49200 again won first at the same show, beating Messrs. Watts' celebrated Barmpton Hero = 324 =, the only time he was ever beaten. This family, like the Isabellas, are all sure and regular breeders, and are noted for their excellent quality throughout. Imported Isabella was the foundation of the family so well and favorable known in Canada to-day. Many prize winners are also found among them. Isabella was never beaten but by her stable companion, Nelly Bly 2nd; but she has proved a much better breeder than this cow, her



JOHN MILLER.

descendants as a class are much superior. In 1871 Lady Oxford, which was sold for \$2500, and Lady Juliet, sold for \$2000 (both went to C. C. Parks), together with a number of other good ones, were imported. From that date until now, from time to time as required, fresh importations have been made. At present the herd numbers 50 females and 10 males. Among them are representatives of the Strathallans, Isabellas, Nonpareils, Lydias, Rosebuds, Prince of Wales and Coquettes. The herd is headed by the grand show bull, Vice-Consul, which has been shown eleven times and won as many first prizes. We believe him to be the best bull in America to-day; it is very doubtful if there is a bull alive that is good enough to beat him. He is now 42 months old and weighs 2,350 lbs.; in color a red, his legs are short and his body very thick and massive. He has been used by Mr. Miller three seasons, and has left each year a wonderfully good, even lot of calves, which are very like their sire and possess his smooth, massive qualities.

Mr. Miller imported his first Clydesdale, viz., Rob Roy [31], in 1854, and in 1860 Black Douglass [72], though previous to this date he had been breeding to good imported horses, and

had then a mare, Maggie, that had won 22 first prizes. She girthed eight feet one inch, and by the service of Black Douglas produced the horse which won first and sweepstakes at the Provincial show in 1863. The competition was keen, there being a lot of imported horses present. The next horse imported was the far famed Comet [174]. He was used in Ontario for twenty years. Before coming to Canada he travelled in Scotland one season. Many of his colts were prize winners, and perhaps, excepting Netherby [126], there never was a horse in Ontario that was the sire of so many good colts. They were unusually good workers, heavy and compact, and of a kindly disposition. The mares generally bred well. Here and there throughout the country, even to the present day, may be found horses got by him. Comet and Netherby are names found in the pedigrees of most of the best Canadian bred Clydesdales. With the next importation came Boydston Boy (111), Young Ivanhoe (1887) and Royal Diadem (1286). These horses are too well known to need any special comment. Each is at the head of leading breeding establishments.

In 1875, he showed four imported mares at five different shows and won twenty first prizes. Again, in 1882, he imported a horse and three mares; with these he won four first prizes at the Provincial the same year, and two firsts and one second at Toronto. In 1883, he imported thirteen horses and mares—among this lot were several prize-winners. In 1884, nine horses and mares were imported—three of which were shown in Toronto, winning two firsts and one second. In 1885, five were imported; on this date at Toronto, he won first with foal, first with yearling colt, and second with yearling filly; the yearling was got by Boydston Boy, and was shown against the colts which won first at the English Royal Show, first at the Royal Northern, first at the Glasgow Summer Show, and second at the Highland Societies' Show. Mr. Miller afterwards sold this colt for \$2,500—the highest price ever received for a Canadian bred Clydesdale. In 1886, he won first at Toronto on yearling colt, and first and third on two-year-old filly. This is the last time he has shown horses.

During 1887 and 1888, he made extensive importations, but the extent of his sales have prevented him from showing. At the present time, their stables contain a number of Clydesdale stallions and mares, also a Cleveland Bay horse and mare.

The first ten years of Mr. Miller's life in Canada, he imported and bred Leicester sheep, and for the next fifteen years a flock each of Cotswolds and Leicesters were kept; but from 1860 to 1880, Cotswolds only, with the exception of a few Shropshires which were imported in 1863, but were all sold in 1867. In 1880, and each year since, extensive importations of Shropshires have been received. During all these years the sheep kept at "Thistle Ha" have been most noted and successful. The foundation of many of the most successful flocks, both in the show yards and breeding pens, now in Ontario, were laid from purchases made here. In 1887, Shropshires owned at this farm won the silver medal at Toronto, as the best middle or fine wool flock, and in 1888 they won the flock prizes at the Provincial show and at Toronto, as well as a fair share of all the class prizes.

Since August last, 500 head of pure-bred sheep

have been sold from "Thistle Ha"—\$5 of which were Cotswolds, the remainder Shropshires. At the present time the flock consists of ninety yearling ewes, ten aged ewes, and ten rams; all of the ewes are believed to be in lamb to the imported ram Director, or the grand lamb Spearman, which has been shown six times in England, and ten times in Canada, and has never been beaten. The Shropshires here are a grand lot.

Hog breeding has also received much attention in the past, and a great many very valuable animals have been imported and bred. At the present time a lot of good Berkshires may be seen, but for some years past they have not been recorded, though their breeding and quality is good. In this short sketch we have only mentioned a few of the many animals in each class that Mr. Miller has owned; to go fully into details would occupy a whole volume. Those who wish to know more must pay "Thistle Ha" a personal visit, and will be well repaid for their trouble.

The integrity and good judgment possessed by Mr. Miller is well known to the stock-raising public. The fact that an animal is descended from importations made by this gentleman, always proves much in its favor when it comes to be sold, thus testifying to the confidence which both the American and Canadian repose in Ontario's veteran importer and breeder, who is ably seconded by his son, Mr. Robert Miller, jr., who is fast becoming, and deservedly so, one of the most popular and respected importers and breeders.

#### Agricultural and Arts Association.

##### PRIZE ESSAYS—FARM PRIZES.

A meeting of the council of the above association was held on Thursday, Dec. 27th, at two o'clock, in the Board Room of the Agricultural Hall, corner of Yonge and Queen streets, Toronto. After the reading of the minutes, the Secretary presented the statement of the finances in connection with the Provincial Exhibition, held at Kingston last September, and a shortage of \$3,674.24 was shown to exist. Mr. J. J. Habron, of Mossborough, was appointed auditor. Messrs. Rykert, Rowand, Morgan and the Secretary were appointed a committee to wait upon the Dominion Minister of Agriculture to request him to give the Dominion grant in aid of the Provincial Exhibition to be held at London in 1889.

A motion was unanimously passed, repudiating all knowledge of or connection with any violation of the law by the sale of liquor on the fair grounds at Kingston during the late show.

It was resolved, in view of the scarcity of feed and cattle in many sections of the province, to hold no fat stock show this year.

The Finance Committee's report was received and passed. It recommended that the Legislature be requested to provide for the following sums for the association for the ensuing year: Prize farms, \$450; council expenses, \$750; essays, \$350; salaries, \$1,500; postage expenses, \$400; printing, \$1,000; educational scheme, \$600; fat stock show, \$500; veterinary college, \$150; exhibition, \$4,000; total, \$10,000.

The Committee on Herd Books recommended that the third volume of the Clydesdale Stud book be issued at once; and as soon after its issue as possible the first volume of the Shire and Draught Horse Stud book be also printed.

The recommendation was received and adopted.

Prizes will be awarded for the best essays on the following subjects: 1st. The cultivation of green crops for soiling and ensilage, and their value in farm operations, first prize, \$30.00; second prize, \$20.00. 2nd. The advantages of rotation of crops as compared with the evil of over-cropping, first prize, \$30.00; second prize, \$20.00.

Prizes will be awarded for the best managed farms in group No. 3, comprising the following Electoral District Societies: Huron's, 3; Dufferin, 1; Bruce's, 2; Wellington's, 3; Grey's, 3; Perth's, 2. Any farmer working one hundred acres may compete, and must make his application in writing to the Secretary of the agricultural society of his district on or before the first day of May in each year.

Full particulars will be furnished on application to Mr. Henry Wade, Secretary of the Agricultural and Arts Association, Toronto.

### Farmers' Clubs.

#### Dominion Farmers' Council.

[The Dominion Farmers' Council meets in the city of London, Ont., on the third Thursday of every month, at 1 o'clock p. m. All communications should be addressed to the Secretary, F. W. HOBSON, LONDON, ONT. This Council has now on hand pamphlets containing its Constitution and By-laws, with an account of its origin, objects, etc.: Constitution and By-laws suitable for Farmers' Clubs, and notes on how to organize a club. These will, on application to the Secretary, be sent free to all parties having in contemplation the organization of clubs.]

The Council met at 1.30 p. m. President Anderson in the chair.

After routine it was decided to comply with the request of Mr. McGregor, of Appin, to send a delegate to give an address on the occasion of their organization of a Farmers' Club.

Mr. W. L. Brown, of London, then read the following paper:

##### THE FARMER'S GARDEN.

It is a matter of surprise that farmers in this country pay so little attention to the cultivation of a vegetable garden.

In travelling through different parts of Ontario, and by careful observation, I have found that not one farmer in a hundred has anything approaching a rotation of vegetables—say from the early part of May through the successive months of summer and fall. The average farmer's garden consists of only two or three varieties, instead of fifteen or twenty, and these few kinds generally come in a month or six weeks later than market gardeners around towns and cities. At a very small outlay every farmer could have a succession of vegetables from May until May again. In the first place, an acre or so of ground should be devoted to vegetables; this plot of land should be thoroughly manured, drained, and kept in first class trim, with regard to cultivation and the eradication of weeds. This spot should receive from eight to ten cords of well rotted manure each year, with all the hard wood ashes that could be obtained. Never change your garden plot. The land should be manured in the fall if possible, and the dung plowed in. This will give a chance for the nutritive elements to be thoroughly incorporated with the soil, and plant food be made available. When this land has been got into proper tilth, the whole succession of garden vegetables may be put in with the same ease as is a field of roots or corn. Lettuce, early peas, spinach, parsnips, early carrots, onions, early turnips, radishes, beets, etc., may be put in with the same drill that puts in the mangel crop. Then early peas and beans, by taking out every other tube in a grain drill can be planted with no more trouble than putting in acres of grain. Early corn and squashes may be as expeditiously sown by taking out two tubes in the drill. One man and a team of horses with the proper implements mentioned could easily plant the vegetables in a day. But

we have to go further in this acre plot. Every farmer should have cabbages and tomatoes, and these can be put in with a plow; let furrows be struck out three feet apart and drop the tomato plants every four feet, and cabbages every two feet—say angling at 45 degrees—then throw the furrow back on the plants, and this is all the covering they need. A tomato plant grows better by being placed at an angle in transplanting. In England, acres of cabbages are grown for cow feed by plowing down the plants, as I have previously stated. Little attention has been paid to this branch of farming, and, mainly through the mistaken idea that raising vegetables cost too much labor—too much hoeing—when in reality, all the work could be done by horses and machinery. With one horse and a cultivator, a few hours in the evening, would keep the patch clean.

If this acre of land were measured in its productiveness, it would exceed in profit more than any ten acres devoted to anything else. An acre of ground, with seasonable vegetables, would be the mainstay of a farmer's living, and the other ninety-nine acres could be applied to profitable grain, stock and fruit-raising. The quantity that can be raised on an acre of fertile land is something prodigious, and, not only could the farmer feed a large family from this source, but he might make profitable sales of the surplus in our central market. Especially where near a canning and pickling establishment, he would have ready sale for his green corn, tomatoes, green beans, peas, cauliflowers, cucumbers, etc.

In the different New England States, at the present time, but for their canning factories the farmers there could not live, as the majority of their farms have ceased to yield a profitable return in grain and stock. And now, they are buying Canadian ashes and superphosphates—keeping up the fertility of their soil at our expense, and making productive farms out of impoverished soil by going into "truck farming" as they call it—raising vegetables and fruit, selling in local markets and to canning factories. This latter phase of the subject is merely showing the possibilities of this branch of rural industry as a profitable investment, rather than that a good vegetable garden is a necessity in itself to every family.

In a hygienic point of view the different courses or rotations of vegetables, that may be raised at such a small outlay of capital and labor by every farmer, contain the medicinal virtues of the whole vegetable pharmacopœia. With a proper vegetable diet with animal food, our Canadian farmers should be the perfection of health, and of manly and womanly vigor. But there is no country under the sun where a rural population take more quack nostrums, in the shape of pills and bitters, than farmers and their families right here in this London district. And why? Because too much white bread and fat pork is eaten, too many sweet cakes and pies, and not enough vegetables, brown bread, fresh meat and fish. If a man leading a sedentary life, as in our towns and cities, lived on as few vegetables as farmers they would not live out half their days. In the whole garden vegetables you may find they contain some medicinal principle which has a special action on some organ of the body—that is, besides being a wholesome food. Carrots and parsnips have a powerful influence on the kidneys, so has spinach and lettuce, besides being tonic and laxative. Celery is a powerful nervine, whilst onions act similarly, also producing good effects on the pulmonary organs. Tomatoes act mechanically on the bowels, and their acid chemically on the liver. If ladies would take a liberal diet of carrots and parsnips two or three times a week, they would have a complexion like a rose and as clear as marble. There is a strong sentiment setting in in scientific circles in favor of a more liberal vegetable diet, and I am fully persuaded that if farmers would confine their diet to seasonable vegetables, with more fresh meat, a great number of years would be added to their lives—not only farmers, but all other classes of society. There is no reason why Ontario farmers should not live on the fat of the land, and have everything that heart can desire, by a little effort in cultivating vegetables and fruit. But how often is it the case that we find men with one hundred and two

hundred acres of land actually coming to London market and buying their tomatoes, cabbages and cauliflowers from market gardeners. This certainly is a suicidal policy, and one which shows the utter neglect of gardening operations on the farm. I would advise every farmer, if he cannot put in an acre of ground, to try half an acre or even less; but whatever, have a vegetable garden, and one thing is certain, that, with improved machinery, an acre can be cultivated at about the same cost as half that quantity of land.

In conclusion, I would strongly recommend to farmers the cultivation of cabbages, not only for a garden vegetable, but also for a general crop for milch cows. This is a most profitable crop, and comes in an excellent soiling crop in the fall of the year. In England thousands of acres are grown every year for feeding and are called cattle cabbage, such as Schweinfurt and large drumheads. This cabbage crop is as easily cultivated as a Swede crop, and is more profitable for fall feeding.

A vote of thanks was given Mr. Brown for the paper.

The President thought that farmers neglected the vegetable garden too much, so much so that the taste was not educated sufficiently to appreciate either the luxury or even the necessity of it.

Mr. Vining thought the paper contained some excellent ideas; he had his garden at some distance from the house, and planted everything in drills, thus enabling him to keep it thoroughly clean with a horse. In burying cabbage for winter use, he turned a furrow each way and placed the cabbage in the furrow, roots upward, covered with straw and ploughed the furrows back against the cabbage.

Mr. Whetter stood his on the ground with leaves under them, roots upward and covered all with leaves; had used corn-stalks with good results. He thought the garden very profitable.

In answer to a question, President Anderson and Mr. Hodson said there was little danger of putting too much salt on the asparagus bed; both thought the ground might be made white with salt with good results.

Mr. Weld referred to a small island near San Francisco which was almost on a level with the sea, and which produced asparagus that would require to be seen to realize the immense size of it, the stalks actually growing higher than a man's head.

Mr. Venning found no trouble in raising good celery. He dug a trench and planted in loose earth; thought in porous soil it was best to plant in trenches, but if the soil was tenacious it would not be well to do so. Thought rich bottom land best for celery.

Mr. Little gave an instance of celery being grown with great success on high, gravelly land.

Mr. Deadman preferred planting on the level.

Mr. Whetter also preferred planting on top of the ground; had placed drain tiles over the plants to bleach them, but thought they had not the same taste, although white and tender.

In answer to a question by the President, Mr. Venning said he soaked his onion seed in moderately hot water, and allowed it to stand two days; in sowing, he only opened up the rows to receive the seed as fast as they were needed, in order to insure the seed coming in contact with fresh earth; thus he claimed insuring immediate germination.

Mr. Whetter did not approve of soaking seed, under any circumstances, as he had lost large quantities of seed by soaking it, as it rotted in a dry time before it began to germinate.

Mr. Weld thought Mr. Brown's remarks re-

canning and pickling works well timed, as our city, especially, needed such.

Mr. Hodson referred to large profits made from sweet corn, garden peas, strawberries and other garden products in the Bay Quinte district.

Referring to the annoyance gardeners were subjected to through the English sparrow, Mr. Whetter thought them the worst enemy in the feather line the farmer had to contend with.

Mr. Little thought them a very great nuisance and a source of loss as well; he had poisoned them by placing a dish of wheat soaked with water, in which Paris green had been dissolved, on the eave trough of the building where it was out of the way of other things.

Mr. Deadman thought a bounty should be paid by the government for their destruction, and regretted very much that they had driven the swallows away, and, to the absence of the swallows, he attributed the increase of various kinds of moths the last few years.

The following resolution was moved by Mr. Little, seconded by Mr. Whetter, and carried unanimously, "That the Dominion Government be asked to offer a small bounty for the heads of English sparrows, and in case that government declines to take action in the matter, that the Ontario Government be asked to do so in this province, and that a copy of this resolution be sent to the agricultural departments of each government, and to the secretaries of fruit growers' and agricultural societies throughout the Dominion."

On motion of John O'Brien, seconded by Mr. Weld, the membership fee was reduced from one dollar to fifty cents per annum.

The following officers were then elected:—President, John O'Brien; 1st Vice-Pres., J. K. Little; 2nd Vice-Pres., R. Whetter; Secretary, J. W. Bartlett; Corresponding Secretary, F. W. Hodson; Treasurer, John Kennedy.

On motion of Henry Anderson, it was resolved to meet hereafter at one o'clock.

Mr. John S. Pearce, being prevented from attending this meeting, will read his paper on "Is Dairying More Profitable than Grain Growing," at the next meeting of the Council, which will be held on the third Thursday in February. Council adjourned to meet on that date.

#### Our Prize List.

For the benefit of our new subscribers, we again call the attention of our readers to the very liberal list of premiums we offer, to those who send us in clubs. (See our advertising columns, or large posters.) Every advantage will be given to canvassers. Those who cannot get the required number of subscribers may send in names as follows:—All articles calling from 30 to 50 new names may be divided thus:—30 new names for one year, or 15 new names prepaid for two years, above 50 to 100 may be divided by three, thus, an article calling for 60 new names may be won by the 60 new names prepaid for one year, or 20 new names prepaid for three years. Articles calling for 100 to 200 new names, may be divided by four, thus, 50 new names prepaid for four years, or 100 prepaid for two years.

#### LADIES' PRIZE.

To ladies who send us in clubs, we make a special offer, viz.: one of Wortman & Ward's celebrated churns, valued at \$9, which we will send to those sending us in nine new subscribers.

Only the best stock will pay for the extra care, labor and feed that it is the mark of a good farmer to bestow.

## Stock.

### Clydesdale Horse Breeders' Association.

The second annual meeting of the Clydesdale Association of Canada was held on December 28th at the Albion Hotel, Toronto. The chair was occupied by President David McCrae, of Guelph, and there were also present about forty of the leading Clydesdale breeders of Ontario.

The report showed the receipts to have been \$1081, and as the expenditure reached \$929.99, the balance on hand amounts to \$151.01. The members of the association now number 305. There has been entered for registration in the stud book, up to 15th of December, 344 stallions, 150 of which were imported, and 326 mares, of which only 28 were imported, making 670 in all. This number will pass 700 before the printing has gone too far to allow no more to be received, which will bring the total number of stallions up to 1,000 and the mares to 800. This does not include the Scotch appendix, the value of which is not properly understood. Two hundred and forty-seven copies of the first volume of the stud book, and 192 of the second volume have been issued to members of the association. At the stallion show held last year the report showed that \$325 was offered in prizes, and that thirty-six horses were entered for competition. Unfortunately, owing to a snow blockade, a third of these did not reach Toronto, consequently some horses that have since distinguished themselves in the show ring were missed. The show was held in the drill shed, which answered the purpose very well, but it is much to be regretted that the Government has been so long selecting a site for a new drill shed in order to allow the city to go on with their scheme of building a large agricultural hall suitable for holding such shows as the one held under the auspices of the association. It is to be hoped, now that we have a Minister of Agriculture, we will speedily have a suitable agricultural hall erected in Toronto. It is greatly needed, and its need will be greater in the future than in the past. The following resolutions were passed by the association:

"Whereas the time of holding our annual meeting is fixed by the constitution for the month of December in each year, and as we expect to hold each year a stallion show some time during March, and, as further, there are held at this time in Toronto the annual meetings of the various other live stock associations, all of which bring together a large number of people; therefore be it

*Resolved*, That the constitution be amended in such a manner as will permit of our holding our annual meeting some time during the first three months of the year, when it shall be deemed most expedient by the Executive Committee."

A new class for Canadian bred horses was made, and a Canadian bred horse was defined, after much discussion, to be "One not tracing on the side of its dam to an imported Clydesdale mare, but recorded in the stud book." It was decided to hold the next annual stallion show on the 14th of March next. The number of prizes will be increased by adding to each class a fourth and fifth prize to be known as "highly commended" and "commended."

The following gentlemen were elected officers for the year 1889: President, Wm. Smith, M.P., Columbus; Vice-President, George Moore, Waterloo; Provincial Vice-Presidents, Robert Hess, Howick, Que.; Hon. A. C. Bell, New Glasgow,

N. S.; C. C. Gardner, Charlottetown, P. E. I.; James E. Smith, Brandon, Man.; Dr. McMonegal, Sussex, N.B. Directors, Messrs. R. Beith, Bowmanville; Wm Rennie, Toronto; Robert Graham, Claremont; Robert Miller, Brougham; Arthur Johnston, Greenwood; David McCrae, Guelph; D. Sorby, Guelph. Auditors, Mr. J. C. Snell, Edmonton; J. Y. Ormsby, Oakville. Delegates to the Industrial Fair, the President-elect and Mr. Rennie, Toronto. Secretary-Treasurer, Mr. Henry Wade.

The association decided to present the retiring President, Mr. D. McCrae, with an address, which will contain expressions of approval from the association in regard to the highly satisfactory manner in which the president's chair was filled during his *regime*, and regretting that owing to important business engagements he could not again hold office. This was a very fitting act on the part of the members. Mr. McCrae has been very faithful to the interests of the association since its commencement, and has very ably discharged the duties of president, for which he is by nature well fitted.

**What Constitutes a Canadian Bred Clydesdale.**

What constitutes a Canadian bred Clyde has been variously defined, but generally speaking, heretofore it has been understood to be those foaled in Canada which were also sired this side of the ocean, and not until now has it been taken into consideration where the dam was bred or how descended, and as a natural consequence the prizes in the Canadian bred class have generally gone to horses whose dam and sire were imported. This has been discouraging to the farmers who have struggled for ten, fifteen or twenty years to improve their native mares, they say "what's the use for us to feed and prepare for a show; we have good, and well bred horses, but cannot successfully compete with the offspring of the best imported beasts." This condition of things has kept our Canadian Clydes in the background. Our leading breeders and importers have recognized this fact, and at the last meeting of the Clydesdale Association a Canadian bred horse was defined as "One not tracing to an imported mare, but registered, or entitled to registry, in the Clydesdale stud book." This is a move in the right direction, we are heartily glad the association has settled this much disputed question. As it has previously been understood it was manifestly unfair to the ordinary farmer, and unfair to the exhibitors of imported horses, because they were compelled to show only in the class for imported stock; while animals descended from imported dams were allowed to show in either the imported class or as Canadian bred, thus having two chances to win. There are and have been hundreds of good Canadian Clydesdales which have never been brought to public notice because there really was no class for them. The breeders of these animals, because of their obscurity, which was in a measure forced on them, have doubtless been loses financially, and our Canadian bred Clydes have suffered in quality, because farmers thought in order to be successful in the show rings they must have an imported mare, therefore they neglected their Canadian Clydes. On the other hand, by putting those descended from imported mares in the Canadian class we acknowledged we could not breed as good horses in America as in Europe, even though we have as good breeding stock.

Yet this is not the case; we can breed as good heavy horses in Canada as can be bred anywhere. Now that the importers and breeders have defined the classes it becomes the duty of our fair managers to properly adjust their rules and give the proper definitions in their prize lists. We hope the farmers will take advantage of these new and better rules, and bring out a first rate lot of Canadian Clydesdales.

**Chatty Letter from the States.**

[From our Chicago Correspondent.]

Chicago received in 1888, 2,611,543 cattle, 96,086 sheep, 4,921,712 hogs, 1,515,014 sheep, and 55,833 horses. Receipts were the largest on record, with the exception of hogs.

Of range cattle receipts at Chicago, last year, were of Texas and Indian, 547,185 head, being the largest on record by 61,657 head; of western range cattle, 269,509 head, or 8,384 head—more than ever received before. The receipts of range cattle for several years were:

Years.	Texas and Indian.	Western Range.
1888	547,185	269,509
1887	486,528	261,275
1886	330,639	240,695
1885	286,168	232,040
1884	358,374	221,879
1883	256,340	176,680
1882	346,300	227,700
1881	143,380	190,500
1880	88,600	109,500

Prices for range cattle from all sections averaged about 50c. higher than in 1887.

Texas and Indian steers of the best quality sold at \$3.50 @ \$5.30, the top in June, with some at \$5 in August, and best at \$4.70 in September. The poorest quality sold at \$2 @ \$3, the lowest in July, with many steers at \$2.10 @ \$2.30 in the last five months.

Far western grass cattle sold at \$3.50 @ \$5.40 for best steers, the highest in August and September, and \$2.25 @ \$3.50 for the poorest, the bottom prices ruling in October.

Prices for rangers during part of the season were \$1 higher than in the previous year, and the bulk of the really good cattle sold 50c. @ 75c. above the price of 1887, though the superior quality materially cut down the advance in prices.

Reports from all parts of the western range country are of a most satisfactory character. The winter has been mild, feed plenty, and cattle have not lost their fall flesh as they usually do. Good authorities predict that marketing range cattle this year cannot, possibly, be so large as last year; that, however, was the prediction made for 1888. Still, the tide seems to have turned somewhat, and old time-ranchmen are beginning to invest in cattle again.

The magnitude of the Chicago business of dressing and canning beef is shown by the following report of business done in 1888:

Swift & Company for dressed beef exclusively, 458,189 cattle, also 26,918 calves. Hammond for dressed beef 220,000 cattle; Libby, McNeil & Libby, for canning, 174,963 cattle; N. Morris and the Fairbank Canning Company, for dressed and canned beef, 468,498 cattle (including calves), also 170,606 sheep; Armour & Co., for dressed and canned beef, slaughtered during the twelve months ended Nov. 1st, 561,000 cattle (and calves). The total number of cattle (including calves in some cases) slaughtered in Chicago for dressed and canned beef was reported at 1,822,650 head against 1,695,295 in 1887.

Following is the correct record of Chicago's banner receipts:—

**LARGEST RECEIPTS OF STOCK IN A DAY.**

Cattle, Nov. 19, 1888	20,069
Calves, Sept. 1, 1885	1,773
Hogs, Dec. 5, 1884	66,597
Sheep, Oct. 4, 1888	12,129
Horses, May 14, 1888	789
Cars, Dec. 10, 1884	1,522

**LARGEST RECEIPTS OF STOCK IN ONE WEEK.**

Cattle, week ending Oct. 22, 1888	71,310
Calves, week ending Sep. 12, 1885	4,369
Hogs, week ending Nov. 20, 1874	300,488
Sheep, week ending Oct. 6, 1888	48,971
Horses, week ending May 19, 1888	1,926
Cars, week ending Dec. 6, 1884	6,964

**LARGEST RECEIPTS OF STOCK IN ONE MONTH.**

Cattle, Oct., 1888	281,156
Calves, Sept., 1885	15,449
Hogs, Nov., 1880	1,111,997
Sheep, Oct., 1888	187,450
Horses, May, 1888	6,591
Cars, Dec., 1884	25,387

**LARGEST RECEIPTS OF STOCK IN ONE YEAR.**

Cattle, 1888	2,611,543
Calves, 1888	96,086
Hogs, 1888	7,059,355
Sheep, 1888	1,515,014
Horses, 1888	55,833
Cars, 1885	214,146

The opposition of the butcher interest was never so strong as now against the dressed meat business. "State Inspection" bills are being introduced in several states; these provide that all beef must be inspected on the hoof in the state where sold. This, of course, if adopted in many states, would put an end to beef-dressing and canning on any large scale. This is what the butchers and many small cattle-feeders in the east would like, but it would be a pretty severe kind of class-legislation.

T. L. Miller, the veteran Hereford cattle breeder, has moved the permanent location of his herd from Beecher, Ill., to Phoenix, Arizona; that seems like "getting out of the world," but there are some decided advantages. There is not so much competition out there. The principal bull-buyers now are the western cattle ranchmen, who are not willing to buy bulls not raised in the range country.

There are some very excellent herds of pure-bred Shorthorn and Hereford cattle now in the State of Texas, and the time is rapidly coming when the term "Texas Longhorns" will be obsolete.

In this connection, it may be said that the Chicago Stock Yard Company has had done an artistic bit of terra cotta work in front of the new bank building just being completed. On one side of the large main entrance is a handsome figure in bas-relief of a typical cowboy with leather leggins, broad sombrero, lariat, bowie knife and six-shooter; he looks as if he had just stepped out of the pages of a dime novel. On the other side, in the same material, stands a strikingly life-like figure of the late Col. John D. Gillette, who did so much to promote better methods in cattle-feeding and breeding. These two figures form an artistic and striking illustration of the past and present in the cattle-raising business.

D. S. Bliss says: There has been many ups and downs in the business since my boyhood; many changes from sheep to something else, and back again, and many thousand sheep have been slaughtered for their pelts and tallow alone in times of depression, but the men who have persistently stuck to sheep through thick and thin, improving their flocks while others were selling out or killing theirs, have in the end come out ahead every time, and have kept up the condition of their farms better than any other class of farmers among us. No man acquainted with the situation will attempt to controvert this assertion. If I desire to bring back into condition a run-down or worn-out farm I should stock it up just as heavily as it would bear with sheep, provided, of course, that it was adapted to sheep.

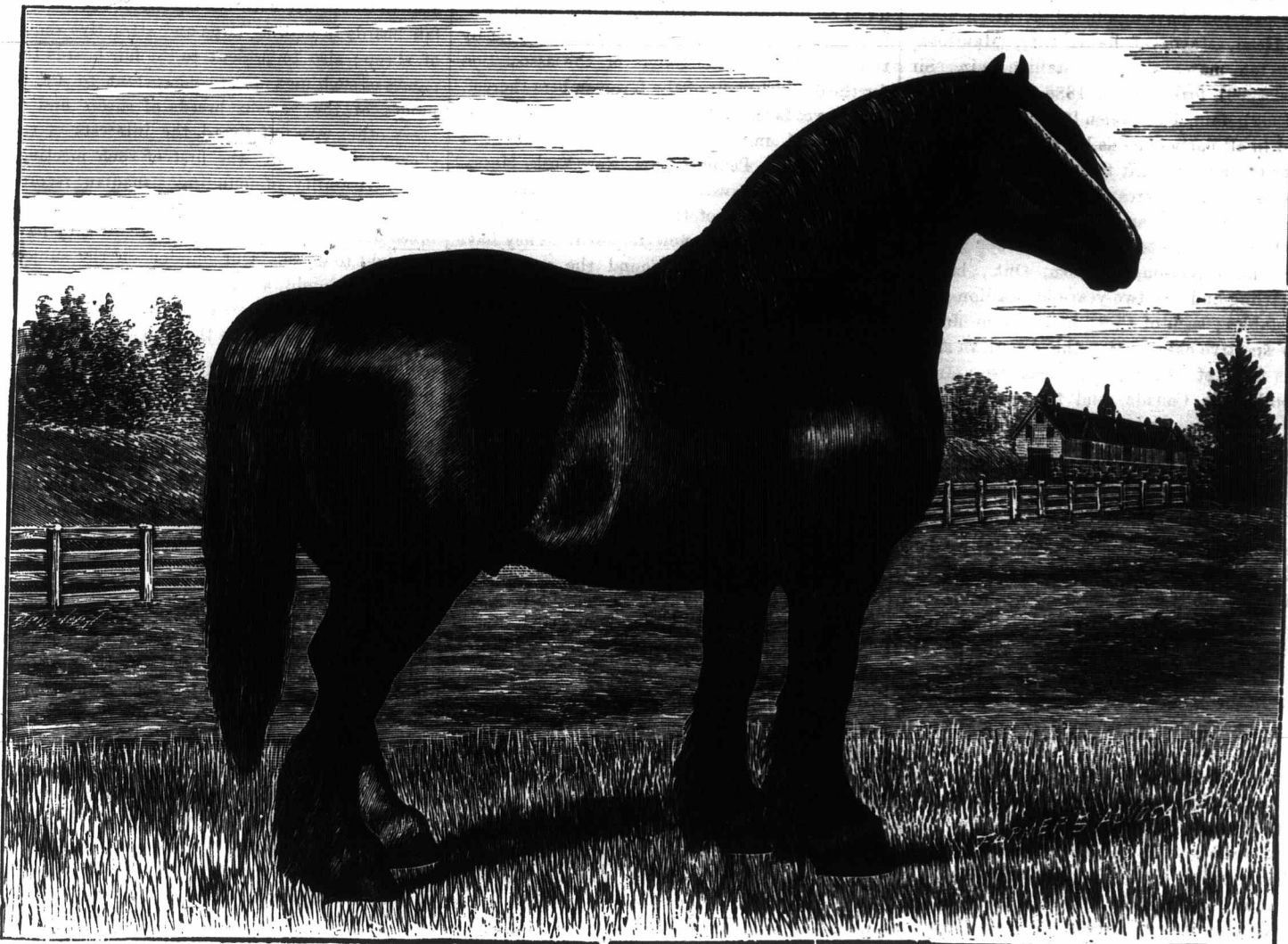
**D. & O. Sorby's Clydesdales.**

The farm where these horses are kept is the homestead, where Mr. and Mrs. Sorby settled many years ago. Mr. Sorby, sr., was a business man, being interested in the cutlery and coal trade in England. After travelling in America for some time, he at last bought this farm, which is known as Woodlands, and is situated four miles south from Guelph. When purchased it was in a poor state of cultivation, and not beautified in any way: since buying it, the proprietor and his family have brought it into a high state of cultivation. In the year 1882 it was one of the Provincial prize farms. The approach to the house is by way of a well gravelled road, which winds through a lot of beautiful ornamental

kept in high condition—rather the reverse—just in that condition that if they have a fault it can be seen by intending purchasers. Collectively, they are a heavy, thick, massive lot of horses, standing on short legs with good muscular development. The breeders and importers throughout Ontario acknowledge that these gentlemen have imported a lot of as good mares as were ever brought to America. Considering the merit of their stock, the prices they ask are very reasonable—we would say low.

The famous Boydston Boy (111), the sire of the celebrated Lord Erskine (1744) is at the head of their stud. This is not a large horse but a strong, even beast, and, although nearly fifteen years old, he is fresh and youthful looking.

Highland Society's Show, also at Ayr. This is a very nice, neat, compact, little horse of grand quality, and one of the best "movers" we have ever seen; he is a great favorite among the Clydesdale breeders in Ontario. McLay [964] was foaled May 27th, 1887; imported August, 1888. This is the subject of our sketch; he is like nearly all the others, a beautiful bay, very massive and stands on strong, short legs, of good quality, well set for work; his sire was Gallant Lad (2781). 1st dam Maggie, by Never-Mind-Him (557); 2nd dam by Gartverrie (321). Gallant Lad won 4th at Highland Society's Show, 1884, and first at same in 1885; he was got by Druid (1120). Never-Mind-Him is a son of the famous Prince of Wales (673). In McLay's extended pedigree



THE YEARLING CLYDESDALE STALLION McLAY [964], THE PROPERTY OF D. & O. SORBY, GUELPH, ONTARIO.

trees. The house is surrounded by a handsome and well kept shrubbery and lawn, and all are well surrounded by a lot of very fine evergreens. The house is a solid structure, and its fittings within and surroundings without, proclaim the refined and cultivated taste of the residents. The out-buildings are very substantial, the stabling is the best we have seen anywhere. A new horse barn, which they have just erected, is probably the best finished and most imposing horse stable in the Dominion. Most farmers have their buildings close together, but these gentlemen have placed theirs many rods apart—so far apart are they that if one building was burned the others would not feel the heat from it. Their stables will accommodate seventy horses in box stalls; at the present time they have between forty and fifty head of pure-bred Clydes, many of which are imported. Their horses are not

In 1875, Boydston Boy was first at Ardrossan as a one-year-old. In 1876, he was first at Renfrew, and third at the Highland Society's Show, at Aberdeen, as a two-year-old. In 1877, he was third at Glasgow May Show, and second at the Glasgow Autumn Show, and commended at the Highland Society's Show at Edinburgh, as a three-year-old. In 1878, he was highly commended at the Highland Society's Show, at Dumfries. In 1879, he was first at the Royal Northern Agricultural Society's Show, at Aberdeen, and very highly commended at the Highland and Agricultural Society's Show, at Perth, in a class of 24. A prize-winner himself, he has descended from a long line of prize winners, and has been the sire of considerable good stock, of which the popular Scotch horse Lord Erskine is the most famous. Farmer Lyon (3340) was a prize-winner before leaving Scotland, at the

the following well-known names occur: Lockfurgus Champion (449), Samson (741), Broomfield Champion (95). The latter occurs eighteen times, and the well-known Lampit's mare twenty-four times. Among their home-bred stallions we will only mention Renfrew Jock [626], foaled May, 1887; sire, What's-the-Odds (301); dam, Princess [214]; before leaving Scotland, this mare won 2nd at Highland Society's Show in 1879. In 1880, she won 1st at each of the following places, viz., the "English Royal Show," at Glasgow, at Kilbride, at Girvan, and at Hamilton; after coming to Canada, she was shown for the first time at the Provincial in 1886, where she took first for mare with foal by her side.

Renfrew Jock, except in color, is doubtless one of the best, if not the best, yearling colt in Canada to-day. If he is properly fitted for the coming spring show, unless the judges are prejudiced



against him by his color, he will be found a hard horse to beat, either in his class or for higher honors. Among the mares, we will only notice a few of the younger ones, beginning with Lucy Douglas, foaled in 1887, imported 1888; sire, Douglas Chief (2603); 1st dam, Lucy Bogside (4449). This is a broad, low-set filly of good quality throughout; her sire and dam are both descendants of the Prince of Wales (673). Fair Mellie (450) is Canadian bred, got by What's-the-Odds (301); 1st dam, Fair Helen (218). This is a very good filly, with a good pedigree; she is, perhaps, the best young mare in their stables. From lack of space, we have specially mentioned only a few of their Clydesdales.

The Messrs. Sorby have a lot of very good horses and mares now on hand. Their sales during the past year have numbered seventeen head. S. L. Head, Mayor of Rapid City, Manitoba, bought ten mares and one stallion, viz., Sir Michael (269), foaled July, 1886; sire, Farmer Lyon (302); dam, Fair Helen (218). This colt is as good in all particulars as his sire, but will be a larger horse; he ought to leave his mark where he has gone. The mares chosen to go with him were a very good lot, and have won many prizes on both sides of the ocean.

Mr. John Davidson, Ashburn, Ont., bought one yearling and one two-year-old stallion from these stables; each of these horses won first in their respective classes, also the American silver medals for best yearling and best two-year-old stallion bred in Canada, and the yearling won the sweepstakes as best Canadian Clydesdale stallion any age.

#### Southdown Sheep Record.

BY JOHN JACKSON, ABINGDON.

Knowing you have long and faithfully advocated the interests of farmers and breeders, I would respectfully solicit your co-operation with your readers interested in Southdown sheep, both in Canada and the United States, through the medium of your widely circulated paper, to assist in bringing about a more satisfactory means of keeping a proper and reliable record of pure bred Southdown sheep. In regard to the necessity of such record to breed intelligibly there is no room for argument, and while I am not in favor of a multiplicity of records, as many of your readers are already aware, yet to submit to the grasping hand of oppression—rings and combines—I am equally opposed, and now call the attention of every breeder interested in the improvement and advancement of this old reliable and well defined breed of sheep to give the subject careful consideration. By way of illustration, we will first notice the contrast between the broad and liberal way in which the American Shropshire Association has dealt with its members and patrons as compared with the narrow-gauge, circumscribed line which the American Southdown Association has laid down to run on.

The Shropshire Association charge a fee of from 50 cents to \$1 for recording, and have again extended the time (giving due notice) for registering flocks of pure bred sheep, not previously recorded, to first of April, 1889, thus showing a willingness to deal out justice liberally to importers and breeders in both countries, the result of which is general satisfaction. A prosperous and growing association, with a surplus of over \$1700 in the treasury, a large amount of which they have decided to offer in premiums at Chicago and Toronto to encourage the improve-

ment and popularity of the breed, instead of aiming to realize large dividends on the capital stock of the association, for the special benefit of a few stockholders.

Now, on the other hand, how different the course pursued by the American Southdown Association. From the time it was organized in 1882, up to 1888, the fee for recording to members and non-members was \$1 for each sheep, which was fairly satisfactory. But in 1888, and without due notice to many of the importers, breeders and patrons, the fee was raised to \$5 for each imported animal, and \$2 for American bred animals, except to members of the association; American bred animals are recorded for \$1 (the fee for membership is \$10). Now, the \$2 fee discourages beginners and small breeders, the fee of \$5 on imported animals simply means collecting a duty or tariff of \$4 per head, paid by the importer into the coffers of the association for the direct benefit of the few members thereof.

I have been advised and pressed by a large number of importers and breeders in this country, Ohio, Pennsylvania, New York, Massachusetts, etc., who have unanimously condemned the action of the American Association in regard to the fee now imposed. They have urged with no uncertain sound the expediency of forming an association on liberal principles, such as will commend itself to the public, and one that will be taken as authority on this favorite breed of sheep, that has stood the test of time and more than held its own. An American friend suggests the name "International Southdown Association," I feel inclined to favor this as quite appropriate. Meetings could be arranged to discuss matters of interest to the association during the holding of the International Fair at Buffalo, the Industrial at Toronto, or such other place as the association might appoint from time to time for convenience of members. There is a large number of imported Southdowns in this country and in the United States, of the very best blood and individual merit that the world can produce, a number of them being first prize winners at the Royal Show of England and other important shows, but they are not yet recorded, nor are they likely to be at the unreasonable fee of \$5 therefor. It seems to me the time has fully come for all the breeders of Southdowns to unite in what will be for the good of all interested in the welfare of this noble breed of sheep. Let the owners of the hundreds of imported animals not yet recorded be heard from through the press or by private correspondence, which I shall be pleased to reply to at any time, and hope to see a meeting arranged for in the near future to give the matter deliberate and serious consideration.

#### The Spring Stallion Show.

The third annual show of the Clydesdale Association, which is to be held in Toronto on the 14th of March, bids fair to be the finest stallion show ever held in the Dominion. We believe there are more good Clydesdale stallions in Ontario to-day than ever before, and a good many are being prepared for the coming show. There are to be classes for imported and Canadian bred horses. The imported horses will make a big show, and it is to be hoped the Canadian bred horses will do the same, they certainly ought to be present since they now have a separate class. Doubtless Americans who want to buy stallions will be present as they have been in previous years. Those who exhibit will be likely to meet customers.

#### A Sheep Breeders' Association for Ontario.

We have received a great many letters from the breeders of the various breeds of sheep regarding the formation of an Ontario Sheep Breeders' Association, nearly all are in favor of such a project. Mr. E. B. Morgan, of Oshawa, Ont., who is a very extensive shipper, says:—"Such an association has long been needed, and should receive the hearty support of both breeders, wool dealers and shippers." He pledged himself to support such association. Several other dealers have done the same. The object of the association should be to encourage the interest and improvement in the breeding and management of sheep, by the dissemination of reliable and practical information on the subject; also to co-operate with the officers of the various fair boards in making large and attractive shows of sheep; also to present to the fair boards the names of such men as are competent to act as judges of the various breeds of sheep, and in every other way to forward the interests of the sheep breeders. At the first of such meetings the advisability of founding Canadian records should be discussed. If the breeders of any breed determine to commence a record they have the right to do so. Our opinion on the subject is that we should, as far as possible, unite with our American purchasers in supporting one record for one breed, but where the Americans insist on running it all their own way, or in an unjust manner, as described by Mr. Jackson in his able letter, then we would be in favor of founding another record, and in making that record as international as possible. One record for each breed found in America is all that is required, but such record must be for both countries, not for Americans only. A multiplicity of records is not to be desired; every additional record means an additional tax on the breeders, who deserve all the protection and encouragement they can get. In all classes the records should be controlled by the breeders, not the breeders controlled by the record. The American Shropshire Association have endeavored to make their record serviceable to all of North America, and whenever asked, have made such concessions as we on this side of the line deemed advisable, but some of the other associations have not done so, and should be compelled to give us fair play or else Canadian breeders will start records in Canada that will better suit the wants of both Canadian and American breeders. Several of the American States have Wool Growers' Associations, chief among them is the Indiana Wool Growers' Association, which has done a very good work. In 1876 it commenced with a membership of thirteen, in 1880 its membership had increased to about seventy active members, and has continued to increase since that date. The Hon. Jasper Davidson, President of the Indiana State Board of Agriculture, recently wrote us that their Wool Growers' Association had been a great help to the sheep industry in the State. The fourteenth annual meeting of this association was held at Indianapolis, Wednesday, January 23rd, where, after the President's address, papers were read on the following subjects:—What is the most profitable type of sheep for our farmers to breed? How shall we manage to get early lambs? Sheep husbandry and its relations to our wants. What should be the qualifications for an expert judge on sheep? Value of

pedigrees to the breeder of pure bred sheep. Difficulties to be overcome by beginners. How to treat wounds and diseases incident to sheep. Each of these papers were prepared by practical and competent men. The papers and the discussion which followed each brought out a fund of useful information.

At the Albion Hotel, Toronto, at one o'clock on Wednesday, the 13th of March, those interested in sheep breeding are requested to assemble to form a Sheep Breeders' Association, and adopt a constitution and by-laws. The programme of the meeting will be published in the March number of the ADVOCATE.

**First Prize Essay.**

THE MOST ECONOMICAL AND HEALTHFUL SYSTEM OF FEEDING FARM HORSES, INCLUDING WORKING ANIMALS, BROOD MARES, AND GROWING COLTS.

(Continued from last issue.)  
BROOD MARES.

The brood mare should be fed so as to give a good supply of milk for the colt. This is the primary object in feeding her. If she is working—and work, if not too heavy and exhausting, does not hurt her—she will require food not only to supply milk for the colt, but also enough to supply the waste of muscle and keep her in good condition. The mare's milk is very rich in muscle-producing matter, and, of course, she must obtain that from her food; and, therefore, her food should consist of a large percentage of albuminoids. The following is a good ration for mares weighing from 1000 to 1200 pounds, but if larger the amount should be increased:—

- 7 lbs. cut clover hay,
- 7 " " oat straw,
- 3 " gr. oats,
- 3 " bran,
- 3 " gr. oil-cake,
- 6 " roots, twice a week.

The hay and straw should be moistened and mixed with the oats, bran and oil-cake.

This ration is strong in albuminoids, and, therefore, a good ration for a mare to give milk on. It is very important that the mare should be well fed, so that the colt will have sufficient milk to grow rapidly and develop fully. The muscle and bone is what makes the colt so useful an animal. Another good ration is:—

- 14 lbs. cut hay and straw, mixed,
- 6 " pulped roots,
- 2 " peameal,
- 2 " chopped oats,
- 2 " bran.

If the mare is worked, increase the quantity of oats and peas. The turnips, if pulped and mixed with the hay, straw and meals, are not so cold, and keep the bowels laxative enough for health.

THE COLT.

The mare's milk is the best food for the young colt, and if the mare does not give sufficient she should be fed to produce more milk on such foods as clover hay, bran, gr. oil-cake, roots, &c., &c. If still she does not give enough milk, then cow's milk should be given to the colt, at first in small quantities, and sweetened, as the mare's milk is much sweeter than the cow's. Half a pint of cow's milk given five or six times a day to a colt four or five days old, is enough for a time, but the quantity should gradually be increased. As soon as the colt learns to take cow's milk, it should not be sweetened. When the colt is old enough to eat, ground oats and oil-cake, mixed together, or half a pint of flax-seed, boiled with

two quarts of wheat-bran, should be given to it. The quality of the bone and muscle depends, to a great extent, on the food given when young. In many parts of the States colts are fed on corn, which has the effect of making them tender footed; the bone is not good, and the muscles are flabby. They cannot endure hard or prolonged work, although they look fat and sleek. This is due in a great measure to the superabundance of fat and carbo-hydrates in corn, and the want of muscle-producing matter in it. This turns out to be a serious defect in horses, and renders many of them useless for hard work. Later on the colt may be fed cut hay and straw roots, gr. oats, gr. oil-cake, and bran. There is no danger of colts growing too rapidly on healthy foods and well-balanced rations. However, if fed injudiciously, as on corn-meal, or peameal with loose straw or hay, they may show bad results. Dry pea-meal or corn-meal given to colts, mares or horses, is very apt to form into a solid cake or mass in the stomach, so that the gastric juice cannot act properly upon it, and soon disease results from this. If the same foods were mixed with something to keep them from forming into a mass, they would be all right and perfectly safe to feed. Corn-meal and pea-meal, unless in very small quantities, are not good for young, growing colts.

Mares and colts should be turned out to grass as soon as it is fit, because grass contains a large percentage of albuminoids, and is a good ration in itself; but if some grain can be added, so much the better.

I remember reading of a man who wintered his colts on straw and roots. This is certainly a cheap kind of food, and, in times of great scarcity, would answer the purpose; but it is very weak in muscle-producing elements. Grain would greatly improve this food, and it would be economy to feed it. When the colts are to be weaned, skimmed milk is one of the best things that can be given. It is in a liquid state, and, therefore, very easy to digest, and it contains what colts need at that time; and oft-times farmers have skimmed milk that could be easily spared for that purpose. Ground oats, with about one-fifth part of corn-meal and a pint of oil-cake, might be given in addition to the milk. The rations given depend to a great extent on the size, kind and general get-up of horses. Some are hard keepers, and require more food; others are easy to keep, and require less. One must increase or decrease the rations accordingly.

The following table, taken from Prof. Stewart's work on "Feeding Animals," may be of use in showing the composition of our commonest foods in Ontario:—

	Albuminoids.	Carbo-hydrates.	Fat
Meadow hay, medium	5.4 p.c.	41.0 p.c.	1.0 p.c.
Clover	7.0 "	38.1 "	1.2 "
Oat straw	1.4 "	40.1 "	0.6 "
Wheat straw	.8 "	35.6 "	0.4 "
Oats	9.0 "	43.3 "	4.7 "
Peas	20.2 "	54.4 "	1.7 "
Corn (Western)	7.5 "	67.3 "	3.1 "
Barley	8.0 "	58.9 "	1.7 "
Wheat-bran	10.0 "	48.5 "	3.1 "
Gr. oil-cake	27.8 "	33.9 "	2.1 "
Turnips	1.1 "	6.1 "	0.1 "
Carrots	1.4 "	12.5 "	0.2 "

It will be seen that the table gives the per cent. of albuminoids, or muscle-producing elements; carbo-hydrates, or what is breathed out by animals and what sustains heat in them, and fat.

This noble animal, the horse, is man's best and most useful friend. He eases man's burdens patiently, willingly and kindly; and in return man should always treat him kindly, which is an important factor, feed him judiciously, handle him intelligently and tend him carefully.

**First Prize Essay.**

WHAT IS THE AVERAGE COST TO THE FARMER TO REAR A STEER TO THE AGE OF THIRTY MONTHS, SAID STEER TO BE SOLD FAT AT THAT AGE? HOW MUCH PROFIT IS DERIVED? IF THERE IS A PROFIT, HOW CAN IT BE INCREASED?

BY JOHN CAMPBELL, JR., WOODVILLE, ONT.

Road-pastured, straw-wintered and poorly grass-fattened cattle do not differ so much from good grade, well-fattened animals in the cost as in profit. Did the Bureau of Industries give us statistics of the cost of beef production similar to those given of grain production, it would be quite easy to arrive at a conclusion as to averages.

While the rearing of steers may not materially differ in cost up to a certain age, yet the fattening process will, undoubtedly, be more expensive when done in the stall than if completed in the field. The endeavor, therefore, will be to ascertain the approximate average cost of each system, and from these obtain the mean cost.

As the service of sire and keep of dam some time previous to her dropping the calf are items of cost, it is quite reasonable to value the

Calf at birth at	\$ 3 00
Whole milk three weeks and skim milk four months	5 00
Meal, 100 lbs., during six months	1 00
Pasture, first summer	1 00
First winter's feeding—hay, straw and chaff	4 00
First winter's feeding—50 bushels roots	4 30
First winter's feeding—250 lbs. meal and bran	2 00
Cost when twelve months old	\$20 30
Second summer's grazing	\$ 3 00
Second winter's straw and chaff	6 00
Second winter's roots, 60 bushels	5 00
Second year's cost	\$14 00
The third summer's grazing to fatten	6 00
The total cost at thirty months is	\$40 30

And our average steer will now weigh 1100 pounds. As 3½c. per pound live weight is about the highest price usually realized for ordinary fat steers during the fall months, it will be seen that this grass-fattened animal has made less than one dollar of direct cash profit during the thirty months care and trouble. The value of the manure produced, less cost of attendance, is also an item to be considered as profit, though the majority of stock raisers reckon one as balancing the other.

We fancy we hear a raiser of half-starved scrub cattle exclaim, "Why, your estimates of cost and proceeds are altogether too high. My calves are fed neither meal, hay nor roots, and I sell them when three and one-half years old for \$25." If asked regarding his profits, he admits that he cannot tell, but suspects that his stock raising is not helping to fill his pocket very rapidly; or, perhaps, we listen to a farmer who believes in pushing on the calves so as to keep them constantly growing, and he says:—"The cost of raising my steers and fattening them to be ready for the market when 26 or 28 months old is \$60 each, but they bring \$70 or \$80 in cash and a large quantity of first-class manure."

We cannot for a moment doubt such statements, being based on actual experience. Prof. Brown stated before the Agricultural Commission that the average fat three-year-old steer, which he was accustomed to handle at the Ontario Agricultural College, cost \$175.00.

To have a stall-fattened steer ready for the market at 30 months directly from the stable, he

requires to be dropped in early winter. His first year's cost will be as follows:—

Value at birth.....	\$ 3 00
Milk, whole and skimmed, during four months.....	5 00
Meal, hay and oats during winter.....	4 50
Pasture, first summer.....	1 50
<b>First twelve months cost.....</b>	<b>\$14 00</b>
Second winter's straw, hay and chaff.....	5 00
Second winter's roots—80 bushels.....	5 00
Second winter's meal and bran—200 lbs.....	1 75
Second summer's grazing.....	3 10
<b>Second year's cost.....</b>	<b>\$17 75</b>
As the proper season has arrived to begin the fattening process, the expense during the next six months will be:—	
Hay and chaff.....	\$ 5 00
Meal and bran.....	12 00
Roots.....	14 00
<b>Cost during the last six months.....</b>	<b>\$31 00</b>
<b>The total cost will be.....</b>	<b>\$62 75</b>

The weight is 1,350 pounds live-weight, and value at 5c. per pound—\$67.50—giving a direct profit of \$4.75.

While reckoning the cost of grain, roots, etc., I have taken the average cost of production, as given by the statistics of Bureau of Industries for 1887, and values are given according to the average prices received in our leading markets for ordinarily good grade animals during the past five years.

Not only does the stall-fattened steer give the greatest cash profit, but the largest amount of stall-made manure, and most valuable also, on account of the heavier feeding at the finish.

The grass-finished animal with 95c. profit, and the one fattened in the stall \$4.75, give us the mean profit of the average thirty months steer as being \$2.85. The cost of the former is \$40.30, that of the latter \$62.75, or a mean cost of \$51.52½.

As it has been shown that the average steer yields a small profit, the next consideration is, how can it be increased?

As the Emerald Islander would say, "we must begin before the beginning." Dams and sires must be so mated that the offspring will have the tendency bred in them to mature early, and lay on flesh rapidly. In other words, the first step towards increased returns, must be the production of what might be called an animated machine, which will convert the greatest amount of raw food materials into the finished products of frame, flesh and fat in the shortest period. Then the manufacturing must be constantly carried on to the full capacity, for if the food is so reduced in quantity, or lowered in quality as to check growth, lessen condition, and prevent the accumulation of flesh, the largest available profit will not result. Were we given a quantity of proper food to change into beef, knowing that an animal requires a certain amount to sustain life without any advancement in weight or condition, would it not reduce the ultimate returns to employ ten steers to bring about the change, if seven or eight specially-bred ones would accomplish the work in the same length of time? Undoubtedly, the food saved from having two or three less structures to build and maintain, would give considerably more of the finished article—beef. A further saving would be had in less stabling, attendance, etc.

As "a penny saved is a penny gained," so is the prevention of waste in connection with stock raising necessary in all details to insure the most abundant returns; therefore, careful breeding, judicious feeding, and so managing as to have the animal ready for the market at that season when the available markets usually yield the highest prices, are the means whereby the profit resulting from the rearing and fattening a thirty months' old steer may be greatly increased.

### The Science and Practice of Stock Feeding.

BY PROFESSOR G. H. WHITCHER,  
Of the New Hampshire Agricultural Experiment Station.

For the next few months the subject of stock feeding must necessarily occupy much of the time and attention of the successful farmer, and as the importance of this subject is often overlooked I will briefly state the latest available statistics on live stock. It has been found, by numerous experiments, that on an average, it will require twenty pounds of hay, five pounds of corn meal, and two pounds of cotton seed, or an equivalent of these, daily for one thousand pounds of live weight,—this is necessarily an average for horses, oxen, sheep, cows, and growing cattle.

At the outset I wish to say, that the science of stock feeding is the key to better practical work. It should go hand in hand with the practice, pointing out possible improvements, and showing the losses which many old methods entail. Science can never take the place of practical knowledge, but it can point out the methods which lead to success. True science and good practice never conflict; if theory and practice lead to opposite conclusions, either the science or the practice is wrong. A practice not based upon science may be right, or it may be wrong, just as a man may guess right or wrong, but at best such practice, whether in agriculture or engineering, contains too many elements of uncertainty.

Theory and practice must go hand in hand to arrive at the best results in the best way. This is as true in agriculture as in any other pursuit.

The two factors with which we have to deal in stock feeding are *plants* and *animals*, and we will briefly consider the principles of their growth and composition. *Plants and animals are mutually dependent* for their existence. Without *plants*, *animals* would perish, and without *animals*, *plants* would in time die for lack of an atmosphere suited to their wants.

#### PLANT GROWTH.

When a kernel of corn is planted under favorable circumstances it produces a stalk and ear that may weigh five pounds. It is evident that the little kernel, weighing but a small fraction of an ounce, could not have furnished all the material from which the stalk was produced, and the soil and atmosphere must have made up the deficiency.

The leaves of the growing plant absorb from the atmosphere a gas, known as carbonic acid gas; the roots take up water, in which potash, iron, sulphur, lime, phosphoric acid, and magnesia, are dissolved, and the roots and leaves both take up nitrogen in combination with other elements. Within the plant these simple substances are combined in wonderful ways, forming many compounds having unlike properties; for example, the carbonic acid taken in through the leaves, and the water taken up by the roots, furnish the elements from which starch, sugar, oil, vegetable acids, mucilage, gum, etc., are produced. By the addition of nitrogen and sulphur a class of compounds are produced which resemble the white of eggs. Wheat gluten is an example of this class. One of the chief characteristics of plants is this power of taking the elements contained in the soil and air, and from a few, forming an almost endless variety of substances having the most diverse properties.

Sugar and acids, starch and oil, strychnine and quinine, are a few of the many. This power is not found in animals. Not a grain of starch was ever produced from the elements of carbonic acid and water, except by plants; animals are dependent upon plants for their food. During the growth of plants they are constantly taking in carbonic acid, using a part of it in the production of starch, sugar, etc., and giving off oxygen; the result of this is to use up the carbonic acid of the atmosphere and overcharge it with oxygen; animals, however, produce just the opposite effect; they take in and use oxygen and give off carbonic acid. This is the one thing that keeps nature's books balanced.

A plant put under a tight jar would in time so far use up the carbonic acid as to die from lack of food; a mouse under another jar would use up the oxygen and increase the carbonic acid until suffocated; the two if put under the same jar would keep the air right for both. The oxygen given off by the plant would supply the mouse while the carbonic acid exhaled by the mouse would furnish just the kind of food necessary for the plant.

#### FOOD.

A *food* may be *complete* that is capable of furnishing all that an animal requires, as grass, or it may be *incomplete* or not capable of sustaining life, when fed alone, e. g., starch, sugar, oil, etc. These are just as much food, however, as grass.

In the machine shop the mechanic learns the peculiarities of different machines by taking them apart and noting their construction. In the laboratory the chemist learns the characteristics of various plants and fodders by taking them apart, so to speak, but instead of the vise he uses the crucible, in place of the monkey wrench he uses various acids, alkalies, etc., to tear apart the plant and separate it into the constituents of which it is made up; instead of the accurate rule measuring to the 1/10000 part of an inch he uses delicate balances, which weigh to the 1/100000 part of an ounce. The object of both the mechanic and the chemist is to get a knowledge of the internal structure which simple inspection cannot give. If plants were made up of but one kind of material there would be no need of chemical analysis. But such is not the case. If we press out the juice of a stalk of corn and evaporate it we get *sugar*; if the dried kernels are ground into a paste, with water, and then washed and manipulated in certain ways a large per cent of *starch* is obtained. If another sample of this corn meal is boiled with ether and the ether poured off into a clean dish and evaporated there will be found a clear yellowish oil, or *fat*, which the ether dissolved out of the corn. If wheat dough is washed until the starch is removed, a tough, sticky mass is left, this is known as *gluten*. These four substances represent the most important constituents found in fodders.

The chemical composition of fodders and feeding stuffs is determined and expressed in the following way: *Water* exists in all plants, the amount is determined by weighing a sample of the given substance and then drying it at 212°, until it ceases to lose weight, the loss is water, the part which remains is called *water free substance* and is made up of: 1st, *albuminoids* or substance resembling albumen or the white of eggs, wheat gluten or "wheat gum," already alluded to being the most familiar illustration of this class. The albuminoids contain not far from

sixteen per cent of nitrogen and on account of this they are spoken of as the nitrogenous constituents. 2nd, *Nitrogen Free Extract* includes starch, sugar, substances resembling gum, mucilage, etc. 3rd, *Fibre*; this is the woody matter found in all plants, in the flax and in cotton plant it is the part that gives us the material from which linen and cotton clothes are made. 4th, *Fat*; this is determined by dissolving with ether and evaporating the ether, leaving the fat or oil to be weighed. In the seeds of some plants, for example, cotton and hemp, the fat is found in large quantities and is pressed out and used for numerous purposes. 5th, *Ash*; This is the part left after burning a sample of the substance.

The following table shows the chemical composition of corn meal and shorts; the figures are an average of many determinations made at the Massachusetts Experiment Station:

	Corn meal.	Shorts.
Water .....	13.16	11.5
Water free substance...	86.84	88.5
Water free substance contains:		
Albuminoids .....	10.19	16.1
Nitrogen free extract...	68.92	52.3
Fibre .....	2.50	10.0
Fat .....	3.87	4.0
Ash .....	1.36	6.1
	86.84	88.5

This is the customary method of starting an analysis, showing the total composition of fodders. But it is not in shape to be used by the feeder as a means of determining the nutritive value of these two products, because the animal fails to get the full amount of nutritive matter shown by analysis. Food, to be of any value to an animal, must be rendered soluble, so that it can be absorbed and carried through the system in the blood. This process of making the constituents of the food soluble is known as *digestion*, and is effected by the juices of the mouth, stomach, intestines, etc. If animals could digest the whole of the albuminoids, or other parts of corn meal or shorts, then the analysis above given would show the nutritive value. But it has been found that such is not the case. Only a part of each substance is digested. We may illustrate this point by supposing that some one puts on the market a mixture of coal and gravel stones, eighty pounds of the former and twenty pounds of the latter, in each one hundred pounds. The value of this, as fuel, is only that of the eighty pounds of coal, and any estimate based upon the total weight would be erroneous. In the same way each constituent of corn meal is made up of two parts, one *digestible*, corresponding to the coal in our assumed mixture; the other, *indigestible*, and corresponding to the gravel stones. The value of any kind of food is based, not on its total composition, but on the *digestible* parts. It is necessary, therefore, to know what portion of each constituent is rendered available by the digestive juices. The method employed is briefly as follows: An animal is placed in a stall where no food can be wasted, a record of all food consumed is kept, and from the analysis it is possible to compute the exact amount of *albuminoids*, *fibre*, *nitrogen free extract* and *fat*, that has been taken into the system during the entire experiment. All the parts of the food that are not digested pass unchanged through the intestines and are found in the manure, consequently, if all the manure is weighed and samples are analyzed, it is easy to compute the albuminoids, fibre, nitrogen, free extract and fat, that has passed through the animal unchanged, and these

subtracted from the amounts taken into the system will show what portion has been rendered available by digestion. The degree of digestibility is usually expressed by stating the number of pounds that are digestible in one hundred pounds of each constituent. For example, it has been found that of each one hundred pounds of albuminoids fed in corn meal eighty-five pounds are digested. This eighty-five represents the *per cent* of digestibility of albuminoids in corn meal, and is called *digestion co-efficient*. Of the nitrogen free extract, ninety-four out of every one hundred pounds is digestible, in other words, ninety-four is the *digestion co-efficient* of the nitrogen free extract of corn meal. In the same way it is found that thirty-four and seventy-six are the digestion co-efficient of the fibre and fat, respectively. For shorts the figures are eighty-eight, eighty, eighty, and twenty, for albuminoids, nitrogen free extract, fat and fibre. To get the analysis above given into shape to be of value to the feeder, it is necessary to determine what the composition is when *only the digestible* part is considered. This is done in the following table:

	Corn Meal.			Shorts.		
	Total com-position.	Digestion co-efficient.	Amount digestible in 100 lbs. meal.	Total com-position.	Digestion co-efficient.	Amount digestible in 100 lbs. shorts.
Water .....	13.16	...	11.5	11.5	...	...
Water free substance	86.84	...	88.5	88.5	...	...
Albuminoids .....	10.19	85	8.66	16.1	88	14.17
Nitrogen free extract	68.92	94	64.78	52.3	80	41.84
Fibre .....	2.50	34	.85	10.0	20	2.00
Fat .....	3.87	76	2.94	4.0	80	3.20
Ash .....	1.36	...	6.1	6.1	...	...

In this table, in the third and sixth columns we have the available nutritive material in corn meal and shorts, but as the digestible nitrogen free extract and digestible fibre are equally valuable these two may be added together, and in most stock feeding tables this is done, the name *carbo-hydrates* being given to the sum of the two; this term, *carbo-hydrate*, means that portion of the digestible part of food which is made up of three elements, carbon, hydrogen and oxygen, the last two elements being in the ratio of two parts of hydrogen and one part of oxygen.

[TO BE CONTINUED.]

**Veterinary.**

**Parturient Apoplexy, Milk Fever, Puerperal Fever, Calving Fever, Dropping After Calving.**

BY DR. HINEBAUCH.

Veterinarian Indiana Agricultural Experiment Station.

The causes are predisposing and exciting. Among the first may be mentioned high condition; well fed cows, especially heavy milkers, suffer most seriously and extensively from this disease. One attack usually predisposes to another. Age has a great influence, parturient apoplexy being most often noticed from the third to the seventh calving. The exciting cause is the act of parturition. The first symptoms are usually manifested at from one to three days after calving. The sooner they are developed the more serious and fatal will be the disease. There will be diminished secretion of milk, hanging of the head, loss of appetite, and paddling with the hind feet. As the disease progresses the breathing becomes hard and loud; there will be knuckling of the fetlocks, and finally the animal

drops; will perhaps rise, then drop, and will be unable to rise again; breathing becomes slower, accompanied by a peculiar moan. The eyes are blood-shot, wild and staring; the ears, horns and forehead hot, the extremities cold. At first the cow dashes her head about violently, but finally becomes quiet and insensitive to surrounding objects. The head will be thrown around, resting against the side with the nose upon the ground. In some cases the cow lies on her side with the head and legs outstretched. The power of swallowing may be lost or imperfectly maintained. The pulse, at first full, gradually becomes quick, small and almost imperceptible. During the first stages there is slight fever, but the temperature soon falls below the normal; the bowels are constipated, with retention of urine. These symptoms will run their course in from two to twenty-four hours.

The treatment which I recommend is that which I have successfully used the past two seasons, and which can be applied by any one who handles cattle. My attention was first directed to it by an article in the London Veterinary Journal for August, 1887. The first thing necessary is to place the animal in as near a natural recumbent position as possible, keeping her in place with bundles of hay or straw. Place a rope around the horns and fasten the head so that it will be held in a natural position, then give at once (1) twenty to thirty ounces of whisky or a pint of brandy, well diluted with warm water. About half an hour afterward administer (2) from one to two pints of good molasses dissolved in hot water. The molasses creates a thirst; the animal will drink greedily two or three hours after it has been given, and should then be allowed plenty of good pure water. Apply plenty of ice or cold water to the head. If cold water, see that it is applied every ten minutes. A common grain sack wrung out is very good. If the cow is inclined to keep dashing her head about, apply a check rope to the horns, in order to keep her from bruising her head or breaking off the horns. Do not attempt to draw the milk for there is none secreted. If the animal is not comatose, repeat the dose (1 and 2) in four hours, and continue doing so every six hours until you see her recovering. In my experience, with one exception, I have never given more than two doses, one sometimes being sufficient, recovery usually taking place in from twelve to thirty-six hours. Pure alcohol in one-half the dose may take the place of the whisky or brandy. The body should be kept warm with plenty of light woollen blankets.

Veterinary surgeons, or those who have hypodermic syringes, will get excellent results by injecting ten grains of pilocarpin combined with two grains of physostigmine (eserine), in which case remedies 1 and 2 need not be employed. Intertrachial injections give better and quicker results than when injected under the skin.

If the above treatment is resorted to in the early stages of the disease, before the power of swallowing is lost, nearly every case will recover. This disease is easily prevented, but somewhat difficult to cure. For two weeks previous to calving diminish the food. Keep the bowels active by small doses of Epsom salts or a laxative diet. Avoid all highly nutritious food. The common practice with some people of giving extra feed at this period to increase the flow of milk is, without doubt, the most prolific cause of this disease.

most is to obtain a fair knowledge of the milk yield of each cow. To do this a sheet of paper should be ruled in lines both ways, with the names of the cows each occupying a line upon the left hand side, while the days of the month run across the top of the sheet, two spaces being allowed for each, so that morning and night's milk may be recorded. These record-sheets can be made on brown manilla paper, by the use of a rule and lead pencil at a trivial expense. We have found it better to use small sheets and record only for a week on a sheet since large ones are apt to become very much soiled and the figures too dim for easy reference. For scales probably the spring balance is the cheapest, but a platform scale will be more accurate. If one has a double beam scale, the weight of the pails, which should be uniform, can be set upon one of the beams so that no subtracting need be done. Pails can be made of uniform weight by running a little solder upon the bottom of the lighter ones to bring all to a uniform standard.

I believe it will pay any farmer to weigh the milk of each cow every milking in the year. The time occupied in weighing is far less than one supposes. I have often timed our milkers when they did not observe what I was doing, and found three-fourths of a minute to be all that was required for weighing the milk and recording the figures. I believe the extra amount of milk drawn by good, careful milkers will more than pay for this time, since they have upon the sheet before them the results of previous milkings, and do not like to have the yield run down too rapidly.

If one cannot make up his mind to do his best in this particular, let him take a single step in the right direction and weigh the milk for one day in the seven, choosing that which is most convenient for the purpose and having a regular day, say Saturday or Monday. On this day let the morning's and night's milk be weighed, and the same multiplied by seven to determine the yield for the week, or rather at the end of three months calculate the yield of milk from the several weekly weighings for the quarter. At first let each cow's milk be tested until the owner feels confident he understands the quality of each cow. It is not necessary to test a cow quarterly from year to year, but for the first year or so she should be, and in after years occasional tests should be made to ascertain if there are any material variations. From the total yield of milk, as ascertained by the daily or weekly weighings and the percentage of fat, the dairyman has two very essential factors for making up the verdict as to the merits of the individual cows. Of course these are by no means all the factors that must be taken into consideration; the age of each animal, the favorable or unfavorable conditions under which they commenced giving milk, the season of the year, and kind of feed must all be taken into account and are important. I need not enlarge upon these for they are apparent to every good dairyman. Knowing the yield of milk, however, and the quality of it, one is in an excellent position to sort over the herd and dispose of those animals considered as possessing the least merit.

Because of not having a knowledge of the total yield of milk and the percentage of fat contained, I believe that many of the best cows in the herd are sold through ignorance and left without progeny to succeed them. It costs something like forty dollars a year to maintain a

cow, and the profit lies in what she yields above the cost of care and maintenance. From this it follows that even a small increase in the amount of butter very materially affects the value of the individual. I can explain it perhaps better by wheat-raising; supposing it costs 75 cts. to grow a bushel of wheat which brings 80 cts. in the market; five cents then, is all the clear profit there is on a single bushel. Should the price of wheat advance to 85 cts. per bushel the profit becomes twice as great as at the former figure, so that the seemingly small advance is of considerable importance to the grower. The same thing is true with dairy cows. In my judgment a farmer will not use the milk test more than a month or two until he will wonder how he ever got along without it. We have in the past been sailing the dairy sea without rudder or compass. By weighing the milk and determining its richness we can pursue a definite track and make headway far more rapidly than ever before. —[Abridged from Hoard's Dairyman.]

**The Farm.**

**Sir John B. Lawes' Experiments.**

A number of English farmers visited Rothamsted, one of them reported on some of the experiments as follows:—The first experimental plots examined were those in the Park, the object being to show the effects of the different kinds of manures on permanent pasture which has been in grass as far back as can be traced, nor can it be proved that at any time any renovating or other grasses have ever been artificially sown; we may, therefore, take it for granted that it is really what is in some districts termed a natural pasture, or one where the only plants growing before the experiments were begun would be those indigenous to the soil. The very first plots to which our attention was called were two which had been treated thus—A. From 1856 to 1863, eight years, fourteen tons farmyard manure, average produce, as hay, 42½ cwt.; 1864 and since, no manure of any kind applied, the average produce for twelve years, 1864 to 1875 was 38½ cwt., and for eleven years, 1876 to 1886, 32½ cwt., per acre. Plot B. had received no manure of any kind, nor, of course, the droppings of any stock since the year 1856; on this plot, during the first ten years, the weight of hay was only 22½ cwt., or only about half as much as on the plot dressed during eight of the ten years with farmyard manure; for the next ten years the figures were 20 cwt., and for the third period, from 1876 to 1886, 27 cwt. against 32½ cwt., and, what appears still more remarkable, the beneficial effects from the application some twenty-five years since of this farmyard manure are, after this great lapse of time, yet visible; indeed, the produce in the year 1886 from the plot on which the manure was applied was greater by about 4 per cent. than on the unmanured plot. A question was asked of Sir John, if he could account for this marvellous effect of farmyard manure a quarter of a century after its application. Sir John frankly replied that he was unable to give a sufficient explanation; he could only call our attention to the fact. On another portion of the farm we were much struck with the wonderful improvement, not alone in the quality, but also in the quantity of the herbage on the grass land where the cattle had for some years been fed with decorticated cotton cake compared with the adjoining pasture which had not been so treated. Some years since, a keen discussion took place

between a professional man and a practical, as to whether or not a pasture would be cheaply and permanently benefited by the application of nitrate of soda, the whole of the growth of grass being consumed by cattle on the pasture. The farmer maintained that the weight of grass grown on the land, being so much greater and a larger quantity of manure consequently being returned to the land, the latter must be richer and the pasture improved. On the other side, it was maintained that greater permanent benefit at less expense would accrue by the feeding of decorticated cotton cake to the cattle eating off the grass. From what was seen at Rothamsted, it was very evident that if the two systems were on other points equally beneficial the advantage must be immensely in favor of the use of the cake against the nitrate of soda, so far as the herbage is concerned. We saw how changed and improved the grass was where cake had been for some years fed to the stock, and we also saw that heavy dressings of ammoniacal manure alone had actually exterminated all the finer and better grasses, whilst on other plots, where the dressing was lighter, the ill effects on the herbage were still visible, although, of course, not to the same extent.

**Farming Affairs in Great Britain.**

(From our English Agricultural Correspondent.)

London, Jan. 12.

**RETROSPECT AND PROSPECT.**

The past year has been, in many respects, a remarkable one for British agriculturists—full of disappointments in respect to its brightest promises and its worst threats alike. It is characterized very differently by various classes of farmers; to some of whom it has brought good fortune and bright hopes, while to others it has brought losses and depression. It opened favorably, with mild weather after a dry early winter, and with autumn-sown crops in excellent condition, but, at the end of January a severe winter set in and lasted, with few and brief intermissions, nearly to the end of March, being followed by a heavy rain-fall. By this time it was found that the fall of lambs had been a very short one, and this was the first disappointment. Next to deplore was the lateness of spring sowing, which was not generally begun till the first week of April, by which time it should have been nearly finished; but, the land worked exceptionally well after the frost, and barley and oats were sown quickly and well, as were peas and beans, though very late, and mangolds and Swedes afterwards. A hot and showery summer would have given us a splendid harvest, as the crops were thick on the ground at the beginning of June, though backward. Unfortunately, we had instead a very cold and persistently wet summer, which injured nearly all the first crop of hay, and quite spoilt a good deal of it, besides beating down the best of the grain crops. Harvest began about a month later than usual—the weather still being wet. It was not till September that fine and sunny weather set in, and by that time about half the grain crops had been stacked in damp condition. Then we had a fine autumn, which ripened the crops in the late districts, and enabled them to be got in better than could have been anticipated, while excellent second crops of grass and clover were made into passable hay or good silage—the latter chiefly by the stack system, instead of in silos. Even for the root crops the summer had been too cold and wet, and consequently they proved only moderately good

instead of bulky crops. Potatoes, as usual in a wet season, suffered badly, being more affected by disease than for many previous years. The hop crop, too, was nearly ruined, and a very poor yield was obtained, and mostly a bad quality also. The preliminary summary of the official agricultural produce statistics estimated the yield of wheat in Great Britain at 28 bushels an acre, as compared with the ordinary average of 28.8 bushels; barley at 32.84 bushels, against the ordinary average of 35.39 bushels, and oats at 37.24 bushels, as compared with 39 bushels for the ordinary average. The wheat, though measuring better than expected, proved to be very light and poor in quality, while barley was a good deal discolored, and oats were generally light. Prices rose early in September to the top figures for the year; average price of wheat going up to 38s. 1d. per quarter of eight bushels, whereas for the first half of the year the average had ranged from 30s. to 32s.; but a great foreign and home supply soon brought values down, and at the end of the year the average was a little lower than at the beginning. So far, the record is chiefly one of misfortune; but for produce, other than corn crops, the returns have been fairly satisfactory on the whole. Cattle and sheep rose in value early in the year, so that it is estimated that the price of the former, lean and fat together, was fully £2 a head, and that of the latter 7s. 6d. to 10s. a head higher than in 1887. Dairy cows yielded an extraordinary abundance of milk, in consequence of the profuse production of succulent food. The prices of dairy produce were low in the season of plenty, but chiefly because of the extra production. Stock-keepers, then, did well, as a rule—much better than in 1886 or 1887. As to prospects for the new year, we start well with autumn-sown crops in excellent condition, with plenty of keep for stock for the rest of the winter, and with the young clovers and pastures in fine order for an early bite, should the season be favorable. The tupping season for ewe flocks, too, was so propitious that a good fall of lambs is expected. With respect to prices, wheat can scarcely fail to rise considerably in value, and other grain too, though probably to a less extent. Should the trade of the country continue to improve, the prices of meat and dairy produce will probably be higher than they have been in recent years. There is a more general feeling of hopefulness among farmers here than has been noticed since the long period of depression set in, and it is pleasant to see that the same may be said of the Colonial farmers, excepting those of Australia, where drought has played havoc with the crops, and the herds and flocks also. Let us hope that an era of prosperity has set in for the farmers of the world, and may they do their utmost, with courage and assiduity, to deserve success.

A Colorado feeder is so well pleased with the following experiment that all of his future lucern crops will be stored for winter the same way: "A stack was put up last fall by placing a layer of straw and then a layer of green alfalfa—continuing until the stack was completed. There were doubts whether the green fodder would not sour and mould. It did not, and now comes out bright and sweet. The cattle eat every particle of the mixture as greedily as they would the finest clover hay. This simplifies the manner of putting up hay feed. No drying needed—no extra handling—and no loss of precious leaves of the great plant."

## Entomology.

### Entomological Society of Ontario. (Continued from page 16.)

Passing on to the first-class pests of the season it was stated that the insects which had been brought oftenest before the notice of the Society were grasshoppers and cutworms. The increase in the numbers of the grasshoppers beyond the usual numbers was due to the dry, hot weather during July. A remedy which could have been applied in the Ottawa district was the cutting of the hay crop about a fortnight sooner than was usually practiced. Grasshoppers do not possess wings with which to fly from place to place in search of food until they reach the last or perfect stage. This takes place about 1st July. Had the hay been cut about the 20th June vast numbers of the young, half-grown insects must have perished for want of food. As soon as the hay crop is cut the part left exposed on the field is at once dried up by the sun and the plant does not shoot up again, except in very wet seasons, for some weeks. What is left is entirely inadequate to satisfy such hosts of insects as there were this year. By waiting until 1st July the grasshoppers were full grown and possessed of wings, with which they flew from the fields and attacked all green vegetation.

Early in the spring reports had come in from all parts of Canada complaining of the ravages of cutworms. These are the caterpillars of dull-colored, active moths belonging to two or three families, which fly at night time. As a general statement their habits may be said to be as follows:—The eggs are laid upon low vegetation during the summer or autumn. These hatch, and the caterpillars either come to maturity the same season and pass the winter underground in the chrysalis state, or after hatching feed for a short time and pass the winter as small caterpillars in a torpid condition. The effects of their attacks are seldom noticed in autumn on account of the abundance of weeds and other vegetation. As soon as spring opens these small caterpillars revive, and at once attack the nearest plants. At that time of the year their injuries are particularly noticeable, owing to the ground being free of weeds and there being nothing for them to eat except the plants the farmers and gardeners are growing as crops. They are very voracious and grow rapidly. There is a great variety of these cutworms; but they may all be described generally as smooth, greasy-looking caterpillars, of dull colors, similar to the ground in which they hide during the day. Their attacks may usually be at once recognized from their habit of biting off the stems of young plants close to the ground. When occurring in the vast numbers they did in many localities during the past year they are very difficult to combat; but there are several remedies which may be tried with a certain measure of success.

The following are amongst the most useful:—For those kind which pass the winter as caterpillars, late ploughing has been found advantageous. By this means they are disturbed in their winter quarters, and exposed unprotected to the effects of winter's frosts. For those kinds which climb trees and destroy the foliage, syringing with a weak mixture of Paris green, or at night time with a kerosene emulsion, have been found efficacious. A sheet of tin rolled round the base of the tree in the shape of a tube and held in

position by a piece of twine is also a sure remedy, because these heavy-bodied caterpillars cannot crawl over it.

Similarly merely wrapping a piece of paper round the stems of cabbage or tomato plants at the time of planting out, has been found effective, except in instances when the insects occur in very large numbers.

Sand saturated with coal oil or carbolic acid, or a small quantity of fresh gas lime sprinkled amongst newly set-out plants, will, to a large measure, protect them from the attacks of these insects. There is a method which has been suggested by Prof. Riley, of Washington, by which large numbers can be destroyed. This consists of tying up loose bundles of some succulent plant (clover or lamb's quarters would do), and, having sprinkled them well with Paris green and water, lay them at intervals as traps amongst the plants to be protected.

The apple worm, the caterpillar of the codling moth, has been destructive in many localities; but by judiciously spraying the trees directly after the petals had fallen from the flowers, many fruit growers had considerably lessened this evil.

The Colorado potato beetle and the gooseberry and currant saw-fly are no longer to be feared, as easy, and, when properly applied, perfectly harmless remedies had been discovered in Paris green for the first and hellebore for the latter.

The army worm had been reported as injurious in many localities; but specimens of the true army worm had only been sent in from the Lake Temiscaming district. The others all belonged to a form known as the fall army worm. The habits of the two differed considerably. It was not often that the last named insect appeared in the large numbers it had during the past year.

It was satisfactory to note that, without exception, every consignment of these caterpillars which had been sent in, contained a large proportion of specimens which had been attacked by beneficial insects. One lot of over a dozen specimens, instead of producing moths had only given parasitic flies, the maggots of which had fed inside the living caterpillars. It must not be forgotten that all insects are not injurious, for a large number feed entirely upon injurious species. The beneficial insects which attacked these caterpillars were a two-winged fly, like a rather large house-fly, and an Ichneumon fly, an insect belonging to the same natural order as the honey bee.

The eggs of these friends of the farmer are laid either on the surface or are inserted beneath the skins of their victims. When the young grub hatches it eats its way into the caterpillar, but always avoids the vital parts. Here it lies in the cavity of its victim's body feeding on its juices, and growing with its host until mature.

There were many other matters of scientific or society interest touched upon which our space will not permit us to dwell upon. In concluding, attention was drawn to the introduction of the English sparrow into Canada, which was stigmatized as a grave mistake.

The common hazel bush is a very hardy plant, and when once well established in a pasture the task of eradicating has sometimes proved a difficult one. It has been found, however, that if the bushes are cut in the fall, after the ground is frozen hard, but few shoots will make their appearance. A stout bush scythe or bush hook is the proper utensil for cutting the bushes, which should be done as close to the ground as possible. The brush should be left on the ground, covered by the clumps of bushes, and when dry the following spring should be burned, after which sow on a quantity of grass seed, and scratch the ground with a garden rake. The roots of swamp alders and other bushes which are cut when the ground is frozen hard in the fall seldom throw up shoots as they will if the bushes are cut at any other season of the year.

## Garden and Orchard.

### Keiffer's Hybrid Pear.

This new fruit is a very remarkable one, and in many respects valuable. Chief among its merits is its early bearing. If a tree is set out at three years from the bud, (which is the age usually preferred), it will in four cases out of six, produce fruit the second year from planting. So here we have all the merits of a standard tree, and the early production of the dwarf; this is of great value. Again, for hardiness it is unequalled by any other variety. For productiveness it is equal to any, but cannot of course surpass some of the older varieties. For canning and preserving it is excellent, but as a dessert fruit it is not more than third rate. Contrary to the usual custom of standard pear trees, it seems to flourish on sandy soil equally as well as on clay.

### Coal Ashes for Strawberries.

E. S. Goff, of the New York Experiment Station, says: "Three years ago, at Dr. Sturtevant's suggestion, a bed of Sharpless strawberries was planted out and heavily mulched with coal ashes. The object was to see if this material would not act beneficially in keeping down weeds. It has done this in a marked degree, but this is not all. The yield from the plants has been more abundant than from another bed of the same variety that has received excellent culture of the ordinary kind. The plants have been almost entirely free from blight, though the Sharpless blights badly here when grown in the ordinary way. I should have stated that the bed has received no culture since the mulching, except to remove the weeds that were strong enough to grow through the three inches of coal ashes."

### Fruit in British Columbia.

Mr. A. McD. Allan writes from British Columbia that the Province is far behind in fruit growing. California and neighboring states furnish an inferior quality of pears and apples. He deprecates the apathy of the people to their own interests. Where trees are planted they are poorly cared for. The trees being overgrown with moss, and unhealthy in appearance, limbs are chopped off without regard to the future usefulness or beauty of the tree, while the utmost care is really necessary, as the crops of apples are so heavy that the trees are scarcely able to carry them. Mr. Allan thinks an association similar to the Ontario Fruit Growers' Association would be of great benefit to the Province. He says further:—They have magnificent stretches of valley land where fruit could be grown to perfection, if given proper attention, and which would be comparatively easy, as the soil is easily cultivated, and the climate very favorable. This state of affairs should not surprise Mr. Allan, who has had so much experience in Ontario, where fruit growing has received little attention in comparison to what it should have had until quite recently. Even now, with all our advantages, a majority of our farmers will tell us that it does not pay to grow apples, and yet the fact remains, that if properly cared for the orchard will yield a greater profit than any other department of the farm, even at the low prices of this season.

Mr. A. finds the people on the prairies much more alive to their interests in forestry and fruit growing than those of British Columbia, although their facilities are not nearly so great, and there is little doubt that the interest taken in forestry in Manitoba and the North-west Territories will prove of great benefit in future years, and will doubtless, to a certain extent, exert a beneficial influence on the climate.

## The Apiary.

### Outside Wintering.

Quite a lengthy discussion followed upon the above subject. The general results from outside wintering by members present, appeared to be that there was less spring dwindling from colonies wintered outside, but that they consumed more stores than if wintered indoors. The bees should be packed in sawdust or chaff before the cold weather arrived, which would be likely to penetrate the hive.

### Bee-Keepers in Convention.

The Ontario Bee-keepers' Association has been in existence nearly ten years. Before incorporation, the annual meetings were held in Toronto, and generally during the time the Toronto Industrial Exhibition was held. Since incorporation it has held one meeting in Toronto, one at Woodstock, and the last one, January 8th and 9th, at Owen Sound. The next regular meeting will be at Belleville, the time being the second Wednesday and Thursday in January, 1890.

There will, however, be a special general meeting, probably before that time, to meet the International at Brantford, as that body will meet at that place. The meeting at Owen Sound was, perhaps, the most poorly attended since the organization of the Association, but when we consider the failure of the honey crop of 1888, this will not be wondered at; the condition of the roads throughout the Province at the time, and the locality, had doubtless something more to do with the meagre attendance.

It is, however, gratifying to know that the season of 1888 has been a very prosperous one. The membership is now 231, making nearly 80 more than the previous year, which was also the best on record up to that time. This association is now the largest Bee-keepers' Association on the American continent.

Martin Emigh, Holbrook, the President, called the meeting to order at two p. m. of the first day. The Treasurer's report showed a balance on hand to expend of \$255.75.

The Secretary in his report showed that about 1000 invitations had been sent out to bee-keepers, inviting them to become members. The affiliated societies numbered eight, being the Listowel, Mount Forest, Western Ontario, Norfolk, Oxford, Brant and Haldimand. The number of colonies held by the members of these associations is, spring count, 2,717; fall count, 3,138; pounds of comb honey taken 10,177, pounds of extracted honey taken 22,638. The County of Haldimand has evidently not taken one pound of honey, and the Listowel not five pounds per colony. It is fair to assume that the best of the reports have been given in, and this will show how great the failure has been.

The President, in his annual address, stated that although the past season had not been a good one for the production of honey, there was much to be thankful for. He referred to the appointment of the Hon. Charles Drury, as Minister of Agriculture, and thought the appointment would meet with the approval of all bee-keepers.

Reference was made to the increased facilities and inducements offered by various agricultural societies, for the displays of honey and apian supplies.

A paper was now read by S. C. Pettit, Belmont, Ont., the subject being

### PRIORITY OF LOCATION.

Mr. Pettit explained its present position, and showed that the idea was gaining ground that one bee-keeper, especially a specialist, should not encroach upon the territory of another; that such would prove a detriment to both. He also claimed, that because a man's bees had gathered nectar from the flowers on certain fields, this did not entitle him to the nectar of coming years. Legislation appeared to be advocated by Mr. Pettit, which would entitle a specialist to a certain territory by the payment of a small tax, which would go, say, towards the payment of municipal expenses.

### Ventilation.

S. Corneil opened up the discussion upon this subject, claiming that bees required pure air, and not sufficient attention was directed towards ventilation. The repositories should be ventilated, and the hives should be ventilated. He preferred a loose bottom board, in order to allow a rim two to three inches deep, to be placed under the brood chamber in winter. He claimed that if only one entrance were permitted an upright ventilator should be used, not one horizontal, and by means of a dense smoke created in the hive, showed the upward tendency of currents of atmosphere in the hive. A straw hive was also shown, which was claimed to retain the heat better than wood, and yet act as a ventilator to a degree. The smoke was shown passing slowly through the walls of the straw hive. Allen Pringle gave a paper upon "Bee-keeping for Pleasure and Profit." Mr. Pringle claimed that although bee-keeping and the study of bees had much about it that was fascinating and gave pleasure, there were but few who kept them or would keep them aside from the profit to be derived from them. He claimed that more and more was it obvious that bee-keeping should be combined with some other pursuit. The failures of the last two years made that more apparent. The hive to be used and the bee would probably vary under different circumstances. The Carniolian and Italian bees were mentioned as gentle bees, the former especially.

Owing to the attendance of less than twenty-five, the ordinary railway rates only could be secured, which disappointed some of those who came to the meeting.

A paper upon "Bee-keeping: its Relation to Agriculture," will be read at the annual meeting of the Ontario Agricultural and Experimental Union, held at the Ontario Agricultural College, February 7th and 8th.

Farmers' Institutes are in some instances giving bee-keeping its proper place, by putting it on their list of topics, for discussion at their various meetings. This is as it should be, and it would be only just and proper if more would follow the example of those who have so commendably taken the lead in this matter. The specialist is losing ground, when he is unable to supply the necessities for home out of a business for two years. Good seasons which we expect will follow, will not supply his immediate wants, and naturally he looks for something to combine with bee-keeping, and which may not prove a failure at the same time, as bee-keeping; in short, to prevent having all his eggs in one basket.

### Poultry.

#### Poultry Shows—Are They Beneficial, and in What Respect?

That the fanciers of pure bred poultry have reduced breeding, feeding and judging to a science more than any other class of breeders cannot be denied. First, poultry is the only line of stock that is at present judged by a scale of points. The poultry departments of the various exhibitions are the only ones that are judged by one man; there are twice as many poultry associations existing in Canada at present, as in any other line of stock, and in every instance, so far as we can learn, these associations have given an impetus to poultry breeding in their locality. That poultry shows exert an influence for good cannot be denied. In attending them, many persons who have never taken a special interest in poultry are led to do so, very often buying some improved variety. Next comes a desire for poultry literature, which leads to a greater knowledge of their requirements, and the result is better care, not only of the late acquisition, but the original stock of mongrel birds. From a study of the results, he learns that corn is not the best food for egg production, even if the hens do eat it greedily, and very often even learns the difference in the feeding value of the different kinds of grain. This may not always be the case, but the tendency is in that direction.

#### Black Minorcas.

Just what relation they bear to the White Faced Black Spanish, we cannot at present state; but they have long been known in England as Red Faced Black Spanish. They are a handsome bird viewed from the standpoint of a fancier, but their massive combs and pendulous wattles require the same treatment accorded the Leghorns, as noted in another article, viz.: a reduction in the size of the wattles and comb.

Some very fine specimens have been imported from England this season. Mr. Geo. McCormick, of this city, has brought over about \$300 worth, chief among which is one of the finest cockerels ever bred in England, for which he paid the modest sum of twenty-one guineas, and one pound sterling for the coop he was shipped in, making about \$115 besides express charges.

There is little doubt that they will in time prove a valuable fowl for this country, but not until the size of the comb and wattles have been reduced very much. They are prolific layers of large white eggs, but are not hardy enough to stand much exposure.

Lewis Wright, who is the best authority extant on these breeds, says:—"This breed resembles in comb, ears, shape, and color of plumage, the White Faced Black Spanish, but considerably surpasses it in size, and on an average we consider the comb more largely developed, and the legs are shorter. A good cock ought to weigh from eight to nine pounds. It is the best layer of all the Spanish breeds, except, perhaps, the Andalusian. The chickens are tolerably hardy. It is a great favorite in the West of England, and deserves to be more widely cultivated, as it far surpasses the above breed in everything except the White Face."

This, however, was written in England, where the winters are not so severe as in Canada, and due allowance must be made therefor. There is no doubt, however, that the Minorcas are a hardier and better breed than the White Faced Black Spanish.

### Buffalo Show.

With the exception of Light and Dark Brahmas and some varieties of Cochins, the show was in quality below that of the Ontario Association at St Catharines early in January. The numbers were very large, about twenty-four hundred entries in all—150 Brown Leghorns, 150 Laced Wyandottes, 75 White do., 140 P. Rocks, 75 Buff Cochins, 50 Partridge do., 75 Langshans, 60 White P. Rocks, 59 Dark Brahmas, and 130 Light do. The show was not as well managed as our own usually are.

#### Ontario Poultry Association.

The show of this Association was held in the Central Rink, St. Catharines, the second week in January. The exhibit was of a very high order, so far as quality is concerned, but without the actual number of entries, and judging from appearances, the numbers were lower than they have been in some previous years. Most of the standard varieties were fairly represented, and in some cases the numbers were very large, especially was this the case in the Light Brahmas, in which class there were above fifty entries, and so keen was the competition that in no instance did one exhibitor win two first prizes. Some of the finest Hamburgs and Polands ever exhibited in Canada, graced the coops. Black Minorcas were out in large numbers, a few White Minorcas as well, but not of such quality or quantity as the blacks.

Mr. Knight, of Bowmanville, showed some very fine specimens of Andalusians; Mr. R. Oke, of London, some Crevecoeurs. A pair of Golden Wyandottes were on exhibition, but we have not the name of the exhibitor. Several coops of Rose Comb Leghorns were shown, the Browns were scarcely up to the mark, but the White ones were really grand. Mr. Peter, of Angus, won most of the prizes. Several fine White Plymouth Rocks were shown, Mr. Wallace, Woodstock, being the leading exhibitor. White Wyandottes were really magnificent, Messrs. McCormick (London), and Corcoran (Stratford), were the principal exhibitors. A goodly number of birds put in an appearance from across the Niagara river.

Owing to the fact that the show was held on the third flat of a large building, the attendance of visitors was small. The directors expect, however, to show a good record, and pay one hundred cents on the dollar, which has not always been done by previous Boards.

On Wednesday evening of the show, a supper was given by the St. Catharine's Association to the outside exhibitors, when the correct thing was done (we understand) in the matter of toasts, speeches, etc.

The annual meeting of the Association was held in the parlor of the Murray House, on Thursday evening of the show, when the following business was transacted. Officers elected—President, J. C. Rykert, M. P., St. Catharines; 1st Vice, A. Bogue, London; 2nd Vice, Wm. Barber, Toronto. Directors—T. H. Smelt, Guelph; Sharp Butterfield, Amherstburg; Wm. McNeil, London; Knight, Bowmanville; Russ, Grimsby; Jno. Cole, Hamilton; Messrs. Lawrence, Pay and Crowie, St. Catharines. A resolution was passed that hereafter the Treasurer of the Association give security to the amount of \$1000. Also that the show of the Association be held next year in St. Catharines.

It was moved, seconded and carried, that hereafter the show be held but one year in a place consecutively. After the meeting adjourned, a meeting of the Board of Directors was held, when Robert Hammill, of St. Catharines, was elected Secretary, and Mr. Crowie, Treasurer.

### The Spanish Breeds.

BY W. G. PETER.

I have kept and bred the W. F. B. Spanish, but have not had any for eight years past; in fact, as soon as I got Plymouth Rocks, I gave up keeping the Spanish, as I found the Plymouth Rocks so much hardier and better layers, though the eggs were not quite so large, besides the Rocks are so much better for the table, and the chicks are very hardy. I found much trouble in raising the Spanish chicks. As I had already a few years experience with White Leghorns, I concluded to keep them and the Rocks, and parted with the Spanish—I have never regretted the step. I believe the W. F. B. Spanish lay the largest eggs of any breed; Leghorns are not far behind them for size of eggs, and will lay far more in number in the year. Spanish have, to my taste, a disagreeable flavored flesh, though larger than the Leghorn in body; but the Leghorn up to a year old are quite nice for the table, a plump, delicate flavored bird; the brown are the best flavored and more juicy meat than the white. In my opinion in the Leghorn, we have a much better breed than the W. F. B. Spanish. Another item in favor of the Leghorn is, that there is no breed that I have had under my care that will give better results in hatching, and not many so good. The rose comb variety are only better in standing extreme cold; and will lay more eggs in winter than those with single comb, as I have proved by careful experiments. I also consider them the handsomer bird.

They are fast becoming favorites, and I have had to refuse a large number of sales this fall; they are improving in my hands, for I could see their faults when I first imported them—four years ago—and, though I imported none scoring less than ninety points, I could see they needed improving. Any one who has followed the shows, year by year, has had an opportunity of seeing the progress that has been made, and, I am proud to say, by my own efforts to improve, for those who were breeding a few years ago have ceased to exhibit, or even breed them, not recognizing their possibilities. I am pleased to find them becoming so popular, and they will keep, by merit, the position they are gaining in public favor. The rose comb, in any variety for utility, is a desirable point, and it should be small and firm for best results; large combs have no influence on egg production; it is a mere theory, and is not warranted by the facts of tainable from long, careful and intelligent observation. We are gradually reducing the single comb to sensible dimensions for our severe climate; yet, they are just as good layers in summer and better in winter than formerly; the males are not suffering in vitality as was predicted, since judges took half a yard off their wattles and three or four inches off their combs; they are just as sure stock getters, and their progeny as sturdy and precocious as before.

Re Black Minorca and Black Leghorn. The Black Leghorn, to my mind, is too much Minorca; a true Leghorn is yellow-legged—just as if we are to have the Black Wyandottes, they must have the yellow legs to be true to the breed. A Black Wyandotte with black legs is a mixture of some kind, and it is not hard to hit on two or three crosses that would do it. I have had no experience with Minorcas, so cannot say anything with regard to them; but this I may say, I have seen some recently that I thought really beautiful, to which reference is made in another column. I have never seen any before that created so much interest in my mind in the variety; they were typical show birds, and, no doubt, will prove they can beget show stock—the hen being large enough to throw fine males.



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 to 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.

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

How They Fare in Manitoba.—It is some time since I noticed anything but very brief notices of Manitoba in your columns, but I suppose it is the same with others as with myself. We don't feel fit for any literary effort after working in the fields all day. The evenings are now getting longer, and scribbling will be in order again. The outlook for the farmers here is brighter and more hopeful than it has been since boom days. The crops as they stood in the fields looked exceptionally good and gave fair promise of a grand and bountiful harvest, but when it came to handling the sheaves they seemed to be a little too light, and I am afraid the threshing machines will lower our estimates considerably. Our season was about a month later than last year; whether or not there is any quantity of frozen grain, it seems impossible at present to say. Many farmers report their wheat frozen, while the newspapers say there is little or no frozen wheat in the country, so we must, I suppose, wait a little and hope for the best. I am glad to be able to say that I believe there is but a very small quantity of the late wheat frozen in our locality. We had no frost to hurt wheat until the second week in September, when most of it was too ripe for Jack Frost to do it any damage. On the other side of the line, in Northern Dakota, the farmers tell me there is considerable damage done by frost. In the localities that escaped, the farmers have done well, getting over \$1 for their wheat, and barley 50c. per bushel. In Manitoba the price has gone over \$1 per bushel for wheat; now, I think, the top price is 82c. This is a great improvement on the prices of previous years, and the farmers generally are feeling pretty jubilant, and the future looks brighter because many have been able to shake off the incubus of some of their debts. Beef cattle are, I believe, plentiful and cheap, while pigs are very scarce, indeed many farmers have not a single grunter around their place, others have not nearly enough for their own use, so those who have some surplus ones will make money by them this year. And now a word or two about the very mild and fine weather that we have had up to the present time. December nearly gone and not enough snow for sleighing. Cattle still feeding on the prairie and doing well, the only drawback being a scarcity of water in some places. I don't think the thermometer has touched zero this winter. It has truly been a most beautiful fall and winter so far. And now, Mr. Editor, wishing you most heartily the compliments of the season, I remain, yours, R. C. B., Reimland P. O. Dec. 20th, 1888.

[We would be glad to hear from our Manitoba and North-west subscribers more frequently. Write frequently gentlemen, you have a grand country, but you must let the people know it; by so doing you will encourage emigration, and benefit yourselves as well as the country and the emigrant.]

From Manitoba.—We are having splendid weather and are working outside with bare hands and coats off. The boys in town had a base ball match on New Year's Day. Just think of it, and in Manitoba at that! The little snow we had all went, and to-day (the 2nd Jan.) the water was running down the roads. Our little town is doing wonderfully well. We have now four (4) elevators and one more to build, which will give us a better market than ever. Wheat, 85c.; oats, 25c.; barley, 30c.; flax, 30c. per bushel; butter, 20c.; lard, 20c. per lb.; eggs, 20c. per doz.—T. C., Morden, Man.

Axle Grease.—Please give a recipe for manufacturing axle grease.—B., Pincher Creek, N. W. T. [We have found Mica Axle Grease the best we have ever used. Can any of our subscribers send B. a recipe for making a good article?]

From Nova Scotia.—The time has again come round for renewing our subscriptions to the FARMER'S ADVOCATE, and although money is scarce, I cannot think of doing without it. The information given in it on subjects connected with farming is so general that nearly all may make some practical use of its contents. But we are not a very progressive people. A few try to lay up money, a number try to make a show beyond their means, very few try to increase the general comforts of their homes by useful arrangements in their building and general surroundings according to their means, and not many desire to make the soil richer by a strict attention to compost and other means by which land is made better or more productive. Many of our best farms are getting badly run out. We hope a change may come over our general farming soon, or our young men will have become disgusted with farm life. They have had no opportunity of attending any agricultural school till lately, and even now very few avail themselves of the opportunity within their reach, and the little knowledge gained by the practical experience and observations of a few of the early settlers, who made themselves comfortable homes, has been to a very large extent lost to our young men because it conflicted with public opinion, though producing comfortable homes.—J. MCG., West New Annan, N. S.

Scaly Leg.—Can hens be cured of scaly leg; if so, what is the remedy? [For ordinary fowls one or at most two applications of kerosene will effect a cure. In the case of exhibition birds it is better to use equal parts kerosene and lard, and apply once a week for four weeks. It takes considerable time to effect a cure, but this will not fail.]

Lice on Pigs—Smut on Corn—Keeping Onions.—1. What is good to destroy lice on pigs, and is there danger of them spreading to other stock? 2. Is smut found on corn stalks poisonous to cattle if eaten by them? 3. Which is the easiest and best way to keep onions through the winter?—SUBSCRIBER, Ridgetown.

[1. Wash the pigs all over with crude petroleum, next day wash thoroughly with soap and soft water, also thoroughly clean the sty; or wash with water and carbolic acid, 1 ounce crude acid to eight quarts water. Coal oil and lard may also be used in equal quantities. There are two kinds of lice that infest pigs, and hen lice also frequently get on them. Those most easily seen are likely to get on other stock. 2. Smut on corn stalks is poisonous if eaten by any stock, owing to a certain amount of ergot it contains. 3. Store on slatted shelves from four to six inches deep, leaving an inch or so between the slats to admit air. Keep at as low a temperature as possible without freezing.]

Goose Wheat—Machine for Planting Corn and Distributing Fertilizers.—I have this fall plowed an old sod that is wet and low, I purpose sowing it to peas in the spring and would like your advice in regard to following the pea crop with wheat of the variety named Goose wheat, it is new to us in this vicinity, but have heard that it stands the wet, will in fact grow under water, and that it yields well. Please give me your opinion and how much should be sowed per acre. Is there any machine manufactured for planting corn and a fertilizer (such as ashes) at the same time?—H. E.

[Goose wheat will do as well on low land as any other variety. It is very hardy and yields well, but we do not believe it will grow under water or do well on very wet land. The berry is large and it requires thick sowing. We have found two bushels per acre to suit our land best. We do not know of such a machine, perhaps some of our readers can answer.]

Salt on Land.—What quantities of salt should be applied to land, and at what season of the year?—Sub., Shediac.

[The application of salt, as well as of most artificial manures, is an experiment, except in the hands of a practical chemist. Different soils require different treatment: in some instances it is highly beneficial, in others the results are imperceptible. We have had good results from an application of from 200 to 250 lbs. per acre on dry, warm soil in a fair state of cultivation, with oats, barley and wheat, broadcast on the crop when nicely up, and 400 lbs. per acre gave excellent results with mangels. While on the experimental plot of Messrs. Gilbert & Lawes, Rothamsted, England, in one instance 366 lbs. per acre actually gave less grain and straw than on a similar plot adjoining where it was not applied. This was applied as a top dressing in March. The two years following it was applied with other manures in the fall, and resulted in considerable increase in grain and a slight increase in straw, while the following year it did more harm than good. Before using salt extensively, try it on alternate ridges and note results.]

Cheap Paint.—Can you or any of your correspondents tell me of a cheap and suitable paint for applying to a shingle roof?—J. R., Moose Creek. [Will some of our subscribers answer?]

Trimming Hedges.—I have purchased a farm fenced with hedges. They have grown wild for want of trimming. When shall I trim them and how? Also would like to know the name. They are of a dark brown color and bear black berries.—YOUNG FARMER, Brickley P. O. [Four hedges are from your description buckthorn. Trim in the spring when the danger of freezing is past from that time up to the first of June.]

Daily is Strength.—I enclose \$1 to renew my subscription to the FARMER'S ADVOCATE. I have taken it now for several years and I like it better every year, and I believe that if all farmers would read it they would be benefited more than they are by these Experimental Farms that the different governments are establishing through the country. Taking my own case for example, living here in the western part of Nova Scotia, what benefit is the Dominion Government at a large cost? It seems to me to be a useless expense. Is there no way in which that money could have been spent to give a more general benefit? We would not know of their existence if we did not see some reference to them in the ADVOCATE. It seems to me that if there was some way to lessen the tariff and taxes it would be a greater benefit to us as farmers. I am a farmer and have no other way of supporting myself and family. I like farming and am satisfied with the country, but am not satisfied with the present protective policy of the Dominion Government. It does not protect the farmer. We have to compete with the world in what we have to sell. If they would let us buy where we can buy the cheapest without having to pay such a heavy tariff it would be better. All I ask is for them to put all classes on an equal footing. Why is it that farm machinery and furniture cannot be manufactured in this country as cheaply as any other; labor is cheaper here, and that right has a manufacturer to export so much higher profit from money invested than a farmer? It seems to me that this thing has been running all one-sided long enough, and I hope that the time will soon come when farmers will lay aside party politics and look after their own interests as they should. Go on, Mr. Editor, as you are going, and you can count on me every time. Yours truly, AN ANnapolis COUNTY FARMER.

Raw Oats for Colts—Worms in Apples—Killing the Daisy.—1. Are raw oats good for young colts? 2. What will prevent worms in apples? 3. Is there anything that will kill the daisy, and will it grow from manure from daisy hay put on the ground for top dressing.

[1. See prize essay in January and February numbers. 2. Spray the trees occasionally through the month of June (beginning on the first day of the month or even earlier if the evenings are very warm.) with a solution of Paris green, (six ounces to a barrel of water (40 gallons), every two weeks will be quite sufficient if there are no drenching rains. This is the time the fruit begins to form and most likely to be stung by the codling moth. 3. There is no short road to success in killing the ox-eye daisy, to which you doubtless refer. It is a perennial, and the roots live from year to year. The seeds are very numerous and tenacious of life. At a recent meeting of the East Middlesex Farmers' Institute one member stated that he had killed it when first seeded by hand pulling immediately after rain while the ground was soft. Another one had failed although very careful, but had kept it in check and in some instances killed small patches of it by keeping the ground mellow by constant tillage and pulling up the plants as fast as they appeared above ground. Prof. Fenton, of the Ontario Agricultural College, Guelph, gives several methods of eradication, among which the following seems the most thorough:—"Plow the land thoroughly and plant a crop requiring the hoe, cultivate it at least once a week. Next year sow and plow in two crops of buckwheat. The third year plant to corn, and if still weedy repeat buckwheat to plow under. This will leave the land in good condition and exterminate the daisy." Manure for top dressing from hay in which the daisy has ripened will certainly seed the land to which it is applied unless the manure has been properly piled and fermented and afterwards turned over, so the outer sides of the pile as well have been heated. We receive many such questions as this. It must be borne in mind that there is no magical method of exterminating this or any class of weeds. Simply keep them below the ground and they must die; some will take longer than others, but this method will in time effectually kill them.

**Garden and Orchard.**

**Smith's Hybrid Pear.**

This pear has a very remarkable one, and is very superior variety. Chief among its merits is its early bearing. If a tree is set out at three years from the last, (which is the age usually preferred), it will in four years out of six, produce half the amount of a standard tree, and the early production of the dwarf; this is of great value. Again, for hardness it is unequalled by any other variety. For productiveness it is equal to any, but cannot of course surpass any of the other varieties. For canning and preserving it is excellent, but as a dessert fruit it is not more than third rate. Contrary to the usual custom of standard pear trees, it seems to flourish equally well on clay as well as on clay.

**Coal Ashes for Strawberries.**

A. S. Hall, of the New York Experiment Station, says: "Three years ago, at Dr. Sturtevant's suggestion, a bed of Sharpless strawberries was planted out and heavily mulched with coal ashes. The object was to see if this material would act beneficially in keeping down weeds. It has done this to a marked degree, but this is not all. The yield from the plants has been more abundant than from another bed of the same variety that has received excellent culture of the ordinary kind. The plants have been almost entirely free from blight, though the blight might have been expected when grown in the ordinary way. I should have stated that the bed has received no culture since the mulching, except to remove the weeds that were strong enough to grow through the three inches of coal ash."

**Fruit in British Columbia.**

Mr. A. M. D. Allen writes from British Columbia that the Province is far behind in fruit growing. California and neighboring states furnish an inferior quality of pears and apples. He deplores the apathy of the people to their own interests. When trees are planted they are poorly cared for. The trees being overgrown with moss, and unhealthy in appearance, limbs are dropped off without regard to the future usefulness or beauty of the tree, while the utmost care is really necessary, as the crops of apples are so heavy that the trees are scarcely able to carry them. Mr. Allen thinks an association similar to the Ontario Fruit Growers' Association would be of great benefit to the Province. He says further: "They have magnificent stretches of valley land where fruit could be grown to perfection, if given proper attention, and which would be comparatively easy, as the soil is easily cultivated, and the climate very favorable. This state of affairs should not surprise Mr. Allen, who has had so much experience in Ontario, where fruit growing has received little attention in comparison to what it should have had until quite recently. Even now, with all our advantages, a majority of our farmers will tell us that it does not pay to grow apples, and yet the fact remains, that if properly cared for the orchard will yield a greater profit than any other department of the farm, even at the low prices of this season."

Mr. A. Allen thinks the people on the prairies much more alive to their interests in forestry and fruit growing than those of British Columbia, although their facilities are not nearly so great, and there is little doubt that the interest taken in forestry in Manitoba and the North-west Territories will prove of great benefit in future years, and will tend, to a certain extent, exert a beneficial influence on the climate.

**The Apiary.**

**Outside Wintering.**

Quite a lengthy discussion followed upon the above subject. The general results from outside wintering by members present, appeared to be that there was less spring dwindling from colonies wintered outside, but that they consumed more stores than if wintered indoors. The bees should be packed in sawdust or chaff before the cold weather arrived, which would be likely to penetrate the hive.

**Bee-Keepers in Convention.**

The Ontario Bee-keepers' Association has been in existence nearly ten years. Before incorporation, the annual meetings were held in Toronto, and generally during the time the Toronto Industrial Exhibition was held. Since incorporation it has held one meeting in Toronto, one at Woodstock, and the last one, January 8th and 9th, at Owen Sound. The next regular meeting will be at Belleville, the time being the second Wednesday and Thursday in January, 1890.

There will, however, be a special general meeting, probably before that time, to meet the International at Brantford, as that body will meet at that place. The meeting at Owen Sound was, perhaps, the most poorly attended since the organization of the Association, but when we consider the failure of the honey crop of 1888, this will not be wondered at; the condition of the roads throughout the Province at the time, and the locality, had doubtless something more to do with the meagre attendance.

It is, however, gratifying to know that the season of 1888 has been a very prosperous one. The membership is now 231, making nearly 80 more than the previous year, which was also the best on record up to that time. This association is now the largest Bee-keepers' Association on the American continent.

Martin Emigh, Holbrook, the President, called the meeting to order at two p. m. of the first day. The Treasurer's report showed a balance on hand to expend of \$255.75.

The Secretary in his report showed that about 1000 invitations had been sent out to bee-keepers, inviting them to become members. The affiliated societies numbered eight, being the Listowel, Mount Forest, Western Ontario, Norfolk, Oxford, Brant and Haldimand. The number of colonies held by the members of these associations is, spring count, 2,717; fall count, 3,138; pounds of comb honey taken 10,177, pounds of extracted honey taken 22,638. The County of Haldimand has evidently not taken one pound of honey, and the Listowel not five pounds per colony. It is fair to assume that the best of the reports have been given in, and this will show how great the failure has been.

The President, in his annual address, stated that although the past season had not been a good one for the production of honey, there was much to be thankful for. He referred to the appointment of the Hon. Charles Drury, as Minister of Agriculture, and thought the appointment would meet with the approval of all bee-keepers.

Reference was made to the increased facilities and inducements offered by various agricultural societies, for the displays of honey and apiarian supplies.

A paper was now read by S. C. Pettit, Belmont, Ont., the subject being

**PRIORITY OF LOCATION.**

Mr. Pettit explained its present position, and showed that the idea was gaining ground that one bee-keeper, especially a specialist, should not encroach upon the territory of another; that such would prove a detriment to both. He also claimed, that because a man's bees had gathered nectar from the flowers on certain fields, this did not entitle him to the nectar of coming years. Legislation appeared to be advocated by Mr. Pettit, which would entitle a specialist to a certain territory by the payment of a small tax, which would go, say, towards the payment of municipal expenses.

**Ventilation.**

S. Corneil opened up the discussion upon this subject, claiming that bees required pure air, and not sufficient attention was directed towards ventilation. The repositories should be ventilated, and the hives should be ventilated. He preferred a loose bottom board, in order to allow a rim two to three inches deep, to be placed under the brood chamber in winter. He claimed that if only one entrance were permitted, an upright ventilator should be used, not one horizontal, and by means of a dense smoke created in the hive, showed the upward tendency of currents of atmosphere in the hive. A straw hive was also shown, which was claimed to retain the heat better than wood, and yet act as a ventilator to a degree. The smoke was shown passing slowly through the walls of the straw hive. Allen Pringle gave a paper upon "Bee-keeping for Pleasure and Profit." Mr. Pringle claimed that although bee-keeping and the study of bees had much about it that was fascinating and gave pleasure, there were but few who kept them or would keep them aside from the profit to be derived from them. He claimed that more and more was it obvious that bee-keeping should be combined with some other pursuit. The failures of the last two years made that more apparent. The hive to be used and the bee would probably vary under different circumstances. The Carmolian and Italian bees were mentioned as gentle bees, the former especially.

Owing to the attendance of less than twenty-five, the ordinary railway rates only could be secured, which disappointed some of those who came to the meeting.

A paper upon "Bee-keeping: its Relation to Agriculture," will be read at the annual meeting of the Ontario Agricultural and Experimental Union, held at the Ontario Agricultural College, February 7th and 8th.

Farmers' Institutes are in some instances giving bee-keeping its proper place, by putting it on their list of topics, for discussion at their various meetings. This is as it should be, and it would be only just and proper if more would follow the example of those who have so commendably taken the lead in this matter. The specialist is losing ground, when he is unable to supply the necessities for home out of a business for two years. Good seasons which we expect will follow, will not supply his immediate wants, and naturally he looks for something to combine with bee keeping, and which may not prove a failure at the same time, as bee-keeping; in short, to prevent having all his eggs in one basket.

### Poultry.

#### Poultry Shows—Are They Beneficial, and in What Respect?

That the fanciers of pure bred poultry have reduced breeding, feeding and judging to a science more than any other class of breeders cannot be denied. First, poultry is the only line of stock that is at present judged by a scale of points. The poultry departments of the various exhibitions are the only ones that are judged by one man; there are twice as many poultry associations existing in Canada at present, as in any other line of stock, and in every instance, so far as we can learn, these associations have given an impetus to poultry breeding in their locality. That poultry shows exert an influence for good cannot be denied. In attending them, many persons who have never taken a special interest in poultry are led to do so, very often buying some improved variety. Next comes a desire for poultry literature, which leads to a greater knowledge of their requirements, and the result is better care, not only of the late acquisition, but the original stock of mongrel birds. From a study of the results, he learns that corn is not the best food for egg production, even if the hens do eat it greedily, and very often even learns the difference in the feeding value of the different kinds of grain. This may not always be the case, but the tendency is in that direction.

#### Black Minorcas.

Just what relation they bear to the White Faced Black Spanish, we cannot at present state; but they have long been known in England as Red Faced Black Spanish. They are a handsome bird viewed from the standpoint of a fancier, but their massive combs and pendulous wattles require the same treatment accorded the Leghorns, as noted in another article, viz.: a reduction in the size of the wattles and comb.

Some very fine specimens have been imported from England this season. Mr. Geo. McCormick, of this city, has brought over about \$300 worth, chief among which is one of the finest cockerels ever bred in England, for which he paid the modest sum of twenty-one guineas, and one pound sterling for the coop he was shipped in, making about \$115 besides express charges.

There is little doubt that they will in time prove a valuable fowl for this country, but not until the size of the comb and wattles have been reduced very much. They are prolific layers of large white eggs, but are not hardy enough to stand much exposure.

Lewis Wright, who is the best authority extant on these breeds, says:—"This breed resembles in comb, ears, shape, and color of plumage, the White Faced Black Spanish, but considerably surpasses it in size, and on an average we consider the comb more largely developed, and the legs are shorter. A good cock ought to weigh from eight to nine pounds. It is the best layer of all the Spanish breeds, except, perhaps, the Andalusian. The chickens are tolerably hardy. It is a great favorite in the West of England, and deserves to be more widely cultivated, as it far surpasses the above breed in everything except the White Face."

This, however, was written in England, where the winters are not so severe as in Canada, and due allowance must be made therefor. There is no doubt, however, that the Minorcas are a hardier and better breed than the White Faced Black Spanish.

#### Buffalo Show.

With the exception of Light and Dark Brahmas and some varieties of Cochins, the show was in quality below that of the Ontario Association at St Catharines early in January. The numbers were very large, about twenty-four hundred entries in all—150 Brown Leghorns, 150 Laced Wyandottes, 75 White do., 140 P. Rocks, 75 Buff Cochins, 50 Partridge do., 75 Langshans, 60 White P. Rocks, 59 Dark Brahmas, and 130 Light do. The show was not as well managed as our own usually are.

#### Ontario Poultry Association.

The show of this Association was held in the Central Rink, St. Catharines, the second week in January. The exhibit was of a very high order, so far as quality is concerned, but without the actual number of entries, and judging from appearances, the numbers were lower than they have been in some previous years. Most of the standard varieties were fairly represented, and in some cases the numbers were very large, especially was this the case in the Light Brahmas, in which class there were above fifty entries, and so keen was the competition that in no instance did one exhibitor win two first prizes. Some of the finest Hamburgs and Polands ever exhibited in Canada, graced the coops. Black Minorcas were out in large numbers, a few White Minorcas as well, but not of such quality or quantity as the blacks.

Mr. Knight, of Bowmanville, showed some very fine specimens of Andalusians; Mr. R. Oke, of London, some Crevecoeurs. A pair of Golden Wyandottes were on exhibition, but we have not the name of the exhibitor. Several coops of Rose Comb Leghorns were shown, the Browns were scarcely up to the mark, but the White ones were really grand. Mr. Peter, of Angus, won most of the prizes. Several fine White Plymouth Rocks were shown, Mr. Wallace, Woodstock, being the leading exhibitor. White Wyandottes were really magnificent, Messrs. McCormick (London), and Corcoran (Stratford), were the principal exhibitors. A goodly number of birds put in an appearance from across the Niagara river.

Owing to the fact that the show was held on the third flat of a large building, the attendance of visitors was small. The directors expect, however, to show a good record, and pay one hundred cents on the dollar, which has not always been done by previous Boards.

On Wednesday evening of the show, a supper was given by the St. Catharine's Association to the outside exhibitors, when the correct thing was done (we understand) in the matter of toasts, speeches, etc.

The annual meeting of the Association was held in the parlor of the Murray House, on Thursday evening of the show, when the following business was transacted. Officers elected—President, J. C. Rykert, M.P., St. Catharines; 1st Vice, A. Bogue, London; 2nd Vice, Wm. Barber, Toronto. Directors—T. H. Smelt, Guelph; Sharp Butterfield, Amherstburg; Wm. McNeil, London; Knight, Bowmanville; Russ, Grimsby; Jno. Cole, Hamilton; Messrs. Lawrence, Pay and Crowie, St. Catharines. A resolution was passed that hereafter the Treasurer of the Association give security to the amount of \$1000. Also that the show of the Association be held next year in St. Catharines.

It was moved, seconded and carried, that hereafter the show be held but one year in a place consecutively. After the meeting adjourned, a meeting of the Board of Directors was held, when Robert Hammill, of St. Catharines, was elected Secretary, and Mr. Crowie, Treasurer.

#### The Spanish Breeds.

BY W. G. PETER.

I have kept and bred the W. F. B. Spanish, but have not had any for eight years past; in fact, as soon as I got Plymouth Rocks, I gave up keeping the Spanish, as I found the Plymouth Rocks so much hardier and better layers, though the eggs were not quite so large, besides the Rocks are so much better for the table, and the chicks are very hardy. I found much trouble in raising the Spanish chicks. As I had already a few years experience with White Leghorns, I concluded to keep them and the Rocks, and parted with the Spanish—I have never regretted the step. I believe the W. F. B. Spanish lay the largest eggs of any breed; Leghorns are not far behind them for size of eggs, and will lay far more in number in the year. Spanish have, to my taste, a disagreeable flavored flesh, though larger than the Leghorn in body; but the Leghorn up to a year old are quite nice for the table, a plump, delicate flavored bird; the brown are the best flavored and more juicy meat than the white. In my opinion in the Leghorn, we have a much better breed than the W. F. B. Spanish. Another item in favor of the Leghorn is, that there is no breed that I have had under my care that will give better results in hatching, and not many so good. The rose comb variety are only better in standing extreme cold; and will lay more eggs in winter than those with single comb, as I have proved by careful experiments. I also consider them the handsomer bird.

They are fast becoming favorites, and I have had to refuse a large number of sales this fall; they are improving in my hands, for I could see their faults when I first imported them—four years ago—and, though I imported none scoring less than ninety points, I could see they needed improving. Any one who has followed the shows, year by year, has had an opportunity of seeing the progress that has been made, and I am proud to say, by my own efforts to improve, for those who were breeding a few years ago have ceased to exhibit, or even breed them, not recognizing their possibilities. I am pleased to find them becoming so popular, and they will keep, by merit, the position they are gaining in public favor. The rose comb, in any variety for utility, is a desirable point, and it should be small and firm for best results; large combs have no influence on egg production; it is a mere theory, and is not warranted by the facts obtainable from long, careful and intelligent observation. We are gradually reducing the single comb to sensible dimensions for our severe climate; yet, they are just as good layers in summer and better in winter than formerly; the males are not suffering in vitality as was predicted, since judges took half a yard off their wattles and three or four inches off their combs; they are just as sure stock getters, and their progeny as sturdy and precocious as before.

Re Black Minorca and Black Leghorn. The Black Leghorn, to my mind, is too much Minorca; a true Leghorn is yellow-legged—just as if we are to have the Black Wyandottes, they must have the yellow legs to be true to the breed. A Black Wyandotte with black legs is a mixture of some kind, and it is not hard to hit on two or three crosses that would do it. I have had no experience with Minorcas, so cannot say anything with regard to them; but this I may say, I have seen some recently that I thought really beautiful, to which reference is made in another column. I have never seen any before that created so much interest in my mind in the variety; they were typical show birds, and, no doubt, will prove they can beget show stock—the hen being large enough to throw fine males.

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.

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

**How They Fare in Manitoba.**—It is some time since I noticed anything but very brief notices of Manitoba in your columns, but I suppose it is the same with others as with myself. We don't feel fit for any literary effort after working in the fields all day. The evenings are now getting longer, and scribbling will be in order again. The outlook for the farmers here is brighter and more hopeful than it has been since boom days. The crops as they stood in the fields looked exceptionally good and gave fair promise of a grand and bountiful harvest, but when it came to handling the sheaves they seemed to be a little too light, and I am afraid the threshing machines will lower our estimates considerably. Our season was about a month later than last year; whether or not there is any quantity of frozen grain, it seems impossible at present to say. Many farmers report their wheat frozen, while the newspapers say there is little or no frozen wheat in the country, so we must, I suppose, wait a little and hope for the best. I am glad to be able to say that I believe there is but a very small quantity of the late wheat frozen in our locality. We had no frost to hurt wheat until the second week in September, when most of it was too ripe for Jack Frost to do it any damage. On the other side of the line, in Northern Dakota, the farmers tell me there is considerable damage done by frost. In the localities that escaped, the farmers have done well, getting over \$1 for their wheat, and barley 50c. per bushel. In Manitoba the price has gone over \$1 per bushel for wheat; now, I think, the top price is 82c. This is a great improvement on the prices of previous years, and the farmers generally are feeling pretty jubilant, and the future looks brighter because many have been able to shake off the incubus of some of their debts. Beef cattle are, I believe, plentiful and cheap, while pigs are very scarce. Indeed many farmers have not a single grunter around their place, others have not nearly enough for their own use, so those who have some surplus ones will make money by them this year. And now a word or two about the very mild and fine weather that we have had up to the present time. December nearly gone and not enough snow for sleighing. Cattle still feeding on the prairie and doing well, the only drawback being a scarcity of water in some places. I don't think the thermometer has touched zero this winter. It has truly been a most beautiful fall and winter so far. And now, Mr. Editor, wishing you most heartily the compliments of the season, I remain, yours, R. C. B., Reinland P. O. Dec. 26th, 1888.

[We would be glad to hear from our Manitoba and North-west subscribers more frequently. Write frequently gentlemen, you have a grand country, but you must let the people know it; by so doing you will encourage emigration, and benefit yourselves as well as the country and the emigrant.]

**From Manitoba.**—We are having splendid weather and are working outside with bare hands and coats off. The boys in town had a base ball match on New Year's Day. Just think of it, and in Manitoba at that! The little snow we had all went, and to-day (the 2nd Jan.) the water was running down the roads. Our little town is doing wonderfully well. We have now four (4) elevators and one more to build, which will give us a better market than ever. Wheat, 85c.; oats, 25c.; barley, 30c.; flax, 90c. per bushel; butter, 20c.; lard, 20c. per lb.; eggs, 20c. per doz.—T. C., Morden, Man.

**Axle Grease.**—Please give a recipe for manufacturing axle grease.—B., Pincher Creek, N. W. T. [We have found Mica Axle Grease the best we have ever used. Can any of our subscribers send B. a recipe for making a good article?]

**From Nova Scotia.**—The time has again come round for renewing our subscriptions to the FARMER'S ADVOCATE, and although money is scarce, I cannot think of doing without it. The information given in it on subjects connected with farming is so general that nearly all may make some practical use of its contents. But we are not a very progressive people. A few try to lay up money, a number try to make a show beyond their means, very few try to increase the general comforts of their homes by useful arrangements in their building and general surroundings according to their means, and not many desire to make the soil richer by a strict attention to compost and other means by which land is made better or more productive. Many of our best farms are getting badly run out. We hope a change may come over our general farming soon, or our young men will have become disgusted with farm life. They have had no opportunity of attending any agricultural school till lately, and even now very few avail themselves of the opportunity within their reach, and the little knowledge gained by the practical experience and observations of a few of the early settlers, who made themselves comfortable homes, has been to a very large extent lost to our young men because it conflicted with public opinion, though producing comfortable homes.—J. MCG., West New Annan, N. S.

**Scaly Leg.**—Can hens be cured of scaly leg; if so, what is the remedy?

[For ordinary fowls one or at most two applications of kerosene will effect a cure. In the case of exhibition birds it is better to use equal parts kerosene and lard, and apply once a week for four weeks. It takes considerable time to effect a cure, but this will not fail.]

**Lice on Pigs—Smut on Corn—Keeping Onions.**—1. What is good to destroy lice on pigs, and is there danger of them spreading to other stock? 2. Is smut found on corn stalks poisonous to cattle if eaten by them? 3. Which is the easiest and best way to keep onions through the winter?—SUSCRIPTION, Ridgetown.

[1. Wash the pigs all over with crude petroleum, next day wash thoroughly with soap and soft water, also thoroughly clean the sty; or wash with water and carbolic acid, 1 ounce crude acid to eight quarts water. Coal oil and lard may also be used in equal quantities. There are two kinds of lice that infest pigs, and hen lice also frequently get on them. Those most easily seen are likely to get on other stock. 2. Smut on corn stalks is poisonous if eaten by any stock, owing to a certain amount of ergot it contains. 3. Store on slatted shelves from four to six inches deep, leaving an inch or so between the slats to admit air. Keep at as low a temperature as possible without freezing.]

**Goose Wheat—Machines for Planting Corn and Distributing Fertilizers.**—I have this fall plowed an old sod that is wet and low. I purpose sowing it to peas in the spring and would like your advice in regard to following the pea crop with wheat of the variety named Goose wheat, it is new to us in this vicinity, but have heard that it stands the wet, will in fact grow under water, and that it yields well. Please give me your opinion and how much should be sowed per acre. Is there any machine manufactured for planting corn and a fertilizer (such as ashes) at the same time?—H. B.

[Goose wheat will do as well on low land as any other variety. It is very hardy and yields well, but we do not believe it will grow under water or do well on very wet land. The berry is large and it requires thick sowing. We have found two bushels per acre to suit our land best. We do not know of such a machine, perhaps some of our readers can answer.]

**Salt on Land.**—What quantities of salt should be applied to land, and at what season of the year?—SUB., Shediac.

[The application of salt, as well as of most artificial manures, is an experiment, except in the hands of a practical chemist. Different soils require different treatment: in some instances it is highly beneficial, in others the results are imperceptible. We have had good results from an application of from 200 to 250 lbs. per acre on dry, warm soil in a fair state of cultivation, with oats, barley and wheat, broadcast on the crop when nicely up, and 400 lbs. per acre gave excellent results with mangels. While on the experimental plot of Messrs. Gilbert & Lawes, Rothamsted, England, in one instance 366 lbs. per acre actually gave less grain and straw than on a similar plot adjoining where it was not applied. This was applied as a top dressing in March. The two years following it was applied with other manures in the fall, and resulted in considerable increase in grain and a slight increase in straw, while the following year it did more harm than good. Before using salt extensively, try it on alternate ridges and note results.]

**Cheap Paint.**—Can you or any of your correspondents tell me of a cheap and suitable paint for applying to a shingle roof?—J. B., Moose Creek. [Will some of our subscribers answer?]

**Trimming Hedges.**—I have purchased a farm fenced with hedges. They have grown wild for want of trimming. When shall I trim them and how? Also would like to know the name. They are of a dark brown color and bear black berries.—YOUNG FARMER, Brickley P. O.

[Your hedges are from your description buckthorn. Trim in the spring when the danger of freezing is past from that time up to the first of June.]

**Unity is Strength.**—I enclose \$1 to renew my subscription to the FARMER'S ADVOCATE. I have taken it now for several years and I like it better every year, and I believe that if all farmers would read it they would be benefited more than they are by these Experimental Farms that the different governments are establishing through the country. Taking my own case for example, living here in the western part of Nova Scotia, what benefit is the Experimental Farm in Nappan, established by the Dominion Government at a large cost? It seems to me to be a useless expense. Is there no way in which that money could have been spent to give a more general benefit? We would not know of their existence if we did not see some reference to them in the ADVOCATE. It seems to me that if there was some way to lessen the tariff and taxes it would be a greater benefit to us as farmers. I am a farmer and have no other way of supporting myself and family. I like farming and am satisfied with the country, but am not satisfied with the present protective policy of the Dominion Government. It does not protect the farmer. We have to compete with the world in what we have to sell. If they would let us say where we can buy the cheapest without having to pay such a heavy tariff it would be better. All I ask is for them to put all classes on an equal footing. Why is it that farm machinery and furniture cannot be manufactured in this country as cheaply as any other; labor is cheaper here, and what right has a manufacturer to expect so much higher profit from money invested than a farmer? It seems to me that this thing has been running all one-sided long enough, and I hope that the time will soon come when farmers will lay aside party politics and look after their own interests as they should. Go on, Mr. Editor, as you are going, and you can count on me every time. Yours truly, AN ANNAPOLIS COUNTY FARMER.

**Raw Oats for Colts—Worms in Apples—Killing the Daisy.**—1. Are raw oats good for young colts? 2. What will prevent worms in apples? 3. Is there anything that will kill the daisy, and will it grow from manure from daisy hay put on the ground for top dressing.

[1. See prize essay in January and February numbers. 2. Spray the trees occasionally through the month of June (beginning on the first day of the month or even earlier if the evenings are very warm.) with a solution of Paris green, six ounces to a barrel of water (40 gallons), every two weeks will be quite sufficient if there are no drenching rains. This is the time the fruit begins to form and most likely to be stung by the coddling moth. 3. There is no short road to success in killing the ox-eye daisy, to which you doubtless refer. It is a perennial, and the roots live from year to year. The seeds are very numerous and tenacious of life. At a recent meeting of the East Middlesex Farmers' Institute one member stated that he had killed it when first seeded by hand pulling immediately after rain while the ground was soft. Another one had failed although very careful, but had kept it in check and in some instances killed small patches of it by keeping the ground mellow by constant tillage and pulling up the plants as fast as they appeared above ground. Prof. Pantou, of the Ontario Agricultural College, Guelph, gives several methods of eradication, among which the following seems the most thorough:—"Plow the land thoroughly and plant a crop requiring the hoe, cultivate it at least once a week. Next year sow and plow in two crops of buckwheat. The third year plant to corn, and if still weedy repeat buckwheat to plow under. This will leave the land in good condition and exterminate the daisy." Manure for top dressing from hay in which the daisy has ripened will certainly seed the land to which it is applied unless the manure has been properly piled and fermented and afterwards turned over, so the outer sides of the pile as well have been heated. We receive many such questions as this. It must be borne in mind that there is no magical method of exterminating this or any class of weeds. Simply keep them below the ground and they must die; some will take longer than others, but this method will in time effectually kill them.

**ropy Milk.**—I have a cow which gives thick, stringy milk now and then, what is the cause and remedy? Is such milk unwholesome? I see considerable in the ADVOCATE about creameries and creamery butter, and the extra price it brings over dairy butter. Within the last year we have sold over 800 pounds in the city of Hamilton, and received an average price of 24c. per pound.—S. B. Seneca.

[Any derangement in the secretion of the milk of the cow, either in its quantity or quality, or both may be produced by a variety of causes. Any disease of the system, or even any unusual excitement, may produce it. It may also be produced by local causes affecting the udder itself, such as injuries from blows or kicks, exposure to cold or wet, or lying in a wet or damp locality; irregular milking, not milking the animal dry, or leaving the udder distended with milk; tumors in the udder of various kinds, also obstructions in the teats; in short, the causes may be looked for in disease, excitement affecting the system at large, or local affections of the udder itself, from injury, disease or inflammation, by which it is rendered incapable of performing its functions properly. The fundamental principle in the treatment of all diseases and derangements of the animal economy is to discover their cause and remove them if possible. It is a matter now well established that the milk of the cow affected with disease, or diseased milk, is not a safe article of diet for the human race. Dr. Sweetapple will prepare an article on this subject for the March number.]

**Roup.**—There is a disease among the fowls in our locality, beginning with a swelling about the eye, also a running from the eyes and nose of a frothy nature, and if left long will rot the flesh from the head. Please give cause and cure.—W. G., Dunmore Junction, N. W. T.

[The disease is roup, of a virulent type. Better kill all the birds infected, or at least those that are in an advanced stage. Thoroughly disinfect the house and yard with crude carbolic acid one gill and water twelve quarts. (Crude carbolic acid costs 40c. per pint.) Make a powder as follows: 1 teaspoon each of sulphate of iron, red pepper, ginger, saffron, chlorate of potash, salt and powdered rhubarb, mix them thoroughly, after mixing add three tablespoonfuls of hypo-sulphite of soda. Mix together well, and incorporate with this one ounce of asafetida. Give a teaspoonful daily to each dozen fowls. Should there be any further attacks wash the head thoroughly with electric oil or, better still, pine tar and coal oil, enough of the oil to dissolve the tar. Roup usually comes from draughts or exposure, and in its early stages is neither dangerous nor contagious, and in such breeds as Brahmas, Cochins, Wyandottes, Plymouth Rocks, Javas or Games, good quarters and wholesome food is a sure preventative, and while with more tender varieties there must be a cause for attack, it is often almost impossible to find it. As the disease advances it becomes highly contagious. The poultry shows are a fruitful source of roup, as there are generally some few sick birds, and the usually close air of the room is quickly laden with disease germs, and the most hardy often have a slight attack at least. This may be partially prevented if sufficient care were taken with the drinking vessels, and each one rinsed out and then filled from a watering can or some such vessel, so the water could be poured into the drinking vessel instead of dipping each one in a pail. It is a good plan if the exhibitor attends to his own birds, to put a piece of asafetida in the drinking cups, or, perhaps better still, give each bird a pill of the same, the size of half a pea, every morning during the show. A fruitful source of roup is foul houses and draughts on the birds while on the roost. And to sum up preventions:—Keep the house thoroughly clean, well ventilated, give wholesome food and a little iron, either sulphate or tincture of iron, or a few rusty nails in the drinking water. An occasional feed of sulphur is an excellent preventative. But one of the most thorough and practicable methods of stamping out this disease in its early stages is to confine the entire flock in a close room and fumigate thoroughly with sulphur. Do not let one escape because it does not appear affected or you may have it all to do over again. If the poultry house is close enough to keep the smoke in, use it, as it will also, to a very great extent, disinfect the house. It must be borne in mind, however, that this is only for mild cases, and when taken at an early stage, and would be of little use in such cases as the one referred to at the head of this article.]

**Rust from Barberry.**—Please state in your next issue what proof you have that barberry rusts grain.—T. S., Wisbeach, Ont.

[It is not the barberry itself but spores that develop rust readily upon the barberry that are the cause of rust in grain. We quote from Prof. Pantou, Guelph Agricultural College.—“ \* \* \* \* These (*sporidia*) as yet have not been discovered to germinate upon wheat; but when they reach the leaves of the barberry shrub they germinate, enter the leaf and soon give rise on the under side to masses of cup-like structures, in which are produced round golden colored spores (*acidium*), which will produce a vegetative growth only when they germinate on the wheat or some other closely allied plant. They then give rise to the condition referred to as ‘rust.’ Such is the life history of this common foe, and to the reader must appear a very complicated one indeed; there being no less than four different kinds of spores produced—*uredo*, *teleuto*, *sporidia* and *acidium*. These, for convenience, we might name summer, winter and spring spores; spring referring to the last two. Two grow on the wheat plant (*uredo* and *teleuto*), one in spring on stubble or fragments of straw (*sporidia*), and one on the leaves of the barberry (*acidium*). From extensive enquiries into the presence and cause of rust, the following conclusions have been reached:—1. Seasons are the chief cause of rust; sudden changes of temperature and rain, accompanied with close, still weather, are favorable to its increase. 2. Low lying rich soils are most subject to attack. 3. An excessive use of manures, rich in nitrogen, encourage the disease. 4. Late sown grain is most liable to injury. 5. Thinly sown crops seem most than white varieties. 6. Red wheats are less affected in the vicinity of barberry hedges than at a distance. To lessen the attacks of this troublesome parasite farmers should avoid, as far as possible, the conditions referred to above, which seem favorable to its propagation. By so doing, they are following in the line of practical and theoretical teaching, and may expect favorable results.”

**Couch Grass—Wild Oats—Wild Mustard.**—Can you tell me how to eradicate couch grass, wild oats and wild mustard?—R. C., Eramosa.

[Couch grass (*Triticum repens*) can only be eradicated by thorough and energetic action in thorough cultivation, and it may be advisable to crop with something that will grow rapidly and thus smother out the grass. Prof. J. Hayes Pantou says:—“1. Plow deep about the first of June and sow buckwheat at the rate of about two bushels to the acre. When this is in full bloom plow down and sow buckwheat again in the same quantity and plow in this crop about the end of September. This will enrich the land and clean the field. 2. Manure in the fall and plow in the spring, cross-plow and harrow about the time the grass is starting. When about time to sow corn plow and harrow so as to prepare for planting with corn. If thoroughly hoed the quack can be kept down and finally got rid of by another hoed crop. 3. Plow early and deep in spring. Stir up the ground frequently with a gang plow, as often as once a week if necessary. In the fall give it a good deep plowing, grow next year a crop requiring to be hoed, and keep it thoroughly hoed. In this method a year's crop is lost. 4. Corn sown broadcast so as to cover the ground thoroughly, harrowed in and rolled, will smother out quack very successfully.” Prof. Beal says:—“Plow late in fall and go on the ground as soon as possible after thawing out, not waiting for the soil to settle. Cultivate well every three days until no traces are seen, which will usually leave time for a late crop of potatoes, corn or rutabagas. It must not be allowed a breathing spell, as it then recuperates rapidly. Do not wait for a leaf to show itself, give it no peace.” Wild oats (*Avena fatua*) are an annual, and the principle of extermination is to thoroughly till the land, bringing the seeds to the surface where they will germinate, and destroying them before they go to seed. Various means are employed to accomplish this, but it requires close attention and energetic action, seasoned with good judgment. Fall rye is almost the only crop that will ripen before the upper grains of the oats will be ripe enough to grow, or better still rye for soiling or hay. Cultivate well after harvest until say September 20th, plow and sow to rye, seed to clover, cut the rye even if it must be used for hay, before the first oat ripens. Keep close watch of the field and see that none of the oats that have been cut off with

the rye run up to seed. This is often the unobserved source of much mischief. Follow the clover with a root crop well hoed. Common sense will suggest other methods on the same principle. Wild mustard (*Sinapis arvensis*)—Owing to the great number of seeds produced from a single plant this weed spreads very rapidly, and as the seeds can resist extremely unfavorable conditions without losing their vitality. Like wild oats this plant is an annual, and the principle of eradication is to allow no plants to ripen seeds. Cultivate so as to have what seeds are in the ground germinate, and destroy the young plants before the seeds ripen. To accomplish this, much the same course will be necessary as with wild oats. Mustard, however, does not ripen quite so early as the oats, thus enabling us to grow fall wheat, and as the brilliant yellow flower must come before it can go to seed, it is not so likely to escape observation. Should peculiarities of the season push a few plants along they should be pulled by hand. Thus cultivate thoroughly until time to sow wheat, then seed to clover, follow with a hoed crop, taking care in all cases not to allow one stalk to go to seed. If the field is very bad it may be worked the following spring until time to sow buckwheat (towards the last of June), then sow and plow under for fall wheat. By thoughtful attention and energetic action, this course will prove sufficient, to clean the worst field.]

#### Beautify Your Homes.

Very many of our best Ontario farms are lacking one great element of beauty, and comfort as well. We refer to wind-breaks, or belts of evergreen trees; these are of very great value, both as enhancing the beauty of the home, and as a protection from the fierce blasts of our northern winter. A row of Norway spruce planted, say, eight feet apart on the north and west side of the farm buildings, is of almost incalculable value, adding greatly to the appearance, and still more to the comfort of the home. An experienced cattle feeder says: “A good wind-break of these trees about the barns and yards will save tons of food in keeping up the animal heat.” Who has not, when driving on a cold winter's day, felt thankful for the momentary shelter of a clump of evergreens planted by some progressive farmer? The orchard is greatly benefited as well by a shelter of this description, both as to the vigor of the trees in bearing, and the fruit remaining on the trees in autumn. We call to mind one instance in the autumn of 1886, when half the apples were blown off most orchards; one orchard protected by a magnificent belt of Norway spruce, suffered much less, and some of the trees near the wind-break scarcely had an apple blown off. In view of these facts, we have made arrangements with Mr. Henry Westney, Highland Creek, Ont., for a supply of Norway spruce to be given as premiums as follows: For twenty-four new subscribers prepaid for one year, or twelve prepaid for two years, we will give 100 trees; for twelve new subscribers prepaid for one year, or for six prepaid for two years, we will give 50 trees, and for six new subscribers we will give 25 trees. These trees will be twenty to twenty-four inches high, transplanted three times. Express charges will be paid to any part of Ontario.

We are also in a position to furnish eggs for hatching from any of the following breeds of fowls: Light and Dark Brahmas, Langshans, W. F. B. Spanish, C. Dorkings, G. S. Bantams, Houdans, White and Silver Laced Wyandottes, Black Minorcas, Brown and White Leghorns, Aylesbury, Rouen and Pekin ducks. These eggs are sold in the regular way at \$3 per 13, and are from the best breeding yards in Ontario. We will give one setting of 13 eggs of any of these varieties for sending us five new subscribers for 1889, accompanied by five dollars. This will give any of our readers an opportunity to stock their yards with the finest poultry in Ontario, at a trifling cost. Eggs will be carefully packed and delivered to express company in first-class order.

Family Circle.

HILLSFORD'S HERMIT.

Hillsford is a pretty little village on a river as pure as truth, in the heart of the Iresquiss valley, with mountains walling it in north and south. At the time I write of it had all the requisites of a thriving town, including a population which dripped with self-satisfaction. This very comfortable commodity was so dense and universal that it fairly covered the place like a fog.

Hillsford's most remarkable citizen was a hermit, an unkempt and eccentric individual, who lived in a cabin high up on the North mountain, and was known as "Old Weaver." In winter, when the foliage was less abundant, his small dwelling could be seen from the village, a little speck of crude architecture, the smoke from which curled sometimes into the very sky. It was pointed out to visitors, who were told, without loss of time, of the hermit, his civilization defying habits and unspeakable appearance.

But it was difficult to exhibit the man himself. He came down to the village at infrequent intervals and then tarried only long enough to procure some simple necessities and departed without holding speech with any one. The townspeople had tried to break into the privacy of his home without avail. They had been repulsed with looks and gestures which inspired fear and helped to confirm the opinion that "Old Weaver was crazy and had better be let alone."

And surely no man in his right mind could live the life he lived. His hair and whiskers showed no respect for the prevailing fashion in hirsute trimming, and his clothes were a slap at all decent garments. He rarely spoke at all, but when he did his words were briefness itself.

In summer they who went near his cabin sometimes found him outside reading the Bible, an occupation from which they could not easily divert him.

This caused some to decide that he was "a religious crank," and helped to dissipate the theory that he had committed some terrible crime. Hillsford was full of wonder about the hermit's past life and antecedents, but as there was absolutely no way of finding out it was obliged to remain in cruel ignorance. All it knew about him was that several years before the time I speak of he had arrived in the village, purchased a piece of land on the top of the mountain, reared a cabin and began a life of solitude perfectly incomprehensible to the people of the valley.

At last they mostly settled down to the belief that "Old Weaver had been crossed in love." Everybody knew that love, if it did not run smoothly, could upset people completely. This gave him exceptional interest in the eyes of the young and sentimental, although the most imaginative among them could not picture him as having ever been a personage capable of inspiring the divine lunacy.

Never were they fully sensible of his value as a romantic figure until after he had been "written up" for a New York journal. A newspaper correspondent, on his summer vacation, wandered into Hillsford, and, of course, soon heard about the hermit, since he was all there was outside of the usual and uninteresting in the place. He at once spun out a column and a half of solid nonpareil, mostly speculation, tinged with sentiment, about the curious recluse.

This had a good result. It dignified the old man in the minds of the Hillsfordians. It lifted him from the rank of a crazy old mountaineer to an eccentric hermit, with extraordinary sentimental possibilities behind him.

It was often said that Weaver would be found starved or frozen to death some time. So every winter there was talk of "looking after him," by those in authority, but it ended in talk, as he was not exactly the kind of man to dictate to. In the vernacular of Simpson's grocery, he was "a hard one to tackle."

In the beginning of the hermit's last winter on the mountain some hunters, driven by cold to his cabin, entered and found him moaning on his rude couch. They spread the news in Hillsford, and "the authorities" conferred together and decided that it was time to act. But what should they do with him? Nobody could go up to his lodge on the mountain to take care of him; his wretched dwelling contained no comforts. And nobody wanted to take him into his home. There was the county house, where all the paupers were sent, but that was near the county seat seven miles away.

They who were most outspoken in the matter of having him "looked after" and who owned the largest and most comfortable houses, "hemmed and hawed" when it came to the question of taking him in. Some one, in a moment of human feeling, suggested that the seven miles journey to the poorhouse might prove dangerous to the sick man, and might even throw serious blame on those who became responsible for it.

However, after much thought and more talk had been put upon the subject, the poorhouse faction prevailed, and the flat went forth that Old Weaver must be taken charge of by the county, willing or unwilling.

The expedition set forth the next morning. It was principally composed of "the authorities," otherwise hard headed and dictatorial personages, with that degree of heartlessness peculiar to the class known as "prominent citizens." A heavy snow lay upon the ground, and the mountain roads were un-

broken. A big sled, generously supplied with straw and lunch baskets, was made ready.

The departure of this hermit capturing expedition was an event. The postoffice loafers gazed upon the imposing spectacle with envy in their hearts, though they cheered the noble philanthropists roundly. The people at the corner drug store were all outside waving their hats and making other demonstrations of good will and interest. The yarn spinners at Simpson's grocery held their tobacco firmly between their teeth and their hands in their trousers' pockets as the sled went by. This was their manner of expressing a very warm interest. Women watched from doors, windows and porches, as women always do, and a swarm of enthusiastic small boys hung on to the sled until driven back when half a mile out of town.

The philanthropists reached Weaver's cabin late in the day after digging their way through great snowdrifts. All this heroic exertion made them feel more dominant in spirit than ever. The very first rap on the hermit's door had the sound of authority in it, delivered as it was by the formidable fist of the town marshal, backed by the approbation of the other prominent citizens who accompanied him.

There was no response. The expression of decision on the marshal's face deepened as he began to beat upon the door with both fists and kick it with the thick soles of his tremendous boots.

Still there was no answer. While they were parleying about whether it was time to use the axe or not the closed shutter of the hermit's single window opened, revealing his haggard face, in which blazed a pair of eyes whose wrathful lightning fairly annihilated the prominent citizens.

"What do you want?" he asked, after a moment discomfiting silence, as they stood, wordless, under the spell of his unspoken anger.

"We heard you were sick," said the marshal.

"Well?"

"We knew you would need help," said the justice of the peace, "and so came to try to do something for you."

"You have put yourselves to unnecessary trouble. I want nothing."

"But our duty as citizens will not allow us to let a fellow being suffer," said Deacon White.

"Your first duty is to mind your own business," said the hermit.

"Here is Dr. Horsefly, who will help you right off, if you will let us in," said Mr. Smollett, also a prominent citizen. The doctor stood silent, medicine case in hand, the rigidity of the registrar's code preventing his doing any trumpeting on his own account.

"When I am weary of life I shall send for Dr. Horsefly. Until then he must excuse me," returned the hermit, with something like merriment dancing in his wild eyes.

The doctor covered under this deadly insult, feeling it the more because the earth was yet fresh over his two last patients. This offensive defiance of their authority was the tacitly understood signal for a concerted rally of the rescuers. Instinctively they drew nearer together, and one said:

"Come, come, Weaver, this is no way to do. We are here in the friendliest spirit, and are sincerely anxious to have you taken care of. You are a sick man. You ought not to be alone as you are."

"Well, what do you propose to do with me?"

"Why, why—take you where you will be properly cared for, of course," answered Justice McCracken.

"Now, that is kind, I admit," said the hermit, and he looked at them with a strange, amused expression in his eyes. Believing that they were gaining ground, they grew bolder.

"Yes, we wish to be kind. We can't let you perish up here, you know."

"Well, where do you propose to take me?"

"Hem, h'm; why, you see, Weaver—you see Hillsford has no hospital—and—"

"But you have fixed upon some place for me, I presume?" questioned the hermit, in the tone of one about to surrender.

"Y-e-s," spoke up another. "We thought we would take you to Johnstown."

"Ah, that's the county seat, isn't it?"

"Yes."

"And the county house is near there, isn't it?"

"Yes."

"Well, that's a good enough place for any one who wants to go there. I don't. Now it is time for you to leave," and he shut the window.

The besiegers conferred together and again began to beat upon the door. Feeling more courageous when Weaver's wild eyes were not on them, they called to him that he must consent to go with them, or they would take him by force.

The window opened once more and revealed the gaunt form of the hermit grasping a shotgun. Instinctively the attacking party fell back a few paces.

The hermit spoke: "I will blow the head off any man who again lays a hand upon my door. I am in my own house, on my own ground, and there is not law enough in the republic to permit you to enter and lay a hand on a man who is neither criminal nor pauper. Had you come here proffering private charity I could have resented it, but I should have respected you. As it is I will kill you like dogs if you trouble me a moment more." And he pointed the gun at them in a way that was convincing.

Grumblingly they moved away. "He's right," said the justice, who had a mortal fear of firearms; he's not a pauper. He owns this ground and he owns the house. If he won't come with us willingly we shall have to let him alone."

"He's as crazy as a kite," piped up two or three others, anxious to cover up their shagrin.

"He ought to be confined as a dangerous lunatic," said the doctor, in whose bosom still rankled Weaver's poisoned arrow.

They reached Hillsford in a crestfallen frame of mind, all agreeing that the hermit might die a dozen times over before they would "put themselves out" to do anything for him again.

Two weeks later, when the weather was bitter cold, Robby Hart, a sturdy 12-year-old, rushed into his mother's sitting room one afternoon, bursting with news. "Old Weaver's in town," he panted.

His mother looked up from her sewing machine with interest. Like everybody else in Hillsford she knew the history of the fruitless siege of the hermit's cabin.

"Yes, he's here; awful sick, too; out of his head, and is lying on the floor in the back part of Hunt's grocery. They're goin' to send him to the poorhouse at Johnstown."

"Not in this terrible weather," said Mrs. Hart, looking alarmed.

"Yes; right off. There's no place here for him, they say."

"No place for a poor old sick man in all Hillsford? We are not so bad as that, Robby, I am sure."

"Oh, but I heard Judge Markie and Deacon White and all of them say so. It's settled."

"Perhaps not," said Mrs. Hart, as she began to put on her bonnet and cloak. She was, perhaps, the poorest person of refinement and education in the town and the most benevolent. She was a widow, whose only dower were a boy of 12 and a girl of 9 years. By sewing almost night and day she managed to keep the wolf out of sight.

Accompanied by Robby she went over to Hunt's to see the hermit, and at once knew that he was sick unto death. As the sled which was to transport him to Johnstown drew up at the door Mrs. Hart touched the arm of Judge Russell, who seemed to be clothed with more authority just then than any of the other "prominent citizens" who hovered about, and said:

"I will take care of Weaver if you will send him to my house. He is a very sick man, already greatly exhausted by his journey down the mountain. The drive to Johnstown might kill him."

"Really, Mrs. Hart, you're always doing too much for others. Young Dr. Clay was in here a bit ago, and he said the old fellow oughtn't to be moved so far. But you'd better think twice before you take him. He'll be an awful charge."

"I know that," she answered; "but I will take him and do the best I can for him." So the hermit was put upon the sled and delivered at Mrs. Hart's like a ball of merchandise. The widow's unselfishness kindled a temporary flame of the same nature in other breasts, and for a moment volunteer help was plenty. She took advantage of some of this to get her patient bathed and barbered and put to bed in a comfortable, Christian way.

Then began for her weeks of care, work and anxiety. The sewing machine was silent, with the unpleasant consequence of low finances. Contributions to the comfort of the sick man fell away as time passed and the affair became an old story. Young Dr. Clay alone remained faithful. The donations of others had dwindled down to advice. All in all, Mrs. Hart had "a hard pull of it."

At last the hermit became convalescent. Finding himself in a home where refinement and kindness prevailed, he fell into the ways of its inmates as naturally as if he had been accustomed to civilization all his life. He talked genially and charmingly, and seemed possessed of as much information as any man in the world. Clad in his right mind and conventional clothes, he lost his character of hermit entirely. Many of the signs of age, too, had disappeared under the good offices of the tailor and the barber. He did not look a day over forty-five.

He was quite well now, but he showed no disposition to return to his semi-savage life, so far as any one outside of Mrs. Hart's home knew.

Christmas was almost at hand. Hillsford was busy buying its presents and getting up festivities. At Mrs. Hart's the preparations were on a scale so simple that they were almost pathetic.

Two days before Christmas the town had something new to talk about. A middle aged gentleman and lady of the upper class, apparently, arrived at the Hillsford hotel and asked for Weaver. While they rested and dined they were regaled with the story of the hermit's queer doings, the ineffectual attempt to send him to the poorhouse, the widow Hart's interference and everything. Then they were piloted to the Hart door, and for two days afterward, although the town was almost eaten up by curiosity, it could find out nothing at all about them.

It got the whole story on Christmas from The Weekly Chronicle.

Our readers will be surprised and gratified to learn that Mrs. Caroline Hart was married night before last to Mr. Vincent H. Weaver, of New York. The ceremony took place at the bride's home at 8 o'clock. The groom's sister, Mrs. C. P. Stevenson, and her husband, also of New York, and two or three of the bride's closest friends were the only guests.

Mrs. Hart, now Mrs. Weaver, as everybody knows, is one of the most highly respected ladies of Hillsford. Although far from rich, she has been philanthropic to an extraordinary degree.

Every one knows how Weaver, the hermit, fell sick one day early in the winter when he came into town to buy some supplies, and Mrs. Hart had him removed to her cottage to prevent his being taken to the county house at Johnstown. But not until recently did any one know that Herman Weaver, the hermit, and Vincent H. Weaver, the celebrated author, were one and the same.

It has been generally believed that our hermit had been the victim of some cruelty at Cupid's hands and for this reason had deserted the society of his fellow men. We learn from good authority that this diagnosis was incorrect. He lived in his mountain cabin because he could there devote himself to the work of writing his books without the risk of being lured away by any of the thousand diversions which tempt him from his toil in the city. His character of semi-savage was assumed to protect him from intruders.

Mr. Weaver really did not live in his mountain lodge half the time he was supposed to. Often, for months together, he would be absent, mixing with the wits and literateurs of the metropolis. He has even been several times to Europe, while the people of Hillsford supposed him to be within his solitary cabin.

Eccentric he is, to be sure. For instance, we have been told that before he spoke of marriage to Mrs. Hart he put \$50,000 in her name in a substantial New York bank and settled a handsome sum upon each of her two children. He wished to make her independent before the question of marriage was discussed, and he considered her entitled to all he could do for her for having taken him to her home thereby saving his life when he was at death's door.

This is a true love match, without doubt. Their Christmas gift is the very best in Santa Claus pack. It is labeled "Love," and comprehends the better part of earth and a portion of heaven.

Mr. Weaver made a final trip to his cabin on the mountain the other day, and wrote across its door in big letters, "It is not good for man to be alone." Mr. and Mrs. Weaver will build a splendid house here for their summer home, but will spend their winters in New York. They left yesterday to finish the season there. We wish them every happiness under the sun.

This startling piece of news caused many an eye to protrude when it was read. "I always thought that Mrs. Hart was a designing thing. Sly, oh, so sly. I'll warrant she knew that Weaver was a rich man or she never would have taken him in," said a woman who, only a month before, had expressed the fear that the widow "would have old Weaver on her hands for life."

GERTRUDE GARRISON.

## ROBIN REDBREAST.

(Concluded.)

She is a little afraid of her smart servant, but she musters up courage to ask the butler to carry her meal into a smaller room, where, with a warm fire in the grate, she can at least try to be cosy.

She wanders out by-and-by, alone to the village church, where the rustics and her tenants stare hard at their young landlady, and make her wish she had never been born. Then back again to gloomy Newtownlock and her Christmas dinner.

"I will pretend that I am quite happy," she says; and then she whistles to Ben, Osbert's collic, who, like herself, is very lonely.

So there, all alone at the head of her table, which glitters with silver, and is scented with hot-house flowers, sits Robin.

A fog has crept up, so the blinds are drawn and the lamps lit, and after awhile the servants go to their revels in their quarters, and Ben and Robin are left to their own devices.

"Let us read our fortunes in the fire," Robin says to her only companion, and she crouches down on the soft hearthrug with her hand on Ben's head, and falls into a reverie.

She is thinking deeply, not of the past, but of the future. Her first experience of isolation and self-dependence is teaching her a lesson. She realizes there is more in life than childish fun and frolicking. All at once the full weight and responsibility of her life and its duties come upon her, and she feels a child no longer.

"It is very funny," she thinks to herself, dreamily: "But, somehow, I don't wish to be at Lowrick one little bit. I don't think I want anything but to sit here and be quiet. It is very pleasant, isn't it, Ben, old dear?"

Ben wags his tail, but his eyes go round wistfully, as much as to say, "If he were only here."

Robin understands that gaze.

"Be patient," she says. "He will come soon, and we will both be glad to see him; shan't we?"

She had a telegram from Osbert early in the day. His mother bore the journey well.

At every turn Robin finds herself surrounded by evidences of Osbert's thoughtfulness.

"Oh, if you please, miss. Mr. Everest said you was to have this," or "Mr. Everest begged me to see you had the other, miss," all of which is exceedingly pleasing to the girl. Even among her well-beloved relations at Lowrick she never had half this care and attention.

The moments pass.

It is nearly six o'clock. Robin rouses herself.

"I think I ought to read something. This is shockingly lazy," she says. But before she can rise Ben has rushed with a shrill bark of joy to the door, and is jumping frantically upon the form of his master, who enters at this moment.

Robin's cheeks flush.

"You?" is all she can say.

"Yes, I," returns Osbert, throwing off his coat, and smiling, as he comes forward. "Don't look so astonished; I have not fallen from the clouds." He takes her hand in her cold one for a moment.

"I felt I must come and wish my ward a happy Christmas, though I fear the words will have an empty and meaningless ring in her ears."

"On the contrary," Robin replies, wondering why her pulses are thrilling so wildly all at once,

"they carry their full and complete meaning. It is a very happy Christmas to me, as Ben will confirm, I am sure;" then, after a little pause, "It is very good of you to come—very."

"Is it?" Osbert says, dreamily, thinking vaguely as he leans his back against the fireplace, how good it is to be here, or indeed anywhere, with this girl's face to greet him, those sweet eyes to gaze into his in that exquisite, fearless way.

"And—and you must be so cold and so wet," Robin goes on, quickly. "Have you had any dinner? Ben and I finished ours long ago; but I fancy we left enough for you."

"I don't feel very hungry," Osbert answers, speaking the truth. He seems to have no desire, now that he is in this cosy, warm room, with that slim form close beside him, and yet he has not tasted food since early morning. He has been some four or five hours waiting about in the fog and cold at desolate railway-stations, wondering why he should take so much trouble for a person to whom he is so wholly indifferent; but now that he is arrived, he no longer wonders. He knows that he would endure days and weeks of far greater discomfort for the sake of winning one smile, or one kind word from this girl. He watches her as she rings the bell, and despite his protest, orders a meal to be served at once. How could he have thought she was a child? She has all the grace and dignity of a woman. She shows no shyness or *mourais honte*. She has fallen at once into her proper position as mistress of Newtownlock.

"I will sit here, but I cannot possibly promise to eat," she laughs, when the dainty meal is laid.

She draws up a chair and leans back in it. Osbert falls to wondering how she manages to pin her curly locks into the high picturesque knob surmounting her little head, and then he wonders with a sudden chill from whom came the one diamond ring that flashes on her slender left-hand finger. The gleam of the jewel as it flashes at every movement robs him of some of the unconscious delight that has come upon him. Robin questions him about his mother, about his sister, about the little baby, and then she cants on merrily. She has quite lost all sense of fear and discomfort. He does not seem half so severe to-night.

"We must drink a Christmas toast, must we not?" she says, by-and-by, and then she lifts her tiny glass of champagne and clinks it against his. Is it a dream, Osbert asks himself, or does that sweet girlish face really exist so close beside him?

"Now own, my guardian," she cries, mischievously, when she has sipped some of the wine, "did you not come back to discover whether your ward had not taken advantage to fly back to the old nest at Lowrick?"

Osbert shakes his head and smiles.

"I have no fear of you. You have a true sense of duty, although you are a Robin Redbreast."

She colors faintly.

"Do you know I am going to be very generous? I am going to tell you that I think you have acted most rightly in bringing me here. I recognize now what I have never done before, that I am no longer Robin Redbreast, but Roberta Maxse, with strong duties and responsibilities attached to my wealth, and the sooner I take them up the better. Mr. Everest, I thank you for what you have done most heartily."

"I am glad," Osbert says, gently, his beautiful eyes glowing very tender as he looks at her. "You are only a girl, but you can do a great deal."

"I mean to try," Robin pauses, and then smiles at him. "And you will help me, won't you?"

"To the best of my power. I shall go into everything with you before I leave England."

"Leave England?" echoes Robin, slowly. "Are—are you going away for long?"

"Did not my mother tell you? I must return to India. My poor father left all his affairs in much confusion, but he invested large sums out there, and I am in great hopes of making every turn out satisfactorily. It matters at a standstill when I come home the other day, but I was anxious to reach England before Christmas, and there was no help for it." He pauses a moment, and she says nothing, and he goes on a little uncertainly. "I shall try to come back as quickly as I can, but I fear it will be some months before you will see your guardian again, miss Robin."

Her face is grave as she rises from the table.

"You will smoke, I hope?" she says, as he rises too.

"You are sure you don't mind?" She shakes her head.

"Hugo is never without a cigarette," He lights his cigar in silence. The mention of Hugo sends a thrill to his heart like the sight of the diamond ring had done just now.

Robin throws herself into a chair.

"How cold it is!" she says, with a shiver; but she has only just discovered the cold.

Going away from England for months—perhaps a year!

She steals a look at his grave face, and a sudden yearning pain comes into her heart; as in a vision she seems to see the future—the long days when her eyes will not be able to rest upon that face.

"Your mother will miss you," she says, faintly.

"I am going to leave her in your care," he answers, with a touch of unsteadiness in his voice; "she likes you very much." Then, before she can speak, "I shall expect long letters from you, my ward, and remember you must tell me all your wants, and—and be sure I will not withhold my consent, unless I feel that to grant it would be utterly impossible."

"Consent!" says Robin, looking at him straight out of her great luminous eyes, "you mean—"

"In the event of your marriage."

Her cheeks flush, but she makes no reply.

By-and-by he rises, and throws his cigar into the fire; he takes up his coat.

Robin wakes with a start.

"I hope your room is prepared!"

"Many thanks," he replies, hurriedly, "but I have taken a room at the inn, and I think I must be making my way there."

"It is scarcely half-past eight," she says, very wistfully.

He puts down the coat at once. She makes no remark about his room, for which he is glad; he does not care to tell her why it is impossible for him to sleep at Newtownlock this night. Her greatest charm is her innate purity, to speak of slander and the world's venomous tongue would be sacrilege.

"I will stay a few minutes longer," he smiles, but he has grown very pale.

Robin remarks this.

"Are you very tired?" she asks, and there is a tender touch in her voice.

"Not now," he answers truthfully.

There is silence again, then she breaks it.

"When do you go?"

"In two days' time."

"So soon?"

He looks at her eagerly. Can his ears deceive him? or is there a ring of despair in her voice?

"You must take great care of yourself while I am gone."

Robin smiles, then she turns away suddenly, and covers her face with her hands.

Osbert stands staring at her; she is crying—crying bitterly. What can it mean?

"Robin, dear," he begins, tenderly, then he is beside her, and his arm is about her—"my darling! what is it?"

"Don't leave me," she whispers, as she clings to him.

His heart beats almost to suffocation.

"Why," he asks, in low concentrated tones, "why do you ask this, Robin?"

She lifts her dusky eyes to his, tears are shining on the long lashes.

"Because I love you," she answers.

"Hush! Oh, hush, my dearest!" he clasps her hands in his. "You must not tempt me! You don't know you don't understand! You are only a child after all, and have your whole life before you! I—I cannot let you speak like this, dear, you may be so mistaken! You are new to this life; it is lonely! Ah! you see, I comprehend so well! In a few months all will be changed; you will think of me kindly, and—"

"Osbert, tell me one thing,"—her little hands rest in his still—"could you love me?"

He looks into her eyes for a moment with such intensity as to dazzle her, then he speaks quickly:

"My lip are sealed, Robin. I must not answer; you must forget this foolishness! You—you must help me, dear. Think of what the world would say!—I, a poor man, appointed your guardian; you, a rich girl, ignorant of the value of money—of the rudiments of life—it cannot be—it must not be! I am your guardian, and nothing more."

Robin stoops her head, and kisses the hands she holds.

"Darling," she says, oh! so tenderly, "you take me to be a child, and I am a woman! Love has come into my heart, and it will not leave me, as you imagine. I understand better than you think, but I will outlive the world. Listen to me, you shall go to India—you shall remain a way for months or years, I shall not change. I love you, Osbert; I love you, and my love will never die!"

His hands clasp hers suddenly. No one but he himself can realize how great is the effort he brings to crush the yearning to take her in his arms.

"You will not mind this, will you, dear?" she goes on, gently. "And is it very dreadful to say it?—I—I seem to be quite another person, not the Robin of old; but I would not change back again, not for all the wealth in the world! I have only known you two days, Osbert, but those two days will last my lifetime! You must not say anything more, only this"—she catches her breath—"that when I am of age, and quite—quite free, if you still care for me, you—you will tell me so, Osbert, and let me be your wife."

"I promise," he says, unsteadily; "but, my dear one, you too must promise me something."

"Anything in the world."

"Well, then, if as the days pass, and you grow older and wiser, you see that you have made a mistake, you—"

Robin silences him by putting her hand over his lips, and she flushes vividly as he rains kisses on the hand.

"See," she says, slyly, after a moment, "you shall take this ring—my mother's ring; it is something to remind you of me when you are miles away; and, Osbert, if ever the day should come when I wish to tell you I care for you no longer, I will send a word to you, and you must return it—that is our bargain."

Osbert lets her slip the ring on his little finger.

"Remember," he says, quietly, "I bind you to nothing, entirely free. Through the long years before us I am your guardian, Robin, nothing more. Now, dear, good night and God bless you."

Robin's answer is to put her two hands in his and to lift her lovely face towards him.

He catches his breath, pauses one instant, then bends his head and presses his lips to hers gently and quietly.

The next moment he is gone, and Robin is left standing where he stood, her hands held close to her heart—the heart that has suddenly expanded into a woman's, quick to know joy or sorrow in its fullest sense—the heart that to-night, and for always, she

gives up unreservedly to the man she has already learned to love and trust so well.

Christmas-time again. Lowrick Hall wears its annual festive air, but this time there is, if possible, more excitement than ever; it is the eve of Evelyn's wedding to Lord Douglas Masters.

There are cries of Robin in every direction; the slender, dusky-eyed girl is in great request, and she does all she possibly can to gratify the many demands upon her.

"And you really mean to say you are going to take yourself back to dingy Newtownlock to night, Robin?" remarked Hugo, handsomer than ever.

"Beware how you traduce my property," she laughs; "I adore Newtownlock."

"I shall take you back, of course," says Hugo, in his grandest way.

Robin frowns. Of late it has struck her that her cousin has adopted a very disagreeable proprietorial manner over her.

"I can go very well by myself," she answers; but this is not permitted, and by-and-by, as the afternoon draws on, she finds Hugo fully equipped ready to accompany her.

For reasons which he does not think it necessary to explain, Robin has ordered a carriage to come for her, and in this she and Hugo embarked.

"Of course you will come back as soon as ever you can leave. Why can't she spend Christmas with her own people, I should like to know?"

"If Mrs. Everest were there or not, I should go to Newtownlock," Robin answers, coldly.

She wishes wearily that her cousin had not come she wants to think she is longing to be back in the comfort and quiet of her own home, and she wonders with a thrill whether the Indian mail will have come, and if there will be a letter. He has not written since October, surely he must write soon. Matter-of-fact, cold, business-like as they are, these Indian letters are her life.

"He said he was going up into the hills, but he might find time to write," she thinks.

She heeds not Hugo's conversation, but by-and-by she wakes with an uncomfortable sensation. Hugo is speaking of love, and is trying to hold her hands.

How it happens Robin does not know, but in a few minutes Hugo is on the frozen road striding back to Lowrick, furious beyond all description, and Robin is driving on alone.

She weeps a little as she goes, and then she falls to dreaming of Osbert, and when she wakes she is at the door of her home.

She gets out wearily; her first glance is for the hall table; there are dozens of letters, but not one with an Indian postmark.

Mrs. Everest is lying down; she will not disturb her.

"I am going to my study," she says, and turns away before the butler has time to tell her some news he is evidently anxious to impart.

She gropes her way through her tears to the room, and reaches the door.

"He might have written—he might have written!" she says to herself again and again.

She opens the door, and then she half staggers; the lamp is lit, and there before the fire stands the one who has never been absent from her thoughts night and day during the year that is gone.

Osbert takes one stride across the room, and holds her in his arms.

"They did not tell you—you are frightened."

Her only answer is to cling to him, she cannot speak.

"My darling, my darling," he says, with infinite tenderness, "my Robin Redbreast."

She lifts her face at last.

"Osbert, you have come—you are here—you love me!"

His lips answer her, though not by words.

"Yes, yes, you love me—we have been true! What does the world matter, we—oh! love, love—you will not leave me again?"

And Osbert, as he gathers her to his heart, and lets his lips rest on her sweet ones, whispers the promise she asks for so eagerly.

Adam was a farmer while yet in Paradise, and after his fall he was commanded to earn his bread by the sweat of his brow.

**FROSTING WITHOUT EGG.**—Mix one cupful of sugar with one-fourth of a cupful of sweet milk, put over a slow fire and stir until it boils. Then boil five minutes without stirring. Set the saucepan in cold water while you stir it to a cream. Spread on the cake while it will run. It will keep longer than made of eggs and will not crumble when cut.

**TO KILL COCKROACHES.**—A housekeeper who was recommended to try cucumber peeling as a remedy for cockroaches, strewed the floor with pieces of the peel, cut not very thin, and watched the sequel. The pests covered the peel in a short time, so that it could not be seen, so voraciously were they engaged in sucking the poisonous moisture from it. The second night that this was tried, the number of cockroaches was reduced to a quarter and none were left alive on the third night.

Minnie May's Dep't.

MY DEAR NIECES,—In this letter I am going to talk of a very homely subject, but one that, if we cannot do well, we will never be classed amongst tidy women. It is not the clothes we possess, but the way we take care of them, and the way we wear them, and to be able to mend our clothes well is an art we should all be proud of. None of us have more clothes than we require, and if they are kept neatly mended, they will look much better and last longer. The first part of our dress that wears is under the arm, or one of the side pieces of the basque. Begin by ripping the sleeve from the part that requires mending, then rip the seams on each side of the worn part, clip the worn part off even with the grain of the cloth, join on a piece, press neatly with a hot iron, baste it on the lining, trim it to the shape of the lining, and sew the seams up again. If the sleeve is worn as well as the bodice, rip the seams and insert another piece after clipping away all the worn part, join the seams together and sew up. If your dress rubs under the forearm and just above the darts, you can cut the worn part out neatly, insert another piece, press with a hot iron, and sew in your sleeve. You will be pleased and rewarded for the extra trouble you have taken, when you contrast the work you have finished with the old fashioned way of sewing a patch on over the ragged part. Often our elbows wear through. Rip the seam at the back of the sleeve in the place where you wish to mend, cut out the worn part and insert a neat piece in its place, and sew up the seam; always press it with a hot iron before turning it right side out to sew together. You must not think, my dear girls, these things are beneath your notice, for nothing is beneath a woman's notice that improves her appearance or helps to economize in any way. Many women in Paris make a good living at mending ladies' dresses alone. And all of our dress-makers can mend expensive dresses in this way. Do not think because your dress is only wincey it is not worth keeping neat. Nearly every lady has to wear a mended dress, and it can be done in such a way as to be almost invisible. The same way with our stockings. If your stockings require darning again, just cut all the old darning and draw it out, then darn afresh. Your stocking will always look neat, and never shrink as they will do if darned over and over all the old yarn, as is usually done. In a word, my dear girls, never patch, always insert, even in repairing your under-clothing; they look neater and feel decidedly more comfortable than if an ugly patch were applied. The clothes of growing children are at all times a trial to mothers—elbows will rub out, skirts become too short, or legs too long for little trousers, and wrists of little coats and dresses get fringed. The sleeves of a little dress can be easily renewed. If you have none of the same color, use another. For instance, if the dress is of plain material, use a pretty plaid, with the color of the dress preponderating; or, if the cuffs are worn, cut all the worn part off and add cuffs of another color to harmonize. How often have I seen a wee lad with the seat of his little trousers patched in two round spots. Now, if mother had cut a square piece out, or an angular piece, and sewed it up again with the back seam after pressing it flat, the ugly look of those round patches would all

have been done away with. So with the knees of trousers; if they were cut straight across from seam to seam, and insert a fresh piece, sewing the piece into the side seams, and finish the bottom as before. The proper mending of children's clothes has far more to do with their self-respect than we ever would suppose. Will not some of my nieces tell me when they have tried my plan, and let me know how they succeed, and if the result is not satisfactory. Darning is quite an art, and in England women make a good living by taking in darning to do; from lace flounces to table linen. It is much the same as lace work, and may be made quite as attractive if done neatly, besides being very restful work.

MINNIE MAY.

How to be Happy.

The following extracts are taken from an article in Chambers' Journal:

"Give us, O give us the man that sings at his work," says Carlyle. "Be his occupation what it may he is equal to any of those who follow the same pursuit in silent sullenness. He will do more in the same time—he will do it better—he will persevere longer. Wondrous is the strength of cheerfulness, altogether past calculation its power of endurance. Efforts to be permanently useful must be uniformly joyous—a spirit all sunshine—graceful from very gladness—beautiful because bright." It is the old story:

A merry heart goes all the day,  
Your sad tires in a mile-a!

It is easy enough to have this "merry heart" when all goes well. But to keep it through all the ups and downs of this changeable world—that is the triumph. Yet our happiness is greatly in our own hands, and on the cultivation of the cheery spirit depends our usefulness to others.

But troubles are so heavy, some will say, it is impossible to keep up. Even so; let them lay us down, let them flatten us out like the grass under a garden roller. We can stand up afterwards humbly, as the grass does, and make the world fresher and brighter that we are still alive.

Answers to Enquirers.

**MARRIED WOMAN'S SIGNATURE.**—A married woman should sign her own name always. Her husband's christian name is her's only by courtesy; others may address her in that way, or she may use her husband's initials on her visiting cards; but to all articles, business documents, or letters, she should sign her own name without the prefix "Mrs." Should she consider the prefix necessary it should be in parenthesis. Her friends are supposed to know that she is married, and whether she is or not, is not supposed to be a matter of importance to others.

**FANNIE H.**—Should judge from your description that your geraniums did not get enough sunlight, and that a little ammonia would do them good. Put it in water in the proportion of a spoonful of ammonia to a quart of water, and give it to the plants as hot as you can bear it on your face. Stir the dirt around them, to keep it loose, and also to keep it from becoming sour.

**YOUNG HOUSEKEEPER.**—Oysters should not be cooked slowly. When making them into stews, have the milk boiling hot before they are put in. If frying them, have the frying pan as hot as possible without burning the butter. Never add salt or salted butter to stews until just before serving them, or the oysters will become hard and shriveled.



**Humps of a Camel.**

The humps of a camel are lumps of fat collected under a fold of the skin, and when the animal is at its best and well fed, they are full and plump, standing upon its back firm and upright; but when on a long journey they are gradually absorbed to keep up the fires that work the heart and legs, and in the caravan camels which arrive at the coast, the skins hang over like an empty bag upon the creature's flanks, bearing witness to the scarcity of external food during his long, forced march from the interior. A starved, small camel in this state, does not look much like the fine, well-kept beasts you see in a menagerie. But water is even more scarce in the desert than food, so his stomach has acquired the power of acting as an internal reservoir, and he can take in as much water at the Wadys, where he rests for awhile, as will last him for four or five days. There is some difference in this respect, however, between the two chief varieties of the camel. The African camel is most abstemious, and best adapted to sandy deserts, the Bactrian larger and stronger, but less patient of hunger and thirst, while, at the same time, it can manage to subsist and make its way in a rockier and more rugged country. —Pop. Science Monthly.

**Work Made Easy.**

The pantry shelves are getting grimy, or finger marks around the door knobs are looking dark and unsightly. For lack of time they are left day after day, for it is hard work to scour all the time, and it wears off the paint, too. The husband keeps his bottle of oil, or perhaps a large can holds it, for he never stints in that.

Now suppose his wife has her bottle of spirits of ammonia to use. She takes a basin of water and a clean cloth, just puts on a few drops of the fluid and wipes off all the dirt. It is worth more than a half day's labor, and does not hurt the paint either. She should put a few drops in her dishwater, and see how easily the dishes could be cleaned; a few drops on a sponge would clean all the windows in the sitting room, making them shine like crystal. It would take the stains off the teaspoons, and a teaspoonful in the mop pail would do more toward washing up the kitchen floor than ten pounds of elbow grease applied to the mop handle. A housewife has just as much right to make work easy and expeditious as her husband has. If she does not do it, the fault is her own in a great measure. —A. E. W.

Cincinnatus was a farmer, and the noblest Roman of them all.

Burns was a farmer, and the Muses found him at the plough and filled him with poetry.

Washington was a farmer, and retired from the high station to enjoy the quiet of rural life at Mount Vernon.

**Uncle Tom's Department.**

MY DEAR NEPHEWS AND NIECES,—All of you, I hope, are working hard at your books, and doing your best to get to the head of your classes. Those of you who do not succeed in gaining the much coveted place, so much desired by earnest boys and girls, must bear in mind that there is only room for one at the top, and that the fact of having done your best in striving will be as much appreciated as if you had succeeded in attaining the topmost place. So in after life you will find that, after having tried for a first place, you may occupy a subordinate position, you can be every bit as useful as the more fortunate, and be happy in the thought that everything you have undertaken to do you have done with all your might. Dear children, even the weakest of you can do a great deal to help others, remembering that the amount of help you can give de-



OUR PETS.

pends very much upon the spirit in which you give it, and cheerfulness and good tempers are wonderful helpers. You may remember the story of the little boy who was anxious to assist in launching the life-boat, and when one of the men pushed him aside saying he was too little to be of any use, replied: "Please, sir, I can push a pound;" each one of you can push a pound, and when the opportunity comes, you will, I hope, push in the right direction. What glorious long evenings for working out the puzzles and enigmas, of which you have a great variety. Sometimes, perhaps, you feel like giving up when you get a pretty hard one; bear in mind that "If at first you don't succeed, try, try again," and the chances are that perseverance will bring success. Perhaps you will think that Uncle Tom's letter this month is rather prosy, but he is very anxious that his nephews and nieces should grow up to be useful men and women, and knows that earliest impressions are the most lasting, and that childhood is the time to learn.

UNCLE TOM.

MY DEAR BOYS,—You are all fond of pets, and I like to encourage the feeling, for boys who do not like animals are not kind hearted, and every kind-hearted boy will have pets of some sort. Pigeons, dogs, birds, guinea-pigs, hens, ducks or rabbits are easily kept, easily fed, and, if judiciously managed, should be made pay for their feed. I shall tell you about keeping rabbits in this letter, and in another shall show you how pigeons may be made a source of profit. Our own little black and white, or grey or yellow rabbits, if well fed, are delicious for roasts, or stews, or soup, and it is only because housekeepers cannot get them to purchase that they do not use more of them. One pair will do to begin on. Keep them in a corner of the stable or warm out-house in winter, and in summer fence a small grass plot off for them. They will eat almost anything, and must have a liberal supply of clean water; tea-leaves are healthy to

give them occasionally in winter. They multiply very fast, and when the young ones are four months old, or full-grown, they are fit to kill, and will find a ready sale in the city markets. One naturalist writes, that a pair of rabbits will produce six thousand in one year; but, allowing that one-half that number is the correct figure, what a lot of twenty-cent pieces will find their way to the happy boy's pocket. The Jack rabbit of California has become a nuisance and a terror to land owners, for they have multiplied so fast and are so destructive that they will eat acres of alfalfa or native hay in a single night. The settlers hold what they call a "rabbit drive" to try and diminish their numbers. All the people living within a certain distance meet on the day appointed, scatter themselves into a huge semi-circle extending half a mile or more, they then slowly

advance with hooting and noise, driving all the Jack rabbits before them. These little creatures do not burrow as our rabbits do, and consequently they are obliged to leap ahead of the crowd of people. The semi-circle narrows in by degrees and terminates in a coral or narrow field, then the crowd closes up and kill the poor little rabbits with sticks; sometimes three thousand five hundred are killed at one drive. When I tell you that not a melon ripens, nor a vegetable grows but the rabbits sample it first, you will not blame the residents so much, though it does look cruel to kill them in that wholesale manner. When all are killed, they make a large fire and burn them up. They are very timid, and when made pets of require to be treated with the greatest kindness and gentleness, else they will run from you and you cannot pet them at all. What little girl or boy does not like to take a dear little soft rabbit and cuddle it, as in our picture?

We are five little prisoner bunnies,  
Our masters they love us so much;  
But, we really don't see what the fun is  
To be shut in the loveliest hutch.

So, from darkness a hint we will borrow  
 And be off ere the morning is light;  
 For, why should we wait till to-morrow,  
 When the coast is all clear to-night.  
 Then, quick, when the world is sleeping,  
 We have nibbled the bars all through,  
 And off we go laughing and leaping;  
 Off through the ferns and the dew.  
 Little masters, a hint you may borrow  
 When you come with the dawn of light;  
 Why, why should you wait till to-morrow  
 When you've got what you want to-night.  
 — J. H. F.

**Puzzles.**

**1—CHARADE.**

My first is sad and gay,  
 Worn by many night and day.  
 My second is grown on India's plain;  
 The poor man's food, the merchant's gain.  
 My whole a change of thought,  
 A mood of mind with danger fraught.  
 HENRY REEVE.

**2—HEXAGON.**

A consonant; a river in Scotland; gay; something we cannot do without; multiplied; a famous battle; tracks; a city in England; small animals; firm; a river in England; a place of amusement; a consonant. The central letters read downwards tell what the ADVOCATE is.  
 LOTTIE A. BOSS.

**3—ENIGMA.**

My first, though not a convict, is in gaol.  
 My second (not a spendthrift) is in debt;  
 And, though it's not an entrance, is a-let.  
 My third, though not a moral, is in a tale.  
 My fourth, although not Jonah, 's in the whale.  
 My fifth is not the setting sun, yet it is in the west;  
 (This puzzle, although hard to make, will be most quickly guessed.)  
 My sixth is in the ADVOCATE, all puzzlers ought to know.  
 My whole, though not our Uncle Tom, is in Ontario.  
 HARRY A. WOODWORTH.

**4—ILLUSTRATED REBUS.**



**5—STAIR PUZZLE.**

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1. A band of singers.
2. A heron.
3. A round body.
4. A succession.
5. One who succeeds.
6. A point.
7. A step.
8. Rent.
9. Dexterity.
10. Stigma.
11. To rend.
12. A Dutch measure of liquids.
13. A seat.
14. A trumpet.
15. Part of a circle.
16. A preposition.
17. In ring.

"SNOWBIRD."

**6—REVERSALS.**

Reverse "to swallow eagerly" and get a "pin."  
 Reverse "destructive vermin" and get a "luminous body."  
 Reverse "to exist" and get "ill."  
 Reverse "strong" and get an "island in the Mediterranean sea."  
 Reverse "to cut" and get "useful articles."  
 HENRY REEVE.

**7—CHARADE.**

My mind I cannot settle,  
 To make first rhyme to-night;  
 So friends you'll please excuse me,  
 If prose I have to write.

I might go last and give you,  
 A verse or two in rhyme;  
 Enough to make a puzzle,  
 Or more if I had time.

But then it would not look well,  
 For me to do it though;  
 Total this winter's evening,  
 I'd break my word you know.  
 FAIR BROTHER.

**8—TRANSPOSITION.**

Wogkledne si rupod atth eh abs nraede os chum,  
 Wmsdio si leghmu hatt eh swonk on home.  
 ANNIE HARLAND.

**9—DROP VOWEL PUZZLE.**

Th-r- s n- w-nt-r -n th- h-rt  
 -f h-m th-t d-s -s-l d--d,  
 -f wh-t h-g-v-s h-h-s -p-rt  
 -nd th-s -ppl- th-ll h-n--ds--G--rl--  
 A. T. REEVE.

**10—CURTAILMENT.**  
 Complete I am a privilege,  
 Granted unto those  
 Who has right to an invention,  
 As everybody knows.

And now, if you should curtail me,  
 The cover of a chalice see.

Again curtail, I am the head,  
 Pray do not take the tail instead.

And if again you should curtail,  
 You'll see a light tap will prevail.

FAIR BROTHER.

**11—GEOGRAPHICAL STORY.**

I am going to tell you about our (an island west of Australia) boys. They have had a splendid (island east of Ecuador). (City in Texas) got a (branch of the Arkansas river) and a (river in Wisconsin) (island in the Bahamas) (cape east of Nova Scotia) got a (a lake in Oregon), two rivers in Montana) and a (a island west of United States) (a river west of British Columbia). While their (mountains in Oregon) (island north of Australia) and (cape west of United States), got a pair of (river south of James' Bay). On New Year's Day the boys went out to hunt. They shot a (river in the Indian Territory), two (island north of Bruce), (a river in Iowa), and a (channel north of Hudson's Bay). And then they came upon a (island west of Manitoulin Island) waste and having no (port west of Patagonia) to go farther they made a (island in Hudson Strait) to go (west of Baffin's Land) to their respected (lake west of lake Winnipeg), (cape south of Greenland).  
 WILSONVILLE.

**12—TRANSPOSITION.**

On nam si papyh lilt eh sinkh no heart  
 Rethe reatbesh ton eon rome hyapp nath simfelh,  
 Neth yenv side, dan vole o'efsrwol no lal;  
 Nad evol lmforg'ewo kamse na galen rebe.  
 A. T. REEVE.

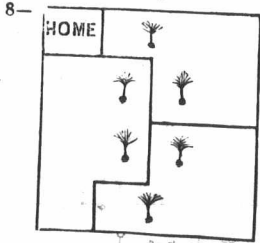
**Answers to January Puzzles.**

- 1—Hearth, heart, hear, ear, are.
- 2—A glad New Year.
- 3—He has much to do who would please everybody.
- 4—

A T E  
 O H O  
 P I N  
 A S P  
 G L I D E  
 P A R S N I P  
 E N G R A V I N G  
 R I V E R G A M B I A  
 D O G  
 B O W  
 W I D O W  
 C H I C K E N S  
 F R I L L I N G S  
 W O R C E S T E R  
 S U M A T R A  
 P I N C H  
 S I L L Y  
 B A V A R I A  
 S T R O M B O L I  
 P H I L I P P I N E S  
 This is a good, clean lamp.

**5—The-rein.**

6—The brave man is not he who feels no fear,  
 For that were brutish and irrational;  
 But he, whose noble soul its fears subdues,  
 And bravely dares the danger nature shrinks from.



7— H A V E  
 A C I D  
 R I C E  
 E D E N

9—Franc-e; Sea-l;  
 Pans-y; Pear-l.

10—A happy new year to the ADVOCATE,  
 And all the girls and boys;  
 Goodbye eighteen hundred and eighty-eight,  
 With all your sports and joys,  
 Now puzzle away, ye puzzlers gay,  
 That the ADVOCATE hopes to hear from,  
 And in the new year do your best to cheer  
 Our jolly good "Old Uncle Tom."

**11—Ear-ring.**

12—How vainly, through infinite trouble and strife,  
 The many their labours employ;  
 Since all that is truly delightful in life,  
 Is what all, if they please, may enjoy.—Byron.

**Names of those who have Sent Correct Answers to Jan. Puzzles.**

Naomi Danbrook, Harry A. Woodworth, Katie B. Buchanan, Flora McDougal, F. E. Fisher, Annie Harland, Clara Rilance, Frank Riddle, Charles S. Laidman, A. Howkins, Ed. A. Fairbrother, Morley T. Boss, Lizzie C. Watt, A. L. Shaver, Emma Dennee, E. Eulalia Farlinger, Mabel Clazie, John Baker, A. T. Reeve, David Winter, Anna K. Fox, Hy. D. Pickett, Henry Reeve, Cecelia Fairbrother, Helen Connell, A. Russell Boss, Lizzie Findley, I. May Flewelling, Robert Wilson, Jessie Murray, G. H. Ferguson, Elsie Ireland, John McFarlane, Thos. McQueen, Hattie Robinson.

Footo, the renowned wit, was talking away one evening at a dinner-table of a man of rank, when, at the point of one of his best stories, one of the party interrupted him suddenly, with an air of most considerate apology; "I beg your pardon, Mr. Footo, but your handkerchief is half out of your pocket."—"Thank you, sir," said Footo, replacing it, "you know the company better than I do," and finished his joke.

Artist—Now, my dear friend, examine this picture carefully and give me your candid opinion about it. Friend (after examination)—The likeness is wonderful! But haven't you given her a little too much color? What on earth are you talking about? About this portrait of your grandmother. Grandmother! Why, manalive, what's the matter with you? That's not my grandmother. That's a sunrise!

**NEW ADVERTISEMENTS.**

**SPECIAL NOTICE.**

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

**AUCTION SALE**

**SHORTHORN CATTLE**

WEDNESDAY, MARCH 27th.

I will sell on the Market Square, Woodstock, my entire herd of Shorthorn cattle, about 25 head of cows, heifers and young bulls. This herd has been bred with great care to preserve the milking qualities of the breed. About ten of them have been giving milk or suckling calves all winter and are very thin. This will be an excellent opportunity for farmers to procure first-class stock cheap. Terms of sale—Nine months credit on approved joint notes.

STRICKLAND BROS., JOHN HART,  
 Auctioneers. Proprietor.

**THE WYTON**

**STOCK BREEDERS' ASSOCIATION**

**THOROUGHBRED HOLSTEINS**

WYTON STATION, ONTARIO,

APRIL 19TH, 1889, AT ONE O'CLOCK P. M.

There will be offered for sale to the highest bidder thirty head of Holsteins, from calves to four-year-old heifers and bulls. Wyton Station is on the G. T. R. R., between St. Marys and London. For further particulars address

W. B. SCATCHERD,

WYTON, ONTARIO.

OVER 6,000,000 people believe that it is the largest and most reliable house, and they use

**Ferry's Seeds**

D. M. FERRY & CO. are acknowledged to be the Largest Seedsmen in the world.

D. M. FERRY & CO.'s Illustrated Descriptive and Priced SEED ANNUAL

For 1889 will be mailed FREE to all applicants, and to last year's customers without ordering it. Invaluable to all. Every person using Garden, Field or Flower Seeds should send for it. Address

D. M. FERRY & CO., Windsor, Ont.

Breeders' Live Stock Sale Association.

### 3rd Semi-Annual Sale of Horses

MARCH 26, 27 and 28,  
On Western Fair Grounds, London. Make  
your entries at once.  
DOUGLAS H. GRAND,  
278-a Manager, 235 Dundas St.

### PUBLIC SALE

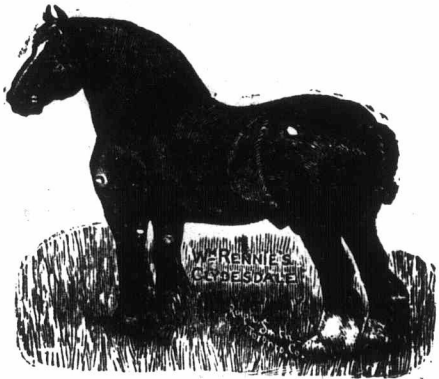
## SHORTHORNS

Maple Lodge Stock Farm  
THURSDAY, 28th MARCH, 1889.

We will sell by auction about 20 cows, heifers,  
and young bulls. Particulars next month. Cata-  
logues ready about Feb., 23th. Send for one.

JAMES S. SMITH,  
278-a Maple Lodge P. O., Ont.

### AUCTION SALE OF HIGH-CLASS PEDIGREE IMPORTED CLYDESDALE HORSES



The undersigned has received instructions from  
Wm. RENNIE, Toronto, to sell his entire stock of  
Imported Clydesdales, viz.: Fifteen Stallions and  
Seven Mares, on Tuesday, 5th March, 1889, at  
Stables - 86 Duchess St., Toronto. As Mr. Rennie  
is retiring from business, all will be sold without  
reserve. This will be a rare opportunity for far-  
mers to secure first class imported Clydesdales for  
breeding purposes at reasonable prices. Six Shet-  
land Ponies will also be sold. For Catalogue  
Address Wm. RENNIE, TORONTO.  
GEO. ANDREW, AUCTIONEER. 277-c

### MAPLE LANE HERD OF JERSEYS FOR SALE.

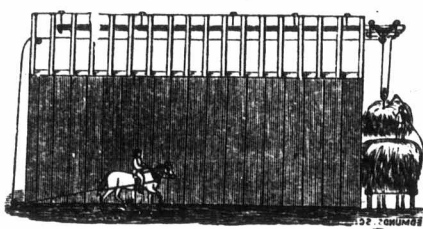
- 1.—King Hugo of St. Anne's (16396), three years  
old, pure St. Lambert.
- 2.—Clover Smith (29523). She is a pure Rex cow  
out of Governor Lorn and Lady Lorn.
- 3.—Violet of Glen Royal (23755), a grand-daughter  
of Stoke's Pogie 3rd, and is due to calve April 1st.
- 4.—St. Lambert's Beauty (41069), a pure St. Lam-  
bert.
- 5.—Daisy of Maple Lane (44546), just dropped a  
beautiful heifer calf.
- 6.—Darling of Maple Lane (52582), 50 per cent. St.  
Lambert, and due to calve March 1st.
- 7.—Flower of Maple Lane (52581), 25 per cent. St.  
Lambert, and due to calve March 1st.
- 8.—Lady Hugo of Maple Lane (52583), 75 per cent.  
St. Lambert, and due to calve 24th May.
- 9.—Mary Ann of Maple Lane (52584), 75 per cent.  
St. Lambert, heifer one year old,  
and a few young calves.

These cattle have been my choice selections for  
the last six years to get the best milk and butter  
cows. These cattle are not culled, they are my entire  
herd and have been shown at all the leading shows  
and all prize animals, and they must be sold as I am  
going to retire from farming this spring. Anyone  
wanting information about any of these cattle by  
writing to me it will be given, but much rather in-  
tending buyers would call and see them as I know  
they will speak for themselves.

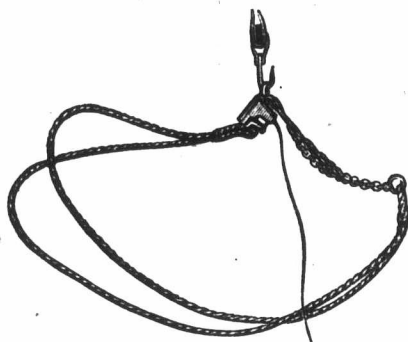
SAMUEL SMOKE,  
278-b CANNING, ONT.

### BUCHANAN'S Malleable Improved Pitching Machine

For unloading hay and all kinds of loose grain



Will unload on either side of barn floor without  
changing car. No climbing necessary in order to  
change from one mow to another. Will unload a  
load of hay in four fork full. All cars made of  
malleable iron. All forks made of steel. Machines  
guaranteed to give satisfaction or no sale. The  
purchaser to be the judge. Responsible agents  
wanted in all unoccupied territory. None but re-  
sponsible men need apply. Send for circulars and  
terms.



### THE COMMON-SENSE SHEAF LIFTER

Works in connection with the hay carrier, and is the  
most complete apparatus ever offered to the public  
for unloading sheaves. Leaves the sheaves in the  
mow just as they come from the load. Satisfaction  
guaranteed. Price, \$5.00.

M. T. BUCHANAN,  
INGERSOLL. 278-a

### MANITOBA DAIRY FARM.

The undersigned would be glad to communicate  
with any party who would be willing to stock a  
splendid dairy farm on shares. It is situated eleven  
miles from Winnipeg, and comprises about 850 acres.  
It is well supplied with buildings, among which is  
one suitable for

CHEESE FACTORY OR CREAMERY,  
with good engine and boiler. Parkdale station,  
Selkirk branch, is on adjoining lot. It has a beauti-  
ful front on Red River, with oak grove, and steam-  
ers ply daily up and down the river in summer. It  
is one of the best stock farms in Manitoba. It is a  
splendid opportunity for any one in Ontario who  
has a large stock and who wishes to extend opera-  
tions in that line. Address—  
J. DRYDEN, Box 1257, WINNIPEG.

### VICK'S AMERICAN BANNER OAT.

This oat was introduced by Jas. Vick, Seedsman,  
Rochester, N. Y., in 1886. He says that he had tried  
it three years previously from an original stock of  
about one pint, and was satisfied both as to its  
distinctiveness from other varieties and also as to its  
productiveness. These oats are the most produc-  
tive grown. In the year 1886 I sowed one pound,  
and have produced from that quantity in two years  
two thousand bushels. The grain is white, large  
and plump; ripens early; has a stiff straw of good  
strength, and has an open or branching head. It  
tilters freely, so can be sown thinner than is  
customary. These oats are free from all foul seeds  
and are perfectly pure.

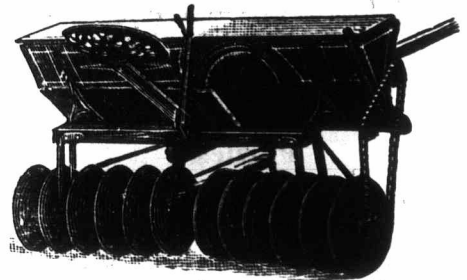
Price, by express or freight at expense of pur-  
chaser, per bushel, \$1.25, or 2 1/2 bushels, including  
bag, for \$3. A liberal reduction for larger quanti-  
ties. Orders received by mail will be promptly at-  
tended to. Address—  
JOHN MILLER, Markham, Ont.

TESTIMONIALS.

Sutton West, Dec. 1, 1888.—From the two bushels  
American Banner Oats I received from you last  
spring I grew 105 bushels. I am well pleased and  
intend to sow them all next season.—Jno. L.  
HOWARD.

A. FORSTER, Reeve of Markham, received one  
bushel of these oats last spring and says he has  
about fifty (50) bushels, but has not measured them  
yet. 278-b

### THE "CORBIN," THE LEADING DISK HARROW



The above shows the Harrow with Removable  
Seeder.

Still Then Come. More than forty trials are re-  
ported with other Disk Harrows, in which the  
"Corbin" was sold and settled for, the past two  
seasons.

The simple fact of the matter is that the "Corbin"  
is the strongest, the most flexible, the most durable,  
the lightest draught, and the only Disk Harrow that  
is reversible, and cultivates all the land under the  
tongue, and leaves the land level, and its work in  
the field quickly proves it.

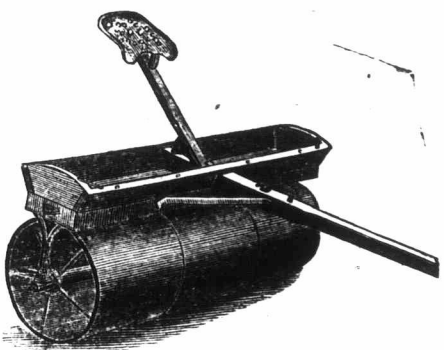
The "Corbin" is made by men who have made a  
specialty of the Disk Harrows for years, and they  
know what is necessary in a perfectly working Disk  
Harrow. In this respect they have a great advan-  
tage over inexperienced manufacturers.

Send for 1889 circular which has some interesting  
facts and description of a new harrow.

Mr. Thos. Shaw, writes in Live Stock Journal of  
March, '88: "The reason this firm (St. Lawrence  
Manufacturing Co.) has done so well, is because  
they have manufactured a good article, the useful-  
ness of which we have verified on our own farm.

About the Seeder. This has now a perfected  
drive gear, and gave excellent satisfaction last sea-  
son. As it greatly adds to the utility of the Harrow  
at a small cost, the demand for it is rapidly increas-  
ing.

### THE CORBIN STEEL DRUM ROLLER, WITH GRASS SEEDER.



—ADDRESS—

The St. Lawrence Mfg. Co. of Ont., Ltd.

PRESCOTT, - - CANADA.

Agencies—Messrs. Van Allen & Agur, Winnipeg,  
Man.; all agents of the Massey Mfg. Co. in the  
North-west, and 230 local agents in Ontario. 278

GRATEFUL-COMFORTING

### EPPS'S COCOA BREAKFAST.

"By a thorough knowledge of the natural laws  
which govern the operations of digestion and nutri-  
tion, and by a careful application of the fine prop-  
erties of well-selected Cocos, Mr. Epps has provided  
our breakfast tables with a delicately flavored  
beverage which may save us many heavy doctors'  
bills. It is by the judicious use of such articles of  
diet that a constitution may be gradually built up  
until strong enough to resist every tendency to  
disease. Hundreds of subtle maladies are floating  
around us ready to attack wherever there is a weak  
point. We may escape many a fatal shaft by keep-  
ing ourselves well fortified with pure blood and a  
properly nourished frame."—Civil Service Gazette.  
Made simply with boiling water or milk. Sold  
only in packages by Grocers, labelled thus:  
JAMES EPPS & CO., Homoeopathic Chemists,  
278-y London, England.

### TO DAIRYMEN!

Wanted a situation as Cheese-maker by a young  
man competent to take charge of a factory. Satis-  
factory references given. Address, Box 161, Lon-  
don, Ontario. 278-a

# SEEDS

Our Annual DESCRIPTIVE and Illustrated Catalogue of **RELIABLE SEEDS** is now ready and will be sent free to all applicants. It contains all the leading and most popular sorts of Vegetable, Farm and Flower Seeds, besides all the desirable novelties of the season, and everything else in our line of business. Every Farmer, Market Gardener, Florist, Private Gardener and Amateur, should see a copy of our Catalogue before ordering. It will pay you.

**J. A. SIMMERS** 147 KING STREET  
(Three doors West of the Market)  
**TORONTO, ONTARIO**

## HENRY WESTNEY

Importer, Grower, and Dealer in  
**Choice Fruit**  
—AND—  
**Ornamental Trees.**

## THE FARM NURSERY

HIGHLAND CREEK, ONT.

**THE CANADIAN MAIL BRINGS OUR SEEDS TO EVERY MAN'S DOOR.**

**JOHN S. PEARCE & CO**  
SEED MERCHANTS  
LONDON ONT.  
64 PAGE CATALOGUE FREE.  
SEND FOR ONE.

## ESTABLISHED 1866. KEITH'S

Gardener's Assistant and Illustrated Catalogue of Garden, Agricultural and Flower Seeds

### NOW READY

and will be mailed free on application to any address.  
Clover and Timothy, Orchard, Blue and Red Top Grasses, Flax Seed, Tares, Seed Wheat, Oats and Barley, &c., &c.  
Correspondence solicited from buyers and sellers.

**GEO. KEITH, Seed Merchant,**  
124 King-St. East, Toronto.



Every kind of hardy Fruit and Ornamental Tree or Plant at almost half the price of many others. Lovett's Guide to Horticulture tells all about them (defects and merits, prices, planting, culture, pruning, etc.) It is a handsome book of nearly 100 pages, finely printed, over 200 engravings. Mailed with colored plates, 10 cents; without plates free. Headquarters for Wonderful Peach, Gandy and Monmouth Strawberries, Abundance and Spaulding Plums, Meech's Quince, etc.

**Plants by mail a specialty.**  
**J. T. LOVETT CO.,** Little Silver, N. J.  
Mention paper and get copy Orchard & Garden free.



### FOREST TREES.

Catalpa Speciosa, White Ash, European Larch, Pines, Spruces, Arbor Vitae, etc., etc.  
Catalpa Speciosa Seed, Forest and Evergreen Seeds.

**R. DOUGLAS & SON,**  
Waukegan, Ill.

## 1850 - 1889 Bruce's SEEDS

Our descriptive and priced Catalogue for spring trade is now ready, and will be mailed free to all applicants, and to customers of last year without solicitation. **Market Gardeners** will find it to their advantage to sow our Seeds.

**JNO. A. BRUCE & CO.**  
Hamilton, Ont.

If you want the best Garden you have ever had, you must sow

## MAULE'S SEEDS.

There is no question but that Maule's Garden Seeds are unsurpassed. Their present popularity in every county in the United States proves it, for I now have customers at more than 31,000 post-offices. When once sown, others are not wanted at any price. My new catalogue for 1889 is pronounced the most original, beautifully illustrated and readable Seed Catalogue ever published. It contains among other things, cash prizes for premium vegetables, etc., to the amount of \$3,500. You should not think of purchasing any seeds this Spring before sending for it. It is mailed free to all enclosing stamp for return postage. Address

**WM. HENRY MAULE,**  
1711 Filbert St. PHILADELPHIA, PA.

## SMALL FRUITS AND GRAPE VINES.

ALL KINDS OF **SMALL FRUITS** AND GRAPE VINES. PLANTS GENUINE AND WELL ROOTED. A CHOICE ASSORTMENT. CATALOGUE FREE.

**T. C. ROBINSON**  
OWEN SOUND, ONT.

**NEW TOMATOES**

Our Illustrated Annual of Tested SEEDS, BULBS, etc., enlarged and improved, a handsome book of 112 pages, beautiful colored plate, mailed FREE to all buyers. Tells all about SEEDS AND GARDENING RARE NOVELTIES

Our Art Collection of Flowers in large Chromo Lithographed Packets is superb. 16 varieties \$1.40. Free by mail. Write now.

**THE STEELE BROS. CO., Toronto**

**SEEDS GIVEN AWAY.** Pick up Mixed Flower Seeds, 500 kinds, GUIDE and loc. Certificate for Seeds, your choice, all for 2 stamps (4 cents.) Every flower lover delighted. Tell all your friends. **G. W. PARK, FANNETTSTOWN, PA.**

## BUY SELECT SEEDS OF VEGETABLES AND FLOWERS, HOUSE PLANTS and ORNAMENTALS

—ALSO—  
CATALOGUE FREE.

**T. C. ROBINSON,**  
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### A NURSERY AT YOUR DOOR.

**TREES, VINES AND PLANTS.** Just the kinds wanted. Strictly first-class. SPECIALTIES: **Globe Seedling Peach, Russian Apricot, Eaton, Vergonne, and Worcester Grapes, Jessie Strawberry,** and other New and Old Sorts. Send your order to the **CENTRAL** for prices. The Mailing Department receives Special Attention. **A. G. H. Central Nursery,** ST. CATHARINES, ONT.

## CREAMERY SUPPLY CO.

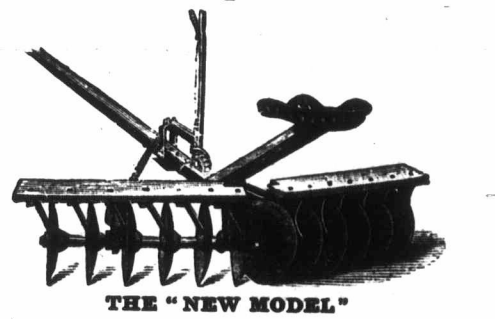
Manufacturers of and Dealers in  
**Hand and Power Butter Workers, Hand and Power Churns, Cream Vats, Danish Western Cream Separators, Butter Printers, Butter Shipping Boxes, Etc.**

Improved Gathering Cans, double lined with air space; the best in use. Also Oil Test Churns of the most improved patterns, and General Factory Supplies. Send for prices. Factories we have fitted up give the best of satisfaction.

**The CREAMERY SUPPLY CO**  
GUELPH, ONT.

ESTABLISHED 1858.

## Morrisburg Implement Works.



### Rotary Disc Jointed Pulverizing Harrow

With or Without Seeder Attachment.  
Don't buy until you have given the "New Model" a trial. Progressive farmers say that it is the very best farm implement ever produced, because effective in work, durable in wear, simple in construction, convenient in handling. See one, try one, buy one and be happy; it will pay you to do so. Send for catalogue showing "New Model" with Seeder Attachment.

**J. F. MILLAR & SON,**  
MORRISBURG, ONT.

Write for testimonials of leading farmers of Canada and descriptive circular. The "New Model" is for sale by Messrs. E. G. Prior & Co., Victoria, B. C.; The Watson Mfg. Co. (Ltd.), Winnipeg, Man.; R. J. Latimer, 92 McGill St., Montreal, Que.; G. A. Le Baron, Sherbrooke, Que.; Johnston & Co., Fredericton, N. B.; W. S. Casson (Mgr. for Frost & Wood), Truro, N. S.; John West, Kensington, P. E. I., and by agents in every county in Ontario.

### Imperial Pen and Pencil Stamp.

Your name on this useful article for marking linen, books, cards, etc., 25c. Agents sample, 20c. Club of six, \$1.00. **EAGLE STAMP WORKS, New Haven, Conn.**

**CARDS** 60 samples and designs, Hidden Name, Chromo, Gold Edge, and Shape Cards, 5 cents. **ROSE & Co., Mt. Vernon, N. Y.**

**\$1,500.00**  
 — WORTH OF —  
**STOCK, IMPLEMENTS, ETC**  
 GIVEN AWAY!  
 For Procuring New Subscribers to  
 the FARMER'S ADVOCATE.

**CONDITIONS:**

- 1st. Cash must accompany all lists of names.
- 2nd. In all cases to secure these prizes the names sent in must be new subscribers. *Renewals will not count.*
- 3rd. Competitors may send in their lists weekly if they so desire. The party who first sends in the full number of names will secure the prize.
- 4th. A Cash Commission will be allowed to all who are not prize winners: From 10 to 20 names, 25cts. each; 20 to 50 names, 35cts. each; 50 to 100 names, 45cts. each; 100 to 200 names, 50cts. each.

**STOCK.**

- For 150 new names we will give a Hereford Bull (fit for service), valued at \$150, bred by R. J. Mackie, Oshawa.
- For 150 new names, a Shorthorn Bull (fit for service), bred by James Graham, Port Perry, Ont.
- For 150 new names, an Ayrshire Bull (fit for service), bred by Thomas Guy, Oshawa, Ont.
- A Heifer of any of the above breeds will be given for from 100 to 150 names, according to quality of animal.
- For 30 new names, a Shropshire Ram or Ewe Lamb, bred by John Miller & Sons, Brougham, Ont., or Jno. Dryden, M. F. P., Brooklyn, Ont.
- For 30 new names we will give a Cotswold Ram or Ewe Lamb, bred by Joseph Ward, Marsh Hill, Ont., or David Birrell, Greenwood, Ont.
- For 20 new names will give a Leicester Ram or Ewe Lamb, bred by Jeffery Bros., Whitby, Ont.
- For 20 new names we will give a Dorset Horned Ram Lamb, bred by Capt. Wm. Rolph, Markham, Ont.
- For 30 new names we will give a Hampshire Ram Lamb, bred by John Adams, Esq., Port Perry.
- For 40 new names we will give a Berkshire Sow or Boar 6 months old, bred by J. C. Snell, Edmonton, or J. G. Snell & Bro., Edmonton, Ont., or by Wm. Linton, Aurora, Ont.
- For 10 new names we will give a pair, or for 5 a single bird, of any of the following breeds: Light Brahmas, Dark Brahmas, Langshans, Black Red Games, any variety of Lechorns, Wyandottes, Dorkings, Spanish, Bantams, Ducks, etc. Eggs will be given as prizes when desired.
- We will give as subscription prizes young animals, either male or female, of any of the following breeds: Shorthorns, Herefords, Galloways, Ayrshires, Jerseys, a bull or heifer of fair quality, purely bred, for 100 new subscribers, accompanied by \$100. We can also supply home-bred or imported stock of any desired breed, age or quality. In all cases we will guarantee satisfaction as to the quality, breeding and value of the animal. We will give very liberal terms to agricultural and other societies, and farmers in new sections, special inducements in sheep and poultry. Write for particulars.

**IMPLEMENTS, ETC.**

- For 110 new names a Bain Farm Tractor, value \$75, manufactured by Bain Wagon Co., York, (Stock), Ont.
- For 65 new names a Patent Iron Frame Section Spring, both combined, value \$36, manufactured by J. O. Wagon & Son, Hamilton, Ont.
- For 110 new names we will give a mowing machine, value \$75, manufactured by the Canadian Manufacturing Co., Chatham, Ont.
- For 70 new names we will give one of the celebrated Westward Ho Sulky Plows, value \$40, manufactured by C. J. Bros., Hamilton, Ont.
- For 125 new names we will give a mowing machine, value \$75, manufactured by the Ontario Pump Co., Hamilton, Ont.
- For 140 new names we will give a Hay Press, value \$75, manufactured by Matthews, Wagon Co., Hamilton, Ont.
- For 100 new names we will give a Straw Cutter, value \$35, manufactured by Matthews, Wagon Co., Hamilton, Ont.
- For 10 new names we will give a large Agricultural Plow, value \$25, manufactured by the Canadian Manufacturing Co., Chatham, Ont.
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- For 10 new names we will give a large Agricultural Plow, value \$25, manufactured by the Canadian Manufacturing Co., Chatham, Ont.

**FOR SALE**  
**THAT VALUABLE FARM AT CHARLESBOURG,**  
 On the macadamized road, about three miles from the City of Quebec, belonging to the estate of the late James Clearihue, containing one hundred and eighty-five (85) acres, more or less, with a large Two-story Stone House, Stables, Barns, etc., etc. For particulars apply to  
**THOS. CLEARIHUE, or to WM. SIMONS,**  
 P. O. Box 176, No. 481, Nicholas St.  
 276-c BROCKVILLE, Ont. QUEBEC, P.Q.

**ANY PERSON CAN PLAY THE PIANO AND ORGAN WITHOUT A TEACHER.** by using Soper's Instantaneous Guide to the Keys. Price, \$1. No previous knowledge of music whatever required. Send for book of testimonials free. Address **The Dorcas Magazine, 19 Park Place, New York.** 276-f

**DOUGLAS H. GRAND, AUCTIONEER.**  
 Pedigreed Live Stock a specialty.  
 Sales held any part of the country.  
 Terms reasonable. **150 Dundas St., London.** 275-11

**GRIND YOUR OWN** Bone, Meal, Oyster Shells, Graham Flour & Corn, in the **\$5 HAND MILL** (Wilson's Patent). 100 per cent. more made in keeping Poultry. Also **POWER MILLS** and **FARM FEED MILLS**, Circulars and testimonials sent on application. **WILSON BROS., Easton, Pa.** 276-c

**9 Cords in 10 HOURS**  
 Runs Easy NO BACKACHE.  
 BY ONE MAN. Greatly improved. Also **TOOL** for filing saws whereby those least experienced cannot make a mistake. Sent free with machine. To others, for common cross-cut saws, by mail \$2.00. Handicrafts have saved 2 to 3 HOURS daily. We want all who burn wood and are interested in the timber business to write for our Illustrated Free Catalogue. We have exactly what you want, the greatest labor saver and best-selling tool now on earth. First order from your vicinity securest. No duty to pay. We manufacture in Canada. **FOLBING SAWING MACHINE CO., 303 to 311 So. Canal Street, Chicago, U.S.A.** 274-14

**BOOKS** Scarce and Curious. The only place in the U.S. where you can get them. Circulars 2c. **J. G. Stauffer, Palmyra, Pa.** 276-d

**Ontario Veterinary College**  
**TEMPERANCE STREET, TORONTO.**  
 The most successful Veterinary Institution in America. All experienced Teachers. Fees, Fifty Dollars per Session. Session 1887-8 begins Oct. 21st. Apply to the principal, **PROF. SMITH, V. S., Edin. TORONTO, CANADA.** 275-y

**DRS. ANDERSON AND BATES—Eye and Ear Surgeons, 34 James Street, Hamilton, Ont.** Exclusive attention given to the treatment of the various diseases of the **EYE and EAR.** 268-y

**CROSS EYES STRAIGHTENED**  
**THE DORCAS MAGAZINE** is full of useful information on Woman's Handiwork: Knitting, Crochet-work, Embroidery, Art Needlework, and other household topics of practical character. Every lady should subscribe for it. Price, 25c a Year. Address **The Dorcas Magazine, 19 Park Place, New York.** 276-f

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Are you fond of good crisp reading? Would a finely illustrated paper filled with items of interest to the farmer and his family be a welcome monthly visitor to your home? If so, send in your name on a post card and receive a specimen copy of the **NEW MASSEY'S ILLUSTRATED**, post free, and see what you think of it.

**This Pictorial Paper,** Which has for so many years been before the farming public, has now made its appearance as a **REGULAR MONTHLY JOURNAL** of a high standard. We will make it the most beautifully illustrated, the best printed, the most interesting, and the best Journal of general "news and literature for rural homes" published in Canada, and to this end we are sparing no expense.

**There Will Be** Notes on Travel. A Beautifully Illustrated Story each month. Editorial Comments. General Items on Things of Interest to the Farmer. A Department for the Household, conducted by a lady of prominence. Something for Young People. Review of Chief Events of the Month in a Nutshell. Latest Harvesting Machinery News. The Poultry Yard, Live Stock, etc. Wit, Humor and Wisdom, etc., etc.

**Our Premium List.** The next issue of the New Illustrated will be made about January 12th. The December number was accompanied by a Supplement containing

**Handsome Illustrated Premium List,**

acknowledged to be the most liberal and most attractive ever offered in Canada. Send for a copy and look it over carefully and judge for yourself. Farmers! Ladies! Boys! Girls! This is a rare opportunity for you to easily earn some handsome presents.

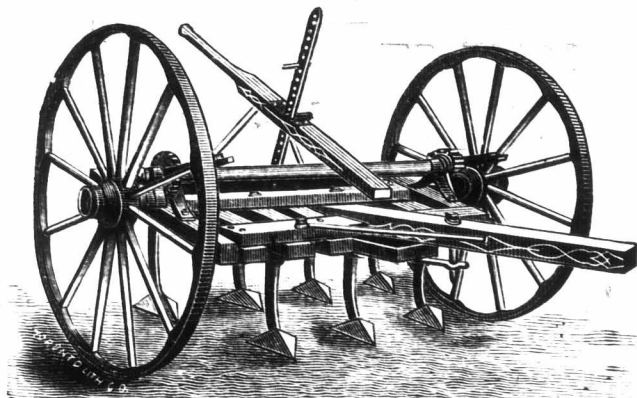
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Read carefully the Second Page of the Supplement. Subscription for **MASSEY'S ILLUSTRATED** ONLY FIFTY CENTS PER ANNUM. The Cheapest Illustrated Paper in the World for value given. Each number will be an improvement upon the preceding one. We have received many kind words of encouragement from all quarters.

**Our Clubbing List With Other Publications.**

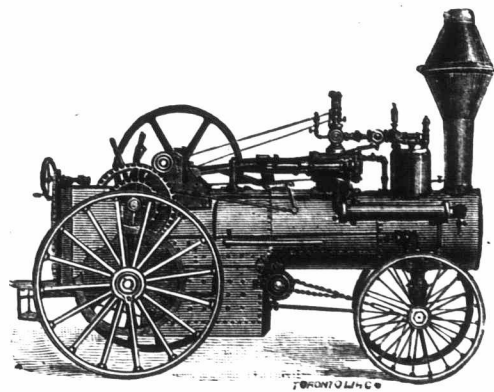
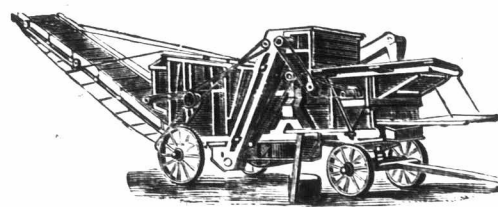
By sending in your subscriptions for your yearly publications through **MASSEY'S ILLUSTRATED** you can get them at greatly reduced rates. Don't fail to see our Clubbing List on the back page of each issue of the **ILLUSTRATED**. Let us have your name and address and we will send a specimen copy of **MASSEY'S ILLUSTRATED** free. Address letters:

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**Norwich Iron Works.**  
**Two Horse Wheel Cultivator**  
 With steel plates 4, 6, 9 and 11 inches wide (death to Canada thistles). Also manufacturer of the  
**ECLIPSE GANG PLOW**  
 Two and three furrows. **Straw Cutters, Root Cutters, Turnip Seed Sowers, and Plows of Several Patterns.** Address all communications to  
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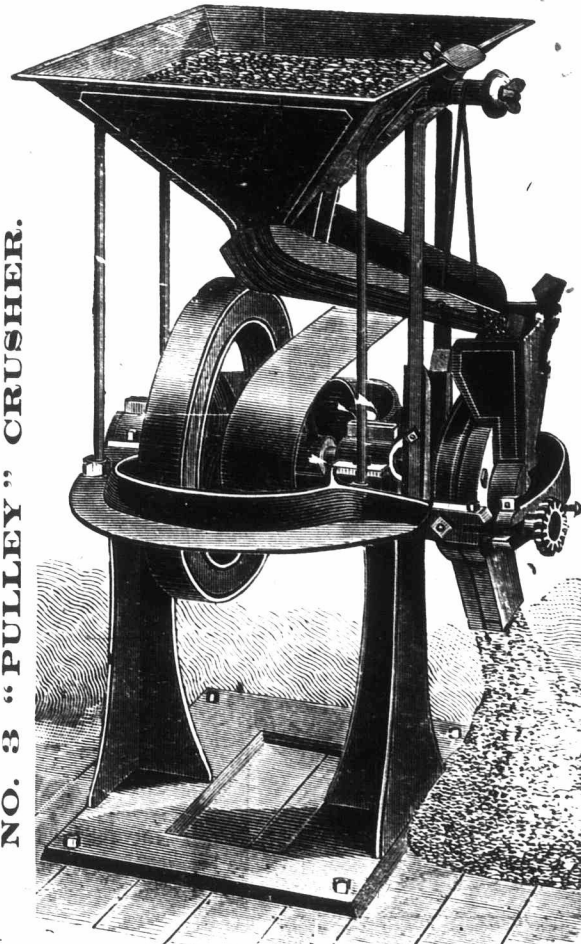


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We will guarantee our Engines and Machines superior to any others made in Canada, and challenge anyone to produce a Machine that shall equal the work done by our Double Blast Separator.  
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**The New Rapid Grain Crushers.**



NO. 3 "PULLEY" CRUSHER.

Will Grind from 10 to 50 Bushels Per Hour.

Made in different sizes to meet the requirements of  
**Farmers, Threshers**  
 AND  
**MILLERS.**

This mill is essentially a farmer's mill for stock feeding purposes, and is constructed on new and scientific principles never before adopted in this country. It is the only iron mill which can compete with the French burr stone in grinding all kinds of grain.

We also manufacture both power and hand  
**CUTTING BOXES,**  
 and a full line of  
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**Harvesting Machinery.**

For full particulars apply to us or our agents in your locality.

**THE PATTERSON & BRO. CO.,**  
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BRANCH OFFICE AND WAREHOUSES, WINNIPEG, MAN.

**CANADA BUSINESS COLLEGE.**  
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TWENTY-SEVENTH YEAR.

BEST equipped and most successful Business College in the Dominion. Over 300 students past year. Offers unequalled advantages to farmers' sons and others desiring a business education. For handsome illustrated catalogue write.

271-y **R. E. GALLAGHER, Principal.**

**BRITISH AMERICAN BUSINESS COLLEGE**  
 ARCADE  
 Yonge St. TORONTO

WILL RE-OPEN MONDAY, SEPT. 3, 1888.  
 For circular, etc., address  
 271-y **C. O'DEA, Secretary.**

**PROOF** THE MANAGERS OF THE **St. Catharine's Business College**

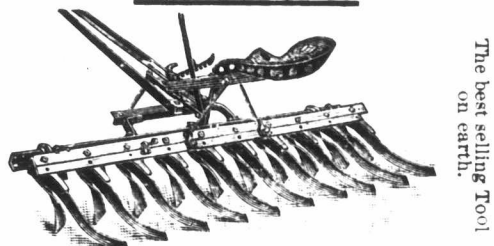
Will give \$100 to any charitable institution, named by any person or rival college, who can furnish the name of a student who has taken a full course in Shorthand at this College, and who has failed to secure a position; or for any student who has taken a full course in any department, and who has lost his position through incompetency.

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N.B.—The best costs no more than the poorest.  
 274-y

**HOME STUDY**—Thorough and practical instruction given by MAIL in Book-keeping, Business Forms, Arithmetic, Penmanship, Shorthand, etc. Low rates. Distance no objection. Circulars free. **BRYANT & STRATTON'S,** 419 Main St., Buffalo, N.Y.  
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The best selling Tool on earth.

**PULVERIZING HARROW, CLOD CRUSHER AND LEVELER.**

Steel Crusher and Leveler. Double Gangs of Adjustable Reversible Coulters. Lumps Crushed, Soil Cut, Lifted and Turned in one operation. No Spike or Spring Teeth to pull up Rubbish. No Wearing Journals. Practically Indestructible. Sizes 3 to 12 ft. With and Without Sulky.

I Deliver Free at Convenient Distributing Depots in Canada.

**FAIR PLAY.** Don't Buy a Base Imitation or Inferior Tool. Order a Genuine Double Gang Acme ON TRIAL, to be returned at my Expense if not satisfactory. No Pay Asked in Advance. Agents Wanted. Illustrated Pamphlet FREE.

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**CREAM -- SEPARATORS.**

THE DOMINION DAIRY SUPPLY CO.

General Agents for the famous

**DANISH SEPARATOR**

—AND THE RISING—

**BLACKSTROM SEPARATOR.**

Creameries, Butter Factories, Have Your Choice.

Danish, A. size, skimming	250 lbs. per hour.
" B. " " "	150 " "
" Hand machine, " "	100 " "
" Foot machine, " "	25 " "
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The cheapest on the market and the best. Before buying, ask for our circulars and prices and descriptive pamphlet showing points on which to judge of Separators. Factory plans free to our customers. Write to J. de L. TACHE, General Manager, box 1083, Quebec, Que. Western Agency—S. M. BARRR, Winnipeg 276-1

**Canadian Pacific Railway!**

Settlers for Manitoba, Northwest Territories and British Columbia look at this Season's Record:

**2,046 Bushels Grown from 37 Acres**

Major Walker, of Calgary, Alberta, now in Ontario, has just received a letter from his manager, dated Sept. 17th, 1888, stating that one half of his oats had been threshed, viz.: 37 acres, yielding 2,046 bushels by measure, weighing 44 pounds per bushel, and that most of them had been sold at 53 cents per bushel. This is the fourth crop of oats grown in succession on the same land without manure.

**\$7,182.00 Made from 180 Acres.**

Mr. J. D. Russell, of Portage la Prairie, who is now in Ontario, with a portion of the Manitoba exhibit, has just received a letter telling him that Messrs. Caruth & Brown, of Portage la Prairie, have just threshed this season's wheat. They had 180 acres, which yielded 42 bushels per acre, and for which they were offered 95c. at the threshing machine. In other words, these gentlemen realized for their wheat crop alone in 1888 the sum of \$7,182.

For full information, rates, or a set of the Company's pamphlets, write

W. R. CALLAWAY, 110 King St. west, Toronto.  
LUCIUS TUTTLE, Pass. Traf. Mang. Montreal.  
D. MCNICOLL, Genl. Pass. Agt. 276-a

**INTERCOLONIAL Railway of Canada.**

THE ROYAL MAIL, PASSENGER & FREIGHT ROUTE BETWEEN CANADA AND GREAT BRITAIN.

DIRECT ROUTE BETWEEN THE WEST AND ALL POINTS ON THE LOWER ST. LAWRENCE AND GULF OF CHALEUR.

New Brunswick, Nova Scotia, Prince Edward Island, Cape Breton and Newfoundland.

NEW AND ELEGANT BUFFET SLEEPING AND DAY CARS RUN BY THROUGH EXPRESS TRAINS.

Passengers for Great Britain or the Continent, by leaving Toronto by 8:30 P.M. train Thursday will join outward mail steamer at Halifax Saturday.

Superior elevator, warehouse and dock accommodations at Halifax for shipment of grain and general merchandise. Years of experience have proved the Intercolonial in connection with steamship lines to be the most direct, safe and convenient route to London, Liverpool and Glasgow to Montreal to be the most direct route between Canada and Great Britain.

Information as to Passenger and Freight Rates can be had on application to

ROBERT B. MOODIE, Western Freight and Passenger Agent, 3 Tossin House Block, York St., Toronto.  
D. POTTINGER, Chief Superintendent, Railway Bldg., Montreal, N.B., Nov. 20th, 1888.

**SEEDS RENNIE'S GREAT DOLLAR COLLECTION \$1.00**

**RENNIE'S SEEDS ARE THE BEST** And in order to induce hundreds of new customers to use them, I am offering this complete collection of the very choicest Vegetable Seeds, including many novelties, FREE by MAIL for \$1.00. The Collection contains full sized packages of the Improved Half-Long Blood Beet; Rennie's Nonpariel Lettuce, the best in cultivation; Golden Hearted Celery; New Cory Corn, the sweetest variety grown; Olive Gem Radish, the finest new Radish; and standard varieties of Cabbage, Carrot, Cucumber, Melon, Spinach, Tomato, Turnip and Herbs, also a pod of the best Wax Beans, and a pound of the New Pea, Pride of the Market, which is the finest Garden variety in cultivation. The entire collection amounting, at Catalogue rates and postage, to \$1.50, will be sent free by mail to any address in Canada, for \$1.00. Order at once, and induce your friends to send with you. I will supply Five of the above Collections for \$4.00. My Annual Descriptive Catalogue now ready. Free to all applicants. Send for it at once. Address, WILLIAM RENNIE, Seed Grower, TORONTO, ONT.

**OUR MANUAL OF EVERYTHING FOR THE GARDEN**



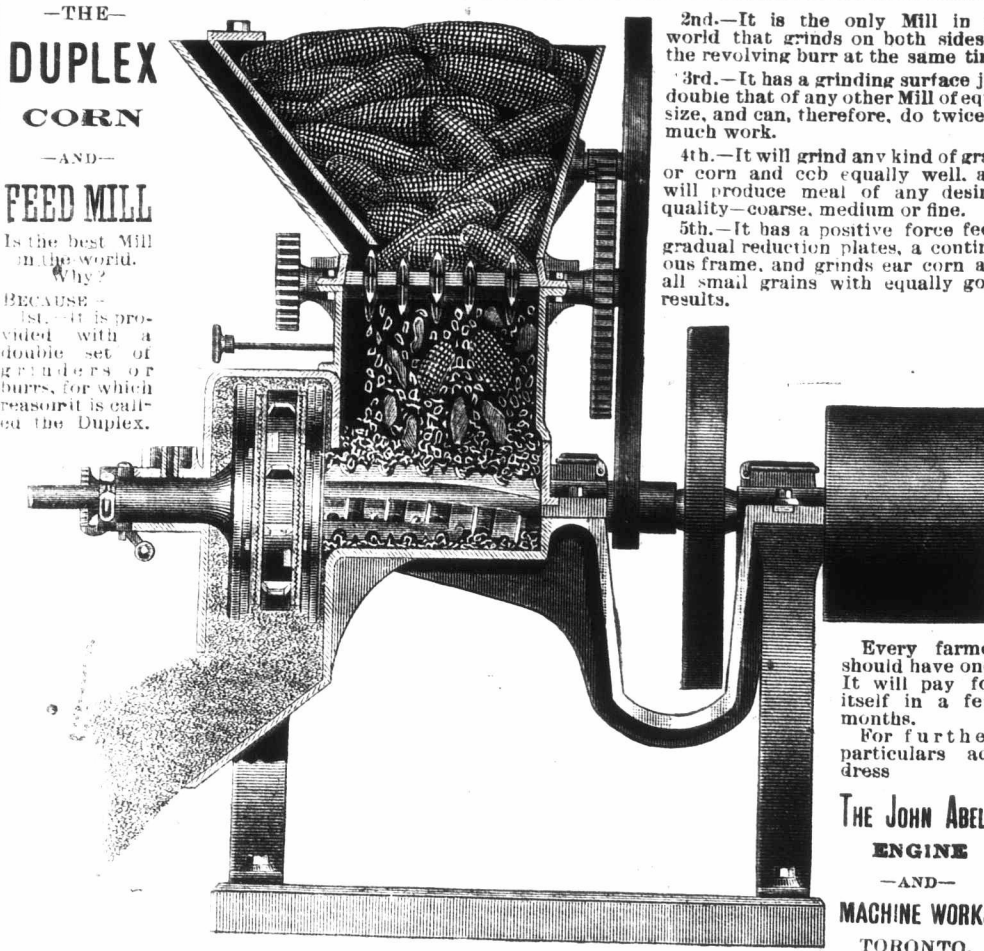
For 1889 is the handsomest and most complete Garden Guide ever published. It is really a book of 140 pages, size 9 x 11 inches, contains three colored plates, and illustrations of all that is new, useful and rare in Vegetables, Flowers, Fruits and Plants, with plain directions "How to grow them," by Peter Henderson

This manual we mail to any address on receipt of 25 cents (in stamps). To all so remitting 25 cents for the manual, we will at the same time send free by mail, in addition, their choice of any one of the following Splendid Novelties, most of which are now offered for the first time, and the price of either of which is 25 cts.: One packet of Autumn King Cabbage, or one pkt. of Yosemite Mammoth Wax Bean, or one pkt. Delmonico Musk Melon, or one pkt. Giant Parsly, or one pkt. Scarlet Triumph Aster (see illustration), or one pkt. Sunflower "Silver and Gold," or one plant of the climber Blue Dawn Flower, or one plant of the White Moonflower, or one Bermuda Easter Lily, or one plant of either a Red, Yellow, White or Pink Everblooming Rose—on the distinct understanding, however, that those ordering will state in what paper they saw this advertisement.

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

**DUPLEX CORN FEED MILL**

Is the best Mill in the world. Why? BECAUSE—1st.—It is provided with a double set of grinding plates or burrs, for which reason it crushes the Duplex.



2nd.—It is the only Mill in the world that grinds on both sides of the revolving burr at the same time.  
3rd.—It has a grinding surface just double that of any other Mill of equal size, and can, therefore, do twice as much work.  
4th.—It will grind any kind of grain or corn and cob equally well, and will produce meal of any desired quality—coarse, medium or fine.  
5th.—It has a positive force feed, gradual reduction plates, a continuous frame, and grinds ear corn and all small grains with equally good results.

Every farmer should have one. It will pay for itself in a few months. For further particulars address

**THE JOHN ABELL ENGINE —AND— MACHINE WORKS TORONTO.**

**A CURE FOR HARD TIMES**

100,000 HEARTS MADE GLAD  
**BOLEY'S NORTHERN SPY POTATO**  
 THE GREATEST DISCOVERY SINCE THE ADVENT OF THE EARLY ROSE  
 6 TO 8 HUNDRED BUSHELS TO THE ACRE UNDER 47 SOWN TESTIMONIALS.  
 100,000 HOMES MADE HAPPY

**SEEDS AT YOUR DOOR AT WHOLESALE PRICES.** Having grown a large quantity of the following choice and valuable seeds the past season, and in order to introduce them, with our wonderful new Potato, into 100,000 homes, we make the following UNPRECEDENTED OFFER: For \$1.00 in postage stamps or money, we will send a box post-paid, containing one packet each of the following NEW AND IMPROVED SEEDS, and one medium-sized tuber of BOLEY'S GREAT NORTHERN SPY POTATO, the greatest discovery since the advent of the EARLY ROSE.  
 Wilson's Early Blood Turnip Beet, earliest and best.  
 Boston's Half-Long Winter Beet, best variety.  
 Wilson's Best of All Pole Beans, good for snap-shorts in winter.  
 Wilson's Best of All Bunch Beans, rich, tender, and buttery.  
 Early Advance Cabbage, best and earliest.  
 Wilson's Premium Flat Dutch Cabbage, best late variety.  
 Early Green Cluster Cucumbers, best for table use.  
 Wilson's Long Green Cucumbers, best for pickles.  
 New Cory Sugar Corn, the earliest in the world.  
 Wilson's Large Evergreen Sugar Corn, sweet and delicious.  
 Callifornia or Golden Pop Corn, best variety.  
 New Self-Blanching Celery, extra quality, needs no banking up.  
 Wilson's Extra Early Lettuce, heading sort.  
 Jordan's Gray Monarch Watermelon, very large, sweet, and sugary.  
 Miller's Cream Netted Melon, best flavored in cultivation.  
 Improved Round Yellow Danvers Onion.  
 NEW SPANISH KING ONION, 3 pound onions from seed first year.  
 Abbott's Improved Sugar Parsnips.  
 Ruby King Pepper, finest, largest, sweetest pepper ever seen.  
 JUMBO, of CALIFORNIA, the largest pumpkin in the world; has weighed 400 lbs.  
 Early Roney Gem Radish, best and earliest.  
 New Charter Radish, best summer variety.  
 White Pineapple Squash, good for pies, keeps all winter.  
 Early Summer Butternut Squash.  
 Turner's Hybrid Tomato, best and finest ever introduced.  
 NEW ZEALAND FIG TOMATO, excellent for preserving; sweet and dried, equal to the best fig.  
 Munich Strap-Leaf Turnip, tender, sweet.  
 Golden Globe Ruta Baga, best for table use.  
 VEGETABLE PEACH, easily grown from seed first year; makes pies or preserves equal to the best peaches.  
 Sample packet of Wilson's True Leaming Corn, the earliest and best field corn in cultivation.  
 New Mammoth Zinnia, double as a Dahlia, bright as a rose.  
 Washington Aster, very large all bright, beautiful colors.  
 Giant German Panicle, best mixed, in all sizes.  
 33 FULL-SIZED PACKETS, with DIRECTIONS FOR CULTIVATING, and ONE WHOLE POTATO for \$1.00  
 FIVE boxes \$4.00, TEN boxes \$7.00, post-paid. Address plain to SAMUEL WILSON, MECHANICVILLE, RICKS COUNTY, PENNSA.  
 OUR BEAUTIFUL, ILLUSTRATED and DESCRIPTIVE 144-PAGE CATALOGUE ACCOMPANIES EACH ORDER.

**STOCK GOSSIP.**

Barrett Bros., Manchester, Ont., have a large stable of pure bred Clydesdales and Shire Stallions, including eight recently imported.

Tisdale's Brantford Iron Stable Fittings. We lose no job we can figure upon. Catalogue sent free. The R. G. Tisdale Co., Brantford, Canada. Advt.

Messrs. Dundas and Grandy, Springville, Ont., have sent us their first annual catalogue of imported Clydesdale stallions and mares. It is well gotten up, and contains the pedigrees of a lot of good horses, which will be reviewed in our next issue.

See Mr. John Miller's advertisement of seed oats. This farm is a very suitable place from which to buy seed grain; the farm is clean, and the quality of the land is good; the crops grown are always heavy. We recommend the grain advertised.

Mr. Thomas McCrae, Guelph, has recently sold three Galloways, a bull and two females, to Robert Shaw, Brantford; the price received was satisfactory. We had the pleasure of seeing Mr. McCrae's herd a short time ago, and were much pleased with their appearance. We will give a review of them in a future number.

We are requested to announce that a meeting of sheep breeders will take place at the Albion Hotel, Toronto, at 1 o'clock p. m., March 13th. As this is the day preceding the exhibition of the Clydesdale Association, it is hoped that a large number of breeders, shippers, wool dealers, etc., will turn out. The object of the meeting is to organize a sheep breeders association for the Province of Ontario.

We have received volumes one and two of the Aberdeen Angus Herd Book. It is a voluminous work, well gotten up, and contains the pedigree of nine thousand eight hundred animals. Volume one contains a short historical sketch of the breed, giving origin, earlier, later and existing herds, cattle shows, importations, etc. It is replete with illustrations of a very high order, much above the class usually found in such works.

F. Nixon, of Ingersoll, exhibited his Leghorns in Detroit, at the meeting of the Eastern Michigan Poultry Association, and won every first prize, ten second, six third and ten specials. T. H. Scott, of St. Thomas, won nearly everything on his Laced Golden and Black Wyandottes. Mr. Allan and A. W. Graham, of St. Thomas, and Mr. Luscombe of Sarnia, and Mr. Lalor of Camlachie, were also among the Canadian winners.

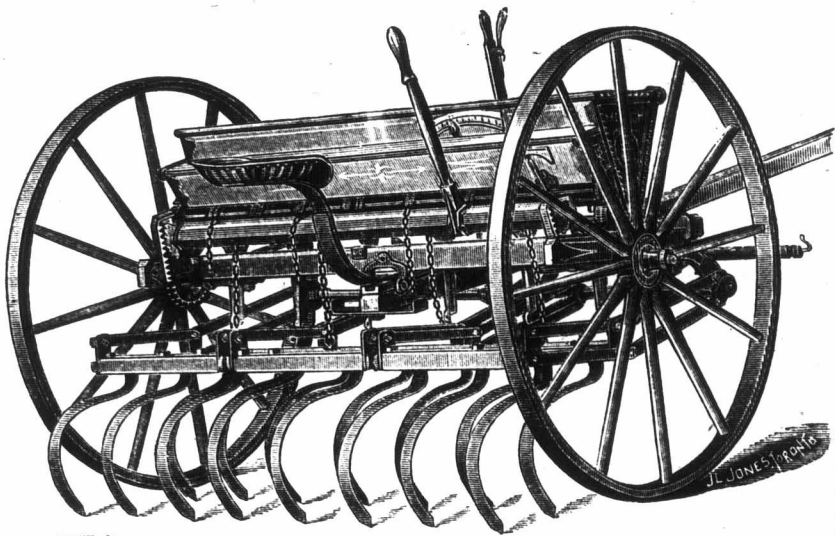
Mr. Arthur Johnston, Greenwood, Ont., has what is perhaps the best lot of Shortborns and Clydesdales he ever had at one time, his yearling and two-year-old heifers are excellent. They are a thick, fleshy lot, and are close to the ground. In one stable he had about twenty heifers, all thoroughbred but one, which was a wood grade. She was an old and had always been fed as well as the others, but was not nearly as large or fleshy. This corroborates our own experience. We have always found the better bred our cattle were the more profitably they filled the place for which they were required.

The North British Agriculturist says:—D Morton & Sons, Hamilton, Ont., have recently bought from Mr. Caldwell, Bogside, Dundonald, Scotland, a very choice lot of eleven females and one bull. They are all registered in the Ayrshire Herd Book, and the females, rising three years old, are all in calf to registered sires. Mr. D Morton, the founder and senior of the firm, is a distinguished son of the county of Ayr, having recently purchased a farm in the vicinity of their works at Hamilton, he naturally wishes to stock it from the breed with which he was so closely associated in his younger days. The cattle have been most carefully selected by Mr. Caldwell. All of them are very fine specimens of the breed, and not a few have a goodly list of show-yard honors to the credit. The females are descended from such well-known sires as Auchindenan (1), Prince (47), Bruce of Drumlanrig (713), Stanley (181), and Black Prince of Lessnessock (252). The bull which has been selected to head the herd is rising two years old, and is bred from the Black Prince of Lessnessock strain. He is possessed of all the good points necessary to a successful sire, having both strength and quality, and appearances indicate that he will realize to the full the expectations formed of him. There has recently been a very active demand for high-class Ayrshire stock in Great Britain, and in the present instance very high prices have been paid for some of the animals.

H. George & Sons, Crampton P. O., Ont., have made the following sales of pure-bred swine within the last five months:—Joseph Featherston, Toronto, one Suffolk sow; John Marshall, Tilbury, Suffolk boar and sow; Stephen Foster, Salford, Suffolk boar and sow; Michael White, Petroica, Suffolk boar; Geo. Jackson, Sarnia, Suffolk boar and sow; Wm. Smith, Watford, Suffolk sow; James A. Luke, Bothwell, Suffolk sow; W. D. McKim, Stratford, Suffolk boar; Neil Mitchell, Hyde Park, Suffolk sow; Seth Barr, Tilbury, Suffolk sow; H. Bodwell, Mount Egin, Berkshire boar; T. Pole, Applin, Berkshire boar; Jno. Rapson, Londesborough, Berkshire boar; G. D. Ellis, Thedford, Berkshire boar; Wm. Mitchell, Newbury, Berkshire sow; S. P. Rennie, Salford, Berkshire sow; H. Swartz, Copenhagen, Berkshire boar and sow; J. & G. Gregg, Salford, Berkshire sow; David Waters, Fernhill, Berkshire boar; I. C. Stilwell, Eden, Chester White boar and sow; H. J. Tennent, Listowel, Chester White sow; Seth Barr, Tilbury, Chester White sow; H. Stilwell, Eden, Chester White sow; Geo. Cleland, Listowel, Chester White sow. Mr. George took 52 prizes on his herd last fall—14 at the Western Fair and diploma. He has a few choice pigs of the above breeds yet for sale, and expects 100 young pigs for the spring trade.

**FARMERS, READ THIS!**

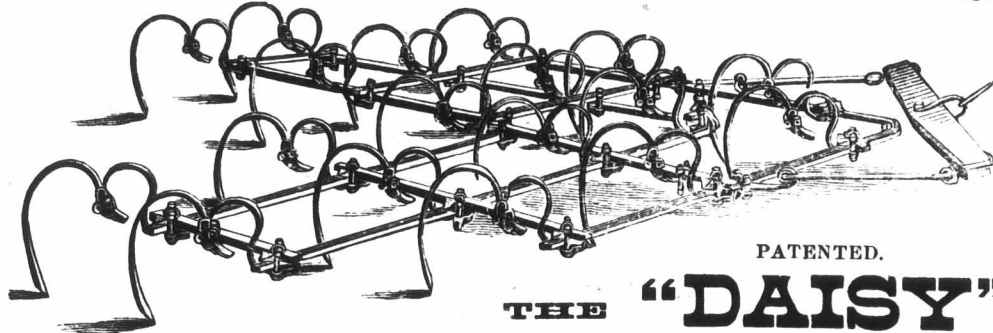
We can now give the farmers what they want and have so long looked for.



LATEST AND BEST. COVERED BY PATENTS.

**THE NEW MONARCH.**

The NEW MONARCH is the latest improved seeder in the market. See and examine it before buying. It has an accurate FORCE FEED. Sows and covers all kinds of grain in any quantity required to the acre. The cultivator is in three sections, independent of each other, and all the teeth can be set to work any required depth in the ground INSTANTLY by a lever in easy reach of the driver, making it the best cultivator obtainable. This feature alone is worth half the price of the seeder. Write for illustrated catalogue



PATENTED.

**THE "DAISY"**

**ALL STEEL FRAME SPRING TOOTH HARROW.**

Ask for the "Daisy," and buy no other; it is the best. Send for illustrated catalogue and price list. Responsible and Pushing Agents wanted in all unrepresented districts.

**THE J. W. MANN MFG. CO., BROCKVILLE, ONT.**



**STOCK GOSSIP.**

Mr. Thos. R. Smith, New Hamburg, writes: I have sold one of my young stallions to Mr. Leclair, St. Theresa, Terrebonne Co., P. Q. So much for my advertisement in the FARMER'S ADVOCATE. My three imported mares have bred six entire colts in two years. There were eleven mares bred to my imported Cleveland Prince Arthur on the fourth line of Wilmet, in 1887; there are ten living colts. A very good record.

Mr. R. J. Mackie, Oshawa, writes: I have shipped about the first of the month twenty-four head of Hereford bulls to New Mexico; sold to W. T. Hurd of the Detroit and Rio Grande Live Stock Company. They were from the following herds, viz., L. G. Drew, eight; A. Mackie, one; I. H. Baker, one; S. W. Dearborn, three, all of Oshawa, with my own nine, and from I. S. Rundle, Hampton, one; John Hogarth, Brooklyn, one. This takes all the available bulls, except two or three good ones in this section.

Wm. Rodden, Plantagenet, Ont., writes us: The advantages of advertising in the FARMER'S ADVOCATE is evident from the fact, that in ten days after your paper containing my advertisement was issued, I received twelve, and in fifteen days twenty enquiries for Ayrshires, chiefly from western farmers. I have, so far, sold fifteen head as follows: The prize bull Royal Laddie 4647, to Messrs. Bowman & Woodward, of West Montrose, County Waterloo, Ont.; to Mr. C. D. Bowman, three heifers and four cows; to Mr. A. F. Woodward, three heifers and four young cows; all choice animals, tracing to importations direct, and recorded in the Canadian Ayrshire Herd Records. Ayrshire cattle are becoming great favorites with dairy farmers.

At a meeting of the Executive Committee of the Clydesdale Horse Association of Canada, there were present—Messrs. Beith, Graham, Johnston, Miller, Rennie, Sorby, and the President, Wm. Smith, Esq., M. P. The Secretary, Mr. Wade, made the following report: In accordance with a resolution passed at the annual meeting of the Association, instructing me to make enquiries about the Provident Life and Live Stock Association, I beg to report that I wrote to the Inspector of Insurance for Ontario, and he replied that the Association had made no deposit with the government, was not licensed by the government, and did not report to the government. I have further to report that several of the members of the Board of Directors, as published, have resigned their office.

As was decided at the annual meeting of the Clydesdale Horse Association of Canada, there is to be two classes—one for Canadian-bred animals only. The prize list is as follows: Class 1—Section 1—Stallion foaled previous to 1st January, 1886—1st prize, a handsome marble clock worth \$45, donated by John Wanless, jeweller, Yonge street, Toronto; 2nd, \$30; 3rd, \$20; 4th, very highly commended; 5th, highly commended; 6th, commended. Section 2—Stallion foaled in 1886—1st, \$40; 2nd, \$30; 3rd, \$20, and three grades of commended, as in Sec. 1. Section 3—Stallion foaled in 1887—1st, \$30; 2nd, \$20, and three commendation cards, and a sweepstakes gold medal from the Agricultural and Arts Association. Class II—Canadian-bred Stallions only—Section 1—1st, \$30; 2nd, \$20; 3rd, \$10, and three commendations. Section 2 same as Section 1. Section 3—Foaled subsequent to 1st Jan., 1887—1st, \$20; 2nd, \$10 and three commendations, and a sweepstakes gold medal for best Canadian-bred stallion, by the Industrial Exhibition Association. Mr. Alexander McLean of Blandinsville, Ill., U. S. A., has been appointed judge, but in event of his being unable to attend, Mr. Jno. Hope, of Brantford, will act.

**NOTICES.**

**CHARIOT RACE FROM BEN-HUR.**—A realistic representation, beautifully engraved upon a handsome 1889 calendar, by John A. Lowell & Co., Boston, can be procured by sending six cents in stamps to P. S. EUSTIS, General Passenger and Ticket Agent, C. B. & Q. R. R., Chicago, Ill.—Adv't.

Our readers will find in this issue an advertisement of the celebrated Hoosier Seed Drill, manufactured by Noxon Bros. Mfg. Co., of Ingersoll, Ont. We can strongly recommend this seeder to all of our subscribers, and feel confident it will give perfect satisfaction to all who purchase it. Particulars of their new seed binder will be found in the ADVOCATE in a few months.

**A NEW GATEWAY.**—By the completion of a new bridge across the Missouri River at Tulo, Nebraska, the Burlington Route has established, for the entire distance over its own track, a new, direct, through line from St. Louis to Kansas City, St. Joseph, Atchison and Denver. Over this line is run "The Burlington Denver Express"—a solid train with through sleeping cars and coaches from St. Louis to St. Joseph and Denver, and a through sleeping car from St. Louis to Kansas City. The connections made by this train at the Missouri River, at Denver, and at junction points en route, are such that one can directly reach by rail all points in Nebraska, Colorado, and all sections of the West and Southwest, as well as all Pacific coast ports. This is in addition to "The Burlington's" "Big One" well known solid vestibule train between St. Louis and Denver and Cheyenne, with which direct connection is made by C. B. & Q. R. R. train from St. Louis, and by which one can make the run from Chicago to Chicago and Denver without being more than one night on the road. For tickets via the Burlington Route, and for special excursion folders, call on any ticket agent of connecting lines, or address P. S. EUSTIS, General Passenger and Ticket Agent, C. B. & Q. R. R., Chicago, Ill. Adv't. 476-b.

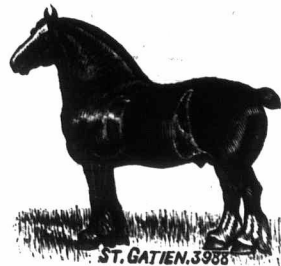
**Imported Clydesdales & Hackney Stallions for Sale**

Highest Prize Winners in the Leading Shows of the World

AND GETS OF FAMOUS SIRES

Such as Lord Erskine, Darnley, Old Times, McCammon, Garnet Cross, Macgregor, Prince Edward, Prince Henry, Sir Wyndham, Good Hope and Fireaway.

Prices Reasonable. Catalogues Furnished on Application.

**ROBT. BEITH & CO.,**

BOWMANVILLE, ONT.

Bowmanville is on the line of the G. T. R., 40 miles east of Toronto and 294 west of Montreal.

**IMPORTED CLYDESDALE REGISTERED STALLIONS AND MARES**

constantly on hand and FOR SALE at reasonable terms.

The importations of 1888 comprise a large number of one, two, three and four-year-old registered stallions and mares, the gets of such sires as Macgregor (1487), Darnley (222), and Prince of Wales (673). Also a few choice SHETLAND PONIES. Correspondence solicited, and visitors always welcome.

**GRAHAM BROS.,**

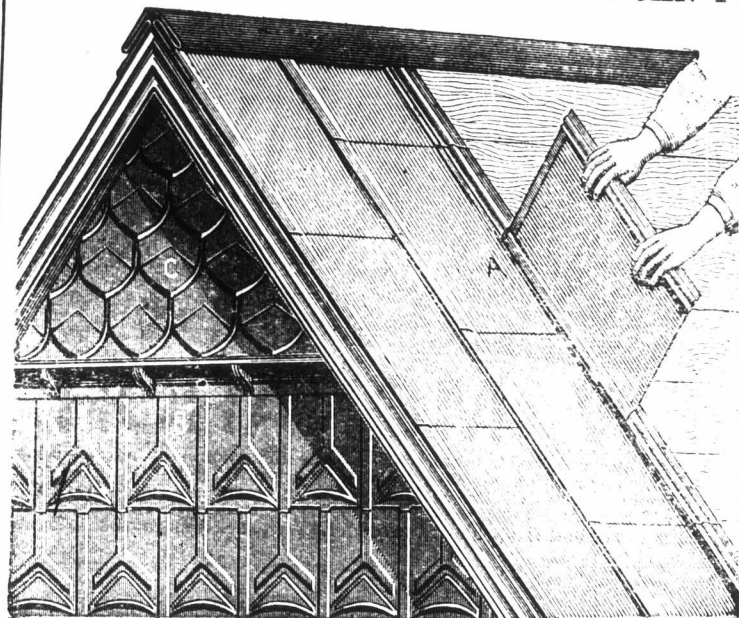
Residence one mile from Claremont Station.

278-

CLAREMONT, ONT.

**Broad Rib Sheet Steel Roofing**

The Cheapest and Best Metal Roofing and Siding in the Market. Can be Laid as Cheap as a Shingle Roof. Specially Designed for Factories, Mills, Elevators, Etc. ANYONE CAN PUT IT ON.



A. Cooper's Broad Rib Roofing. B. Walter's Patent Standard Shingles. C. Cooper's Patent Queen Anne Shingles.

**BROAD RIB ROOFING**

Like our Shingles, has a nailing flange the entire length of each sheet. It forms a **Continuous Rib** when applied from eaves to comb with cross locks, which gives it strength and rigidity not found in roofing where longer sheets are used. It has no protruding anchors, cleats or rivets, all nail heads are covered as perfectly as those used for wood shingles. There is no Waste in using, either at comb or eaves. The **Side Nailing Flange** admits of the roof being made as strong as the owner can possibly desire. Material—Each sheet of this roofing is made from imported **Siemen's Sheet Steel**. It is hard rolled, tough, durable and thoroughly coated on both sides with the best Oxide of Iron and Linseed Oil Paint. **Important Improvements** in the manufacture of Steel Sheets enable us to put this on the market at the same price as Common Sheet Iron Roofing, to which it is greatly superior. For prices apply to the sole manufacturers in Canada.

**T. McDONALD & CO.,**

69 to 75 Sherbourne St., TORONTO, ONT.

We have recently perfected machinery for manufacturing **Plain Sheet Metal Roofing** under the Walter's patent. This patent possesses advantages of construction not found in any other Metal Roofing. Its use does away with the necessity of

TONQUING UP EDGES,  
DOUBLE-SEAMING,  
COPING OF RIBS,  
RIVETING OF RIBS,  
EXPOSED FASTENINGS  
AND CLEATS.

No expense will be spared to make **THIS ROOFING**, in quality of metal and perfection in fitting, the very best in America.

# FAY CURRANT GRAPES

LARGEST GROWER  
GRAPE VINES  
IN AMERICA.

HEADQUARTERS  
NIAGARA, EMPIRE STATE, EATON, MOYER and all others, new and old; also small fruits and first-class establishment. Free illustrated Catalogue. GEO. S. JOSSELYN, Fredonia, N. Y.

## GURNEYS' FARM AND STOCK SCALE

PORTABLE, ON WHEELS. WITH DROP LEVER.  
CAPACITY, 3,000 LBS.

Platform, with extensions, 6 ft. x 2 ft 6 in., provided with guards, allowing ample room for any animal.

Designed Especially to Meet the Wants of Farmers and Stock-Raisers.

Made very strong, of the best material and finish. So constructed that extensions and guards can be uncoupled when desired, and scale used without them. See this scale at your nearest hardware, or write direct to makers.



Patented April 25th, 1888.

PRICE MODERATE.  
—MANUFACTURED ONLY BY—

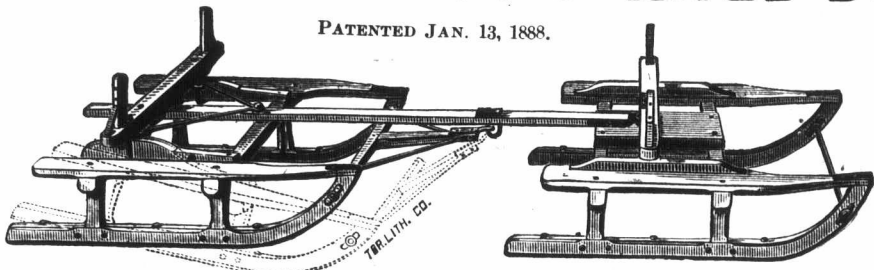
## GURNEYS & WARE SCALE CO.,

HAMILTON, - - ONTARIO.

MANUFACTURERS OF ALL KINDS OF SCALES.

## BAIN WAGON CO'S KNEE-BOB

PATENTED JAN. 13, 1888.



The best in the market for farm work, logging, teaming, etc. Two inch steel shoes.

The only sleigh on which the bolsters slide on the rear legs instead of on the box or rods. See cut.

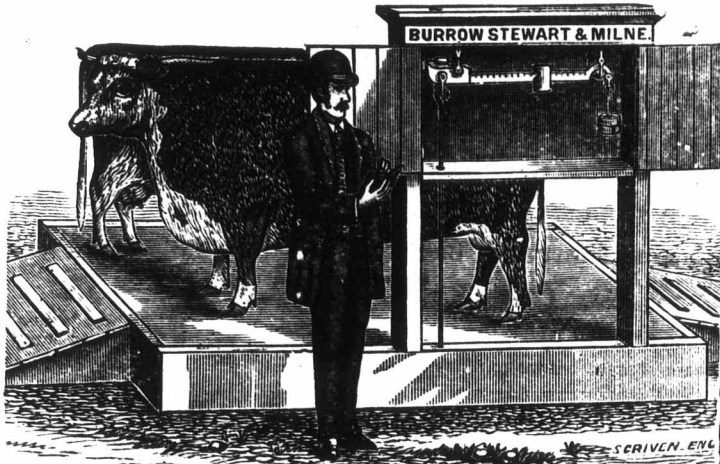
### REASONS WHY OUR SLEIGH IS THE BEST IN THE MARKET.

Because with our patent attachment to hind bob it is the easiest running sleigh made. Because it will go in and out of pitch-holes without any strain on itself even when heavily loaded. Because it will go in and out of pitch-holes without the hind bolster sliding back and forth on the box or rack, as it does with the old coupling. Because with our improved coupling it can be backed up the same as a wagon. Because with our swivel in coupling it can be used on the roughest roads without any twist to the reach. Because with our swivel in coupling it will allow either bob to turn up on its side when loading or unloading logs without any danger of breaking the reach. Because with our improved coupling it can be turned around in its own length. Because it is always in line and will track under all circumstances. Because it cuts off less than any other sleigh made. Because it is well made of the very best wood and iron. Because it has a good length of runner, and faced with a two inch steel shoe. Because all sleigh makers who have seen our coupling say that it is just what was wanted to make the bob-sleigh perfect, and wonder why such a simple and necessary improvement was not thought of before.

264-1f

BAIN WAGON CO., Woodstock, Ont.

## SCALES! SCALES!



The Platform of this Scale is 6 feet by 4 feet.

No Farmer, Stock Raiser or Produce Dealer should be without one.

It weighs accurately from 1 lb. up to 4,000 pounds.

DAIRY SCALES,  
SPECIAL FAMILY SCALES  
COUNTER SCALES,  
PLATFORM SCALES,  
HAY SCALES,  
&C., &C.

Quality, Accuracy and Beauty of Workmanship unsurpassed.

BURROW, STEWART & MILNE, Hamilton, Ont.

### NOTICES.

BURLINGTON ROUTE DAILY EXCURSIONS TO THE PACIFIC COAST, COLORADO, WYOMING AND UTAH.—Railroad ticket agents of the Eastern, Middle and Western States will sell, on any date, via the Burlington Route from Chicago, Peoria or St. Louis, round-trip tickets at low rates to San Francisco, Los Angeles, San Diego, Portland, Tacoma, Seattle, Vancouver or Victoria; also to Denver, Cheyenne, Colorado Springs or Pueblo. For a special folder giving full particulars of these excursions, call on your local ticket agent, or address P. S. EUSTIS, Gen'l Pass. and Ticket Ag't, C. B. & Q. R. R., Chicago, Ill. Adv't. 278-c.

The high position Ontario manufacturers have attained in the past few years is a matter in which every honest Canadian must feel a commendable pride. Not only have our own provinces, including the great Northwest, been supplied, but even the Eastern Hemisphere makes calls upon us. The following from S. T. Pliam, Aide De Camp, and interpreter to the Prince of Siam, Bangkok, Siam, to the Ontario Pump Company, of Toronto, explains itself: "Last year I bought two wind-mills of the Halliday plant; they have answered the purpose very satisfactorily, and now request you to forward me one more mill of the same size and price. The payment will be promptly made on such bank or firm as you desire." This firm has shipped many car loads of these mills to Europe and other countries, and also have them working satisfactorily in all parts of our Dominion.

Another of our Ontario manufacturers, who has made rapid strides successward during the past eight years, is Mr. George White, of the Great City Machine Works, London, manufacturer of threshing engines. Mr. White is himself a thoroughly competent mechanic, and is ably supported in his efforts by his five sons, each of whom have a place in the establishment, which with most manufacturers have to be filled at great expense. We append a few extracts from a letter received by Mr. White from one of his Manitoba patrons:—

"Mr. White, you say you expect to place a good many engines in Manitoba next year. Well, I don't see why you should not. \* \* \* \* \* You will be filling a long felt want. \* \* \* \* \* What I want to say is this: If you put a lot of engines in Manitoba next year, you just take my advice, and that is, be sure to send the same kind of engines you sent in Southern Manitoba this year, and in less than three years you will be at the head of the list as a shipper of engines to Manitoba; don't try to make any improvements on them, as that is impossible to say. \* \* \* \* \* If your agent finds any other parties trying to sell the inferior engines of other makes that the country is flooded with, let him write me and I will furnish him with names and addresses of parties here that have engines of other makes that are nearly worthless as straw-burners. \* \* \* \* \* I hope, as you say, you will put a great many engines in Manitoba next year, and make others as happy as you have made me. Yours respectfully,

JOSEPH LAWRENCE, Manitoba.

This is but a sample of many letters received by Mr. White, concerning his threshing engines. While in Brantford a few days ago, we called upon Messrs. Ingleton & Co. They were about to exhibit the capabilities of their Conqueror Traction Engine. When they had eighty pounds of steam up, they started out and ran it about a mile—going up and down hill with ease, notwithstanding there was about ten inches of snow drifted on the side of one of the hills. This engine is eighteen horsepower; locomotive boiler, constructed of best mild steel, well stayed, capable of carrying a continuous pressure of 125 lbs. per square inch. This engine is fitted with compensating gear, with solid brass pinions and steel brackets; it has a water-tank under the platform, which holds four and a-half barrels of water. This engine weighs about five tons, and is fitted with travelling wheels five feet ten inches in height, thus making it capable of travelling over the roughest road with ease. It is fitted up with the locomotive link reversing gear. Steel is used in its construction as far as is practicable, and no expense is spared in making it a first-class article.

A GREAT SURPRISE.—When in Toronto recently we stepped in the Steele Bros. & Co. seed warehouse. Mr. Briggs, the Vice-President of the Co., said he would be pleased to show us through the premises. The building covers 30,000 square feet of flooring. We first stepped down into the basement, which is used for storage, wash-rooms, carpentering and cleaning of boxes, etc. The engine which supplies the power for cleaning the seed grain, running the printing presses and cutting machines is also here. We then took an elevator (two of which are in the building worked by hydraulic power) and proceeded to the upper flat; this floor is used for the storage of heavy seeds, of which there are several car loads. The seed from this flat is conveyed through spouts to the cleaning mills, preparatory to shipment; here also is their printing department, paper cutter, stock of paper, supplies, etc. From this department we entered the bag seed department, in which were employed about forty girls busy packing seeds; the appliances for this department are most complete, and really an object of interest. On centre floor is the packing department, where about twenty-five girls and men are at work. The front part of this flat is a large room used for the preparation of package seeds, which are sent out in boxes from the Atlantic to the Pacific. From there we entered the storage department for imported seed and garden seeds; on this floor is situated their heating rooms, grass seed room and wholesale department, also their testing apparatus, filled with samples, which is invaluable to every reliable seed house.



PROVIDENT LIFE & LIVE STOCK ASSOCIATION

Chief Office 47 Arcade, Toronto.

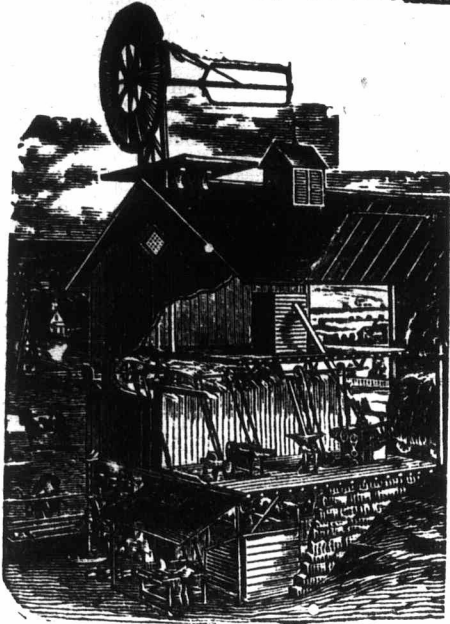
INCORPORATED--A MUTUAL BENEFIT ASSOCIATION

In the Live Stock Department, two-thirds the loss by death of the live stock of its members through disease or accident; also for depreciation in value for accidental injury. Those interested send for prospectuses, claims paid, etc. Reliable Agents wanted. WILLIAM JONES, SECRETARY.

**"BELL"**

PIANOS ARE THE ORGANS LEADING INSTRUMENTS FOR PURITY OF TONE & DURABILITY. CATALOGUES FREE. W. BELL & CO. GUELPH, ONT.

ONTARIO PUMP Co. (LIMITED), TORONTO, ONT.

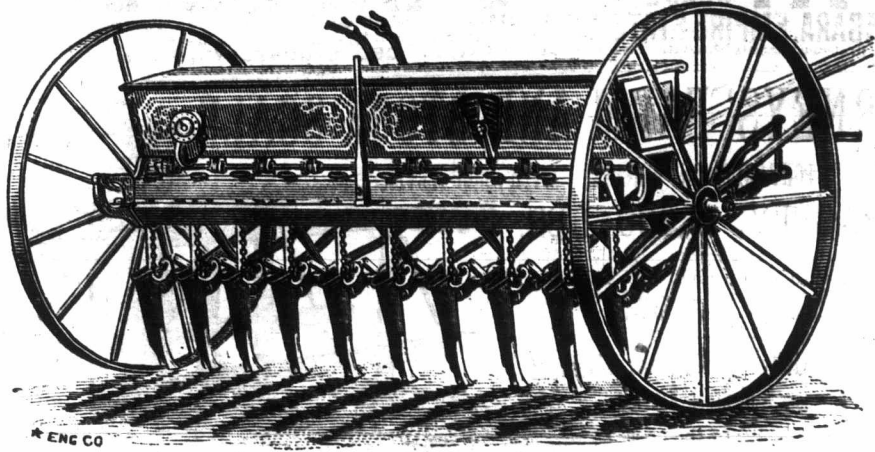


MANUFACTURERS OF WIND MILLS, FEED GRINDERS, HAYING TOOLS, IRON AND WOOD PUMPS.

And a full line of railway, town, farm and ornamental water supply materials. Geared Windmills for driving machinery, pumping water, etc., from 1 to 40 horse-power. Send for Descriptive Catalogue.

273-y

# Hoosier Steel Frame Grain Drill



\* ENG CO

GUARANTEED THE BEST IN THE WORLD.

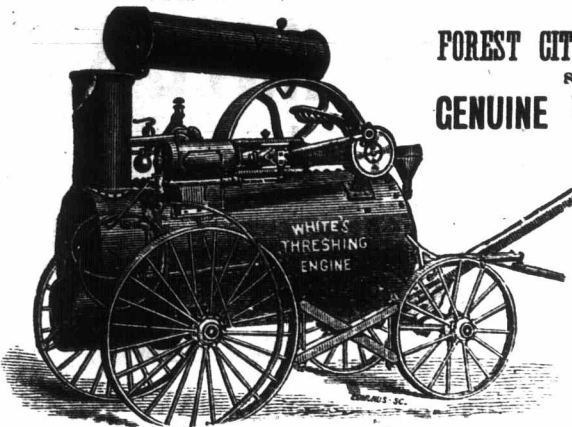
No other Drill made can be instantly regulated to run at any desired depth without stopping the team. No other Drill will sow all kinds of grain thoroughly, even and properly covered at a uniform depth in all kinds of soil. No other Drill commences to sow the instant the horses commence to move, and misses no ground when starting in, after turning. No other Drill equals the Hoosier when used as a cultivator and no single cultivator surpasses it, thus combining two implements in one.

See the greatest invention of the age in our NOXON'S NEW STEEL BINDER, new Knotter which cuts but one cord, makes no waste ends and saves cord in binding. Read our new Descriptive Catalogue for 1889.

NOXON BROS. MFG. CO.,

INGERSOLL, ONTARIO.

278-c



"THE FITTEST SURVIVES." FOREST CITY MACHINE WORKS, LONDON, ONT. SOLE MANUFACTURERS OF THE GENUINE WHITE THRESHING ENGINE.

Special 20-horse power Portable Saw Mill Engine, (same pattern and style), Light and Heavy Traction Engine, and is licensed by all Insurance Co's, and has proved itself to be the most durable. The Engine for the Northwest is made to burn either coal, wood or straw. A thorough warranty given with all Machines and Engines. Call and examine our Machinery, or correspond with us before purchasing elsewhere.

NEW IRON SEPARATOR. GEO. WHITE, Proprietor and Manager. H. B. WHITE, Head Traveller. HUB. J. WHITE, Sec.-Treas. A. W. WHITE, Asst. Manager. F. J. WHITE, Asst.-Sec.

267-11

The CHATHAM MANUFACTURING CO., Ltd. Chatham, Ontario, Canada.



MANUFACTURERS OF THE

## CHATHAM WAGON

Of which we give a faithful illustration, and which the Government of the Dominion of Canada has adopted as the Standard Wagon. We simply ask intending purchasers, in their own interests, to send to us for particulars of the Chatham Wagon before purchasing any other.

Railway Platform Baggage Trucks. Farm and other Dump Carts. Hardwood Lumber and White Oak Gang Sawed Ship Plank. The Patent Champion Hay Rack, Etc., Etc.

CORRESPONDENCE SOLICITED.

268-y