

# FARMER'S ADVOCATE

AND HOME MAGAZINE.

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## THE FARMER'S ADVOCATE & HOME MAGAZINE

W. WELD, PROPRIETOR.

THE LEADING AGRICULTURAL JOURNAL PUBLISHED IN THE DOMINION.

The FARMER'S ADVOCATE is published on or about the first of each month. Is impartial and independent of all cliques 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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### Editorial.

#### The Central Experimental Farm.

When attending the meetings of the Dominion Dairymen's and Horticultural Associations at Ottawa we visited the Central Experimental Farm. The snow was deep and the day very cold, so that we could not judge as to the quality of the land. The farm contains 465 acres, and is situated in the Township of Nepean, 2½ miles from the Parliament buildings, to the south-west of the city, commanding a full view of Ottawa with her splendid public buildings. The various houses and farm buildings on the farm are built in a very tasteful and attractive manner. This is as it should be, as the farm is situated so near the Capital that visitors from all nations will be attracted there. It is very important that the place shall not only be very practical, but beautiful as well. It is of national importance that it shall be so, not only this, but the gentlemen in charge of the various departments must be the best qualified in every particular that can be obtained; they must be practical as well as educated. So far Mr. Saunders has been successful in filling the various departments with men of the highest order.

The following is the list of officers of the Central Experimental Farm:—William Saunders, Director; Jas. W. Robertson, Agriculturist; John Craig, Horticulturist; James Fletcher, Entomologist and Botanist; Frank T. Shutt, Chemist; John Fixter, Farm Foreman; Wm.

W. Blair, Supt. Experimental Farm, Nappan, for the Maritime Provinces; S. A. Bedford, Supt. Experimental Farm, Brandon, Manitoba; A. Mackay, Supt. Experimental Farm, Indian Head, N. W. T.; Thos. A. Sharpe, Supt. Experimental Farm, Agassay, B. C.

On visiting the barn and stables we found the stock in splendid condition. At present there are 15 horses, and 56 head of cattle, viz., 17 Short-horns, 8 Jerseys, 10 Holsteins, 6 Polled Angus, 11 Ayrshires and 4 Grades. The stock have the appearance of being well taken care of and properly fed. The stables and inmates were scrupulously clean.

In the poultry house 19 varieties are being tested. We found everything here in good order, but we did not admire some of the birds that had been selected.

Leaving the stables we found the greenhouse very interesting. The department set apart for testing the varieties of seed grain would first attract a farmer's attention. Last year nearly 1,000 samples were tested, which were sent from all parts of the Dominion. Any farmer may send samples post free of any grain or seeds. They should be addressed to Prof. Saunders, and need not exceed two ounces in weight. Their vitality will be tested and a correct answer returned the sender in two weeks from time of receiving the package. This year they have tested and reported to farmers in the various Provinces on samples of various kinds of grain and seed. In 1889 the germinating qualities of the grain varied from 25 to 97 per cent. Eight varieties of poplars have been tested, six Russian and two American. Mr. Saunders thinks the Russian varieties promise much for the colder and drier sections of the Northwest, where they are so much needed. Their habits of growth, foliage and quality of the wood is much better than the native kinds. These new sorts have been tested in Manitoba and the Northwest. When we were in Ottawa the department was preparing to send out thousands to various sections where required. They were then endeavoring to find the best mode of propagating the different sorts. This they will make known to the public at an early date. The greenhouse will be used during the summer months as a place in which to cross fertilize corn in order to produce improved, hardy and early varieties. The Squaw corn is the only variety yet tested, which ripens every year in Manitoba and the Northwest. This is a very small, dwarfish sort, yielding small ears of various colors. By skilful treatment during the last few years it has been greatly improved in growth of ear and stalk, also in the quality of both. As improved it may be considered a fair yielding

variety. It may now be expected to produce 40 bushels per acre of good corn, while its earliness and hardiness has been in no way impaired. The distribution of new varieties of the various cereals has been very large this year, 8,500 packages having been sent. The distribution is still going on, and extends from the Pacific to the Atlantic.

At the Central Farm last year they tested 99 varieties of spring wheat and 8 of fall wheat, 60 barley, 86 oats, 6 rye, 5 peas, 6 turnips, and 394 varieties of potatoes; also a very large number of varieties of fruits. Of these we hope to tell our readers much in the near future.

The quantity of ensilage put into the silo was about 200 tons, consisting entirely of fender corn, mainly Southern Sweet, Giant Prolific, Southern Ensilage and Red Cob Ensilage. The cattle were fed on the following ration:—25 lbs. ensilage, 20 lbs. roots, 10 lbs. oat straw, 4 lbs. bran and 2 lbs. provender (this latter consists of four-fifths oats and one-fifth peas). This mixture is fed in the proportion of 6 lbs. to the hundred live weight, and costs about 16 cents a day for a cow weighing 1,000 lbs. The horses are fed on cut hay and ground oats, mixed together and moistened. The larger animals, weighing 1,500 lbs. to 1,600 lbs.; receiving 14 lbs. hay and 12 lbs. oats; the smaller horses, 1,300 lbs. to 1,400 lbs., 12 lbs. hay and 12 lbs. oats.

#### Our Circulation.

The addresses of our contributors this month will show to all how widespread our circulation is. No less than four articles were received from England, one from Vermont, one from Quebec, several from the Maritime Provinces; Ontario, Manitoba, and the Western Territories send their quota. Our Manitoba and Western edition is increasing in circulation and influence much faster than we had even hoped. The Ontario and Eastern edition is also making rapid progress.

When writing to any of our advertisers, say you saw their advertisement in the "Farmer's Advocate."

If you have for sale Live Stock, Land, Implements, or any other goods that the farmers require, it pays to advertise in the "Farmer's Advocate."

We want industrious, reliable, pushing men in every township in the Dominion, to canvass for us, and introduce our splendid Subscription Picture. Steady employment and good wages given to suitable men. Write for particulars.



**The Canadian Velvet Chaff Wheat.**

Several years ago the editor of this paper offered \$125 as prizes for new varieties of wheat or other cereals, vegetables or fruits, that on testing proved to be better than the standard kinds now in cultivation. The money was to be divided as follows:—\$50 for four ozs. of spring or fall wheat; \$25 for the best new variety of potatoes or other vegetables, or fruits. The varieties sent for trial must have been previously tested and proved worthy of a trial, and must be a variety heretofore unknown in Canada. The editor promised that none of the varieties sent would be disseminated without the permission of the sender. Full information to be given concerning the winning varieties.

In response we received a number of varieties, among which were two new fall wheats—one a white, the other a red—both of which are new and very promising; but the white, which has been named the "Canadian Velvet Chaff," has proved itself worthy of the \$50 prize. We have had it widely tested in many of the States of the American Union, and in every section of the Province of Ontario, and wherever grown it has excelled all other varieties for the last three years. Last year it yielded more than double as much as the old reliable Clawson in those sections where the Clawson has been heretofore by far the best variety. Where sown together, this new kind has far outstripped the most reliable of the new or old kinds. One of our staff has just visited fields of it in the various parts of the Province of Ontario. He reports that it has wintered better than any other sort. The severe tests we have put it to goes to show that it stands the winter well, even on the most exposed hills, while the freezing and thawing of last winter has not effected it to any extent. The only places that we have found it killed out is where considerable water has lain on the surface for some time, which was at intervals frozen solid. Where winter wheat can be grown we believe this is destined to be of great value. It is a beautiful white wheat, rounder, plumper and whiter than the Clawson. The head is long and close, and the straw stiff and bright, and almost entirely free from rust, even under the most trying circumstances. Last year we saw a field—one half was Clawson the other half this new sort—the Clawson, though a fine looking crop, was badly rusted, and yielded seventeen bushels per acre; the Canadian Velvet Chaff was scarcely rusted at all, and yielded over thirty bushels per acre, and this under most unfavorable circumstances. On the farm belonging to the proprietor of this paper it yielded thirty bushels per acre, double that of any other sort except our new red wheat, not yet introduced. This was in ordinary field cultivation. It is a very heavy yielding wheat in proportion to its straw, and tillers much. As high as twenty-five heads have been counted from a single root. The chaff is mottled brown and white, and has a handsome velvety appearance.

That each one of our readers may fully judge of the values of this new wheat, we attach below copies of private letters received by us from the originator, Mr. John Stone, Norham P. O., Ont., who has spent over forty years in the careful study of our cereal crops. It must be borne in mind too that this is a Canadian variety, originated in Durham county, about thirty miles north of the north shores of Lake Ontario. This is a cold section, in many cases the land is very rolling, but it produces grand samples of grain. We would advise all to read these letters closely:—

Norham, Aug. 15th, 1887.

Dear Sir,—I see by the ADVOCATE that you have offered a prize for the best wheat grown from four ounces of any new wheat after you test it on your own ground. I have sent you four ounces of what is a new wheat. I noticed one stool of very nice looking wheat growing in the Martin's Amber I bought from you. I have sown it twice, and find it

was not given what I thought a first-class chance, and it gave me thirteen bushels from the machine. It was hardly three feet in height, yet every farmer who saw it said it was the finest looking wheat they ever saw. Now, I will give you the history of this wheat: I got one-half bushel of splendid Martin's Amber; I had from that just ten bushels; I sowed it the next season, and in this second crop, though it was not heavy, I found one beautiful stool of wheat, I thought the finest I ever saw, and in sowing the produce of that one stool three times I got thirteen bushels the second time. I sowed a piece 14 by 18 feet, and had 19 lbs. 4 oz., on one-quarter of an acre and had 13 bushels. Who ever beat that with one grain of wheat to start with? I have sown about all of the hardy varieties introduced within the past forty years and have never found one more hardy than this. I have eight varieties testing.

J. B. STONE.

Norham, July 27th, 1889.

Dear Sir,—I have just shelled and weighed the wheat tested by me, and I send you the result of five varieties tested. I sowed on the 18th September, and all were struck with rust more or less; the kind I originated and the Manchester came off best; the Clawson, Garfield and Advocate suffered about alike. I sowed 90 grains of each variety, all treated alike, in drills side by side. I sowed the Garfield on one side and the Advocate on the other of the variety I sent you, as I thought this would be a fair test. The ice laid on the bed quite late in the spring, and this kept it back. I cut it on the 23rd. I do not consider the yield large, but all had the same treatment, and the result was as follows:—The Canadian Velvet Chaff, 90 grains produced 3 oz.; the Garfield, scarcely 2 oz.; the Manchester, 2½ oz.; the Advocate, 2 oz.; Clawson, 1½ oz. I have sown nearly all the standard varieties introduced for the past 43 years, and I am certain that there has not been one single variety more hardy than this new sort. My sample this year will be nice. We have suffered badly with rust on all low and late fields; some pieces of Clawson almost ruined, but early, high land all right. I have no hesitation in saying that this new wheat is more hardy than the Clawson. Yours respectfully,

J. B. STONE.

Norham, Aug. 26th, 1889.

Dear Sir,—You will please receive my thanks for the gentlemanly manner in which you have awarded me the prize of \$50 for four ounces of wheat to be tested in 1888. I have finished threshing this morning, and, although the yield was not as good as I expected, the victory for it over all other varieties in this section is even greater than I expected. I sowed five acres and had 170 bushels of what is now called Canadian Velvet Chaff. I sowed seven acres of Clawson in the same field and had only 120 bushels very bad sample, while a good share of the other is most beautiful. Two of my neighbors have threshed; one sowed 35 bushels of Clawson and had only 190 bushels; the other sowed 30 bushels and had only 180 bushels, much of which was chicken feed. Clawson in this section is only turning out about 10 bushels per acre. There is greater excitement here over my wheat now than before it was threshed. The thresher, who is a farmer, said he would rather pay \$2 per bushel for it than to sow any other variety. Mr. Thomas Carlow, our Reeve, and one of the first farmers in the township, offered me, since we threshed and he saw the wheat, \$5 per bushel, which I refused.

J. B. STONE.

Norham, April 21st, 1890.

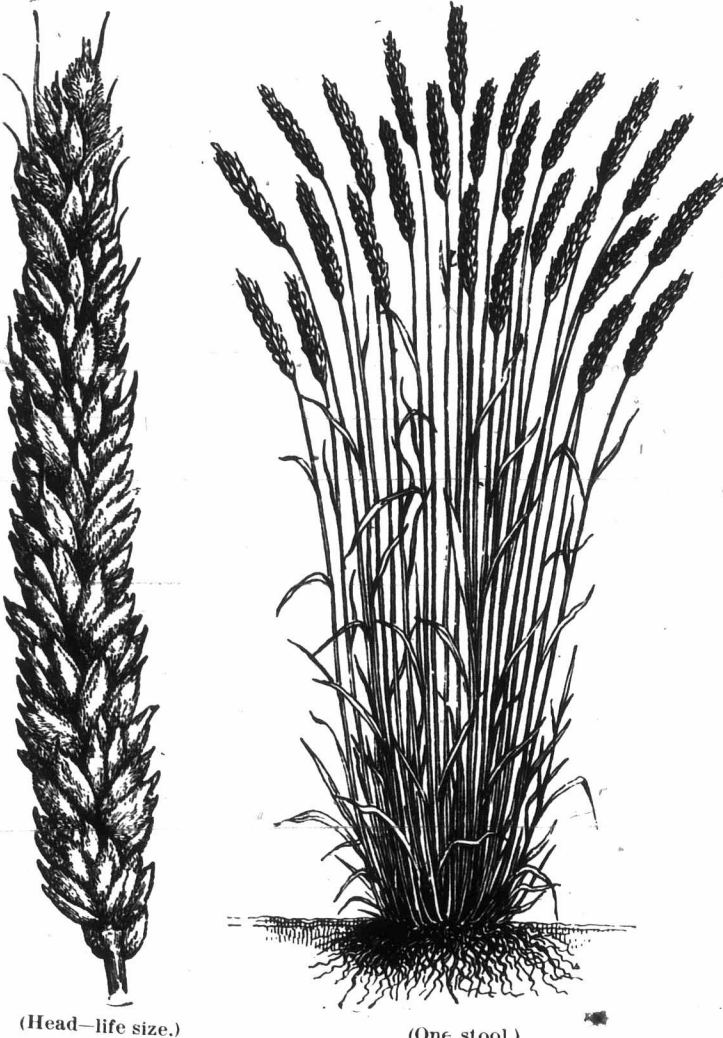
Dear Sir,—I am pleased to state that the winter wheat in this part has come out well. The winter seemed to be very bad for it as we had very little snow and the spring has been wet, but it is generally looking well. Some few very low fields were injured by the water laying on them too long in the spring. This new wheat has again proved to be one of the most hardy, equal to the hardy Clawson if not the most hardy. All I have sown in this part is looking fine. This wheat the first year gave from one grain 570 grains; the 570 grains the second year gave enough to sow a piece 14 by 18 feet, which gave 19 lbs. 4 oz. I sent 8 oz. of this to Mr. Weld and sowed the rest, 18 lbs. 12 oz., on one-fourth of an acre and had 12 bushels and 40 lbs. clean wheat; 10 bushels of this I again sowed on five acres and had 170 bushels.

J. B. STONE.

The following is what Mr. Stone's neighbors say of the Canadian Velvet Chaff Wheat:—

Codrington, Sept. 14th, 1889.

Dear Sir,—I have been in the best wheat section in California and York State and have seen many very fine fields of wheat, but I never saw anything in the shape of wheat as beautiful as a small piece of the wheat now called the Canadian Velvet Chaff growing on the farm of J. B. Stone, in the Town-



(Head—life size.)

(One stool.)

THE CANADIAN VELVET CHAFF WHEAT.

very hardy, and has given great satisfaction as to yield. I have now 18 lbs. 14 oz. from a piece of ground 14 by 18 feet; I had it in fine order. If it proves satisfactory to you I will let you name it, and have the first I have for sale to distribute. The Clawson wheat does the best in this section of all the winter wheats we have in this part. The wheat I sent you is very early, ripening four or five days before the Clawson. Yours respectfully,

JOHN B. STONE.

Norham, July 10th, 1888.

Dear Sir,—I sowed 18 lbs. 12 oz. of wheat last fall the same as I sent to you. I have just one-quarter of an acre, and I am certain that you never saw anything to beat it. It looks good enough to give fifteen bushels to the quarter acre. There is one stool with twenty-five heads, and I have some of the most beautiful heads you ever saw, and will send some to you in a box so that they will not get broken. It will be fit to harvest about Monday next. It is the handsomest grain I ever saw.

J. B. STONE.

Norham, April 23rd, 1889.

Dear Sir,—The winter wheat is looking better now than I have seen it for several years past. I think this new variety I have stood the winter best of all. It is equally as hardy as the Clawson, and far tougher than the Manchester. I have one piece of four acres on summer-fallow. If nothing happens it probably will not be beaten in bushels per acre in Ontario. The one-quarter acre I had last year



ship of Percy, in 1888, and the present year it was fully one-third better than the Clawson growing side by side on the same farm. Yours respectfully,  
JAMES WOOD.

Norham, Sept. 14th, 1889.  
Dear Sir,—I saw the wheat now known as the Canadian Velvet Chaff growing last year and I never saw any wheat to excel it in my life. I think it was the finest I ever saw, and gave at the rate of over fifty bushels per acre, and this year on the same farm and same class of land it was fully one-third better than other varieties, both in sample and quantity. Yours respectfully,  
W. EVANS.

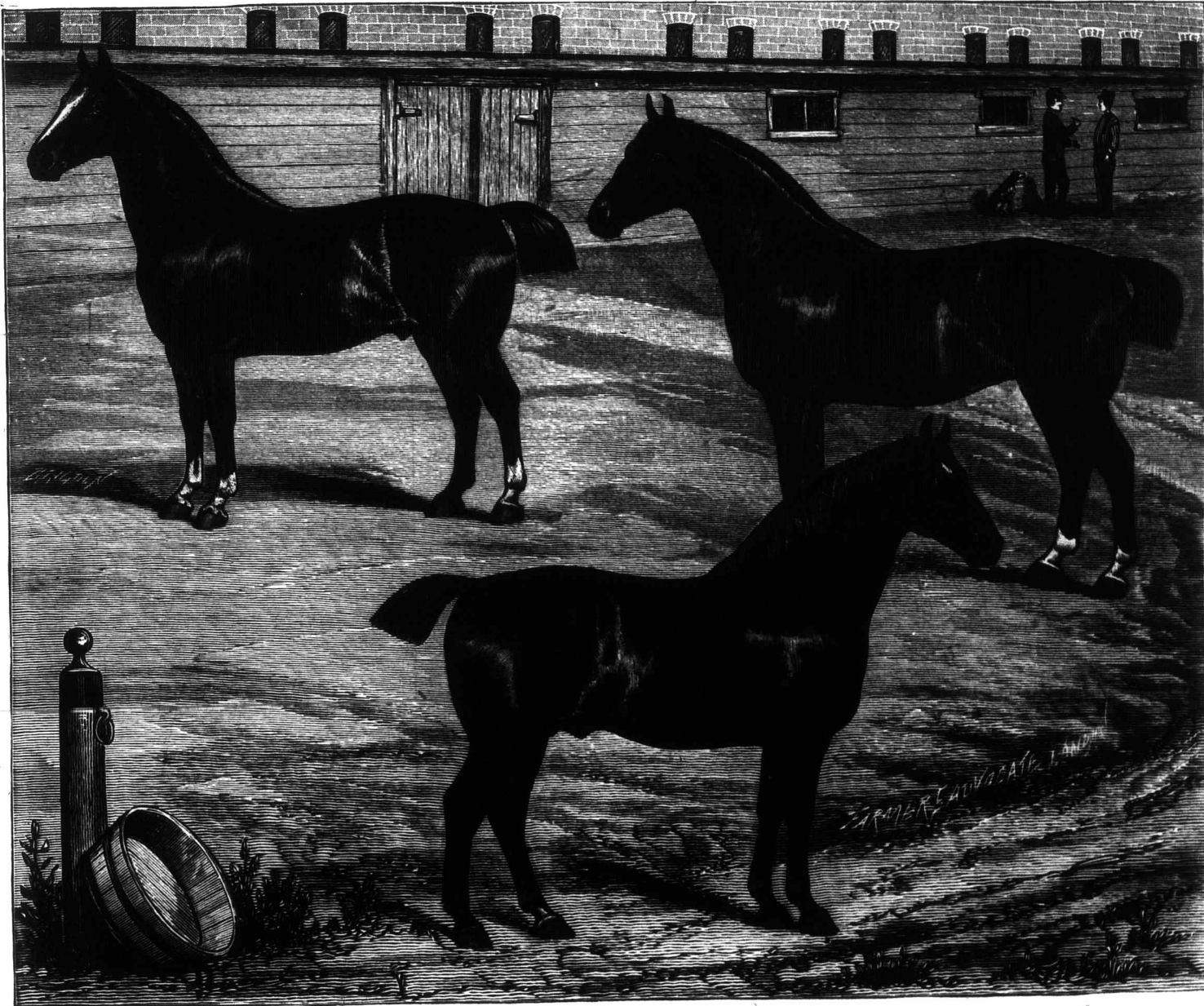
Norham, Sept. 14th, 1889.  
Dear Sir,—My farm joins Mr. Stone's. This new wheat, now called the Canadian Velvet Chaff, has been as well tested by Mr. Stone the past four years as it could be in ten. It has stood two hard winters and has proved to be very hardy, and with equal

**Stock.**

**Hackney Horses.**

While in some lines of stock general purpose animals are not profitable, the general purpose horse is certainly the one most sought after at the present time. A great drawback to the production of first-class general purpose horses in the past has been the almost entire absence of sires of that class of sufficient breeding to insure even a probability of the get being of the desired type. In the Hackney, as the name

twelve or fifteen miles in an hour to covert (where the hunter is in waiting), and sometimes to bring back the groom with greater expedition. It is in the department of the Hackney to encounter and overcome emergencies and difficulties of every description. His constitution should be excellent and his spirit invincible. He must be able to go twenty-five or thirty miles at a time without drawing bit, and without the least respect to the depth of the roads, or the state of the weather, and if he is not equal to any weight in these trying exertions, he will be held in no estimation as a Hackney of



JUBILEE CHIEF 2122. FIREFLY 1779. CONQUEST 4983.  
THREE IMPORTED HACKNEYS, THE PROPERTY OF MESSRS. EVEREST & KERR, REABURN, MAN.

chance I have no hesitation in saying that it will far out-yield any variety now known in this section. I helped thresh it last year and also the present year, and it was better than the Clawson on the same farm by fully one-third. Yours respectfully,  
JOHN DIAMOND.

The above letters show how carefully we have investigated this matter. Mr. Stone's letters, when written, were not intended for publication. We have other letters regarding it which we will publish in our next issue.

Pigs should be made to gain one pound per day. Early in the life of every animal is where the profit comes in. It costs twice as much to feed after an animal has fallen away in flesh. Continual feed from birth is the only road to profit.

suggests, we have a horse for all purposes. Wm. Taplin's "Sporting Dictionary and Rural Repository of General Information," published in 1803, says:—"Hackney, in the general acceptance of the word with the sporting world, is a horse superior to all others on the score of utility, being rendered subservient to every office of exertion, speed, or perseverance; or, in other words, to all the drudgery and labor of his situation, from which his contemporaries, the racer and the charger, by the imaginary superiority of their qualifications and pampered appearance, are always exempt. It is the peculiar province of the Hackney to carry his master

fashion." John Lawrence, of Bury St. Edmunds, in his history and delineation of the horse published in 1809, uses the word roadster as synonymous with Hackney, and as the term roadster was applied to trotters, there is every reason to accept as a fact the belief that the Hackneys excelled as trotters at that time, while the performances noted below show that at a little later date they were fast trotters of very great distances. On March 5th, 1823, Maberly's mare trotted over a four mile course, in Epping Forest, sixteen miles in fifty-eight minutes and ten seconds, carrying ten stone (140 lbs). At Ferryheath, on the 20th of November of the



same year, Capt. Mansfield's brown mare trotted nine miles in thirty-one minutes. In 1832, on the 27th of April, Mr. Dixon, of Knightsbridge, trotted his mare Nonpareil, in a match cart, one hundred miles in nine hours, fifty-six minutes and fifty-seven seconds. The first twenty miles were trotted in two minutes less than two hours. At the finish she showed no symptoms of fatigue, and on entering the stable began eating hay as if nothing unusual had occurred. About the same time a broken-kneed, stone-blind mare of Mr. Woodcock's, East Harling, Norfolk, trotted forty miles on the London road in three hours and forty-nine minutes.

Our illustration represents three of these hardy, useful horses, owned by Messrs. Everest & Kerr, of Ridgemere Stock Farm, Reaburn, Man. At the left is the three-year-old stallion, Jubilee Chief 2122, sire Pilot 1323, he by Lord Derwent 418, by Denmark (Bourdass's) 177, dam of Jubilee Chief, Queen of the Forest 297, also registered as 1553, she by Fireway 249, dam by Sir Richard 1172. Queen of the Forest was a noted prize winner, having won fifteen first prizes and six second at the best shows in England. Jubilee Chief is a very promising young horse, three years old, with lots of style, action, and spirit. At the right is Conquest 1983, sire Anconeous 887, by Phenomenon 584, dam by Eclipse 191. This mare has a majesty of bearing that the artist cannot convey to paper, but must be seen to be appreciated, and if the expression, "An eye like an eagle and a neck like a swan" was ever applicable to an animal, the lofty bearing of the neat head, graceful neck, and quick penetrating eye of Conquest entitle her to it. In the centre and in front is Firefly 1779, now five years old, and by many considered to be "the noblest Roman of them all." Firefly is by Fireway 249 (Triffit's), he by Achilles 2, dam Nance 1291. Fireway won twenty-two first prizes, and Nance four. Jubilee Chief and Conquest were imported this season by Messrs. Everest & Kerr, in company with five other Hackneys, the remainder of which are mares. Firefly was imported by R. Beith & Co., Bowmanville, Ont., and was purchased over a year ago by his present owners. He has probably more admirers than any other horse in the Province. He has been shown in the roadster class on several occasions, invariably winning first in strong competitions. At the recent spring-stallion show at Portage la Prairie one of the judges remarked, "That it almost broke his heart that two such horses as Firefly and his leading competitor could not both win a first, as they were such grand animals." One of the points indicative of a long line of good ancestry in these horses is the similarity of gait, every one having grand knee action and trotting with mechanical accuracy and precision. On the evening prior to the Portage show Firefly was harnessed to a buggy, after weeks of illness, having been driven but four times in six months, and showed, what some of the spectators pronounced a three minute gait, with two men in the buggy; although three and a quarter was nearer the mark than three minutes. Even this was almost phenomenal under the circumstances.

From what can be learned of the past of these horses, and the evidence given of the usefulness by their appearance, they will become exceedingly popular here.

Give your farm credit for furnishing you a home rent free, and for a thousand and one necessities and luxuries which you would have to pay cash for in the city.

### Canadian Studs, Herds and Flocks.

MESSRS. A. B. SCOTT & SON'S CLYDESDALES.

Two miles west of the Ilderton Station, on the Huron & Bruce Railway, is the farm of Messrs. A. B. Scott & Son, Vanneck P. O. In 1886 these gentlemen laid the foundation of their present breeding operations, by importing and selecting, in person, the two mares Annie, by McGregor, and Kate 2nd of Congeith, also by McGregor. On the dams side of the pedigree of these mares we find such noted horses as The Laird, Farmer's Fancy, Lord Clyde, Lochfergus Champion, and other celebrated horses. The quality of the produce bears out the old adage, that "Like produces like," for the young things from both these mares show plenty of what Clydesdale men are just now after, that is, size united with quality. Kate 2nd of Congeith is a mare of beautiful quality, of very compact form, and good size, with just the sort of feet and legs that will stand wear. She was placed second at the London Provincial last year as a brood mare, with foal by her side, her foal taking first. She took 3rd at Toronto, the foal taking second. A colt rising two this spring bids fair to make a capital stock horse. His dam was Annie, by McGregor, and his breeding, combined with his individual excellence, should satisfy anyone who wishes to purchase a stallion of this sort. He is sired by Corporal Logan, a capital son of Belted Knight. This colt, called Red Cross Knight, is a bright bay, with plenty of size, good feet and legs clothed with just the quality of feather that denotes good flinty bone. He is very nicely turned, and when we say that at the Toronto Industrial he took first place in a ring of ten, all imported, some just fresh with ribbons won in the show rings of Scotland, proves him to be a colt of more than ordinary merit. He is a honor to his breeders. Some fillies of more than ordinary quality are also to be found on this farm, prize winners in the past, and very promising. Unlike many of our importers, the Messrs. Scott have centered their energies in breeding. It is an undoubted advantage of buying a stallion or filly that is bred here. You then have the opportunity of judging of the merits of both sire and dam, which cannot always be done in the case of the imported colts.

MESSRS. CARGILL & SON'S SHORTHORNS.

On the Wellington, Grey and Bruce branch of the G. T. R., and close to the station which bears their name, Messrs. H. Cargill & Son have founded a choice herd of Shorthorn cattle, and although among the last to enter this useful and interesting field, they, with a determination to excel that has marked their other business transactions have started in a line that should insure success. They first purchased from T. & A. B. Snyder, German Mills, the two cows, Duchess of Kent, of the imported Princess, by Lancaster sort, and the show heifer, Rose of Strathallen 3rd, herself a winner at the Toronto Industrial in 1884; and with her dam, the better known Rose of Strathallen 2nd, the sweepstakes cow of two successive show seasons, from the two strongest members of the herd that won in Ottawa and took second place in Toronto the same year. Several others of the useful sort have been added from time to time, until two years ago the present stock bull was purchased of Mr. Arthur Johnston, of Greenwood, his importer, and along with him two imported heifers, bred by J. Campbell, Kinellar, viz., Ury, of Greenwood, by the Sittyton bull Gravesend, and

Ury Maid, by the same sire. These are two most promising heifers, being of the thick fleshed sort that are required, not only to grade up our feeding cattle, but also to strengthen the feeding qualities of many of our Shorthorn herds. The bull Albert Victor was also bred at Kinellar, and is of the Golden Drop family, that made such a reputation for themselves in the show rings of Canada and the Western States in years past. This bull is proving himself a most successful sire, as the large crop of growthy calves of more than ordinary quality testify. He is a bull that could easily be pushed forward for the show ring, being particularly deep in the rib, smooth and stylish; he would make a hard beast to beat in the highest company; but he is still better situated at the head of this useful herd, and will be a great benefit to that section of country. This herd now numbers between thirty and forty of pure breeding, with an additional thirty or more capital grade cows, heifers, and steers. Many of these latter are good specimens, both steers and heifers having quality enough for show, should their breeders desire to push them for that purpose. The presence of such a herd as this should be of incalculable benefit to the section of country in which they are bred; and now that export steers, as well as stock cattle of all grades are again at such high prices, they will no doubt have a full share of the patronage not only of their own locality, but also from buyers from other parts.

MESSRS. RIVERS' DURHAMS AND SOUTHDOWNS.

Messrs. Richard Rivers & Son, the proprietors of Spring Hill Farm, near Walkerton, Ont., have been prominent breeders of Shorthorns for eighteen years. The herd was started by purchasing Jemima, of the Beauty family, by Snowball, and Cherry 7th, by imp. Baron Berkeley, bred by F. W. Stone, of Guelph, and being of his branch of the same family; after which Lady Strathallen 2nd, bred by Mr. George Keith, Toronto, of the Syme sort, was also added to the herd. These formed the basis on which the herd, now numbering twenty-five head, has been built. These cattle are of the useful sort, of which many more are required by our farmers. The bulls latterly used have been the Duke of Hamilton 3069, bred by James Russell, Richmond Hill, and sired by imported British Statesman, Victory bred by H. Thompson, St. Marys, and sired by the Cruickshank bull, Baron Braith; the present stock bull is Silver King 4th, bred by F. Lowell & Son, West Montrose, sired by the Bow Park bull, Waterloo Duke 12th, by imported 4th Duke of Clarence. They also have a lot of high bred grade cattle of the class which produce the best quality of feeding steers, and for which just now there is such a demand from the Northwest. A flock of twenty-five South-down sheep, of good quality, headed by a ram imported by E. & A. Standford, of Markham, also a choice lot of Leicesters are kept. Some wonderfully good lambs of both these sorts were being pushed forward to supply the demand for something extra good in these lines. Berkshire swine also find a place on this well-appointed farm.

The Messrs. Rivers are also making a specialty of seed grain of different sorts, which they are well enabled to do, their farm being well adapted for this purpose, the whole being in splendid order throughout. The appearance of once showing that close attention is given to details in both farm and stock departments, for which they are reaping a reward by extension of their business and demand for their products, both from the field and stall.



### Horse Breeding in Canada.

Which ever way fancy may lead men in breeding horses our heavy sorts of Clydesdales and Shires are the safest line in which the majority of farmers may continue to breed. There is less risk in having them blemished, a more certain sale. If size is united with quality, a more remunerative price is received according to cost of production. They require no breaking and training, the farm being the finishing point, as well as the breeding ground; therefore no middlemen come in here to reap a part of the profits. The colts are being broken to work while performing the labor of the farm, as they come into use earlier, are ready to work at from two to three years, at which age they are as fit for farm work as the lighter breeds are a year or two later; they do their work with greater ease and pleasure to the driver, and with less wear and tear to the tackling required in the work.

There are many mares suitable for breeding this class of horses, but selection is required to be carefully carried on, and grading up to a class of horse that is alike suitable for city trade or farm work is quickly and easily done, if only the right class of stallion is used.

Unfortunately here is where the difficulty arises—farmers are only too apt to overlook their requirements in order to save a trifle in the service fee, therefore the cheap horse gets the largest patronage. Of late years this had the effect of causing cheap horses to be imported by some; all of such horses ought to be working in the shafts in their own country, instead of being palmed off upon the farmers, not only doing damage to the breed they represent, but doing material harm to the whole line of breeding, by robbing the better class of stallions and spoiling the breeding and quality of the produce of the mares bred to them. These colts that have come, and which are of no use to us, are rough, with beefy legs, round spongy bone, straight short pasterns, coarse hair growing all around the legs, which no amount of attention can make look presentable. This sort are sure to be sluggish in gait and ungainly in appearance.

A visit to numbers of our spring shows in different parts of the country will impress upon a judge of horses what a number of this class have been imported of late. Farmers are too often of the opinion that because a horse has come over the sea he is all that they require. Never was there a greater fallacy. The demand has been so great in Britain that every colt with any pretensions to breeding is saved entire, and we are the unfortunate sufferers. Every mare bred to them will be a direct loss, as the offspring will not sell, therefore they stay with us and go to pull down our average quality. Some importers in the past have bought specimens of this class cheap, and sold them high, which means a large profit, but the day is going by for this kind of stock. We want horses of the improved type, and nothing else will pass—whether Clydesdale or Shire. We must have both size and appearance, with clean, flat bone, silky feather, well set pasterns, and feet that will stand the pavements. This sort cost money, and cannot stand at low figures. In England and Scotland, particularly the latter, this best type of horses can obtain higher fees than here, and men that have enterprise enough to import or purchase from our importers who are bringing over this class, deserve to be liberally treated in

this matter. In the better class just referred to, breeders have been eminently successful in the improvement made. The Clydesdale in the past has undoubtedly been the most popular draught horse of Canada; his handsome head and graceful forehead, and above all his particularly good legs and feet, with evidence of unmistakable wear about them, combined with an easy motion and attractive action, that is excelled by no breed of horses for heavy work. Among the Shires we may not be able to find as many with the quality of bone and feather, "flash legs" as some of the Shire breeders are just now styling them, they are to be had if the price is only paid for them, and the Shire horse has a middle that none can take exception to.

During the last few months there has been quite a controversy going on between some of the large importers of Shire horses and the breeders of this class in England, as to which class is the most suitable for American trade; the breeders trying to persuade the importers that the horse to import is what they don't want at home. Many of the Shire breeders will have to pay more attention to feet, feather and legs. A quick moving horse is what is wanted on this side, and we can sacrifice a little weight to get it, although both are required to make the perfect draft horse.

A glance at the report of any horse market will show that it is from the best that the profit comes; therefore, those that have good mares should see to it that nothing but the choicest stallions be used. A good draught horse for dray work is still worth from \$200 to \$300, according to weight and quality, and the demand will be likely to keep pace with the supply for many years.

### Chatty Letter from the States.

[From our Chicago Correspondent.]

Some of the leading Chicago packers and large cattle dealers think cattle prices will be higher for a good while to come. The strong demand for improved bulls is a pretty good sign. Beef cattle are selling \$1.00 per 100 lbs. higher than one year ago, and there is a remarkably good feeling among dealers and producers. That long looked for "good time coming" seems to be well on the way. During the past two or three years the marketing of cows and heifers has been very heavy. Latterly, however, there has been a falling off in that respect, and there are hardly enough cows coming to supply the demand for canning stock. Whether this change is due to the fact that owners have decided to hold the stock for breeding, or the fact that the surplus of cow stock has been marketed, remains to be seen.

Never in the history of the live cattle export trade were such heavy shipments going forward as now. There is a great demand on the other side, but the exporters all feel that they have contracted to fill too much space, and have lately been losing quite as heavily as they gained for a while, and there is little hope of an early change for the better.

Canadian exporters are now doing a heavy business, and prices on this side are holding up and going higher.

For some months past it has been talked that hog receipts would be far in excess of the demand. This talk has had the tendency to spur owners up to ship in their hogs as fast as possible so as not to get caught in the rush. And, as a matter of fact, this method of anticipation has seemed to keep the over-supply always just

ahead; and there are strong indications that hogs intended for May markets were slaughtered in April.

The country evidently has a large stock of pigs on hand, however; and, where corn is plentiful and cheap, it does not take long to convert pigs into mature porkers.

There is a noticeable improvement in the horse market. The demand for all good kinds is stronger this spring than it has been in years. Choice driving teams have sold at \$450 to \$600 per span; drivers, good to choice, \$175 to \$350; work horses, \$100 to \$140 per head.

Cattle, hogs and horses are selling in a fairly satisfactory way, but no class of live stock is giving such general satisfaction to feeders and breeders as sheep. Prices are the highest they have been in two years, and sheepmen are happy when 142 lb. corn fed Western shorn sheep fetch \$5.70; 130 lb. woolled Westerns, \$6.40, and good to choice lambs \$6.50 to \$7.50 per hundred pounds. Sheep owners certainly cannot complain.

### Some Particulars Concerning the Stud of Mr. W. L. Ellwood, De Kalb, Ill., U. S. A.

In a recent letter Mr. Ellwood wrote us the following:—We expect to import a large number of Percheron and French Coach horses directly from France this summer, and our importations will consist, as heretofore, of the very finest animals which we can obtain. We have had a very good trade during the past year, having disposed of all of our Coachers, and almost all of our Percherons, which we believe speaks louder than words for the quality of stock we handle and the prices and terms we are able to make. We believe that the French Coacher is destined to be the coming horse of America, and we shall pay particular attention to this breed, and are confident that after the 1st of September we shall be able to show to our customers the largest and finest collection of these popular animals which has ever been offered for sale in this country; and we believe that no one who is in the market for anything in our line can afford to pass us by without giving us a call and examining our stock and getting definite prices in connection with the different ones. We have always aimed to treat our customers in a fair and liberal manner, which will ensure for us their future patronage as well as present. We are always glad to have our friends call upon us, at "Ellwood Green," whether they wish to purchase or not, and we can assure them of a hearty welcome. We have a number of farms which are used exclusively for our Percherons and French Coachers, and we will do all in our power to make the visit as pleasant as possible. We have met with good success at the fairs and horse shows where we have exhibited during the past year, having won more first and second premiums than any other man or firm in the country, both in our Coachers and Percherons. We were particularly successful at the great American horse show held in Chicago last fall, where we exhibited a large string of our best horses, and now have the ribbons which we won there on exhibition in our office, together with a large number of gold medals which our Coach horses won while in France, and we shall be pleased to show them to any one who will call upon us.

We thank you very much for the favors which your paper has shown us, and believe that the demand for draft horses in Canada is increasing.



### The Fourth Volume of the Clydesdale Stud Book of Canada.

That Canada has now taken her stand as one of the chief stock breeding grounds of the world is borne out by the present activity of our many live stock associations, the arrival at this office of the fourth volume of the Clydesdale stud book of Canada is one of the many reminders of the talent engaged in the breeding operations that are now carried on. When we consider that the registration of Clydesdales began in the closing of the year 1882, and the numbers have now rolled up to a total of 2,388 stallions and mares, from these figures we can form some idea of the amount of capital invested in this branch of our breeding industry. The fourth volume contains the pedigrees of 259 stallions and 290 mares, with an additional 62 stallions and 102 mares in the Scottish appendix, making a total of 703 animals. There is also an appendix showing the change of ownership and corrections of pedigrees; and a new appendix is started in this volume giving the additional produce recorded from the mares in Vols. I, II, III and IV., and a most convenient index of Vols. I, II, III and IV., which is a great help in searching up pedigrees. Illustrations of the prominent prize winners of the Clydesdale spring show, viz., McNielage, the winner in the aged class, and McClaskie, the first prize in the class rising three, as well as the sweepstakes horse of the show, both owned by Graham Bros., Claremont, Ont.; a trio owned by R. Beith & Co., winners of last fall shows, including Sir Maurice, winner and sweepstakes horse at London and Toronto; Eastfield Style, second at London and third at Toronto; and Eastfield Chief, first in two-year-old class at both the above shows. The book is altogether complete and neatly gotten up, similar in binding to the previous volumes, and is a credit to its editor, Mr. H. Wade, Toronto. Every farmer in Canada who is interested in heavy draft horses should own the volumes of this record. No stallion should be used even on grade mares whose owner claims him to be a Clydesdale, if not found recorded in some of the volumes.

### Mortality in Foals.

The now very prevalent disease among foals, described as "Joint" by numbers of the old writers, was ascribed to rheumatism, while leading veterinarians now designate this scrofulous ostitis, and impute it to this cause, but most authorities are still in the dark as to how the complaint is engendered; however, it is becoming year by year a serious loss to those engaged in breeding horses. A thorough study of the causes and effects would not only be useful, but particularly interesting. In many cases the disease is accompanied with a dribbling of urine from the umbilical cord through the urachus, the natural passage for the urine before birth, and at present theorists claim is that scrofulous or tuberculous matter in the urine prevent the natural closing of the urachus, and therefore claim scrofulous matter to be present wherever this disease shows itself; and although the natural passages through the urethra may be normal and urinate freely, still the dribbling goes on. The patient will be found stiff and lame in one, two, or more of his joints, the affected parts swollen and tender, the appetite in some cases remaining unimpaired for a length of time, but the swollen joints suppurate, abscesses form, the patient losing flesh gets unable to rise, and dies a miserable object. For this reason many breeders become disheartened directly a case is presented

and immediately destroy the patient. The chances of effecting a cure depend upon the severity and situation of the inflammation of the larger joints, those having most motion, such as the back and elbow, and if once opened the case is hopeless. In treating, tone up the system, if attended with diarrhoea or the bowels are costive; in both these conditions a gentle laxative, such as from two to four ounces of castor oil, with two drachms of bicarbonate of soda, and when the bowels are restored to their normal state, give a pint or half pint, according to age, of lime water, in milk, two or three times daily, which, by-the-by, is good for all young animals in case of scours. The lime water is recommended as an antacid; half-ounce doses of compound syrup of phosphates is also a good tonic, and used with much benefit to young animals, but these must be made use of at an early stage. In case of the urachus remaining open, which is of quite frequent occurrence, a suture should be passed around the umbilical cord. It is better applied by means of a needle passed through the skin on both sides, which prevents it slipping, and then it is better to take a deep hold to hasten adhesive action. By injecting within the urachus a solution of nitrate of silver, ten grains to the ounce of water, would assist healthy action. Many authorities claim that in all cases the cord should be tied up by means of catgut, steeped in a strong solution of carbolic acid, and the loose end of the cord dressed with the same, as the cord in a new-born colt is very sensitive; by this it would quickly dry up, and would not absorb poison, which, it is claimed, is a fruitful cause of many complaints in young animals.

### Essex Pigs.

I have read with considerable interest the discussion going on in your columns lately between the breeders of the Improved Yorkshires and the Berkshires. It is certain the breeders of Yorkshires are bound to bring them to the front if printer's ink will do it, whether they are the pig best adapted for the Canadian farmer or not. They look to me like a breed of hogs of some time back, say fifty years ago, such as our grandfathers bred, and which we had lost sight of, as not being adapted to our wants. Now we find these large-boned animals suddenly brought to the notice of Canadian farmers, with long pedigrees and still longer prices, in spite of the fact that we have been breeding for years, and have succeeded in getting just the pig we want. The Berkshires have been the favorite breed for some time, and have given fair satisfaction, though they are rather coarse and heavy boned. It is hard to fatten them, or the Yorkshires either, at as early an age as these breeders claim for, viz., six months. Then we have the Chester Whites, another large breed, which have not grown in favor, nor have the Poland-Chinas, though neither of these breeds have been boomed like those I have before mentioned. Then we come to the Suffolk; these seem to be rather too small for general use. They are of very quiet disposition, with great aptitude to fatten at any age. And lastly, we come to the Essex, a breed well adapted to the uses of the farmer, the cottager, or, in fact, any one that keeps a pig. They are of good size, larger than the Suffolk, will not blister with the sun, are of a quiet disposition, and will fatten early, producing a quality of meat not excelled. They are not very widely known in this country, from the fact they have not been boomed as other breeds have. Men that have bred them have not done so with a view of making great profits out of them by making

sales at fabulous prices. In fact their breeders have been like the American breeders of Ayrshire cows, they have a good animal, but do not seem to want anybody to know it, for fear they will get some, too. Breeders of Essex do not claim the whole earth, as our friends in the former issues of your journal have been in the habit of doing, but we claim that for general use our favorites cannot be excelled. I have sold numbers of them the last two years, and have yet to hear of a single instance in which they have not given entire satisfaction to the purchaser. I have not written this with a view of entering into a controversy with other breeders on the merits of the different breeds, but it seems to me we should have a small patch of the earth, and I suppose there is no other way to get it except to speak for it. R. T. PADDOCK,  
Florence, Ont.

### Southdown Sheep—The Sheep that Produces the Best Quality in Paying Quantities.

BY MR. JOHN JACKSON, ABINGDON, ONT.

The readers of the ADVOCATE have heard a good deal of late on the sheep question, and no doubt have read with interest the controversy between Messrs. Snell and Dryden, "Quality vs. Quantity." However, I think if the personalities indulged in had been left out the argument would have looked stronger for the sheep, although Mr. Dryden is certainly deserving of credit for the moderate way in which he replies in the last issue of the ADVOCATE.

But it is not my intention in this article to take part in this controversy. If more remains to be said it is in able hands. Mr. Snell's success as a breeder of Cotswold sheep is a sufficient guarantee of his judgment; and Mr. Dryden's success with Shropshires is ample proof that he is a splendid judge of them.

Discussion of the merits of the different breeds of sheep does good, it sets farmers thinking; but it's the "quality," not the "quantity" of the argument that tells. Some breeders, like politicians, "died in the wool," cling to their "first love" through good and evil report, and no amount of argument will change them. There are others who are open to conviction, or have not yet decided which of the breeds would suit them best, and may be waiting until there's "another county heard from."

We quite agree with Mr. Dryden's theory of producing the best quality, and that it will and does have its influence on the market, although in practice we are not quite so sure that he is exactly on the right track yet; but it is not advisable to change too often. The man who is breeding a sheep that is paying him well is wise to stay with them. The question is not whether the Cotswold or Shropshire is the most profitable sheep, but which, of all the different breeds, will return the most money for a given amount of food consumed.

To Mr. Snell the Cotswolds are a profitable sheep, whilst Mr. Dryden finds Shropshires more profitable for him; Mr. Kelly is making his pile with Leicesters; others find the Southdowns do well, and Rock Bailey pins his faith to the Merinoes, with all their wrinkles.

It is quite clear to any one who watches the market reports, and considers the small cost, quick returns, and many other advantages in raising sheep, that they are the best paying goods on the farm, and yet we find very many farmers who haven't a single sheep. If the country had three sheep for every one it now has, we would hear less cry of "hard times,"



and half the number of good sheep that there are of poor ones would yield double the profit on one-half the feed.

Now I can hardly agree that a champion prize won counts for nothing as to the suitability of a breed, although the fact that a Cotswold ram won the champion prize at the County Show in Oxford, Eng., may not count much, it being right in the home of the breed. There's an old saying that "It's a poor rooster that can't win a battle on his own dung-hill."

And the champion prize won at London on flock at the late Provincial Show decided nothing as to the merits of the different breeds. Still, the Cotswold breeders have reason to be proud of their victory. It always carries its weight.

Mr. Shore, one of the judges, states very clearly the ground upon which the award was made:—"That they were the best and most even representatives of their breed." Had it been known that the judges would have taken this very sensible view in making their award (somewhat at variance with the wording in the prize list), I have no doubt there would have been stronger competition for so valuable a trophy. As it was, so far as I know, the decision was a correct one. "Give honor to whom honor is due."

A single battle does not decide the destinies of a nation. "Bull's Run" did not decide between the North and South; but the army that wins battle after battle, and victory upon victory, is a safe army to enlist in. The merest chance shot may hit the bullseye, but the one that can hit it twice out of three times, you may risk your money on. Just so with champion prizes. The breed that can show the highest average in a large number of trials has good grounds for claiming superiority.

Mr. Snell states that at the Smithfield, 1839, the greatest Fat Stock Show in England (and he might say in the world), "the champion prize for best three lambs of any breed was won by Cotswolds for the third time in the last five years." Without disputing the correctness of it, I would like to know where he gets his authority for this statement. I have at hand a number of the official catalogues of the Smithfield during the last five years, and in them I fail to find any such prize offered. I also have the report of prizes as awarded by the judges at the last show (1889) given in the London Live Stock Journal, and no mention of a champion prize for lambs.

The assertion that in grazing the finer wools go in solid column, or in the shape of the letter A, does not apply to Down sheep. It may in a measure apply to Merinoes (or a flock of wild geese); but if it did, it would be no objection. The leading Southdown flocks in England are kept in hurdles for the very purpose of keeping them in solid column, to clean off the pasture as they go. Flock-masters find it pays to do so, and there are none more healthy in England than the Southdowns.

The Southdowns, the sheep that produces the "best quality in paying quantities," while we don't claim everything for them, have always been noted for being prolific breeders and excellent mothers, producing a large percentage of twins, and occasionally three (one too many). We have not heard of them producing lambs by litters of five, nor do we hope to until they are provided with as many teats as a Berkshire sow. It would be a curiosity to see even a Cotswold ewe raising five lambs, and a greater to see the lambs after she had raised them. In the next issue I will give some facts and figures that will enlighten many readers.

[TO BE CONTINUED.]

### Hog Raising and Pork Products.

By the last trade returns we find that in the year ending June 30th, 1889, Canada imported \$2,500,000 worth of pork and pork products, and with the increase of consumption we have one-tenth less hogs in Ontario than we had five years ago; though in the four counties bordering on Lake Erie hogs have slightly increased, every other county in Ontario has reduced its numbers. By this it would seem that this industry has been neglected of late. As the additional duty lately placed upon imported meats will doubtless have the effect of increasing the price, more attention should be paid to this branch of stock-raising; the cheapest manner of producing pork should therefore be considered. The profitable hog for the feeder is one that makes the greatest growth at the earliest age; to obtain this the sow should be of good size and of the most approved form, with good length, deep sides, carrying her size well back, with deep, large hams. Old sows are also best for this purpose, as they are better nurses, and their pigs are stronger; keep the sow in good condition, but feed cooling food towards the time of farrowing; don't be in too much of a hurry to wean the young pigs, leave them eight weeks with the sow, they will do better afterwards; then push them forward with good muscle-forming foods, such as shorts or middlings. As they become older more concentrated food may be added, such as ground corn and peas. This food with a few roots in winter and grass cut for them in summer will keep them in good health; continue to push them forward, so they will weigh 250 pounds at from six to nine months; they should be farrowed so as to be ready for market any time between May and September, during which months the highest price can be obtained. This will be found much more profitable than exclusive grain-growing, and the advantages are that it does not require much money to make a start. Always endeavor to sell your pigs alive directly to pork packers.

The extensive pork packer of Hamilton, Ont., Mr. F. W. Fearman, writes as follows:—"The packers require their hogs alive all through the year, as they handle them to much better advantage, and make better meats of them, than they can from hogs which are brought in dead and dressed. The custom of killing hogs on the farm is being discontinued in many parts of the country, as drovers now are eager to buy them alive and ship to packers, and farmers find it more profitable to sell and get their money early. Hogs are wanted as early as May, and then on through the year, especially in the summer, as the meat cured then, with the assistance of ice, is in much better demand than winter cured. Even the farmers prefer it, as they say they cannot get their families to eat the fat, home-cured meats. It is easily understood that men who handle and cure tens of thousands of hogs in the year, and employ the most competent labor and use the best of material in curing, that the product will be of a much superior cut and quality than that made and cured in the old style of years ago. A great change has come over the provision trade in the last few years; the working people now, as well as the rich, demand the best of meat, and as higher wages are now paid, they have more money to buy the better article. By greater care in breeding and feeding, and the improved methods of cut and

curing, the consumption will become greater, our home trade thereby is increased all round, and all parties benefited. There has been a great deal said and written on the different breeds of hogs. The Berkshire has long held the highest position both in England, Canada and the United States, as an all-round serviceable hog, for while young weighing from 160 to 250 lbs. alive, or 125 to 190 lbs. dressed, which are the weights desired by the trade, it is good for fancy cuts of meats, and also when allowed to grow to 200 lbs. and over is suitable for heavy bacon, mess pork, and lard.

There is now coming to the front a breed called the Improved Yorkshire, which is represented as being a great improvement, and very suitable for bacon purposes, as they are long and deep in the body, thick in the ham and light in the shoulder, with a small head. They grow fast when well fed, making a bacon pig in six or seven months. I have had no experience with this line yet, but as there have been several importations from England they will be soon on the markets. I hope they are nothing like the old breed of Yorkshires, as that was a very coarse, unprofitable animal. I have always found a cross from a thoroughbred of almost any breed with common stock to make the best pork for bacon, as they do not lay on so much fat.

### Dorset Horn Sheep.

BY THOMAS CHICK, STRATTON, DORCHESTER, DORSET, ENGLAND.

Of the various breeds of sheep in Great Britain the Dorset Horn is one that deserves to be more known by Canadians than it is at present. As producers of early, fat lambs they outstrip all other breeds; few, if any, are such prolific breeders. Mr. Charles Horrell, near Winchester, had a Dorset Horn ewe that produced three living lambs on the 27th of January, 1889; they were all reared without milk beyond what the mother supplied, and in the open field with the rest of the flock. When these three lambs were eleven weeks and two days old, they were sold fat in Winchester market for £7 1s. 0d., the three lambs. Many instances of four lambs at one birth have been known, and even six lambs has occurred; in this case the ewe belonged to the writer. This ewe had previously produced three lambs at a birth for three consecutive years, and on the 15th of December, 1864, she produced five living and one dead lambs, thus making a total of fifteen lambs in four years. Dorset Horn ewes will take the ram at almost any part of the year, provided they are well fed, and will continue to breed if properly treated. Two crops of lambs in one year can sometimes be reared, and in a general way three crops of lambs in two years may be relied upon if desired. As an instance of early maturity, twenty-five lambs were sold fat in Dorchester market in June, 1889, at an average price of 38s. each. The dams of these lambs were under eighteen months old at the time, and at this present time some of them are suckling two lambs each, although less than two years and four months old now; thus by the time they are two and a-half years old they will have reared three lambs. Is not this early maturity and prolificacy? These sheep are now in my flock. The mutton of Dorset Horns is not excelled by any breed of sheep except the Southdown, to which all other breeds must give place for quality of mutton. Dorset Horn mutton is, in fact, very superior to that of the heavy coarse breeds.

Dorset Horn sheep must of necessity spread far and wide as their merits become known, and an opinion formed after an experience extending over about forty years, is that no animal will give a better return for food consumed, than a good Dorset Horn ewe, provided she is properly treated, and with suitable soil and climate.



**Ayrshire Cattle.**

Extracts from Mr. Wm. Rodden's Address at the Twentieth Anniversary and Annual Meeting in Montreal of the Ayrshire Importers' and Breeders' Association of Canada.

In consequence of his desire to retire from his official duties as President of the Society, he produced for publication in the record much information he had collected concerning the rise and progress of "Improved Ayrshire dairy cattle" and evidence of their superiority; also a concise statement of the origin and business of the Association, with the establishment of Ayrshire Herd Books, their necessity and present position in Scotland, Canada and the United States, with other matters of importance to dairy farmers.

Over a century has passed since England, Ireland and Scotland found it necessary to provide better means of supplying food for the increasing populations, the increased demand for dairy products occupied much attention, cattle were fed for and taught to produce beef for British tables and armies, thus decreasing the supply of dairy goods in England, it became necessary for Scotland and Ireland to improve their dairy cattle, and increase their dairy products for their home consumption, as well as for the English markets. Scotland improved hers by the most judicious crossing and feeding, particularly in the dairying districts of Ayrshire, where care and attention produced a class of cows that became famous for their superior production for the food consumed. That example may safely be followed in Canada, while it will be most profitable in dairy products; the maintenance of a proper proportion of live stock on the farm will preserve the producing power of the soil, and improve the bank account of the farmer. Excessive shipping of young stock for beefing purposes should be guarded against in Eastern Ontario and the Eastern Provinces, where dairying for shipping purposes and for maintenance of fertility of the farm is so necessary. Dairy farmers are particularly warned of the danger to their herds from the use of ill-bred young bulls, or those from families long fed for beefing purposes that do not produce good dairy stock. The study of feeding and breeding for milk requires more attention. Good dairy animals cannot be profitable if kept most of winter days in barn yards, picking up straws scattered on the snow or sloppy dunghills; care and more succulent food is needed to produce good milk. The following evidence found in records extending back for one hundred years shows that Ayrshires are the best suited to Canada's soil and climate, and most profitable:—

Their reputation in Ayrshire was first publicly established by the tests of the poet Burns, when cheese-making in a Dumfries dairy, as evidenced by his letter of November, 1778. He pronounced a Dunlop Ayrshire the best; thence forward they became most popular. Scotch cattle were sent by Sir Wm. Alexander to the Eastern Province about 1625 to 1630, and settlers from Scotland brought Ayrshires for the use of passengers, and subsequently found them superior to any others for use on the voyage and on land.

The Governor, Lord Dalhousie, imported Ayrshires in 1821 to 1823; they gave good satisfaction in his dairy. Some of them were obtained by land owners about Quebec and Montreal. The report of the then Montreal Agricultural Society in 1827 announced their superiority for yield in quality and quantity for the food consumed, and for their adaptation to this climate. The society's first importation was then made and continued up to 1852, when the importation was continued by members of the Quebec and Montreal societies, and two Ontario societies, all declaring their excellence. The Governments of two of the Eastern Pro-

vinces imported cattle for the improvement of live stock and dairying.

The counties that obtained them were called upon to report on their respective merits. From the report of twenty county societies I read that "Ayrshires hold the first place in popular estimation; are valued as hardy, healthy, good breeders; best milkers for the food consumed, and the use of Ayrshire bulls has given a superior class of grade dairy cows."

**IMPORTED AND CANADA BRED AYRSHIRES IN THE UNITED STATES.**

We are much indebted to American breeders of Ayrshires and to professors in their State Experimental Dairy Farms and Agricultural Colleges for valuable practical tests and scientific experiments of milk products. Several of the American herds of Ayrshires were produced from animals imported to and bred in Canada; many are descended from the best to be found in the district of Montreal and Eastern Ontario. Some Americans have reported the tests of six to twenty cows, varying in weight from 1,000 lbs. to over 1,100 lbs. each. "Several of the cows have given in one month 1,025 lbs. to 1,140 lbs. of good milk—from 6,000 to 10,000 pounds per annum. Their cream tests by tubes in cold water varied from 22 to 30 per cent. of cream; quality not tested; quantity of cream does not indicate quality. Generally speaking, their feed in winter was hay, straw and roots, or ensilage, or a little grain and bran. In summer they are pastured; if field feed was short, green feed, or a little ground grain and bran were given to keep up condition." Some forced tests show from 10,000 to 14,000 pounds a year. I found such forced tests to be injurious to the future usefulness of cows, and only gave temporary advantage at sales and exhibitions, but should be avoided.

**RESULTS OF AMERICAN PROFESSORS THOROUGH, PRACTICAL AND SCIENTIFIC TESTING.**

The officials of experimental stations called upon the Ayrshire Breeders' Association to furnish Ayrshires for the tests. Similar requests were made for Jerseys, Ho'steins and Durhams. The following figures, taken from reports of a professor's tests, of four of each of the four breeds, for the year 1879, "shew the Ayrshires to be the most profitable producers of milk and butter for the food consumed. They shew the lowest cost of keep and the least cost of producing milk and butter:—

|                                 | Ayrshires.<br>lbs. | J Jerseys.<br>lbs. | D Durhams.<br>lbs. | H Holsteins.<br>lbs. |
|---------------------------------|--------------------|--------------------|--------------------|----------------------|
| Quantity of milk tested         | 4,579 to 6,658     | 3,616 to 5,650     | 4,732 to 7,450     | 5,171 to 7,361       |
| Cost of keeping                 | 44.41              | 46.49              | 48.41              | 50.12                |
| Cost of 100 lbs. of milk        | 78                 | 99                 | 81                 | 85.12                |
| Cost of butter per lb.          | 11.7-10            | 13.3-10            | 13.12              | 18.3-10              |
| The variation in cost in butter | 09.9 to 15.5       | 10. to 16.9        | 10.6 to 18.8       | 12.4 to 23.7         |
| Per cent. of butter fat.        | 4.28               | 5.12               | 3.86               | 3.13                 |

The professor placed a value of 25 cents per hundred pounds on the skim milk in each case, and deducted it from cost of keep. He says:—"As a rule Ayrshires are under-estimated as butter producers. As to economy in the utilization of food, the Ayrshires leave very little to be desired. Their vigorous constitution and good temperament are points of no small importance." He urges breeders "to know the per cent. of fat in the milk of their cows, and abandon the use of scrub bulls."

Other professors report:—"The keeping qualities of Ayrshire milk are good; it stands shipment very well. It has kept bottled on steamers for use all the way to Europe, and is a very good market milk. Its proportionate amount of solids make it most desirable for cheese-making." They report "600 pounds each of cheese made from Ayrshire cows per annum, and more in some cases." Another reports Ayrshire milk "very desirable for drinking, and children as a remedy."

Professor Law gave instances "where children improved by a change to its use." One of their presidents says:—"The Ayrshire is to be the business cow of this continent, to give more good milk than any other breed that is known

here." Space will not admit of more similar testimony from the United States.

**WHAT HAS BEEN DONE IN CANADA.**

In the last ten years there has been some public practical tests, confined in some cases to the proportion of milk given to size of cow, with others the quantity of milk per cow; in others both the quantity and quality were determined. In the cases referred to, members of our association were the successful competitors at Ottawa, Montreal, Sherbrooke and Quebec cities, with animals bred on their own farms from Montreal importations. Some of these tests were performed scientifically, in which the solids were 13.6 to 15 per cent., and butter fat was 3.80 to 4.50 per cent., some exceeding 5.00 per cent. In the few cases where milk records have been kept, they show yields of from 6,000 to 8,000 lbs. a year; some exceed that on such good feed only as should be given to dairy cows in most cases, without forcing, where actual profit was considered. The standard here for milkmen's herds of ordinary grade is 3.00 per cent. butter fat, and it has been exceeded; where there were Ayrshire grades it exceeded four per cent. I have the certificate to above effect.

In several of the counties of the Province of Quebec and in Eastern Ontario there are large herds bred from the use of pure Ayrshire bulls that give from 4,500 to 6,500 lbs. of milk per annum, of good quality, giving from 250 to over 300 lbs. of butter for the season. Some of those are in counties having Canadian cows with Ayrshire crosses.

**THE LATEST TEST IN CANADA**

was made at London, Ont., September, 1889, for the very liberal prize offered by the FARMER'S ADVOCATE. It should have been better patronized. The only animals offered for that contest were, "Three Jerseys, from the herd of Mrs. Jones, Brockville, and three Ayrshires from the herds of Mr. Smith and Mr. Thos. Guy, Oshawa, Ont." I have carefully examined the professor's report of the test and all the comments thereon, which brings me to the following conclusions:—The professor has adhered to the stipulated condition and reported accordingly; nevertheless, it is not such a test as reaches the required points of excellence of the two breeds, and it is a failure as far as Mr. Guy's Ayrshires are concerned. The feed they received at the test was not in the same proportion of suitable food for producing milk as that which was given to Mrs. Jones' Jerseys, which was of a more succulent nature and less expensive than that given to Mr. Guy's cows; the food he gave was better calculated to build up the flesh of the body than to fill the pail.

Dairy cows should not receive large proportions of grain and dry hay, and should not be allowed at exhibitions to remain unmilked to inflate the udder for appearance sake; thus be taught to convert food into meat instead of milk, as has been done in the case of the beefing breeds. A few days tests at exhibitions, without sufficient time to recover from the effect of removal from home, cannot produce true indications of the difference in merit, particularly where similar proportions of food are not given to each breed, and where quantity and quality are not together calculated. This I know from over twenty-five years experience in home tests, at much expense, from which business I am retiring.

This report would not be complete without evidence from Great Britain, where Ayrshires have taken the lead and are holding it in their best dairies, as evidenced by the following extracts from reports:—

Members of the British Dairy Farmers' Association met the Scotch dairy farmers at Ayrshire in June, 1889. The meeting was attended by dukes, earls, hon. members of governments, professors, a large number of public men, and the best dairy farmers, who kept from 50 to over 100 cows, and paid \$15 to \$20 an acre annual rent for farms by dairying with Ayrshires. Mr. Dunlop said, "He took 50 Ayrshires to London, England, twenty years ago; they were there now by thousands in the front ranked dairies, and gained a world-wide ascendancy over every other breed. Coming to Scotland warmed his heart amid the classic scenes made famous by their



Scotch Bard and the Ayrshires." Mr. McAdam said his experience was that more Ayrshires can be more profitably kept on the same land. For twenty-six years his average yield of cheese was 520 lbs. per cow, and is increasing. Mr. Wallace reported tests of Ayrshires, showing 60 to 80 lbs. of milk per day, making 14 to 18 lbs of butter each per week. Mr. Fermes' Ayrshire cows, when four months calved, averaged 68 lbs. a day at Bristol, England; the same cows beat all-comers in quality and quantity. Mr. Nuttall, lecturer at the Royal Agricultural College, said "He got thirteen pence a pound for cheese. It paid to make the best." Professor Wright knew dairies of about 100 cows now giving each 650 to 800 gallons per annum; where the system of feeding was that generally followed for dairy cows. Hon. Mr. Vernon, M. P., was pleased to have assisted in having a herd book for Ayrshires. It assisted in many sales to England, Sweden and America.

Mr. W. Bartlemore, of Paisley, Secretary of the Renfrewshire Agricultural Society, Scotland, being a recognized authority on everything relating to Scotch dairy herds, presented much information collected for the Glasgow and West of Scotland Society, which indicated Ayrshires as pre-eminently suitable for cheese-making. The milk globules were small, mixing with curd better, making evenly rich cheese of over five hundred pounds weight per cow in the season. Some selected animals came up to and some exceeded Jerseys. Taken as regards actual yield for food consumed, Ayrshires were now far ahead of any other breed. Strong proof of this is found in what was done at shows in London, Windsor, Oxfordshire, at the Royal Society of England. At the last British Dairy Farmers' Show, Mr. Holmes' Champion cow was not exhibited, but by request she was put on trial, without previous preparation, and beat the Jersey winner a long way, by making 119 points. Her milk weighed 57 lbs. 8 oz., solids 14.58, butter-fat 5.49 per cent. Mr. Wallace had on record a cow giving 1,305 gallons per annum. Herds, not specially selected, gave 630 to 660 gallons, and over it in many cases. Selected animals did better, and gave 800 gallons. Professor Wright corroborated this. One of the leading prize winners gave 41 pounds of good milk at a milking. At other shows the Ayrshires stepped far ahead of Shorthorns, Guernseys, and other breeds. The victories of Ayrshires in England at York, Preston, and other dairy farmers' shows are fresh in their memories.

Mr. Taylor, Flesher, Paisley, said Ayrshire cattle, when well treated and fed, make capital butchers' beasts. They weighed well, the quality of flesh was excellent. Mr. Wilson and Mr. W. Bartlemore corroborated this, stating they did better than any other breed bred for milking purposes. As a general purpose breed the Ayrshires hold a very prominent position. He knew heifers that sold for thirty pounds as beef, and young bullocks sold at auction for fifteen pounds at fifteen months old. The Ayrshires cross very well with Shorthorns, their progeny fattening well, were hardy and milked well. He warned dairy farmers to reject as inferior any Ayrshire or other cows that would not give 12 to 15 per cent. of cream, about 12½ per cent. of solids, 3½ to 4½ per cent. of butter fat; selected animals did better than that. The foregoing information obtained of tests had to be much curtailed in numerous details given of practical tests made at farm dairies. All dairymen should know the good, and discard the unprofitable animals of their herds. Many details of scientific tests and methods of increasing dairy profits cannot here be given that are in the report; sufficient is offered in as concise a form as possible to enable readers to understand the progress that is being made outside of Canada, and to show dairymen the necessity of using their herds in a careful, judicious manner, and thus ensure much larger profits at a little extra expense. Less than \$60 to \$70 annual returns per cow does not satisfy European or our American dairy neighbors. To ensure success the maintenance of a better class of dairy cattle is an imperative demand.

Considerable important matter concerning Ayrshires will appear in our July number.

**Our Beautiful Subscription Picture.**

This picture, which is 24x36 inches, shows a beautiful landscape; in the foreground are the portraits of nine celebrated draft horses, the ownership and the particulars of each horse are concisely given. The picture itself is a very fine original engraving, and is certainly the best thing of the kind ever issued in America. The best animal artist in the Dominion spent the greater part of six months engraving it. The excellence of the work has certainly proved his ability to be very good. Every day we see pictures offered for sale at prices varying from \$5.00 to \$10.00 which do not compare with this in artistic finish or any other particular. The portrait of each horse is true and lifelike. All the experts who have examined it pronounce it a masterpiece. We have had this work engraved and printed to be used entirely as a subscription prize, and have put it within the reach of every farmer in Canada. It may be obtained by every old subscriber who sends him one new, yearly subscriber. New subscribers will be sent a copy on the same terms. Those who wish to obtain copies in frames, by sending five new subscribers, at \$1.00 each, will receive by express one copy in a gilt, cherry, antique oak or ash frame, as desired. For ten new names a copy will be sent in a very deep and superbly finished frame; in every case a glass 24x36 inches will cover the picture. Subscribers ordering the picture without the frame will receive it post-paid by mail. Framed pictures will be sent by express, charges not prepaid. The frames are all very good, and are furnished at the lowest wholesale prices. It is the most costly and finest executed engraving ever issued in Canada. Every farmer should obtain one. Hundreds have already been sent out. The following is what well-known gentlemen say concerning this picture:—

Dear Sir.—The portrait of the nine Canadian horses, called "Canada's Pride," is deserving of a place in the drawing-room of any gentleman who may take an interest in Canada's property, as it clearly shows the wonderful advance which is being made in draught horses. For design and execution the picture is truly marvellous. For a work of that kind I could not believe that the same was produced in Canada.  
GEO. TAYLOR, Mayor of London, Ont.

Dear Sir.—It is a beautiful work of art, highly meritorious in every respect. A handsome adornment for any home, and a credit to our country.  
CAPT. A. W. PORTER,  
President of the Western Fair Board.

Dear Sir.—It is the finest engraving I have ever seen produced in this country. Both striking and pleasing.  
W. GLASS, Sheriff of the City of London.

Dear Sir.—The engraving, called "Canada's Pride," is the most artistic agricultural engraving I have ever seen. The different positions and points in the animals are admirably brought out. The artist's work in many respects I consider to be equal to the work of the noted artist, Rosa Bonheur.  
JOHN M. DENTON.

Dear Sir.—I have carefully examined your picture, entitled "Canada's Pride," a portrait of nine celebrated draught horses. I consider it the finest piece of agricultural art in America. The varied position of the horses are admirably arranged. The points of the animals are so well brought out, that the picture takes me back to the show rings more completely than any engraving I have ever seen. It is a real study of nature, and must please every admirer of a horse. It is a school at which every one can and must learn who sees it. It is deserving of a place in every home in Canada. It is a credit to our Dominion to possess such stock, and the artists who are able to produce them so artistically and faithfully on paper. Those who were unable to see these notable horses in the show ring, can now see them at their homes, and have a lasting remembrance of what good stock is or ought to be.  
Yours truly,  
A. McCORMICK.

Mr. A. McCormick is probably one of the most popular and best known judges of horses in Canada, having at the Provincial Exhibition, twenty years ago, served as the referee in difficult cases. The members of the Montreal Hunt Club presented him with a valuable memento in token of their high appreciation of him. In London no man has a more honorable reputation. He has filled the office of Alderman, Mayor and President of the Western Fair Board.

**The Dairy.**

**The Holsteins at Home.**

BY F. L. HOUGHTON, EDITOR HOLSTEIN-FRIESIAN REGISTER, BRATTLEBORO, VT., U. S. A.

Your Stockman, evidently hurt by the progress that our breed (the Holsteins) is making, vents his feelings as follows: "Why," says he, "the plebeian things never had a herd book until a speculative Yankee saw into it. The world cannot expect scientific breeding from a people many of whom sleep, eat and live with cattle, having just an inch board to separate them from cattle filth."

The Holland breeders, to whom he refers as a people who "sleep, eat and live with their cattle," were really scientific breeders before our English had even a thought on the subject. This is a historical fact. William, Prince of Orange, when he came to the throne of England sent to Holland for improved cows to supply him with milk and butter, and when the English nobility began to think of improving their herds they also sent to these same Holland breeders for improved blood. It is not very probable that English Dukes and Earls would have been to the expense, not a light one in those times, of importing cattle from Holland if there had been no improvement of cattle in that country, or in other words, no scientific breeding. Virtually there was scientific breeding in Holland at that time and such breeding has continued up to the present time.

Holland breeders were not then, nor are they now, a class of common laborers with no thoughts beyond earning their daily bread. The great majority of them have belonged and now belong to that class who have done so much for the improvement of English cattle, among which are the honored names of Bakewell, Price and the Collings. This class of men have loved cattle and lived among them both in England and Holland. Some have been called, in times past, from their chosen vocation to be counsellors of kings. We recall the name of a Holland breeder, still living, whose house we had the pleasure of visiting, within whose reception rooms hung portraits of his ancestors back as far as the eleventh century and also another whose library of choice books in different languages would have been a credit to the erudition of a college president, and whose "better half" is still one of the leading poets of her country. Perhaps it may shock Stockman to add that this lady went with us to the stables to look at the beautiful herd of cattle that was her husband's study, and next to herself her husband's pride.

Herd books are a modern device. They originated in the circumstances that were peculiar to the formation of the Shorthorn breed. The Holland breeders have no need for such a book. The isolation of that section of country in which their work has been carried on, and their natural conservatism, have been all that has been required to keep their cattle pure. The Jersey and the Guernsey breeds have been similarly preserved without herd books. But when these breeds are imported to this country, herd books become a necessity, hence the "speculative Yankee" has originated herd books for them. These breeds are no more, nor no less, pure for these herd books. Nor is any breed any the more or any the less improved for such herd books. Merit is the foundation of all genuine aristocracy, whether of men or of cattle. Such a man as was Prince Albert of England would be a nobleman though he dug ditches and pruned hedges.



### Mr. Tho. Guy Replies to Various Correspondents.

When I ventured to call in question the correctness of the late dairy test at London, I expected it would arouse the ire of our Jersey friends, and cause a general commotion all along the line. It is quite natural that they should endeavor to shield and vindicate their favorites. Here I would remark that I have no antipathy against the Jerseys, and am willing to give them all the credit they deserve. Neither have I any "bitter feeling" against their owners; but entertaining the idea that we live in a free country, we claim the right to discuss matters of this nature in an impassioned and intelligent manner, without being denounced as giving personal offence to any one. Others, as well as ourselves, have been perplexed over this question, and have written to me, as well as the ADVOCATE, on the subject, and are anxious to have it solved in a clear and satisfactory manner. So far the professor's answer is inexplicable.

As I could not arrive at the same conclusion as the professor, I handed over the results of the test, with its rules and regulations, to the best mathematical masters we have in this neighborhood, and they all fail to arrive at the same conclusions as he. So I think he is in duty bound to give his explanation in full.

His remark about "sour grapes" is hardly in keeping with the merits of the case, as, in no way, did we attempt to depreciate your valuable prize, Mr. Editor. Our aim was to show that had it been given in accordance with just and equitable rules the result would have been quite different.

True, I "knew the scale of valuation that was to govern the test before it began," and when it was published, I wrote to the professor, objecting to some of its conditions, one of them affirming that the *quantity*, as well as the *quality* of the milk, ought to be taken into consideration, &c. The answers I received were to the effect that the rules had been published and could not be changed. Your correspondents seem to think that if the conditions were not in unison with my views I should not have entered my animals, but this is not in accordance with my idea. True, I scarcely thought the Ayrshires would win under such regulations, but I did not like them to be in the back ground or unrepresented in such a contest, and had it not been that one of our cows was taken sick, and gave bloody milk after the entry was made, there would have been two lots of Ayrshires in the ring instead of one. It was merely by request that I put in one of our cows with the Messrs. Smith. (Let your captious correspondents make a note of this). At the same time, although I did not approve of the standard by which they were to be judged, I expected to have an opportunity after the test was over to show what I thought about it.

The professor says "the scale on which the cows were judged gave full and equitable value for everything in the milk except its water. Water in milk has no real value, whether it is put there by a cow or a man."

We are not scientists, but we think this is rather a singular answer for a professional gentleman to give. We are under the impression that the liquid substance of milk, as furnished by the cow, is of a somewhat different nature to water put in it by man. If water is added to

milk by a milk vendor, it can be detected by analysis, and he is liable to be punished for a misdemeanor. The article, commonly called whey, must be of some value, as on it we can raise our calves or fatten our hogs, and consequently must be of some rateable value, but we never heard of any hogs being fattened on mere water.

This answer of the professor establishes my theory that nothing was allowed for the bulk of the milk, only its butter-fat and solids, and confirms my opinion as to its being "an unfair and absurd way of judging."

Again, he says "the standard of points as given by me from the Ohio Farmer, are erroneously calculated, and not applicable to this Province." Will the professor be kind enough to tell us in what way this "standard" is not applicable to this Province, as well as across the line or elsewhere? He quotes my figures, viz., 582.06 due the Ayrshires, and 580.63 for the Jerseys, and says divide these products by three, it will give the Ayrshires 168.68, and 160.21 for the Jerseys. We can't see into this mode of dividing. According to our method of dividing, a third of 582.06 and 580.63 would be 194.02 and 193.63 respectively. He also says he knows these figures are not correct. He should remember the original were his own. I merely copied them. If they are wrong, he should be kind enough to correct them.

[TO BE CONTINUED.]

### A Parting Word to Stockman.

Kindly allow me a short space for a last answer to Mr. Stockman. He reminds me very much of a tramp—he keeps tramping around from subject to subject; as soon as he is cornered on one he immediately jumps to another, and this must be getting stale and uninteresting to the esteemed readers of your journal. What does he know about Holsteins anyway? In all likelihood he never owned or handled one, but has all his assumptious knowledge from hearsay and prejudice. First, he claimed that they were not much as milkers; that he often got more from his family cow than these Holsteins were giving. Next thing they were all dying from milk fever, caused by impaired constitution through heavy milking. Again, he gives a very learned definition of the word "uncontrollable" and advises to control the bull to avoid the fatal malady, but immediately after asserts that he has lost more than one cow through this same malady, which would indicate that he cannot control his cows, his bulls, nor himself. The fact that we lost a cow is correct, but we have others that are milking fully as well, even better, year after year, and are yet alive and doing as well as ever. We farm to make a living (not for pleasure), and have always found that dairying was one of the most profitable sources of our income. We used grade cows of the different dairy breeds, but find that none gave us so good returns for food consumed as our Holsteins do. If they did not pay we would soon be at an end with them. Mr. Stockman gives a fine little story about that great English butcher. *He must, indeed, be an authority on the quality of beef, when he kills milk cows nearly due to calf and expects a high quality of beef from them.*

Now, most of your intelligent readers will be aware that it is only since the 1st of September, 1889, that Holstein cattle have been allowed to enter England alive (her ports having been closed to them for nearly twenty years), so that this great authority had at the best only about three months' time to form an opinion of their milking qualities, and he certainly deserves credit for coming to Canada to give his vast experience to Mr. Stockman, and your intelligent

readers will know how to appreciate it. Now, I will also give a little story, which may be of value to Stockman: A short time ago we received a letter from one of our customers, in which he states that his cow (a Holstein purchased from our herd) had dropped a fine calf on Christmas Day, and that she had, during the month of January, besides feeding the calf all the new milk it required, made him fifty-two and a-half pounds of marketable butter. Another customer writes that he has done a little testing with his two-year-old heifer (also a Holstein), and that she made him ten and a-half pounds of excellent butter in seven days. Now, this was done under ordinary farmers' care, and by an ordinary farmer, and by men who actually own Holsteins, such evidence should go further than mere hearsay. H. BOLLERT.

### Milk for Cheese Factories.

BY JAS. W. ROBERTSON, DAIRY COMMISSIONER.

**FEED.**—The milk of cows is a secretion or direct elaboration from their blood. Whatever interferes with the health and comfort of the animals will also affect the quality and quantity of their milk. Too much care cannot be exercised in providing feed that is cheap, succulent, easily digestible, wholesome and nutritious. The grass of early summer is too watery and weak in feeding substance to be fed alone to the greatest advantage. A judicious allowance of bran, peas and oats, oil-cake or cotton-seed meal will increase the milk supply and fortify the cow's system for the production of a larger quantity of milk during mid-summer, fall and winter. Broadcast fodder-corn does not meet the needs of milking cows. A soiling crop of some sort or sorts should be grown to furnish plenty of green fodder at the time when pasture may be bare from prolonged dry weather. Indian corn, when grown under conditions favorable to its attainment of mature size and quality, —in rows or hills 3 feet or 3½ feet apart with from 2 to 6 seeds per foot in the row,—yields a fodder by the use of which cows are enabled to produce the largest amount of milk, butter or cheese per acre of land required for their support. Fodder corn is not a complete ration for the most economical production of the best milk. When it is supplemented by grass, bran, oil-cake, cotton-seed meal, or similar feeds, better returns for the feed consumed are realized than when it is made the exclusive diet.

**WATER.**—Water is nature's vehicle for carrying about most of the matter which she requires to move from place to place. The great builders were quietly clasped in her arms and without apparent effort brought from the northern ridges to the southern parts of our Dominion. The tiniest specks of nourishing matter needed to replace the worn-out tissues of the body are likewise carried to their proper places in this wonderful omnibus. The identical water swallowed by a cow to serve as a carrying medium in her blood, for the equitable distribution of the elements of nutrition throughout her whole body, is made to serve a like function in the milk which she yields. If that water be impure in the first place, it is liable to carry the impurity with it throughout its whole mission, from the drinking of the cow until after its consumption by the creature which consumes the cow's product. Water which has been contaminated by decaying animal matter is specially likely to retain its pollution. The milk from the cows which drink such water is a menace and danger to the public health, and interferes greatly with the commercial value of all dairy products. There should be an abundant supply of pure water, easily accessible by the cows during hot weather. It should be furnished at a comfortable temperature during the cold



weather of winter. Cows which are denied access to abundance of water, will not give as much milk or milk of as good quality as when plenty of water is provided with wholesome satisfying feed.

**SALT.**—Dairy cattle should have access to salt every day, and salt should be added to all their stable feed daily. The conclusion from a series of experiments carried on in 1886 indicate that when cows are denied salt for a period of even one week they will yield from 14½ to 17½ per cent. less milk, and that of an inferior quality. Such milk will on the average turn sour in 24 hours less time, than milk drawn from the same or similar cows which obtain a due allowance of salt, all other conditions of treatment being equal. This may apply with aptness to only the parts of the Dominion remote from the sea. From Quebec westward, as far as the Rocky Mountains, cows will consume an average of 4 oz. of salt per day, while they are milking during the summer.

**SHELTER.**—Comfortable quarters are indispensable to the health and well-being of cows. Stables during the winter should have a temperature constantly within the range of from 40° to 55° Fahr. In summer-time a shade should be provided in the pasture fields, or adjacent thereto, to protect against the exhausting influence of July and August suns. In all the management of cows such conditions should be provided and such care given as will insure excellent health and apparent contentment.

**MILKING.**—When practicable the milking of each cow should be done by the same person, and with regularity as to time. He only that hath clean hands should be allowed to milk a cow. I say "he," because I think the men of the farm should do most of the milking, at least during the winter months. It is no more difficult to milk with dry hands than with wet. It is certainly more cleanly, and leaves the milk in a much more desirable condition for table use or manufacture. A pure atmosphere in the stable is indispensable, to prevent contamination from that source. Immediate straining will remove impurities which otherwise might be dissolved to the permanent injury of the whole product.

**AERATION.**—After the straining is attended to, the milk should be aerated. Too often it is poured into one large can and left there just as the cows have given it. That neglect implies three things that are very injurious to its quality for cheese making. (1) The peculiar odor which the cow imparts to the milk will be left in it until it becomes fixed in its flavor. (2) The germs of fermentation that come in the milk and from the air have the best conditions for growth and action when the milk is left undisturbed. (3) The milk will become in a degree unfit for perfect coagulation by rennet. Hence it is needful and advantageous to aerate it for three reasons:—

First, because by pouring, stirring, dipping or by trickling it over an exposed surface, there is eliminated from the milk by evaporation any objectionable volatile element that may be in it. Secondly, because as has already been stated, the milk contains germs of fermentation. A strange peculiarity about some of these microbes is that they become active only in the absence of free oxygen. When warm new milk is left undisturbed, carbonic acid gas is generated, and that furnishes the best condition for the commencement of action by those almost invisible creatures. After they get started they can keep up their decomposing work, even in the presence of oxygen. It is impracticable to perfectly coagulate such milk so as to yield a fine quality of keeping cheese. Coagulation by the use of rennet, of milk that is ripe, can never be perfect, unless it be thoroughly aerated immediately after it is taken from the cow. *Neglect of aeration will increase the quantity of milk required to make a pound of fine cheese.*

Thirdly, because the airing seems to give vigor to the germs of fermentation that will bring about an acid condition of the milk, without producing the acid. So much is this so that it has been found impracticable to make strictly first-class Cheddar cheese from milk that has not been aerated.

**COOLING.**—The subsequent cooling of milk retards the process by which it becomes sour.

Certain germs of fermentation exist in milk which in the acts of their multiplication, split molecules of sugar-of-milk, each into four molecules of lactic acid. By delaying the operation of these germs the milk is kept sweet for a longer period. The cooling of the milk should never precede the aeration. A temperature of from 60° to 70° Fahr. will be found cold enough for the keeping of milk over night, when it has been previously aired.

**PROTECTION.**—Milk is a liquid of absorbent proclivities. It should be protected against injury that would result from exposure to impure air. A general purpose milk-stand is a device specially adapted for the spoiling of milk in that way. Such a stand serves as a milk-stand and also a carriage stand, both of which are legitimate uses. Sometimes it is also occupied as a hog bivouac for the convenience of these animals, the end of whose whey trough furnishes one step for the stand. Both of these latter extensions of its uses and hospitalities are all wrong.

**HONEST MILK.**—The employment of inspectors promises to improve the quality of the milk furnished by some patrons, whose highest moral aspiration is limited by an effort to keep the self appointed commandment, "Thou shalt not be found out." The adulteration of milk by the addition of water, the removal of any portion of the cream or the keeping back of any part of the strippings is forbidden by the Dominion statutes. Any person who is found out so doing, will not escape lightly. The inspectors appointed by the Dairymen's Associations have been equipped with suitable and competent testing instruments and have been instructed to render every assistance to cheese makers, looking towards the prevention of adulteration and the conviction and punishment of those who may be found guilty of the practice.

#### MATTERS MOST NEEDFUL OF CARE.

In the following short paragraphs I have ventured to gather helpful advice on the matters most needful of care.

Milk from cows in good health and apparent contentment only should be used.

Until after the eighth milking, it should not be offered to a cheese factory.

An abundant supply of cheap, succulent, easily digestible, wholesome, nutritious feed should be provided.

Pure cold water should be allowed in quantities limited only by the cow's capacity and desire to drink.

A box or trough containing salt, to which the cows have access every day, is a requisite indispensable in the profitable keeping of cows.

Cows should be prohibited from drinking stagnant impure water. The responsibility for the efficacy of that beneficial prohibition rests wholly with the individual farmer.

Wild leeks, and other weeds common in bush pastures, give an offensive odor and flavor to the milk of animals which eat them.

All the vessels used in the handling of milk should be cleaned thoroughly immediately after their use. A washing in tepid or cold water to which has been added a little soda, and a subsequent scalding with boiling water, will prepare them for airing, that they may remain perfectly sweet.

Cows should be milked *with dry hands*, and only after the udders have been washed or brushed clean.

Tin pails only should be used. All milk should be strained *immediately* after it is drawn.

Milking should be done and milk should be kept only in a place where the surrounding air is pure. Otherwise the presence of the tainting odors will not be neglected by the milk.

All milk should be *aired* immediately after it has been strained. The treatment is equally beneficial to the evening and the morning messes of milk.

In warm weather, all milk should be cooled to the temperature of the atmosphere after it has been aired, but not before.

Milk is better for being kept over night in small quantities, rather than in a large quantity in one vessel.

Milk-stands should be constructed to shade

from the sun the cans or vessels containing milk, as well as to shelter them from rains.

Only pure, clean, honest milk should be offered. Any deviation from that will not always go unpunished.—[Bulletin No. 1.

#### Advice to Cheese-makers and Patrons.

Prof. Jas. W. Robertson, Dairy Commissioner, in his Bulletin No. 2, gives the following advice to cheese-makers in public factories. Private dairymen everywhere will do well to be guided by them:—

#### FACTORIES AND THEIR SURROUNDINGS.

*The Present*, not next week, will be the best time to see that all the drainage facilities of the factory are adequate and in good working order.

Whey runs, spouts and tanks should be put into such order that leaking will be prevented.

If there be a leakage anywhere from floors, spouts or tanks, which is not immediately preventable, provision should be made at once for the drainage of the waste, if only by shallow open trenches. A liberal supply of lime and gypsum should be spread around such places. Don't fail to secure a barrel or two of each, for use during the hot weather.

If the factory buildings are not painted and will not be painted, get them white-washed. If you cannot get that done by the proprietors or managers, get permission and do the rest your self. A white-washed curing-room of imperfect construction can be kept 10 degrees cooler in summer than one not white-washed. If the cheese become injured, through excess of heat, neither the buyers nor the patrons will white-wash your reputation then, whether the blame belongs to you or not.

Make the surroundings of the factory neat and tidy. Plant a few trees and a great many flowers.

While keeping the outside of the premises as creditable to your taste and neat habits as possible, make the inside to reflect still more your aversion to everything untidy and dirty. Give every part of the factory a thorough cleaning and keep it in a sweet state all summer.

Before the curing-room contains any cheese, fumigate it by burning some sulphur mixed with alcohol. That will help to prevent the growth of mould on the outside of the cheese.

The leisure hours should be employed putting all apparatus, appliances, utensils and machinery into the best of working order.

Be sure that the making room floor is so well constructed and supported that it will not shake or vibrate during the coagulation of the milk.

#### MILK AND MAKING.

Procure a copy of "Milk for Cheese Factories" for each of your patrons by applying to the Dairy Commissioner, Central Experimental Farm, Ottawa, stating the number required and the address to which they are to be sent. They will be furnished free in French and English.

Look out for "leaky" flavors in the milk. Don't put such milk into the vat with that of the other patrons. If you have time make it up by itself, and send the cheese from it to the patron who supplied that milk for his private use.

Make provision for keeping a short record of each day's work, of the exceptional treatment of every vat and of a comparative quality of the cheese from each vat, before they are shipped.



Milk sours *readily and rapidly* for a number of weeks after the period of lactation in the cows begins.

Use enough rennet to coagulate the curd into a state fit for cutting, in from 17 to 20 minutes, at from 82° to 88° Fahr.

Cut it rather early, slowly and very carefully. Use the horizontal knife first.

Afterwards allow the curd to settle until whey comes over nearly the whole surface.

Then begin to cut with the perpendicular knife.

Immediately after the cutting is completed, begin to stir the mass slowly and continuously, until the curd is cooked.

Heat should not be applied until 10 minutes after the stirring is begun.

The heating should be effected gradually, at the rate of about 1 degree for every 4 or 5 minutes until 98° Fahr. is reached.

Draw most of the whey early, and so guard against being caught unprepared for the rapid development of acid.

Don't dip the curd until the presence of acid is discernible by the hot iron test. Sweet flavors result from too early dipping in May.

After dipping the curd, stir it gently and keep it at a temperature above 94°.

Don't attempt close matting, high piling or packing of the curd in May. See that the whey is separated from it.

When it begins to feel "slippy" and smells like fresh made butter, it should be put through the cutter or grinder.

Acid develops so rapidly that care must be taken to keep the treatment well in advance of the change in the curd.

After grinding or cutting, stir for 10 or 15 minutes before salting.

Apply salt at the rate of about 1½ lbs., early in May, to 2 lbs. per 1,000 lbs. of milk during the last ten days, varying the quantity slightly according to the condition of the curd as to its moisture.

Begin to put the curd in the hoops within 20 minutes after the salt is stirred in.

Use only pure water in bandaging.

Guard against the formation of edges or shoulders from the hoop-followers being too small. Apply the pressure gradually until the whole power through the long lever is used, after four hours.

Leave the press-cloths on, and turn the cheese in the hoops every morning. Let no cheese leave the press-room until the shape is symmetrical and the finish neat.

Don't press the scaleboards on the ends of the cheese.

When the press cloths are removed, use hot clean whey-oil or butter, into which has been dissolved a teaspoonful of soda per cupful of oil.

Try to keep the temperature of the press-room above 60° Fahr.

The curing room should be kept at a temperature continuously between 65° and 70° Fahr.

Provide strong, smooth boxes of the exact size. Stencil the weight of the cheese in neat figures on the side of every box.

#### PATRONS.

Try to get each patron to take a personal interest in the care of the milk.

Send to the Dairy Commissioner, Central Experimental Farm, Ottawa, for a bulletin of instructions on the planting of fodder corn, the construction of silos and the curing of silage.—[Bulletin No. 2.]

The secrets of large yields always and everywhere are rich soil, good seed and thorough tillage.

The Farming World quotes a subscriber from Manitoba as saying: "One great fact looms up in the near future. Not only the best brain, but the best educated brain must find its place on the farm. We must have educated and brainy farmers to run this basis of industry."

Farmers must now make preparations for next winter's food supply; see that the land for fodder and field corn, and root crops, are got into good shape. There is no difficulty in each farm doubling its feeding capacity; and it is in this alone we may hope to increase the profits in the future.

## The Farm.

### Food for Boys.

BY R. GIBSON, DELAWARE.

No country can go on for ever growing wheat; there must be a rotation of crops; the soil must be fed and coaxed and treated like a spoiled child; we must not plow the heavy soils when wet, or they will sulk and refuse to smile with plenteous harvests. Intelligence must be brought to bear; farming must be elevated from the slough of despondency to which it has descended; our sons must be liberally educated. Remember, we are engaged in a fight against the whole world; it is a survival of the fittest—a fight to the death. We are, perhaps, handicapped in a measure by our long winters, but then that is a season that may be turned to good account by reading and study. Did you ever contemplate how many branches of the sciences a farmer's life is associated with? Is he a botanist? If so, what a grand opportunity he has of pursuing this interesting study—not only interesting to him, but to all men it will prove of use. If he is a chemist, what an opportunity to practice what he has learned in theory; to study the process; how crops grow; to watch how the tiny plant takes up certain elements from the soil, and in the great laboratory of nature one evolves therefrom the kernel of wheat, while another distils the deadly nightshade. Is he fond of geology? The study is at his door. We might go through the whole list. Entomology will enable him to distinguish the flies, and moths, and butterflies, that are injurious to his crops, and their parasites which should be encouraged. The same with ornithology. I do not say a boy should be taught to study all these, but I do say, if his mind and thoughts incline that way, encourage him by all means. The brightest lights in science have been, as a rule, those who have taken up the subject and worked out their own deductions. Not the men specially trained and educated for the work.

Remember, boys, Newton, Ferguson, Franklin, and Rittenhouse the astronomer, who calculated eclipses on his plow-handle. Then Sir Humphrey Davy and Prof. Faraday. Davy wrote in his note-book, "I have neither riches, nor power, nor truth, to recommend me; yet, if I live, I trust I shall not be of less service to mankind and my friends than if I had been born with all these advantages." Think of William Smith, the great geologist, a farmer's boy; of Hugh Millar, who said, "It was necessity which made me a quarrier, that taught me to be a geologist." And many others not necessary to mention.

In addition to all the boy should be naturally fond of stock, for it is the sheet anchor of Canadian farming. If I had a boy, and he was not fond of stock, I should certainly endeavor to direct his mind to some other occupation besides farming. But, I fancy I hear some one remarking, "I don't want my boy to learn about bugs and butterflies, let him learn to plow." All right, friend, I say so, too; but don't think that plowing is all; it is intelligence and business ability that is going to have its innings now. The coolie can plow as well as your boy, and can work and board himself on three or four cents a day. Have you no higher ambition for your boy than that he should enter into such competition? You

have been told often enough, "that agriculture is the most noble as well as the most ancient of callings." Prof. J. F. W. Johnston writes: "That art on which a thousand millions of men are dependent for their sustenance, and two hundred millions of men expend their daily toil, must be the most important of all, the parent and precursor of all other arts. In every country, then, and at every period the investigation of the principles on which rational practice of this art is founded, ought to command the principal attention of the greatest minds."

What can I add to this except to say that we are each and all of us in competition with 200,000,000, all of whom can plow, or sow, or dig; but it is only to those who bring to bear intelligence and knowledge and study that can hope to gain and occupy that position socially and politically, which both by right and calling the farmer should occupy. Instead of dictating to our fellows and taking the lead as we should, we are simply plodders, with hay seed in our hair, and when we go down to town the boot-blacks call out, "Don't blow out the gas, uncle." We may remain hewers of wood and drawers of water for the rest of the community as long as we please, and we can raise ourselves from the false position which we now occupy when we please. But we must learn to respect ourselves; we must no longer take pride in wearing old and ragged clothing, or dirty boots and linen, for fear of being high-toned. This is a bugbear that I cannot understand; it has taken possession of the minds of the whole community in Canada; you don't find it in England; you find but little of it in the States, and that in the south and west. In the south long hair is of more importance than clean linen. Only a short time ago I heard two gentlemen arguing in London that the farmers' wives were too extravagantly dressed for their calling; one was the manager of a loan society, the other brother of a railway president, both drones in the hive of industry—parasites would be the proper term. When I quietly asked them if their servants wore as good clothing, they replied, "Yes." Then out with such sophistry, let us rise in our might and teach men that we are the people to whom this country belongs, and that such hangers-on shall not dictate to us what we shall eat or what we shall wear! Why should a man owning 100 to 200 acres of land consider he is putting on airs if he is decently clothed? Not one storekeeper in ten, even in our large cities, has as much of his own capital invested as each of you owning that amount has in your land.

What an insult to that profession which Cincinnatus did not despise, but who was found at the plow when called upon to command and lead the Roman legions to victory; that profession that George Washington loved and followed; that produced Henry Clay, who took more pride and pleasure in his Shorthorns and his horses than he did in electrifying his critical audiences by his most brilliant oratory.

[TO BE CONTINUED.]

John Splan, in the Breeders' Gazette, says in reference to the trade in road horses in England:—"Any quantity of sound, good-mannered and courageous horses can be placed there, and the few horses that I took over are still there, as such prices were offered me for them I had to part with them. It would have been easy for me to have placed fifty more. People came to me for them; I did not have to hunt for customers. Trotters that are good roadsters and can go a distance are wanted."



**How to Keep Up the Fertility of Our Farms by Breeding Cattle and Sheep, and Feeding for Profit.**

(Continued from May issue.)

DOES IT PAY TO RAISE CATTLE TO EXPORT OR FOR HOME MARKETS?

I will try and show that the farmers of Ontario can at least do better than many are doing. In the first place they must produce cattle well bred and well fed. The day is past for the long legged steer, with qua legs, big tail, long narrow head, light in the flank, bare over the loins, and shingle hams. This sort consumes more food, gains less, takes from six months to a year longer to mature, and will not realize as much as one of the right sort, although the latter weighs 100 to 150 lbs. less; then they never ship or handle kindly; they are always in trouble; they require more care because their constitutions are weak, and will not stand the voyage to market, thereby causing the shipper anxiety and loss. The right sort of steers are those that are entirely free from the defects and stand on a hard, bony, short leg. This class can be raised and fed to the age of two and a-half to three years old, and leave a profit to the producer. Calves should be kept growing the first year; never allow them to lose their calf flesh. Allowing steers to lose 200 lbs. through winter, for the purpose of having them gain 400 lbs. through the whole summer, is a terrible mistake keep them up to their fall weights and gaining through winter, then put on 200 lbs. more by July, or 400 lbs. by October, and you have a finished bullock. The same with winter feeding, keep them always gaining, it is the finished cattle that pays. Year before last I took my cattle to London, England; I had some of my own breeding (Shorthorn grades) not three years old; they brought £21 per head; I had a number of the same class three and a-half years old, they brought about the same. Mark, they had been fairly raised and I wintered them. I had others that I bought in the spring, got by pure Shorthorn sires, heavy weights, a little on the leggy side, and two or three others that are termed the light fleshed sort; they were the last sold, and sold at a loss. I had among the lot five little steers, about 1,250 lbs., of the right sort; they sold for £18, when some of the others a year older and weighing 1350 lbs., brought only £16. I can tell you that it is quality that tells in any market. In looking over my gains and losses in the cattle trade, which has extended over a period of twenty-five years, it was when my cattle lacked quality and finish that my bank account diminished. It will be hard for any breeder or feeder to succeed if his cattle lack quality.

Another matter in our cattle industry which should be practised is economy. One great mistake in this branch is in sending our good steers to Scotland and our little steers to the American markets to be fed and finished in either country, and at the same time robbing our own lands. What do we realize for our little steers which go over to the Buffalo market every fall by the thousands? We sell them for 2c. to 2½c. per lb. live weight, and they sell them for 3c. to 3½c. I admit that is all they are worth, as they are light—700 to 900 lbs. No wonder they are light; we cannot expect anything else, as long as we continue robbing our lands by this

system; but you will say we were compelled to, our crops were short. I tell you they will continually grow lighter if we do not change. Let us consider this question—2½c. for a 900 lbs. steer would be \$22.50, and in Buffalo at 3½c. would be \$29.25. Feed them at home until spring for beef or for grazing; you can feed for beef at 18c. or 20c. per day, and for grazing 8c. or 10c. per day; then after you have finished them ship them to the Buffalo market, or to Europe; add gains, say 250 lbs. per head would be 1,150 lbs. at 5c. per lb. in Buffalo, \$57.50, for wintering them you would have \$28.25 for each steer that gains 250 lbs. at a cost of 18c. to 20c. per day, and you can do this if you have the right sort; this for five months would show a profit of 45c. on each steer, if you can feed for 18c. per day, and they are worth 4c. per lb. for grazing purposes in the spring, and should weigh 950 lbs. at 4c., \$38.00 at 10c. per day would show a profit of 50c. on each steer. But the manure from steers fed by either method for five months is worth from \$6 to \$8 per head when applied upon your farms, and the weight of your steers instead of being 700 to 900 will be 1,100 to 1,300 lbs.

Preparing cattle for export—If you are feeding for the spring market Ontario farmers should have the 15,000 choice steers that are now being fed in Scotland in their own stables. For example, they would average 1,150 lbs. when they left our farms for Europe, and you received \$35 per head for them on an average; feed them for six months at 20c. per day they would cost \$71; in the spring they should gain 300 lbs. each; would be 1,450 lbs., at 5c., \$72.50, showing a profit of \$1.50 per head.

[TO BE CONTINUED.]

**Application of Chemistry and Geology to Agriculture.**

BY JAMES MILLER.

(Continued from May issue.)

Our country has taken a most important step in the right direction in establishing agricultural schools for the education of the rising generation of young farmers, and it is to be hoped that political prejudices will soon disappear, which have a tendency at the present time to retard their success in many different ways. But the fact is still to be deplored that our agricultural literature is very scanty indeed, with the exception of a small number of periodical publications—none of these too well supported—although attempts have been zealously made to scatter important information among the farmers. The press of our country has not been encouraged to educate its readers with agricultural knowledge.

The different branches of science are very numerous, which are connected with the art of the agriculturist. I need not speak of botany, which is, as it were, the foundation on which the first elements of agriculture rests, or of vegetable physiology, or entomology, which alone can throw light on the nature of the numerous insects that prey upon the crops and so often ruin your hopes, and which alone can be reasonably expected to arm you against their ravages, and instruct you to extirpate them. Meteorology, among her other labors, tabulates the highest, the mean and lowest temperatures, as well as the quantity of rain which falls during each day and each month of the year. Do your readers doubt the importance of such knowledge to the proper cultivation of the soil? Think of the destructive effects of a late frost in spring, or of a continued heat in summer, and your doubts will be shaken. It may, indeed, be said with truth, that no part of

natural science is incapable of yielding instruction, that scarcely any knowledge is superfluous to the tiller of the soil.

It is thus that all branches of human knowledge are bound together, and all the arts of life, and all the cultivators of them, mutually dependent. And it is by lending each a helping hand to the others that the success of all is to be secured and accelerated; while with the general progress of the whole, the advance of each individual is made sure.

It is the geologist that can best explain the immediate origin of the several soils; the nature and difference among your subsoils, and the advantages you may expect from breaking them up or bringing them to the surface.

Geology is essentially a popular science, and its relations to agriculture are becoming every day better understood. The Royal Agricultural Society of England has done much to illustrate the connection of agriculture with geology and chemistry.

The times, therefore, is very favorable for the increase and spreading of agricultural knowledge. The exhaustion of our soil and the depreciation of prices demands it. The youth of our country and practical men are anxious to receive greater knowledge.

Having thus given a short synopsis of the state and prospects of scientific agriculture in general and especially of the art of culture in Canada, I shall now speak of a few of those questions of daily occurrence amongst us, to which chemistry alone can give a satisfactory answer. I shall not here refer to the subject of manures, but take it up in its proper place, but I shall select a few isolated topics, the bearing of chemical knowledge upon which is sufficiently striking.

Some soils are naturally barren, but how few of our agriculturists are able, in regard to such soils generally, to say why? How few that possess the knowledge necessary for discovering the cause! Some of these may be improved, some not. How important to be able to distinguish between these two cases? Those which may be improved, practical men have no rule to solve the difficulty, but work in the dark. They may strike the key note, or they may not; and if they do, they only find out something that is already known upon a well known principle of chemistry. For instance, if any of the salts of iron be present they may be decomposed with lime. If there be an excess of siliceous sand, the system of improvement must depend on the application of clay and calcareous matters. If there be an excess of vegetable matter indicated, it may be removed by liming, paring and burning. If there be a lack of vegetable matter, it is to be supplied with manure. Why do the Canadian pines settle themselves on the naked and barren soil and rocks? Why does the birch spring up from the ashes of the pine forest? Why does the strong wheat straw spring from the virgin soil? Why do the natural grasses, the longer they are undisturbed, render the land only the more fertile? Are these, may be asked, chemical questions? I say yes; nothing but a knowledge of chemistry can answer them. Botany has thrown considerable light upon the rotation of crops, but chemistry alone has cleared it up and established the principle. Why is gypsum spoken highly of in one district, doubted in another, and decried in a third? Has not the composition of the different soils something to do with it? and how are you to analyze those different soils without the means of chemistry?

[TO BE CONTINUED.]



## Garden and Orchard.

### Notes on New Fruits.

BY W. W. HILBORN, LEAMINGTON, ONT.

Many new varieties of fruits are introduced every year, many of them are of little value and pass into oblivion soon after dissemination. The Experimental Stations of the United States of America and Experimental Farms of the Dominion are doing a good work in testing new fruits and reporting on their respective value.

Our county has established a horticultural society; they have obtained a small grant of money from the county council, which is being used for the purchase of new varieties of fruits that are supposed to be valuable in this locality. These fruits will be planted with standard varieties, and those proving worthy will be propagated as rapidly and cheaply as possible and disseminated. This method of testing will be of much value to those intending to plant; they can see the new kinds growing side by side with the old standard varieties, which will enable them to make judicious selections for orchard planting. Never plant new kinds extensively, no matter how much they have been extolled by their disseminators; better plant standard varieties that are known to succeed best in your own locality. "Go slow on new varieties" until they have been thoroughly tested on such soil and under about the same treatment you will give them. Many sorts succeed admirably in their original homes, where soil and climate just suits them, that are of little value when removed from their place of birth.

**STRAWBERRIES.**—Among the new strawberries Pearl, Haverland, Crawford, Warfield, Jessie, Mrs. Cleveland, Monmouth, Ohio, Daisy, Gandy and Woodhouse are the most promising and valuable about in the order named, either for home use or market. Bubach and Woodruff, although not very new, are among the most profitable. Bubach is very large, and the plant is strong, vigorous and productive. The fruit is not firm enough for distant market. Woodruff is one of the finest in appearance and of good quality, very firm, will stand shipping as well, if not better, than any except the Wilson, which variety it will fully equal in this respect.

**RASPBERRIES.**—But few, if any, of the new varieties of raspberries now being offered are equal to some of the older sorts. Among reds none of them equal the Cuthbert. A good early market variety that would equal Cuthbert in other respects, and ripen a week or ten days earlier, would be of great value. None of the early kinds quite fills the bill, either for home use or market. Marlboro, although not satisfactory in all localities, is, perhaps, the best early red raspberry for market. Reider is quite a promising early sort, and may prove valuable in many parts of the country. It is strong, vigorous, healthy and productive. The fruit is larger than any other ripening as early. Thompson's Early Prolific, which is now being introduced by several firms, did not show any special merit at the Experimental Farm, Ottawa. The fruit is too small, it is little if any improvement on a number of old sorts. Golden Queen is the most valuable yellow sort grown; it is quite hardy, very healthy and productive, and of very good quality.

Among Blackcaps Palmer, Carman, Nemaha, Ada, Chapman, and several others were tested

at the Experimental Farm, Ottawa, and none of them proved equal to such old sorts as Tyler, Hilborn and Gregg. Johnson's Sweet is of good quality and very productive, but not as large as the Hilborn; the latter was the most profitable market sort tested at the above named Experimental Farm. It was fully described in a late number of the *ADVOCATE*.

**GRAPES.**—Quite a number of new grapes are worthy of trial. Eaton, a new, large, black grape of the Concord type, is very promising; it will average larger in both bunch and berry than any other sort with which I am acquainted. The vine appears to be vigorous, healthy and productive. Moore's Diamond is one of the most promising new white grapes; ripens early, good quality, and perhaps the nearest approach to white of any grape I have seen. Moyer is a small, dark red Canadian variety; it is one of the best in quality, bunch and berry small, ripens very early; the vine and fruit is somewhat of the Delaware class; the blossoms are nearly pistillate, hence, requires to be planted near other sorts. Among those that have been longer tested and found valuable are: Ulster Prolific, Woodruff Red, Wyoming Red, Vergennes and Jessica. For market purposes, plant Concord, Worden, Wilder, Agawam, Lindley and Niagara. These will give satisfaction in most localities.

**CURRENTS.**—Crandall currant is a new fruit worthy of trial. It belongs to the yellow-flowering Missouri class. The fruit is large, black, and not so rank in flavor as other black currants. It resembles the flowering currant in foliage and habit of growth. It appears to be quite productive and not troubled by insects. I do not think it will be valuable for market purposes.

### Fruit as Food.

BY L. WOOLVERTON, GRIMSBY, SECRETARY OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO, READ BEFORE THEIR LATE MEETING.

(Continued from May issue.)

Now if weight of testimony is of any use, here is another from a writer in Orchard and Garden. He says:—"When some of my pear trees littered the ground with their ripe mellow fruit, I fed them to my cows. A peck of pears, with two quarts of meal and bran for a noonday feed, increased the milk and butter one fourth, and when the apples were ripe, and only fifty cents a bushel could be got for them in the market, the horses, cows, pigs and fowls had all they wanted." And here are two quotations from the Michigan Farmer:—

Mr. Chas. Dame says:—"I have fed apples for twenty years quite extensively. During the past three years I have been feeding twelve cows with them. As soon as the apples attain any size and drop from the trees I have them picked up and thrown in the pasture. Some days the stock get as much as ten bushels and I can always see an increase of milk. The apples are of different varieties, but not very sour. Cut down all trees which produce apples that will not do to eat. I am feeding two bushels of Baldwins at one time to my cows and get an 8½ quart can of milk extra from the fruit."

Mr. E. A. Bradley says:—"I have been interested in discussing the value of apples for stock. I had last winter 600 bushels of apples and began by feeding them to my team, giving them at noon instead of grain and with apparent gain to the horses. If the team was hard at

work it probably would not answer. I had a pen of fattening hogs to which I had been feeding a bushel of apples for their noon feed. I had no means of making accurate tests, but think they did equally well. I also gave them to my cows, a peck at one feeding, with the result of increasing the yield both of milk and cream. I have also fed them all winter to pigs which I am keeping over. I am convinced that to feed apples to stock is as profitable and much more satisfactory than to sell them to be made into cider with the possibility, if not the probability, that its use will lead to the use of stronger intoxicants."

And to accumulate evidence, here is a quotation from a writer in the New York Tribune:—"A few years ago one of our largest apple-growers had a large lot of culls left over. He was offered 10 cents a bushel for them delivered to an evaporating and cider-making concern five or six miles away. Instead of selling them at that price, he bought hogs to eat them." I am at this time unable to recall the details of his method, but whatever other feed was given them was accurately weighed and measured, and the gross cost at market prices and all other expenses, except the labor of feeding the apples, were duly charged up against the hogs till they were killed and marketed, when it was found that the apples had netted him 35 cents a bushel. The only case of ill result was where a large herd of cows were turned into an orchard of several hundred trees, and permitted to gorge themselves without restraint. Like any other food, apples should be fed with much discretion, beginning with small rations and increasing them gradually."

For several years I have, myself, been experimenting in this direction, and must say that I am more than satisfied with the results. Last winter I fed a team of horses about seventy-five bushels of cull apples, which were unfit for shipping. They were fed with cut hay or cornstalks, and chop stuff made of peas and oats; and a part of the time, of corn and oats. The ration was made up about as follows:—One-half bushel cut hay, one peck apples and two quarts chop stuff. This was given the team twice a day when idle, and three times a day when at work, with about eight or nine pounds of hay at night. The result is that the team came through the winter in far better condition for work than ever before. There was no need of condition powders with that team. The old coat of hair was shed early in the spring, and the new one was remarkably sleek and smooth; and every one exclaimed on seeing them, "In what fine condition those horses are!" I tried the same diet on a two-year-old heifer, giving her the same ration twice a day. That beast is now as fine a one as can be seen for miles around, fat and sleek and healthy. I have therefore given up growing turnips and carrots for stock, for I find in my waste apples food as valuable for their nutritious qualities as roots, and more valuable for their condimental qualities.

Having then such numerous ways of disposing of our fruit crops, the encouragement becomes greater for growing them. We can evaporate, or feed to stock all second grade apples and pears, and thus relieve our markets of a class of apples which glut them with rubbish, and anger the busy housewife. Thus also we shall be able to cull closer our fruit for shipping, and only put up for export the choicest grades, which will bring the very highest prices, and secure for our Canadian apples the reputation which their excellence deserves of the very finest in the world.

Note:—Daily ration for cow and horses, owing to scarcity of hay, was:—One bushel cut cornstalks, one peck of apples, one quart of chop (peas and oats) three times a day.



**How to Grow Chrysanthemums from Plants.**

BY THE LATE PETER HENDERSON.

If the young plants of Chrysanthemums are received in the winter or spring before the weather is warm enough to plant them in the open ground, they should be planted in small flower pots, say 3 or 4 inches in width, or in shallow boxes, such as cigar boxes, in any good soil such as is used for any ordinary house plant. It will be necessary to shift the Chrysanthemums into larger pots or boxes at least once during the season, otherwise they would not have sufficient soil in the smaller pot to grow the plants in the best manner.

After planting give them one good watering, which will usually be sufficient for the first six or eight days; after that, if the surface of the soil appears dry, they may again be watered, but very lightly, as they will not start to grow much for three or four weeks after planting. As soon as they begin to grow freely they will require water oftener and in greater quantity. As the Chrysanthemum is quite a hardy plant, it may be kept in a cool room or greenhouse where the temperature runs from 50 to 60 degrees. If

desired to be grown for indoor decoration, plants should be placed in any good, rich soil in flower pots of not less than six inches in diameter and depth; or, if the flower pots are not convenient, boxes of about the same capacity will do equal-

ly well, and placed out doors in a good, sunny exposure. It is rather the best plan for amateurs to sink the pot or box containing the plant, so as to be level with the surface, this keeps it cool and prevents it getting too dry in hot weather. The pots or boxes should be moved every two or three weeks, so as to prevent the roots getting through into the ground, as they must all be kept within the limits of the pot or box, otherwise they would wilt when taken up in the fall.

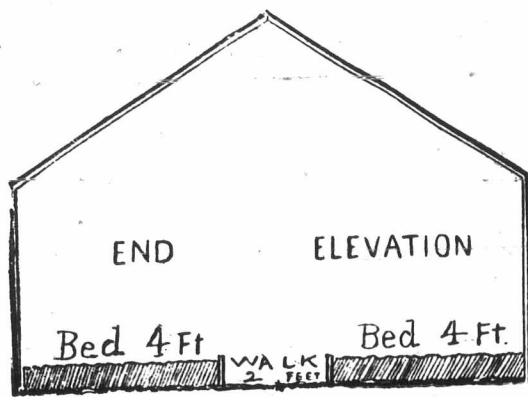
The time for setting the plants outdoors is best told by saying that they should be set out about the time corn and tomatoes are planted. Soon after the Chrysanthemums are set in the open ground they will grow rapidly. As soon as the shoots attain a height of nine or ten inches, they should be "pinched back," as it is called, that is, with the finger and thumb pinch out an inch or so of the centre of the shoot, that at once stops the upward spindling growth and causes the shoots to branch out from below. If fine, bushy plants are desired, this "pinching back" must be done every two or three weeks up to the middle of August, but not later; the plants will then have attained a growth of 1½ to 2 feet in the width and height. Although when the pots or boxes have been sunk to the level of the surface, they are not likely to require much water, yet, in long continued dry spells, it will be necessary to give them a good soaking

once a week, but that will usually be sufficient. By October, the plants, if treated as already directed, will have attained the height and width of two or three feet, having from fifteen to thirty shoots on each plant. On each shoot will be found, about the first of October, a cluster of flower buds. If the finest flowers are desired, all the buds except one—the strongest—should be rubbed off. By the middle of October they should be placed under cover in some plant room or greenhouse, where the temperature ranges say 50 to 70 degrees, and for five or six weeks you will be repaid for your labor by the gorgeous blooms suitable for exhibition purposes. Treated in this way, many kinds give flowers eight inches in diameter.

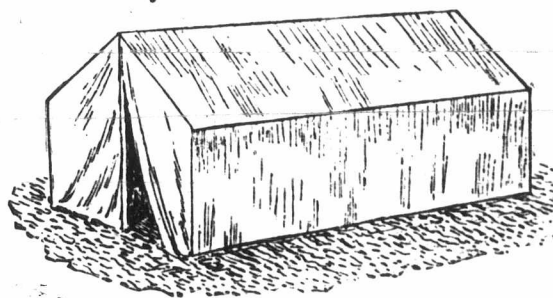
The above directions for culture refer to plants that are to be grown in boxes or pots for indoor culture, but where it is mild enough for Chrysanthemums to flower in the open garden, they had better be taken from the pots and planted at once in the open border (as soon as the ground is warm enough in spring); but treated by "pinching" and "disbudding" exactly as already described, if fine flowers are an object; if not, they may be left to nature and still make a grand

wards, so that for a Chrysanthemum tent 20 feet wide by 25 feet long, the cost for the protecting cloth would not exceed \$10.00, and the wood framework to support it, say \$15.00, so that for \$25.00 you can have a protection for Chrysanthemums just as effective as a greenhouse costing ten times as much. The cloth is simply nailed tight on the framework, as there is no need of providing for ventilation as in a greenhouse. The ratio of cost will be about the same whether the tent is 12 or 20 feet wide, small or large. These tents are now largely used by florists not only to prevent Chrysanthemums in fall, but also to protect tender plants in spring. The best plan for using the tent is to have the plants set out where they are to be covered by it at a distance of about 20 inches apart each way, if set out in spring; if set out in July or August, they should be set closer, say 12 inches apart, but at whatever season they are planted, if before the middle of August, small, healthy plants will grow enough to fill up the space. When this provision has not been made beforehand, plants can be lifted from the garden and planted under the protection of the tent or plants grown in pots or boxes can be placed under it.

It may be stated that if Chrysanthemums are wanted to be propagated in summer, that slips taken any time from May to August will root freely and produce fine flowering plants by November of the same year.



Perspective View



display, if the different varieties are used. In nearly all sections south of Baltimore the Chrysanthemums will perfect their flowers in the open garden and will stand the winter without protection; but very few of the finer kinds will perfect their flowers or prove hardy north of Baltimore, so when grown in pots or boxes the best way to save the plants is, after they are done blooming, to place them in a cool cellar, where, if kept dry, they will keep safely until they can be grown the next year.

A cheap and simple plan now extensively used to protect Chrysanthemums from the slight frosts that we usually have in the North—which in different sections come from the 20th of September to the 1st of October—is to use the greenhouse protecting cloth in the form of a tent, as shown by the cut. This tent may be (if 10 feet in width) 4 feet high at the front and 7 feet high at the apex; or if 20 feet wide, 4 feet high at the front and 10 to 11 feet high at the apex; if 10 feet wide, the walk (2 feet in width) should be in the centre, as shown in "End Elevation;" if 20 feet, there should be two walks (each 2 feet wide), which would leave the front beds 4 feet wide and the centre bed 8 feet. The tent may be any length desired, and if necessary may be heated by an ordinary self-feeding coal stove, or an oil stove as desired. This cloth can be bought of the best heavy grade at ten cents per yard in the lots of fifty yards and up-

**How to Procure Good Forest Trees for Planting.**

BY H. G. JOLY DE LOUVERGNE, LECLERCVILLE, P. Q.

It is not easy to procure young forest trees worth planting. The trees raised in the nurseries can generally be relied upon and they are sold at moderate prices, but, owing to distance, want of easy communications, delays in forwarding and delivering and to the cost, however moderate, it is very seldom that the farmers have recourse to the nursemens for the forest trees they intend planting (I do not allude here to fruit trees).

They generally go to the woods for them, often a distance of several miles. Those who have tried it know how hard it is to find such trees as they want, how much time and trouble it takes to dig them up, and how impossible it is, even with the greatest care, to avoid wounding and tearing off the roots. They know, too, how little satisfaction they have generally derived from all that work. Trees taken out of the forest and transplanted on the open, are placed at a great disadvantage; they fail so often that people get discouraged and many give up tree planting, as too difficult an undertaking.

Nothing is easier; in the proper season, with soil fit to grow the kind of tree you wish to plant, if the tree is in good order, with a little care you ought to succeed. But the trees you dig out of the woods are seldom in good order,



and they cost you a high price in time, if not in money. If you wish for good trees, in great number, safe to grow, without trouble or expense, procure them from a nursery, but let that nursery be your own.

Any farmer can start, in a corner of his garden a nursery of forest trees, by sowing the seeds of the trees he wishes to plant. With a little observation, it is easy to find out when the seed is ripe; for instance, towards the end of June, beginning of July, the seed of the elm and the soft maple (*acerbum*) is ripe; by sowing it, it will sprout and the little trees grow nearly one foot in height this summer.

The maple, oak, ash, birch, butternut, &c., ripen their seed in autumn, better sow it at once than winter it in the house. Sow in straight rows, with a garden line, leaving a picket at each end to guide you when weeding. Sow, say half an inch deep, for the maple seed and for other kinds, in proportion to the size of the seed; two or three inches deep, for butternut and walnut. Thin after the first year, if needed, and transplant further on the little trees removed in thinning. After three or four years, more or less (the time will depend on the rate of the growth of each kind of tree) plant your young trees where they are destined to stay. Choose a cloudy or a rainy day in the spring, and, without leaving home, with no trouble, without breaking any roots, you will take up and plant at once, without allowing the roots time to dry, one hundred young trees, certain to grow in less time than it would take you to go to the woods, and dig up ten trees, with a poor chance of their taking root and living.

These young trees will cost you nothing, your children will soon learn how to weed and take care of them, especially if you set them the example. Our own children, when quite young, took pleasure in sowing acorns and watching the growth of the young oaks as they came up. By sowing you can procure, with no expense, any number of young trees, and rewood, by degrees, all the land which is not fit for cultivation and ought to be kept as wood land.

But do not forget to fence carefully your nursery and plantations, so as to keep out the cattle. No use planting trees without fences, as the cattle will destroy everything.

In many cases nature will spare you the trouble of sowing where the ground is favorable, in July and August, along the ditches, the roads, the fences, on the moss or barren patches, wherever there is a little dampness, in the neighborhood of the elms and soft maples, you will find hundreds of young elms and maples, just sprung up from the seed fallen from those trees; plant them in your nursery, try it this summer, the seed of the elm is so minute and delicate that it is better to pick up these young seedlings in those sections where the tree is native, than to attempt sowing the seed.

In the maple groves, the ground is covered with a regular carpet of young maple seedlings. You can pull them up easily by hand in the fall or early spring when the ground is still damp without breaking any of the small roots. Plant them at once in your nursery.

It is very difficult to collect pine and spruce seed, even in sections where they grow. Early in the spring, when the ground is still soft and spongy, in the pastures, near where those trees grow, you will see a number of young pines and spruces that you can pull up very easily; plant

them at once, for that kind of tree you must shelter them from the sun until they are well rooted. In sections where these trees do not grow farmers will have to procure the seed from a distance.

Whenever the ground of a garden has been dug up and worked in the fall, if there are any maple or ash growing in the neighborhood, it will be noticed that the ground in the spring is more or less covered with maple and ash seedlings, grown from the seeds fallen from those trees.

It takes a very little time to pull up and replant hundreds of them, and scarcely any of them will fail; of course they must not be pulled up too roughly or it may damage the delicate roots; if the ground is too hard use a trowel. As much as practicable, they ought to be pulled up when they have only got their two first leaves which are easily known by their peculiar shape, long and narrow, from one inch and a-half to two inches long and about a quarter of an inch wide.

For several years past I have been seeking the cheapest and, at the same time, most effective mode of restoring the woods, where they have been completely destroyed; many of our old settlements, as well as the western plains are completely denuded of trees, and I can recommend this simple mode as the best, from my personal experience. Let those who suffer for the want of fuel, for timber for buildings, or trees for shelter and ornament, and those who would like to have a sugar maple grove at their door, let them start their own nurseries this very summer. It will entail no expenditure of money, take but very little time and repay them bountifully. It will be a pleasure for me to give any further information and advice to all those who may apply for it.

#### Garden Culture of the Rose.

(Continued from May issue.)

In cases where they are not wanted for winter blooming, we would advise their being lifted up in November, placed in boxes and kept in a cold cellar, giving them one watering when they are placed in the boxes, but no more, until they are taken from the cellar and planted in the open ground the next season in May, as already directed.

Winter protection. The Monthly Roses are only half-hardy and are therefore liable to be winter-killed where the thermometer falls 25 degrees below the freezing point, so that protection is necessary. The best way to do this is to bend the branches down and fasten them securely within two or three inches of the ground, by tying them to stakes driven in for that purpose, or if close enough they may be tied to each other. Then spread dry leaves or rough litter over them to a depth of say six inches. This should not be done, however, until severe cold weather sets in, so that nearly all the leaves are off the plants, and they are thoroughly ripened, which is usually about December 1st, in this latitude. This covering should not be taken off until all danger of severe frost is over, say about April 1st, in this section.

Success depends in a great measure on the care given to the plants after planting. The soil should be stirred frequently with a fork hoe or hand cultivator, so as to keep it mellow, as well as to keep down weeds. This is particularly necessary during dry weather, as ground which is frequently cultivated will be found to retain moisture far better than if it is allowed to become baked into a hard crust; in addition to this it induces a development of young roots close to the surface. Care must be taken, however, not to hoe too deeply so as to injure the young roots. Another important point is to cut off all the flowers which are past their prime, as

not only are they unsightly, but they tend to weaken the plant by forming seed pods; by removing them the strength which would otherwise be wasted goes to form new growth, thus increasing the number of blooms.

The insects and diseases which attack the rose (and other plants as well), are usually the effects of a condition and not the cause—troubles of this kind rarely attack healthy and vigorous plants. It is the weakened, sickly plants which are the victims. The best remedy then, is prevention. Keep your plants in good health by a little care and attention, and there will be little trouble from these pests.

Green Fly (*Aphis*), is one of the most common, but fortunately the most easily destroyed, of any insect that attacks the rose, as it succumbs to tobacco in any form; the most convenient being tobacco dust, which should be liberally scattered over the plants, first wetting the foliage so that the dust will adhere to it. This should be done as soon as the plants start to grow, so as to prevent the insects from gaining a foothold, in which case it is very difficult to get rid of them.

The Rose Slug is a light green, soft, worm-like insect, varying in length from one-sixteenth of an inch to nearly one inch in length. There are apparently two species or varieties of this, one of which eats only the cuticle of the lower side of the leaf, the other eats it entire. The first is the most destructive, as in a few days after they make their appearance, the leaves appear as if they had been burned. The remedies for this insect are given in the following paragraph:—

The Rose Chaffer usually attacks the buds and blossoms of the rose. An excellent preventive remedy for this and the Rose Slug is whale-oil soap dissolved in water in the proportion of one pound to eight gallons. This, if steadily applied twice a week with a syringe on roses before the leaves have formed in the spring, will entirely prevent the ravages of these troublesome pests. Another remedy is Paris green mixed with water in the proportion of one ounce to 100 gallons, and used with a syringe as recommended for the whale-oil soap. These remedies are only preventive, however, as if the insects get a good hold it is almost impossible to eradicate them, unless by hand picking.

The Rose Bug (*Aramigus Fulleri*), usually confines its ravages to roses in-doors, and is rarely destructive in the open ground. The perfect insect is somewhat like a small cockroach, having a hard shell of a brownish color. Its presence is detected by the ragged semi-circular pieces which it eats out of the edge of the leaves; but it does little harm at this stage. The mature insect deposits its eggs close to the stem of the rose; these soon hatch, and the larvæ (or grub), at once begin to feed on the roots. The only remedy is to pick off the perfect insect, which will be usually found on the stems and the under side of the leaves. Care must be taken in picking them, as they drop to the ground on the slightest alarm, where they lay perfectly quiet, their color harmonizing with the soil, makes it no easy matter to find them. If the larvæ attacks the plants in large quantities, it is impossible to successfully combat them; the plants and soil also should be thrown out, as nothing has been found to kill the insect in the larvæ stage, and the roses will do no good while the grub is at the roots.

The Red Spider is a minute insect, almost invisible to the naked eye, and only makes its appearance in a hot and dry atmosphere. Their presence is shown by a brown and hard appearance of the foliage. If the under side of the leaves is then examined, great numbers of these little pests may be seen. Frequent syringing of the foliage will keep the plants clear of them,



but if they are allowed to gain a foothold, the leaves which are badly affected had better be picked off and thrown away.

Mildew is a species of fungus generated by exposure to chilling winds, and is apparent by the presence of a grayish white film on the affected parts; it is very hard to effect a cure in the open air, where the conditions that produce it are beyond control; but it can be held in check by dusting the plants with Flowers of Sulphur, or syringing with a preparation made for the purpose, known as "Mildew Mixture," which can be procured in our seed stores.

Black Spot is a parasitic fungus which manifests itself in the form of round or irregularly shaped black spots upon the upper surface of the leaves. Generally only the full grown leaves are attacked, and it gradually spreads through them, destroying the circulation of the sap and causing a premature fall of the foliage. The Moss Roses and the Hardy Hybrid Perpetuals are more subject than the Tea or Monthly class to this disease. There is no known certain remedy for it, up to the present time. The only thing to be done is to pick off and burn all affected leaves, so as to prevent its spread, as it is quickly contagious. It is usually a consequence of an injury to the roots either by an excess of moisture or an excess of drought. When grown out of doors the danger from drought may be remedied by watering—but nothing can guard against injury from dull, wet weather.

### The Apiary.

#### Accuracy in Bee Keeping.

That care and exactness are required in bee-keeping is shown more distinctly as we learn more about the business. The Bee Keeper's Review and Gleanings in Bee Culture have lately taken up the subject of spacing of combs and thickness of top bars in relation to the building of combs over the top bars. Quite an array of authorities come forward and give testimony. The conclusion must be that it is highly probable that something may be done by being accurate in spacing comb to prevent brace combs and combs between upper and lower stories. The thickness of the top bar, it is also claimed, will prevent brace combs and help materially to keep the queen in the lower story. Some writers even claim they do not require to use a perforated metal queen excluder to keep the queen in the brood chamber, stating that the queen will so rarely pass the heavy top bar that the queen excluders are unnecessary. Whilst some find this the case, it is only fair to state that there are others who have for years used the deep top bar, yet who prefer to use the queen excluders. Only the practical apiarist can tell the annoyance resulting from combs between the upper and lower stories. They are troublesome when the combs are taken out of the upper stories. They cause robbing through dripping, and if the combs are removed before replacing the upper story they are liable to crush bees, which as we well know has very unpleasant results in the way of angering the bees. If by care in spacing frames and a certain top bar we can secure the desired results let us by all means do so. It will now be for bee keepers to find out if anything can be done in this direction. One inch deep top bar appears to be the popular bar for the purpose. Whilst foreign to the subject it will not be out of place to say that an additional advantage with the heavy top bar will be that it prevents all sagging of the frames. Of course the comb is diminished by the added thickness of the top bar, and this from that standpoint is a disadvantage. The bees too are compelled to travel over that much space, a feature not very desirable. Meanwhile bee keepers will watch the results of experimentation upon the subject with interest.

### Poultry.

#### Poultry Culture.

BY JAMES ANDERSON, SPRINGFIELD FARM,  
GUELPH, ONT.

(Continued from May issue.)

The diseases of poultry are not very numerous if kept comfortable and clean. I have never had roup amongst my fowls yet, but have sometimes had the gapes, which is caused by small parasitic worms in the bronchial or wind-pipe. This disease is similar to the botts in horses. The bot fly deposits its eggs on the sides, or on the legs of the horse, where they hatch. The small worms are licked off and swallowed, and attach themselves to the mucous membrane of the stomach, and are finally voided in the spring. The grub goes into the ground, undergoes the changes, and comes out a perfect fly to perpetuate its species. The gape fly deposits its eggs in the nostrils of the chicks, where they hatch. The worms work their way to the wind-pipe, where they often exist in large numbers. A small piece of asafoetida as big as a pea will cure them; first having removed all the worms with a feather from the throat. Feeding a little sulphur in the food is also good. Use plenty of coal oil on the perches, and sulphur in the nests, and you will not be troubled with vermin, and white-wash with lime, with a little carbolic acid dissolved in it, and you will never be troubled with disease. Above all things feed regularly, and keep the poultry house well cleaned. The manure is as valuable as peruvian guano, and by sprinkling plaster on the floor regularly it absorbs the ammonia and is a very valuable fertilizer.

The next bird of most importance to the farmer is the turkey, which, being a great forager, picks up any amount of grasshoppers and other insects destructive to his crops. Among all the different breeds the Bronze is the best, being the largest, hardiest, and the nearest allied to the wild bird. Some twelve or fourteen years ago I bought a young bird (some eight months old, and which weighed twenty-eight pounds) at the Ontario Poultry Show, at Brantford. I gave \$10 for it. People 'round here thought I was crazy, but the following year I sold the produce of that bird for over \$100. I raised forty-five turkeys, and sold them at \$5 per pair and upwards. So, you see there is nothing like getting a good animal to breed from. (Scrubs will not do, even amongst turkeys.) Turkeys are very tender when young, but can stand any amount of cold when matured. A little hard-boiled egg and some milk is good feed when young. They are very apt to be covered with lice, which is certain death to them if not seen to; a little sulphur dusted under the wings and on the head will generally kill them. Care must be taken not to get them wet: even a heavy dew will kill them. A few dandelion leaves chopped fine and fed, well mixed with scalded chopped corn, is excellent food for the young chicks. I generally confine the mother in an old pig crate for the first fortnight or three weeks and let the chicks run 'round, and have no trouble in raising them, unless the season is very wet. A little pepper mixed with the food is good in damp weather.

Geese.—I at one time had a great aversion to keeping geese, as I thought they spoiled the pasture, but I now find they are as profitable as anything I can raise. And, amongst all the different breeds, I find the Toulouse the hardiest,

the most prolific, and which sells the best. Geese live to a great age, and will lay year after year with unabated regularity. I have an old goose some ten or twelve years old, which has averaged forty eggs each season since I got her; she was from the stock of Todd, of Vermillion, Ohio; she generally lays thirty eggs before she sets; one year she laid forty-five. I keep common geese, as a rule, to set her eggs under. I have sold the progeny from this bird from \$5 a pair up to \$10. She has carried off the first prize at the Ontario Poultry Association Shows at Toronto and other places. A cross between the Bremen and Toulouse, or the China goose and Toulouse, makes a very large bird, but they do not do well to breed from again. The feathers are very valuable. And, when you have plenty of water and plenty of pasture, I think they are as profitable fowls as a farmer can keep. There are worse birds puts on the table than a good fat goose about Christmas times.

Ducks.—There is a prevalent belief among farmers that ducks are not profitable poultry. This is a mistake, especially if you have plenty of water. The duck is omnivorous, eating almost everything, either vegetable or animal food, that comes in its way. Its appetite is voracious, hence it grows rapidly and fattens easily. The Aylesbury duck is a very pretty white bird—if you have plenty of water—is a good layer and good table bird; so is also the Pekin, and it lays even earlier than the Aylesbury, and is valuable for its feathers, having nearly as many as a goose. But, above all the breeds, I prefer the Rouen. I have had them when fat weigh twelve pounds a pair, and have had them lay every day for about three months. I have read of a Rouen duck laying every day for ninety-two days. The plumage of the Rouen drake is most beautiful; the green head and neck, iridescent with purple and copper hues, set off with the clean white collar and claret-coloured vest, give him a most distinguished air, in which the various colours and distinct markings of the neck and wings does not detract from. In raising young ducks and geese they should not be allowed near the water, except for drinking purposes, until three or four weeks old. Ducks should be shut up every night, as they lay very early in the morning, and if left out are apt, especially when young, to fall a prey to minks, weasels, or foxes.

Since writing the above, I have had a letter from the Editor of the Poultry Review, giving me the amount of exports in poultry and eggs from Canada last year: Poultry, \$107,909; eggs, \$1,825,559. In United States last year the production of eggs valued at \$350,000,000; poultry, \$167,000,000, equal to \$30,000,000 more than their whole corn crop, and \$175,000,000 more than the year's wheat crop. Annual value of poultry and eggs produced in Canada \$25,000,000, as near as can be estimated.

The sheep business is looking up and the mut-ton breeds are the favorites.

A "Popular Gardening" correspondent thinks there are, all spring, summer and fall, more songsters and fewer bugs, beetles and grubs about his premises than anywhere else in the neighborhood; and absence of the destroyers is directly traceable to presence of the birds, as he gladly gives the latter "chance at the fruits they desire between their forages on insects." The feathered and musical friends are further encouraged by studied provision and protection of nesting-places, some of which consist of sections of wood covered with their natural bark, hollowed out sufficiently by use of inch-augur.



Family Circle.

Rainy-Day Reveries.

- The first bus ever seen in America—Columbus.
- A poetical fellow—Longfellow.
- A noted spear—Shakespeare.
- A useful lass—Windlass.
- Always mum—Chrysanthemum.
- An invaluable ledge—Knowledge.
- Two bad blurs—Gambler and grumbler.
- A big mus—Hippopotamus.
- A key too much used—Whiskey.
- A desirable fire—A sapphire.
- A wretched fare—Warfare.
- A troublesome chief—Mischief.
- A prolific bearer—Tale-bearer.
- An unwelcome grip—La Grippe.
- A long reign—Winter of 1889 and '90.

—Ira W. Adams, Calistoga

HOW I WROTE MY NOVEL.

WRITTEN FOR THE RURAL PRESS BY MAID-OF-ALL-WORK.

(Concluded from last issue.)

The Granger went away for a week and I had Dolly come over to help me while he was gone, and I was surprised to see what an interest Miriam took in her. One day when I sent Dolly out to collect the eggs, while I worked over some mistakes in her picture, Miriam said:

"She is a lovely girl, isn't she? and she paints well, too—she is so fresh and original, and so innocent. How could any one ever do her an injury? I would as soon think of wronging an angel."

"Oh yes," I said, working on; then later: "You rather fancy fresh and bright people, do you not?" Miriam laughed. "I confess I do like them. I am tired of flirts, and I am tired of flirting."

Miriam came to stay two weeks and she stayed six and went out with Willie a great deal for moonlight drives and Sunday walks, and although she tried to look languid and uninterested, I could see her growing happier and healthier every day. When she was about to go to the train to go home, she said:

"Now you will be down soon, won't you? When Mr. Kimball is there, we—"

"What is Willie going to be there?" "Well, yes, I believe so." She was carefully smoothing on her gloves. "He wants to read law a little; he says every farmer needs some knowledge of law, and if mamma will consent to board him I will see that he gets into good society."

"You are a darling," I said; "how kind you are."

After she had gone, I worked faithfully on my novel for awhile. It was easy to work, as I believed I had a genuine love-story to work from. But Willie did not go down immediately, and in a few weeks something came up to again call my attention from my own work. The young people wanted to form a Chautauqua Circle, and wanted me to get it into working order. Willie was deeply interested in it. He said to me one evening over my front gate:

"You know there are some very bright young people here who cannot go away for improvement, and we must help them."

"But," I lamented, "they will need so much urging."

"There is Miss Dunton; she will help; they will all come for her."

"Dolly?" I said. "I hadn't thought of her."

"She will be a great help," he said eagerly.

So I organized a class of ten, and it was quite a sacrifice on my part, for they branched into all sorts of musical and literary entertainments in aid of the W. C. T. U. and the Church Aid Society, and it was nearly spring before I could settle my mind down to a creative condition. And then Dolly worried me, too. She worked faithfully enough, dear girl; she was the best Chautauqua reader we had; she even read all the reference-books and wrote lovely little essays in her class-work, but she seemed so different from my bright, loving Dolly. I was so busy I did not notice the change till after Willie went away; then I began to see that she was sad and listless and worked more for the work's sake than with any interest and pleasure. I tried to cheer her up by reading Miriam's letters to her. Miriam gave glowing descriptions of the concerts and musicals which she and Willie attended. She always spoke of what great things society was doing for him and how his voice was improving. Dolly never made any comment to these letters, but always sat silent with her eyes downcast, so I concluded that, like myself, she was not greatly interested in music.

When haying-time came we disbanded our C. L. S. C. until after harvest. Dolly resumed her painting, very pale, but gentle and lovely. And the next I saw of Willie he was cutting hay in the field adjoining us, and when I received a note from Miriam that she was coming up to see the beautiful haying-time, I was quite afraid that my novel would terminate before it was written.

So I postponed the washing one day and dashed into a new chapter with "Willie and Miriam in Tuscany." They were seated on a stone fence under the vines of an old chateau, her pure, spirituelle face lying in fine relief against his square, manly shoulder. He was saying tremulously:

"Is there not yet some mysterious fate that will cut this golden thread of happiness? Sometimes in my dreams, darling, a shadowy hand—"

Just here I was interrupted by a noise of wheels

and a sound of laughter and merry voices, and several said "Whoa," and several said "I'll get out," and I had barely time to hide my manuscript under the rug when, with a gust of merriment and a swish of starched skirts, three of my favorite girl friends rushed in.

"Come on; we are going for a picnic. Put on your hat."

"But my dinner for the men," I gasped.

"Oh, never mind; set a lunch—we'll do it." And they rushed out and set my table in a twinkling, and the naughty girls wrote a saucy note and pinned it on the table, and one got my shoes, and another found my sketching-book, and in ten minutes they had me tucked into the three-seated wagon with a crowd of boys and girls, and we were rattling off toward the hills.

After they found a place by the creek, they left me to make tea and watch the horses, and the whole party rambled off. I made a good chaperon, because I would rather sketch than watch anybody.

Very soon another wagon-load drove up, and in it was my dear Dolly. She looked so pale and sad that I hardly knew her, but she kissed me lovingly and sat down by me while the rest of her party wandered off also.

"Dear Dolly," I said, "you are not yourself. I fear you will be sick; you are studying too hard. When Miss Grey comes up you must stop your painting for a time."

Here Dolly threw herself down in the grass and put her face in my lap and began to sob.

"Why, my dear, what is the matter?" I cried.

"Don't you like Miriam?"

"Oh, yes," Oh, so slowly and sadly!

"But, my child," I said, "you are not jealous of Miriam, are you? She is a lovely girl, but she never can be to me what you are. You are my dearest friend and helper."

Dolly sat up and put her head lovingly on my shoulder, but she sighed and said nothing.

"Why, here's Miriam now!" I exclaimed, rising. For there was Willie in a fine new buggy with Miriam by his side. I ran forward to meet them. Miriam was so gay; she had telegraphed me of her coming, she said, and as I wasn't at the station to meet her, Mr. Kimball kindly volunteered to bring her out, and as he was already coming to the picnic, she was glad to come too. Willie lifted her out with quite an air of ownership and I made them welcome, but Dolly had disappeared. After a few moments they also wandered away. Willie was unusually grave and quiet, and I wondered if he had not been saying something serious to Miriam. As no one came back, I took my sketch-book and went off to one side in the shadow of a great rock, where I had a very good view of the camp. I laid out my sketch, and was progressing nicely when I heard the cracking of brush and some one came up behind the rock. In a moment I heard Willie's richly modulated voice:

"Now you shan't doubt me any more. You must listen to my story. I am not half good enough for you, but I love you. Listen, I do love you. Look up."

I couldn't hear the answer, but it was something gentle. Then he continued:

"You have treated me wretchedly; you have pretended to like everybody and everything else but me. If you hadn't come here to-day I should never have tried again."

I had been calculating my chance of escape, and when I saw a crowd coming into camp with noise and laughter calling for tea, I gathered up my skirts and ran. We all had a merry lunch together. Miriam was quiet, as I thought a newly engaged girl ought to be. Dolly was shy as ever and Willie was merry with everybody.

Miriam went home with me in the wagon I came in, and as I had to go to work immediately getting supper, I supposed that in the evening she would tell me of her engagement. But she said not a word, though she looked calmly happy in her plain gray silk dress, and after she had sung one song for us she threw a lace scarf over her head and went out in the moonlight. I thought probably she had gone out to meet Willie in the lane, so I took my sewing (I always sew when I am nervous) and sat down by the Granger.

It wasn't long before I heard the sound of Willie's buggy. I dropped my work and rushed out then. I knew he would tell me. He was tying his horse under the locust trees, and sure enough there she was in the buggy. I went out to the gate and Willie came and took my arm.

"I came to tell you of my happiness," he said, "and to ask you to be a mother to my bride that is to be."

Then he lifted her out of the buggy and put her in my arms, but it wasn't Miriam—it was Dolly, and she lifted her old happy face to be kissed.

Surprised as I was, I kept my senses.

"Then there won't be any more pale face and sad eyes," I said.

"Nor any more melancholy law students," said Miriam, appearing by magic. "I just came up to patch up those broken hearts. I knew they never would do it alone."

"Not while I was so jealous of you," whispered Dolly, drawing her up to us.

"Well, dear, I forgive you," said Miriam, caressing her.

That evening, while Miriam was brushing out her long hair in our room, she became very communicative.

"You know I became engaged to Whistler, the artist, before he went abroad, but I declare I almost lost my heart to your handsome Willie, but I found her picture in his Civil Code, and that saved me."

"Sweeping-day I found my novel under the rug, and for Miriam's sake I put it in the fire. And Miriam came no more to the country."

Minnie Mag's Dep't.

One Day.

The fire to kindle, the table to set,  
The coffee to make, the breakfast to get.  
The dishes to wash, the floor to sweep,  
A watchful eye on the children to keep,  
And—there's the baby crying!

The baby to wash and dress and feed,  
The cows and pigs attention need;  
The beds to make, the cheese to turn,  
The chickens to feed, the milk to churn,  
And—there's the baby crying!

The baby to quiet, the table to set,  
The meat to roast, the dinner to get,  
The dishes to wash, the pies to bake,  
The ironing then my time will take,  
And—there's the baby crying!

The baby to rock and put to bed,  
The little chickens again to be fed;  
The cows to milk, the table to set,  
The kettle to boil, the supper to get,  
And—there's the baby crying!

The baby to soothe ere supper I eat,  
The dishes to wash, the room to make neat;  
Then down to the basket of mending I sit,  
Attention divided 'tween baby and it,  
For—there's the baby crying!

God grant me patience and strength to bear  
The every-day round of household care;  
To govern my kingdom in love and peace,  
Until my rule with death shall cease,  
And I at rest am lying.

C. C.

MY DEAR NIECES:—

A man's work is from sun to sun,  
But a woman's work is never done.

And so poor John Grumbly thought when he exchanged occupations with his wife for one day, for he went contentedly back to his ploughing, convinced that men had the best of it, and, let us hope, cured of grumbling. While all the most improved labor-saving implements are provided for the outside work of a farm, the strength of the wife nor her endurance is never taken into consideration; but we must think of these things for ourselves, and make our heads save our feet. Now, a grievous fault with nine-tenths of our homes is our cellars, where we are obliged to keep our milk, cream, butter, and bread; but where are also stored, perhaps, coal and vegetables, which are often in a state of decay or growth. A small apartment should be constructed of brick, or stone, attached by a covered passage way to our kitchen, where we can pass in and out, attending to our dairy duties, without the additional labor of ascending and descending stairs. One model milk-house, which was made of brick, the walls one foot thick, had a well-sloped roof of shingles, filled between with sawdust to keep the heat of the sun out; two windows for ventilation and light, with wire screens and wooden blinds, to be closed during the warmest hours of the day and opened at night. Three low shelves ran all around of planed boards, and a wash of lime made the walls white and sweet. A brick floor completed this daisy of a milk house. A badly ventilated cellar will putrefy cream before it sours, for milk will absorb all the odours that are in the air, be they good or bad. And how often the hard-worked woman feels disappointed and disheartened to find her butter, that she had handled with so much care, and looks so yellow and sweet, with a rancid taste. It is not your fault, my dear niece, you have taken every precaution to have it sweet, but the atmosphere of your cellar is bad. Vegetables should never be kept in the same room with milk, or cream, or butter; in fact, they should not be kept in the house cellar at all, but have a proper root-house away from the house, and a supply taken from it when



required, for there is almost always decay going on where many vegetables are stored, consequently gases are continually being thrown off. Which of my nieces will agitate for a milk-house such as I have described? The cost is proportionately small, compared with the consumption of human strength and time.

Our boys, as soon as they are capable of assisting in the work on a farm, are allowed something for themselves—perhaps in money, or land, or some of the profits—but whoever thinks of our girls being rewarded, though they do raise poultry, bees, flowers, or butter; all they earn is thrown into the general fund. Now, they should be recognized as valuable assistants, and rewarded accordingly. Decide how much they are entitled to, or how much you can afford to give them all for their own, to do with it as they please, spend it or give it away. To earn some money for one's own self, and have it to do as one likes with it, gives one a feeling of independence that only those know who can earn it.

This is a progressive world; nothing stands still; if we do not take a step forward each day, why we have taken one backward. Look how gradually but surely the buds on the fruit trees are bursting into bloom and beauty; the fields soft with tender green are taking on a darker tinge each day. All is growth around us, then; maturity stoutly but certainly advances until all is ready for the harvest. MINNIE MAY.

**Recipes.**

**TO BAKE WHITEFISH.**

Scrape and wash, cut off all the fins, or pull them out; rub with flour, and set it back up in a baking pan; put some dripping in the pan, also a few pieces of butter; cover the back of the whitefish; allow one hour and a quarter for a large one; when about half done, baste well until finished. Place it in a dish and garnish with sprigs of parsley in the mouth and gills. Serve with melted butter.

**A NICE WAY TO SERVE LOBSTER.**

Cut the shell down the back; take out all the meat; break the claws, and be careful not to break the shape of the meat when taking it out. Arrange all nicely in a mould, and cover with clarified and flavored stock. Turn out and garnish before serving.

**GOOD DOUGHNUTS.**

One quart of flour; one egg; one cupful each of sugar and sweet milk; two teaspoonsful baking powder; a pinch of salt; spice to taste, and fry in hot lard.

**GINGERBREAD.**

Cream together one cup of butter and one of sugar; add three well-beaten eggs, one cup of molasses, and one of milk, with a teaspoonful of soda dissolved in it. Stir in three cups of flour, two teaspoonsful of cloves, and bake in a slow oven.

**CHOCOLATE CARAMELS.**

One cup each of molasses and white sugar; one-half cup of sweet milk in which you have rubbed smooth two heaping teaspoonsful of sifted flour; stir all together, and when you think it has boiled nearly enough, add a piece of butter the size of an egg, and one cup of unsweetened grated chocolate; boil until a little piece dropped in water will harden; pour on a buttered dish, and when nearly cold cut in squares and wrap in oiled tissue paper.

As a child grows older he should grow stronger, just like boarding house butter.

**Fashion Notes.**

Among the latest novelties are prettily made waists, to be worn instead of corsets, and they have the merit of being comfortable as well, for the bands of the petticoats and drawers button on them, relieving the hips and waist of the weight and pressure.

Gloves have appeared in silk, with tips of kid on each finger, and thread gloves with a kid palm; they look serviceable and nice to market in.

Ribbons are beautiful in color and texture, though they still keep up the high price, but a cheaper quality can be had, and in all widths and colors.

Some lovely pattern dresses have appeared; that is, part comes as a trimming for the rest. A dark navy blue has a Grecian border, and narrower ones for the waist and sleeves. The pleated waists promise to be a boom to girls who have worn or outgrown their last summer gowns, for they can be worn with any skirt, and can be made as fanciful or as cheap as one chooses, and they are most becoming to the wearer.

Some charming hats have been shown with wide brims, and the sole trimming is a wreath of flowers—roses, or some feathery flower with plenty of foliage.

Parasols have appeared again with long handles, and in every color, plain and figured, and striped black and white, red and black, or brown and black; in fact, any fancy might be suited; but while the long handles were almost a matter of necessity when high trimmings were worn on the front of the hats, they are so no longer, and very pretty parasols may be had with short handles at a much cheaper rate for all except walking. These long handles are a nuisance, and are much in the way in a crowd, or car, boat or carriage. So the sensible girl will not invest unless she has money to spare.

Colored petticoats will be extensively worn this summer, except where a white dress demands a white skirt. They are daily growing in favor, and are an immense saving upon laundry work. They can be made of silk, satin, flannel, or any fancy skirting, which can be purchased for any price—from one dollar per yard to ten cents.

Kind looks, kind words, kind acts, and warm hand-shakes, these are secondary means of grace when men are in trouble, and are fighting their unseen battles.—[Dr. John Hall.

Happiness, if not a panacea for all the ills that flesh is heir to, is an aid and handmaid in the recovery and preservation of health the value of which cannot be exaggerated. But it depends much more upon the family and friends of a patient to supply this than upon his physician—a fact to be borne in mind and constantly heeded.

A GOOD REMEDY SLANDERED.—“A hot lemonade taken at bedtime” is an excellent remedy for a cold, if it be taken at bedtime in the early stages of the disorder. This taking should be succeeded by a night's rest in a good warm bed; and a light, quick sponge-bath followed by brisk rubbing with a coarse towel as soon as you get out of that bed next morning. The latter treatment prevents the system from being left in such condition that another and much more severe cold is almost certain to be contracted, and is much more likely to result in restoration to a strong, healthy condition than dosing with any nostrum ever advertised.

**Rosa Bonheur's Youth.**

In a simple home in Paris could have been seen in 1829 Raymond Bonheur and his little family—Rosa, seven years old, Auguste, Isadore and Juliette. He was a man of fine talent in painting, but obliged to spend his time in giving drawing lessons to support his children. His wife, Sophia, gave lessons on the piano, going from house to house all day long and sometimes sewing half the night to earn a little more for the necessities of life.

Hard work and poverty soon bore its usual fruit, and the tired young mother died in 1833. The three eldest children went to board with a plain woman, “La Mere Catherine,” in the Camps Elysees, and the youngest was placed with relatives. For two years the good woman cared for the children, sending them to school, though she was greatly troubled because Rosa persisted in playing in the woods of Bois de Boulogne, gathering her arms full of daisies and marigolds, rather than to be shut up in a school-room. “I never spent an hour of fine weather indoors during the whole of the two years,” she has often said of the days since.

Finally the father married again and brought the children home. The two boys were placed in school and Mr. Bonheur paid their way by giving drawing lessons three times a week in the institution. If Rosa did not love school she must be taught something useful and she was accordingly placed in a sewing establishment to become a seamstress.

The child hated sewing, ran the needle into her fingers at every stitch, cried for the fresh air and sunshine, and finally becoming pale and sickly was taken back to the Bonheur home. The anxious painter would try his child once more in school; so he arranged that she should attend, with compensation met in the same way as for his boys. Rosa soon became a favorite with the girls at the Fauborg St. Antoine school, especially as she could draw such witty caricatures of the teachers, which she pasted against the wall with bread chewed to the consistency of putty. The teachers were not pleased, but so struck were they with the vigor and originality of the drawings that they carefully preserved the sketches in an album.

The girl was far from happy. Naturally sensitive, as what poet or painter was ever born otherwise, she could not bear to wear a calico dress and coarse shoes and eat with an iron spoon from a tin cup when the other girls wore handsome dresses and had silver mugs and spoons. She grew melancholy, neglected her books and finally became so ill that she was obliged to be taken home.

And now Raymond Bonheur very wisely decided not to make any plans for his child for a time, but see what was her natural tendency. It was well that he made this decision in time before she had been spoiled by his well meant but poor intentions. Left to herself she constantly hung about her father's studio, now drawing, now modeling, copying whatever she saw him do. She seemed never to be tired, but sang at her work all the day long.

Monsieur Bonheur suddenly awoke to the fact that his daughter had great talent. He began to teach her carefully to make her accurate in drawing and correct in perception. Then he sent her to the Louvre to copy the works of the old masters. Here she worked with the greatest



industry and enthusiasm, not observing anything that was going on around her. Said the director of the Louvre, "I have never seen an example of such application and such ardor for work."

One day an elderly English gentleman stopped beside her easel and said: "Your copy, my child, is superb, faultless! Persevere as you have begun and I prophesy that you will be a great artist." How glad these few words made her. She went home thinking over to herself the determination she had made in the school when she ate with her iron spoon, that sometimes she would be as famous as her schoolmates, and have some of the comforts of life.

Her copies of the old masters were soon sold, and though they brought small prices, she gladly gave the money to her father, who needed it now more than ever. His second wife had two sons when he married her, and now they had a third, Germain, and every cent Rosa could earn was needed to help support seven children. "La Mamiche," as they called the new mother, was an excellent manager of the meager finances, and filled her place well.

Rosa was now seventeen, loving landscape, historical and genre painting, perhaps equally, but happening to paint a goat she was so pleased in the work that she determined to make animal painting a speciality. Having no money to procure models, she must needs make long walks into the country on foot to the farms. She would take a piece of bread in her pocket and generally forget to eat it. After working all day she would come home tired, often drenched with rain, and her shoes covered with mud.

She took other means to study animals. In the outskirts of Paris are great abattoirs or slaughter pens. Though the girl tenderly loved animals and shrank from the sight of suffering, she forced herself to see the killing that she might know how to depict the death agony on canvas. Though obliged to mingle more or less with drovers and butchers no indignity was offered her. As she sat on a bundle of hay with her colors about her they would crowd around to look at the picture and regard her with honest pride. The world soon learns whether a girl is in earnest about her work and treats her accordingly.

The road to happiness and the road to misery follow the same course. The difference is in the travellers, not in the road travelled.

"Look at that rabbit ma," said little Tot, as she curiously watched the peculiar twinkle of the animal's features; "every time he stops to smell anything, he seems to stutter with his nose."

A piece of camphor placed in an empty iron pot and set on fire is said to kill moths. As the smoke arising from it does not blacken anything, it can be used in any room, and will be found a ready way to fumigate a drawing-room, when a suspicion of moths lurk in heavy curtains, rugs, or carpets.

### The Lily.

Who does not recognise a friend in the beautiful flower before us. Who has not watched and watered it, and looked forward to the forming flower. This is the *Lilium Candidum* of the east.

Cowper writes:—

"The Lily's height bespoke command,  
A fair imperial flower:  
She seemed designed for Flora's hand,  
The sceptre of her power."

And if the language of the lily is majesty it bears ever with it, purity also, for whiteness, as the botanical name conveys, is its distinguishing feature. Truly the beautiful calla lily is a relic of Eden and in that Elysium of bliss the lilies were not more beautiful and fragrant than now, when surrounded by other flowers we do not attempt to compare them—the lily stands alone and beside her they only make her more beauti-

a personal magnetism, or whatever it may be, that is wanting in the other.

There is no time when love lends such a charm to every word and action as in the hour of sickness; and yet there is no time when a young girl is made more conscious of her insufficiency, of the fact that she is almost as helpless as the invalid. The failure may largely depend on what she regards as the veriest trifles, and which might have been avoided by thoughtfulness.

The mother generally knows, through experience, how to nurse her sick daughter; but very often the daughter does not know how to nurse her sick mother. The yearning sympathy and the earnest desire may be present, but that is not enough, although the strong, healthy girl is apt to think it is. She fails for want of method and a knowledge of what is essential—of what

ought to be done and how it ought to be done. She becomes agitated when she ought to be calm; she becomes irritated when she ought to be serene; her patience becomes exhausted just when it is most needed; she replies sullenly to complaints, she rebels against un-called-for reproaches, and finally goes off by herself to have a good cry. It is an unpleasant experience to her, but it may prove profitable. She discovers that she was not sufficiently equipped, and will very likely inform herself as to what is requisite, and meet the emergency with better success.

Nursing does not merely consist in suiting food to a taste which illness has made ten times more fastidious than usual, or in giving the proper medicine in the proper quantities at the proper intervals, or in bathing the languid head, or in moving the weary body. There is a delicacy besides the delicacy of touch. It includes the modulation of the voice, the movements about the room, the suppression of needless noises, and a score of other things of the kind.

The young nurse must be neither nervously apprehensive nor studiously indifferent. She should seem cheerful and hopeful though she does not feel so. It is a pardonable deceit. Indications of alarm and distress must be suppressed. The dress should not rattle or the shoes creek. The movements to and fro should be gentle and unobtrusive. Nothing should be said that the patient ought not to hear, for in sickness the hearing is often unnaturally quickened.

Rejected dainties should not be allowed to remain in the room under the delusion that they will be fancied by and by. It is a certain way of making the patient loathe the food.

In giving stimulants or nourishment the bowl of the spoon should be carefully raised, so as not to spill any of its contents or to annoy the patient by untidiness.

In shaking up a pillow do it with the utmost gentleness. To raise the patient to a sitting



LILIUM CANDIDUM.

ful. Favored of poetry and song, as flowers are, none unless it be the rose alone has more often been chosen for simile and emblem than the lily. How expressive is Longfellow's quotation, cut "like a lily untimely."

### In the Sick Room.

There is a peculiar knack, as one might call it, in waiting upon the sick. In some it is a gift, an intuitive aptitude, which others only acquire by experience. No one is so quick to detect the want of aptitude as the sufferer, and if the latter has taken a dislike to the nurse it is better for her to retire until the aversion has dissipated itself. The dislike may be but a whimsical fancy, and yet it is as injurious as if based upon abundant cause. The hand of one watcher, toying gently with the hair of the sick one, will woo to slumber with its soothing touch; the hand of another may irritate and induce increased wakefulness. The touch of both may be gentle, but there is in one a sincerity of sympathy, an abiding patience,



posture, put a scarf or long shawl behind the pillow and let two persons each take an end and gently draw up the patient.

No medicine is so beneficial to the sick as fresh air. It is the most reviving of all cordials if administered with prudence. Doors and windows should not be thrown open suddenly or at random. Fresh air should be let into the room gradually, and, if possible, by opening the windows of an adjoining apartment. If the windows of the patient's room cannot be opened, a good plan is to swing the door quickly backwards and forwards.

Muslin rags soaked in aromatic vinegar, and suspended near the door, so as to be agitated by the draught, will prevent unpleasant smells and purify the air. Rags dipped in chloride of lime, and suspended across the room on a cord are a disinfectant in cases of fever.

There are books of instruction for nurses, but as they may not be within the reach of every young girl, it will be well for her to remember the practical hints herein given.

FRANK H. STAUFFER.

**The Fashionable Girl's Vocabulary.**

In her speech a fashionable young lady has her vocabulary as she has her code. Latterly she has permitted herself the use of a good many English expressions. She says "suppose," and she never says "guess;" she says "chemist" for "druggist," "stop at home" for "stay at home," and she "tubs" oftener than she takes "a morning bath." "Function" with her means any sort of social gathering, and a very gay ball becomes a "rout." "Smart" expresses a considerable degree of excellence which she applies equally to a wedding or a bonnet; "an awfully fetching frock or gown" is very English for an especially pretty dress. She likes the word "clever," too. When she sees a fine painting she says: "That's a clever bit of canvas." She thinks Marshall Wilder is an "awfully clever fellow," and if you ask her does she bowl, she replies, modestly: "Yes, but I am not at all clever with the balls." Some phrases she leans rather heavily upon, notably "such a blow," when a rain postpones a visit or a friend dies, and "such a pleasure" alike to hear Patti and spend a tiresome evening at the house of some acquaintance. She has, too, an index expurgatorius which she is very careful to respect. There are no more "stores" for her, they have become "shops;" "servants" also have ceased to exist as such; they are "men-servants" and "maids," although she permits herself to designate as laundress, housemaid or butler; "gentlemen" she avoids; "a man I know," she says, referring to a male acquaintance; or, "there were lots of delightful men out last night," she confides to some sister belle who missed the opera; "all right" she never says, making "very well" do much better service, nor does she add "party" to dinner, speaking of such an entertainment; her home no longer has a "parlor," pure and simple, but a "blue room," a "red room," a "Japanese room," or possibly an "East parlor."

I never knew a man in my life who could not bear another's misfortunes perfectly like a Christian.—[Pope.]

Silence never shows itself so great an advantage as when it is made the reply to calumny and defamation.—[Addison.]

No matter what his rank or position may be, the lover of books is the richest and the happiest of the children of men.—[Langford.]

**Uncle Tom's Department.**

**The Red Breast of the Robin.**

AN IRISH LEGEND.

Of all the merry little birds that live upon the tree,  
And carol from the sycamore and chestnut,  
The prettiest little gentlemen that dearest is to me  
Is the one in the coat of brown, and scarlet  
waistcoat.

It's cockit little robin!  
And his head he keeps a-bobbin'.  
Of all the other pretty fowls I'd choose him;  
For he sings so sweetly still,  
Through his tiny slender bill,  
With a little patch of red upon his bosom.

When the frost is in the air, and the snow upon the ground,

To other little birdies so bewilderin',  
Picking up the crumbs near the window he is  
found,  
Singing Christmas stories to the children:

Of how two tender babes  
Were left in woodland glades  
By a cruel man who took 'em there to lose 'em;  
But Bobby saw the crime,  
(He was watching all the time!)  
And he blushed a perfect crimson on his bosom.

When the changing leaves of autumn around us  
thickly fall,

And everything seems sorrowful and sadening,  
Robin may be heard on the corner of a wall  
Singing what is soacing and gladdening.

And sure, from what I've heard,  
He's God's own little bird,  
And sings to those in grief just to amuse 'em:  
But once he sat forlorn  
On a cruel Crown of Thorn,  
And the blood it stained his pretty little bosom.

—Chambers's Edinburgh Journal.

**MY DEAR NIECES AND NEPHEWS:—**

June roses, June days, and the freshness of June beauty, what is their to compare with them? Nothing, do you say? Yes; the boys and girls of the farm, with their bright eyes, red cheeks, lightsome step and merry voices, are above and beyond even these.

There are some people who, though they do not always wear blue spectacles, seem to see everything blue. They will tell you the rose-bushes have worms on them, that June days are tiresome and long, and that the beauty—if they ever see it—will soon be dried up with heat or covered with dust. If you ask such a one about the boys and girls, he is almost certain to know their bad qualities, but of their good ones he knows very little. You almost wonder if he ever was a boy, or if he missed that great pleasure, and it made him surly all the rest of his life. Such a man is called a pessimist. Uncle Tom answers to no such roll-call, although he, too, has noticed that every plant now-a-days seems to have its enemy, and after all the careful digging, raking and sowing, if nothing more is done, the currant bushes will be worm-eaten, the potatoes bug-eaten, the grape vines insect-eaten, and so on it goes, each year seeming to bring with its leaves and fruit its quota of enemies to devour them. While my young friends have been watching the hawks from the chickens and the crows from the corn, using Paris green and helebore for vine, or tree, or shrub, have they not sometimes thought of enemies of their own? It is a good thing to have some; they let us know what our friends never would of our besetting sins, and thus help us to guard against them, for knowing of a failing is often half way to overcoming it. Another thing, we may expect enemies.

"He who surpasses or subdues mankind  
Must look down on the hate of those below."

The wind may blow its worst blast around the oak and it only serves to root it the more firmly in the ground. Men who have been brought up on "flowering beds of ease" have never developed the muscle or the brain of the man who, against every difficulty, wrestled his way through

to fame, fortune or position. You have all been reading of Stanley—that name which at present stands out before the world like a brilliant orb, and that other whom Stanley brought to light from a voluntary living burial in Uganda. The light was thrown upon the man, but it has now no power save to tell of what has been for "from his ashes may be made the violet of his native land." Mackay, of Uganda, has gone to his reward. He rests from his labors and his works do follow him.

But, about our enemies. Yes, the whole list of great men down have had them; some men have lived who had not any, of whom it was said, as may be said of some one of your school-mates, "Oh, everybody likes him," or "her," as the case may be. Goody, goody kind of people; if they do no harm in the world do little good, who would never stand up for you if you were maligned, who would never correct a bad habit in another, who would—well, who is just a cipher in this busy work-a-day life of struggle, trial and temptation. Give Uncle Tom rather the impulsive, if sometimes wayward, child, who has some character as a motive power, who would fight for you if necessary, who would stand alone against a whole school to defend the weak or the poor. That is true courage—true nobility! That little boy who, to save another from being expelled from school, offered to bear the punishment, and day after day took the imposed number of lashes without a murmur, was a true hero. He gave his teacher a new idea of bravery, and saved a boy for life. A June picture is before me, and with it I close. The early morning dew has decked each blade of grass, each frond of moss and fern with diamonds. From the hill-top all is calm, and the blue haze on the distant horizon serves only to show the soul-stirring beauty of the nearer view. The sun has not yet risen, but his roseate messengers of cloud have dispelled the darkness, and the whole world of birds is alive with song. The lake is calm and glassy, and the wooded shores on the other side, and the little emerald isles dotting its calm waters, show not that white man's foot has trodden there. The lake lights up as the sun peers over, and has become a sea of glory. We stand and gaze, and, like William Tell calling to his native mountains: "Ye crags and peaks I'm with you once again," we would

"That any tongue could utter  
The thoughts that arise in me."

The old indescribable longing of other days come back again, and the freshness and beauty of J. Fennimore Cooper's—that Scott of America—writings are recalled, and the last brave of the Mohicans walks forth, and the path-finder, and the deer-slayer and bee-hunter come by, till the lake is peopled with the dusky warriors, painted and feathered as of yore. When in our boyish haunts, each nook and glade was filled with fancy. Boys and girls, "preserve the ideals of your youth." Let not that unsatisfied and undescribable longing for books pass away. Oh the vanished, vanished dreams of the pure, holy child—days that never return, yet whose ideals have ever had an upward tendency.

Your loving

UNCLE TOM.

A woman's lot is made for her by the love she accepts.—[George Eliot.]

It is necessary to love one's friends as true amateurs love pictures; they fix their eyes upon the good points and see nothing else.



**Puzzles.**

1—JUNE, 1890.

|    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  |
| 8  | 9  | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 |    |    |    |    |    |

- ACROSS.**—1. A species of African lynx.  
 2. A genus of plants.  
 3. A fish of the tunny kind.  
 4. Having no lid.  
 5.  $\frac{3}{4}$  of a note in the scale of Guido.
- DOWN.**—1. A circular moulding cut to resemble a rope.  
 2. To annoy with oil.  
 3. To tear asunder.  
 4. To enamel.  
 5. A small house.  
 6. Insects.  
 7. Meadows.

FAIR BROTHER.

**2—PHONETIC CHARADE.**

I noticed in **MAY ADVOCATE**  
 That puzzle number one  
 Contains all of the alphabet,  
 But title it has none.

And then again there's number four.  
 Perhaps you think I'm smart,  
 But I cannot imagine why  
 I'm beheaded at the start.

Come now, **FIRST A. D. A.**, explain  
 Thou "modest little elf,"  
 If that was the "United States"  
 I'd tell the news myself.

Oh! no, 'tis all a grand **COMPLETE**  
 To dream of such a thing  
 For mother says that I'm too young  
 To get a marriage ring.

Ha! ha! ha!!! "What an awful tease,"  
 "Don't **LAST** me for a clam;  
 To believe all that" our cousin says,  
 Who lives at Pakenham.

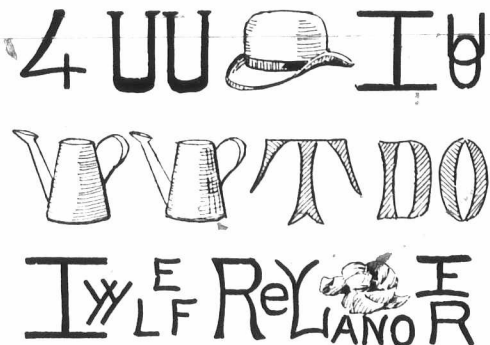
Pray, dear cousin, do you really think  
 I'm getting to be a tease,  
 When I try to "April fool" you all  
 By giving you a breeze?

I like such determinations  
 As that of cousin Lou  
 For it leads to the **elevation**  
 Of this our puzzling crew.

I see our friend's (*the learned* **reeve**)  
*Enigma* takes the cake;  
 He thinks that we, without his aid,  
 Another would never make.

FAIR BROTHER.

**3—ILLUSTRATED REBUS.**



**4—NUMERICAL ENIGMA.**

I am composed of 18 letters.  
 My 15, 14, 13, 14, 5 is a nut.  
 My 6, 11, 4, 17, 18, 13 is a support.  
 My 2, 8, 16, 9, 1 is an inward fine.  
 My 2, 3, 5, 12 is chief.  
 My whole we'd miss much.

A. HOWKINS.

**5—DOUBLE LETTER ENIGMA.**

I'm in the "mighty billows" foam.  
 And in the "briny sea;"  
 I'm also in the "ocean's crest,"  
 And in the "wind" I'll be.

My **WHOLE**, 'tis true, my **SECONDS**,  
 And found, perhaps, let's see;  
 In Canada at certain times,  
 When **FIRST** lies on the lea.

My **WHOLE** again is some one, who  
 With us her lot was cast;  
 But now, alas! forsaken,  
 Forgotten in the past.

Away out west you'll find her,  
 A puzzler, too, they say;  
 Who once in Canada did dwell,  
 But now in **I. O. A.**

FAIR BROTHER.

**6—ANAGRAM.**

The politicians now must pay,  
 Supplying all our need;  
 For now election day's come round,  
 We vote for "partial men."

A. HOWKINS.

**7—CROSS-WORD ENIGMA.**

We did as our cousin suggested,  
 We chose a **May-day Queen**,  
 A dais of **Fancy** we placed for her  
 On **Imagination's green**.  
 So kind and true, no wonder  
 She'd our love and honor claim;  
 The flowers that formed our crown for her  
 Enigmatically tell her name.  
 The "mignonette," sweet-scented,  
 "Tulips" and "snowballs," too,  
 "Pansies," emblems of faithfulness,  
 And "Iris," bright and blue;  
 "Clematis," clinging and climbing,  
 "Mayflowers," lowly and sweet,  
 With a spray of scarlet "geranium,"  
 And "rosemary," our crown is complete.  
 Fair **Queen**, accept the coronet  
 Our love has made for you,  
 And may each tiny blossom  
 Breathe our allegiance true.

ADA ARMAND.

**8—A RIDDLE.**

A little girl with a flock of geese was met by a man.  
 Said he,  
 "That's a fine flock of geese you've there, my dear.  
 How many may there be?"  
 The little girl looked slyly up, "Three chances I'll  
 give to you.  
 If you can guess how many I have, I will give to  
 you a clue.  
 If you had as many, and half as many, and two and  
 a-half. Do you see?  
 In all you would have twenty-five." How many  
 geese had she?

ADA ARMAND.

**9—CHARADE.**

Beneath the shade of a *sycamore tree*,  
 As the day was growing late,  
 I sat for my **elevation**.  
 Reading the **ADVOCATE**.  
 When my eye fell on the puzzles.  
 If I were **smart**, said I,  
 I'd **assay** to make an **enigma**  
 Or **charade**—well here I'll try.  
 A **TOTAL**, in the tree o'erhead  
 Heard the remarks I passed.  
 And jumping down beside me  
 Began to **FIRST ITS LAST**.

ADA ARMAND.

**Answers to May Puzzles.**

- 1—Pack my box with five dozen liquor jugs.  
 2—S L A N G S C A P E G R A C E  
 C O V E R  
 A R E N A C A P E R A C E  
 P A N I C  
 E R A S E A P E A C E
- 3—Sycamore  
 4—Smart, mart, art, rat,  
 tar.  
 5—When you're an anvil hold you still;  
 When you're an hammer strike your fill.  
 6—O  
 7—Marriage.  
 8—Elevation.  
 9—May-day.  
 10—Undertake.  
 11—Enigma.

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

Henry Wilson, Ed. A. Fairbrother, A. Howkins,  
 Dorothy Fox, Clara Rilance, Marv E. Woodworth,  
 Mattie Dolby Woodworth, Drusilla A. Fairbrother,  
 Mary Morrison, Elinor Moore, I. Irvine Devitt,  
 Morley T. Boss, A. R. Boss, Henry Reeve, Sarah  
 Moorhouse, John G. Wilson, Amy McPherson.

Floor-walker in a dry goods store to old man  
 —"Your wife sent you for dress trimmings, you  
 say. Do you want it loud?" Old man—"Yes,  
 I guess so; my old woman's pretty deaf." Floor  
 walker (to clerk)—"Barton, show him the bugle  
 trimming."

Give us, oh, give us the man who sings at  
 his work! Be his occupation what it may, he is  
 equal to any of those who follow the same pur-  
 suit in silent sullenness. He will do more in  
 the same time, he will do it better, he will perse-  
 vere longer. One is scarcely sensible of fatigue  
 while he marches to music. The very stars are  
 said to make harmony as they revolve in their  
 spheres. Wondrous is the strength of cheerfulness,  
 altogether past calculation its powers of  
 endurance. Efforts, to be permanently useful,  
 must be uniformly joyous, a spirit all sunshine,  
 graceful from very gladness, beautiful because  
 bright.—[Carlyle.

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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 bar-  
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 structions inserted until ordered out, and charged  
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 vertising medium to reach the farmers of Canada, ex-  
 ceeding in circulation the combined issues of all the  
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 Stallion and racehorse  
 will serve a limited number  
 of mares  
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 He being fashionably  
 bred, good size and ex-  
 cellent quality, should  
 be sufficient guarantee that his produce will be the  
 right sort.  
**TERMS.**—\$12 for the season; return privilege  
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IS not only a distressing complaint, of  
 itself, but, by causing the blood to  
 become depraved and the system en-  
 feebled, is the parent of innumerable  
 maladies. That **Ayer's Sarsaparilla**  
 is the best cure for Indigestion, even  
 when complicated with Liver Complaint,  
 is proved by the following testimony  
 from Mrs. Joseph Lake, of Brockway  
 Centre, Mich.:—

"Liver complaint and indigestion  
 made my life a burden and came near  
 ending my existence. For more than  
 four years I suffered untold agony, was  
 reduced almost to a skeleton, and hardly  
 had strength to drag myself about. All  
 kinds of food distressed me, and only  
 the most delicate could be digested at  
 all. Within the time mentioned several  
 physicians treated me without giving re-  
 lief. Nothing that I took seemed to do  
 any permanent good until I commenced  
 the use of **Ayer's Sarsaparilla**, which  
 has produced wonderful results. Soon  
 after commencing to take the **Sarsapa-  
 rilla** I could see an improvement in my  
 condition. My appetite began to return  
 and with it came the ability to digest  
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 proved each day, and after a few  
 months of faithful attention to your  
 directions, I found myself a well  
 woman, able to attend to all household  
 duties. The medicine has given me a  
 new lease of life."

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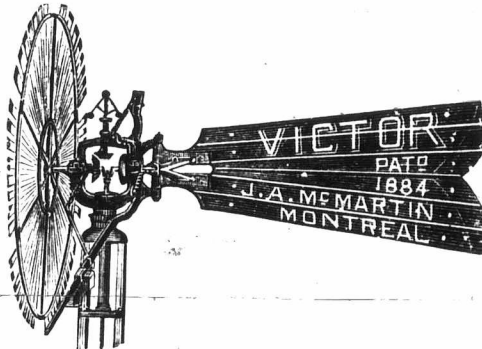
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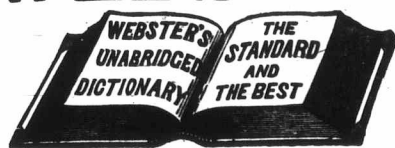
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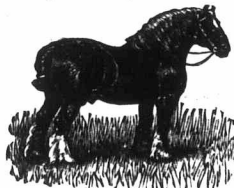
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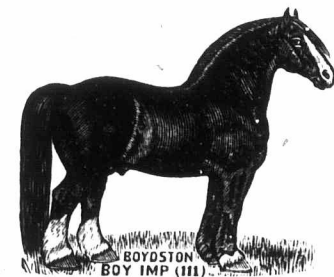
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We have a choice selection of Imported Stallions and Mares always on hand. Having a partner resident in England our expenses are very light, and we are able to sell at figures 25 per cent. lower than any other importers.

Also Pure-bred Shropshires, Imported and Canadian-bred; all registered. **ORMSBY & CHAPMAN,** The Grange Farm, Springfield-on-the-Credit, Ont. Stations—Streetsville, on the C. P. R., and Pt. Credit, on G. W. R. 285-y

**Improved Yorkshire Pigs.**

We were the first importers of pedigreed Yorkshires in Canada. All our stock is registered, and our motto is, "A good pig with a straight pedigree at a fair price." Our terms are, "Satisfaction guaranteed or money refunded."

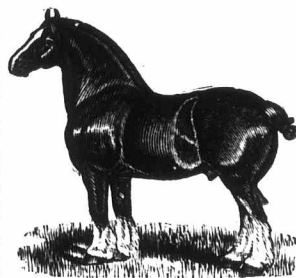
**JOHN S. ROBSON,**  
**Thorndale Stock Farm,**  
 MANITOU, MAN.  
 Breeder and Importer of Clydesdales and Shorthorns.  
 Young animals for sale. Satisfaction guaranteed. 285-y

**ROBT. NESS, Woodside Farm**

—IMPORTER AND BREEDER OF—

**CLYDESDALES, SHIRES, SHETLANDS, AYRSHIRE CATTLE**

The eleventh yearly importation consists of some of the best specimens of the several breeds. Clydesdales from such noted sires as McGregor (1487), Crown Royal (4315), Top Gallant (1850), Macfarlane (2988), Macbeth (3817), Sir Hildebrand (4024), Golden Guinea (2860), Old Times (579), Good Hope (1679), Knight of Snowden (2212). The stock is selected by myself with great care. Intending purchasers are invited to inspect.



The farm is situated 40 miles south-west of Montreal, on the G. T. R., and 100 miles east of Ottawa, by C. A. R. Howick Station on the farm.

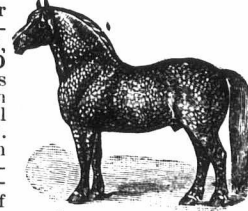
**ROBERT NESS, HOWICK P.O., Que.**  
 291-y-OM  
 Visitors always welcome.

**LA COMPAGNIE DU HARAS NATIONAL**

30 St. James St., Montreal, Canada.

FOURTH IMPORTATION JUST RECEIVED FROM FRANCE  
 —36 HORSES—

Stable, Outremont near Montreal. Medavy breeding and sale farm, Perche, France. **SPLendid PERCHERONS** (stallions and mares), French Coach Horses (Normans), all with first-class pedigrees.



Our connections in France enable us to import cheaper than anyone else. For terms of sale and for our catalogue apply to the office.

**HON. L. BEAUBIEN,** President, Montreal, Canada.  
**BARON E. DE MANDAT GRANCEY,** Vice-President, 5 Av. Flandre, Paris, France.  
**R. AUZIAS-TURENNE,** Manager. 289-y

**300 PERCHERONS, 100 FRENCH COACHERS**

Comprising my importations for 1889, are now on exhibition at

**ELLWOOD'S RANCH,**  
DeKalb, Illinois.

This collection embraces all the First and Second Premium Stallions (with one exception); the First Premium for best Collection of Stallions; a majority of First and Second Premium Mares; shown at the greatest of all Percheron Shows, held at La Ferte Bernard, from May 29, to June 2, 1889.

The quality of this stock is guaranteed superior to any importation that ever crossed the water. In addition to the superior Draft animals which have ever characterized my selections, particular attention has been given to the selection of Coach Stallions, which is the largest ever brought from France by any importer. Conspicuous among this lot is the selection made from the famous stable of Edward de-la-Ville, being the only party that was willing to pay the price that would bring the quality of horses handled by Mr. de-la-Ville to this country, he having been the recipient of more show ring honors than any other owner of Coach horses in Normandy. It will be to the interest of intending purchasers to make a careful examination of quality and price before buying. I desire to impress upon my customers that, as heretofore, I was the first American buyer in France this season, and my selections are made from the leading Stud, and having the first choice of all of them, I spared no expense to secure the best. All stock fully guaranteed. Favorable prices and terms. For particulars, address,

**W. L. ELLWOOD, Proprietor,**  
 DeKalb, Illinois.

DeKalb is situated on C. & N. W. Ry. 58 miles west of Chicago. 288-y

**Pure-Bred Registered Clydesdales & Jerseys**  
 Bred from pure imported stock. Young stock for sale at farmers' prices. 293-y-OM  
**JOHN PULFER, Springvalley Farm, Brampton, Ont.**

**FOR SALE.** Five young Shorthorn Bulls, and a lot of Berkshire Pigs. These are all first-class animals. Send for catalogue and prices. **EDWARD JEFFS,** Bond Head, Ontario. 294-y-OM

**FOR SALE.**

Seven Scotch-bred Shorthorns, including the Cruickshank bull Endymion (52847); Pompador, a 16 months' bull, from Mina 11th; a 12 months' bull by Earl of Mar, dam Imp. Clementina. Cows and Heifers—Imp. Clementina, Mina 11th, Sunnyside Mina, Sunnyside Mina 2nd. 294-c-OM **GEO. THOMSON, Bright P.O., Ont.**

**Shorthorns for Sale.**

Bulls and heifers, sired by Laird of Kinellar, of the Campbell-Buchan Lassic family, from which we have some fine show animals, several prize takers at the Provincial Show, 1889.

**JAMES CRERAR,**  
 294-y-OM  
 SHAKESPEARE, ONT.

**D. ALEXANDER,**  
 Brigden, Lambton Co., Ontario.



My Shorthorn herd now consists chiefly of Imp. Lady Violet Lustre and seven of her daughters, and two daughters of Imp. Beauty 15th, almost all sired by one bull, and of one character, thick, and fine quality. Can furnish a splendid young herd at reasonable prices. Trains twice daily. Station one mile. 282-y

**DAVID BIRRELL, Greenwood, Ont.**

Breeder and Importer of First-class

Clydesdales, Cotswolds

—AND—  
 Scotch Shorthorns.

**YOUNG and BREEDING STOCK for SALE** at prices to suit the times. A call or correspondence solicited. Pickering is my station on the G. T. R., and Claremont on C. P. R. 286-y

**FOR SALE,**

A few Shorthorn and high grade heifers and cows, bred to Silver King 4th, a grand son of (Imp.) 4th Duke of Clarence, so long in use at Bow Park. Good colors and pedigrees. Also a few choice registered Berkshires, male and female, six months old. Leicester and Southdown sheep. Prices to suit the times. Correspondence promptly answered. **R. RIVERS & SON, Springhill Farm,** Walkerton, Ont. 293-y-OM

**GREAT CLEARING SALE OF THE CELEBRATED BREEZE LAWN STOCK FARM HERD OF****SHORTHORN CATTLE, SOUTHDOWN SHEEP AND BERKSHIRE HOGS.**

Owing to a change in business, we now offer sale all our prize-winning Shorthorns, Southdowns and Berkshires, and their produce at our farm, at Souris (Plum Creek), Man. Sale to commence from this date, and to continue until all our stock are sold. This is a splendid opportunity of securing show stock, as all must be sold. Catalogues now ready, for which apply to

**SHARMAN & SHARMAN,**  
 284-y  
 SOURIS (PLUM CREEK), MAN.

**SYLVAN HERD**

—OF—  
**SHORTHORN CATTLE.**

TWO YOUNG BULLS AND FOUR YOUNG COWS FOR SALE

**R. & S. NICHOLSON,**  
 283-y  
 SYLVAN, ONT.



**A GREAT BARGAIN!**

Twenty-eight Shorthorns for what nine Scotch Heifers cost; seven still in herd.

Send for Catalogue.  
**JOSEPH REDMOND,**  
291-1f-OM  
ELM GROVE, PETERBORO.

**JOHN MILLER & SONS**  
Brougham, Ont.



Extensive breeders and importers of Clydesdales, Shorthorns and Shropshires. Business established in 1848. We always have on hand and for sale a large number of imported, and home-bred animals. A visit, or correspondence solicited.  
282-y

**SHORTHORNS**

—AND—

**COTSWOLDS**

FOR SALE.

My Shorthorns are well bred, good colors, and have been fine milkers for generations. I have over 100 females and a large number of bulls, from which buyers may select. Prices to suit the times. Satisfaction guaranteed. Correspondence promptly answered. Visitors welcome.

**JAMES GRAHAM,**  
279-y  
PORT PERRY, ONT.

**BOW PARK HERD**

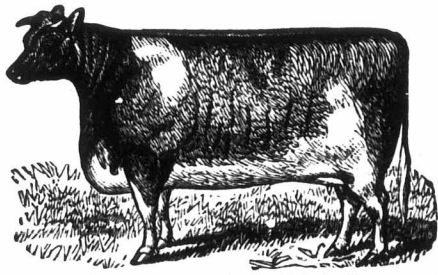
—OF—

**PURE-BRED SHORTHORNS.**

We have on hand Eighteen Young Bulls, fit for service, that we offer at reasonable prices and easy terms. They are good individuals, and well bred.  
ADDRESS—

**JOHN HOPE, Manager,**  
290-y  
Bow Park, Brantford, Ont.

**ARTHUR JOHNSTON,**  
Greenwood, Ont.



I have for sale by far the best lot of young animals of both sex that I have ever offered. My yearlings are especially good; they are all by imported sires, and mostly out of imported dams. I have a number of excellent imported and home-bred Clydesdales of both sex for sale.

New Catalogues for 1890, will be ready by January, 20, 1890. Send for one.

My motto is, "No business no harm."

Greenwood P. O. and Telegraph Office, Clarendon Station, C. P. R., or Pickering Station on the G. T. R. Parties met at either station on shortest notice. Come and see them.  
289-1f

**H. & W. F. BOLLERT,**

Cassel, Ont.,

**HOLSTEIN-FRIESIANS,**

Comprising Aagie Barrington, Bonnie Queen, Jennie B. Trengie, Glenbourne and Gildergee families. Stock for sale. Railroad station, Tavistock, on G. T. R.  
294-y-OM



**NOW READY FOR SALE**

SEVEN CHOICE

**YOUNG BULLS**

Of the most approved Scotch breeding, all out of imported cows, and mostly sired by the imp. Secret bull, SUSEX (56625), bred by A. Cruickshank, Sittyton, Scotland. Also a few young cows and heifers. Catalogues on application.



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**PARK HILL HERD OF AYRSHIRES.**

This herd took all the first prizes in Quebec in 1887 and 1888, and in Ontario in 1889, in competition with all the leading herds. Young stock for sale, all of which is from the celebrated bull ROB ROY (3971), which is at the head of the herd.

**JAMES DRUMMOND,**  
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**Prize Winning Ayrshires for Sale.**



GURTA 4th (1181)

Mine is one of the largest and most successful show herds in Canada. They are finely bred and of great individual merit. Bulls, heifers and cows always on hand for sale; also a few good Leicester sheep. Correspondence solicited. Visitors welcome. Address

**THOS. GUY,**  
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Sydenham Farm, Oshawa, Ont.

**R. J. MACKIE,**

Springdale Farm,  
OSHAWA, - ONTARIO,

Breeder & Importer  
of Pure Bred

**HEREFORD CATTLE**

Forty first-class animals, of various ages, for sale.

An inspection solicited.  
287-y



COMMODORE 32943.  
AT 18 MONTHS.

**HILLHURST HERDS**

**ABERDEEN, ANGUS, HEREFORD,**

—AND—

**A. J. C. C. JERSEY CATTLE.**

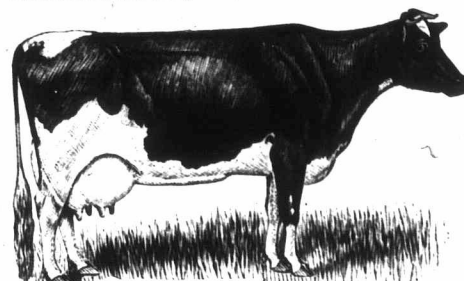
Choice Young Bulls and Heifers of the above breeds for sale at moderate prices at all times. A few fine, young Hereford Bulls, by Cassio, at low prices if taken at once.

**M. H. COCHRANE,**  
286-y  
HILLHURST P. O., Compton Co., Q.

**Credit Valley Stock Farm,**

**SMITH BROS.,**

CHURCHVILLE, PEEL COUNTY, ONT.



MINK (402).

The great butter and milk herd of pure-bred, registered HOLSTEIN-FRIESIAN CATTLE. Most first prizes at Provincial and Industrial Exhibitions, 1888, 1889. Best strains; 75 head in herd; prices low for quality of stock. Send for catalogue. 291-y-OM

**HOLSTEIN-FRIESIANS**

The Choicest and most Uniform Herd in Canada.



Telegraph and Post Office, New Dundee, Waterloo Co., Peterburg Station, on G. T. R. Send for our new catalogue.

**A. C. HALLMAN & CO.**  
294-y-OM

**JERSEY BULLS.**

**GUY FAWKES**—Solid Fawn; two years; a model Jersey; first prize Peel Co. 1888-89; quiet; sure.

**OLIVER TWIST**—Ten months; solid fawn; by pure St. Helier bull, out of first prize cow.

Both registered. Prices reasonable.

Also a few yearling heifers in calf and heifer calves, pure bred, unregistered.

**J. C. SNELL,**  
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**CHOICE**

**Jerseys for Sale.**

All ages and sex, of best milk and butter strains, St. Lambert blood prevailing. This herd has won sixteen medals (gold, silver and bronze), one hundred and forty prizes in money, several diplomas, many discretionary prizes, solid silver cup at Kellogg's New York sale, for best prices on five head, silver tea set donated by FARMER'S ADVOCATE at London, 1889, for three best dairy cows of any breed.

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Brookville, Ontario, Canada.  
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**St. Anne's Herd Jerseys.**

FOR SALE,

**PURE ST. LAMBERT A.J.C.C. BULLS**

Silver Hugo of St. Anne's 19313, four years old, solid color.

United Hugo of St. Anne's 19320, two and one-half years old, almost solid.

Hugo Banff of St. Anne's 19319, two and one-half years old, almost solid.

Micado of St. Anne's 19314, three years old, solid color.

Gipse's Hugo of St. Anne's 2709, two years old, almost solid.

Norwood of St. Anne's 2312, twenty months old, solid color.

I intend to pull down the building which the above lot occupy to rebuild on the same site. I will sell them at from \$100 to \$120 each if taken within twenty days. They are all pure St. Lambert, deep in the blood element of Mary Anne of St. Lambert, and are grandly bred. This is a chance never to be had again. Apply to

**WM. A. REBURN,**  
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STE. ANNE DE BELLEVUE, P. Q.



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Three yearling Ayrshire bulls imported in dams; also six bull calves, sired by our imported bull Royal Chief, out of imported dams.

**DAVID MORTON & SONS,**  
294-a-OM HAMILTON, ONT.

### FOR GOOD HEREFORD CATTLE

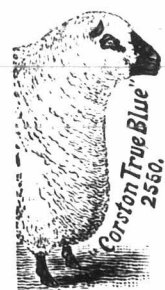
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Address, **WESTON P. O., ONT.,**  
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Mention this paper. 292-y-OM

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This flock has won numerous prizes in England for the last twenty years, besides America, France and Africa. Has been established over seventy years. Several of the best flocks in England started from this flock thirty years back. Sheep always for sale.

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### SHROPSHIRE SHEEP

**DAVID BUTTAR,**  
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Has taken all the principal prizes in Scotland for several years. His sheep are of the purest blood, and carefully bred; every sheep eligible for registration. Pedigrees and prices on application. 294-y-OM

### SHROPSHIRE MY SPECIALTY.



I beg to lay before intending purchasers that my recent importation have proved themselves to be very prolific, fully realizing my expectations, as I have had a very heavy crop of lambs, all of which are by the most noted sires of recent years. Purchasers should inspect this stock before buying elsewhere.

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Seven miles south of London. 291-tf-OM

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I have a choice lot of young Berkshires, from two months old and upward, bred from my prize-winning imported stock. Pairs furnished not akin. 294-b-OM **GEORGE GREEN, Fairview, Ont.**

### A. FRANK & SONS, The Grange P. O.,

Ont., Cheltenham Station, C. P. and G. T. Railways. The Centennial - Sweepstakes herd of

**SUFFOLK PIGS,** being the oldest, largest, and most successful prize-winners in America. The boar I-am-First, at the head of this herd, is 17 months old and weighs 440 lbs.

**Thoroughbred Horses, Shorthorn Cattle** of the Cruickshank blood. Young bulls for sale, got by Baron Camperdown 1218, imp., (473-9) and Baron of the Grange 1894. Also

**Southdown Sheep** from Webb's and Coleman's stock. Young stock of all the above for sale. All orders promptly attended to. 294-y-OM

**SUFFOLK AND BERKSHIRE PIGS**  
From imported stock, \$6 each, \$10 pair. Address 293-y-OM **F. J. Ramsey, Dunnville, Ont.**

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I have now on hand a good selection of young Berkshires sired by the imported boar This-Is-Him, and from imported and Canadian bred sows of splendid breeding. Prices reasonable and registers furnished. 294-a **H. J. DAVIS, Box 290, Woodstock, Ont.**



### BERKSHIRES --AND-- LARGE YORKSHIRES A SPECIALTY.

We are now prepared to book orders for spring delivery pigs of the above breeds. Also for sale a few fall pigs, Ayrshire, Cattle, Shropshire and Southdown Sheep. Call or write for what you want. 287-y **W. H. & C. H. McNISH, Lyn, Ont.**

**Improved Yorkshire Hogs and Shropshire Sheep,** All bred from imported stock and registered. 293-y-OM **JAS. HALL, Edmonton, Ont.**

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All bred from imported stock and registered. Imported boar "Holywell Wonder II." heads the herd. 293-y-OM **JAMES FIELDS, Castle Hill Farm, ANCASTER, ONT.**

### Improved Large Yorkshire Pigs

From the strains of Sanders Spencer and F. Walker Jones, England. Registered young pigs for sale. Apply to **WILLIAM GODGER, Woodstock, Ont.** 293-y-OM

### Write At Once!

If you want something extra good in the line of **LARGE IMPROVED YORKSHIRE PIGS.**

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I have twenty choice sows to farrow this spring; have used six imported boars, so I am now ready to book orders for pairs or trios not akin. Pedigrees furnished; prices moderate; single rates by express. Mitchell Station and Telegraph Office. 293-y-OM

**Improved Large (White) Yorkshire Pigs and Scotch Shorthorns.**

Entire breeding stock of Yorkshires are imported; specially selected from stock of F. Walker-Jones and Sanders Spencer, Eng. Registered sows and boars supplied not akin. Shipped to order and guaranteed to be as described. **J. E. BRETHER, Burford, Brant Co., Ont.** 293-t-OM

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**SCOTCH SHORTHORNS,**

**SHIRE HORSES,** Improved Large (White) Yorkshire Pigs.

First importation of Yorkshires specially selected from the herd of F. Walker-Jones, Eng., whose herd won upwards of \$10,000 in prizes in 3 years. Second importation shortly expected. Orders now booked for young registered pigs. Shorthorns and Shire horses for sale. **GREEN BROS., INNEKIP, Oxford Co., Ont.** 292-y-OM

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Importers and Breeders of **Ohio Improved Chester White SWINE.**

ALSO **SUFFOLK & BERKSHIRE SWINE**  
We will have over one hundred pigs for spring trade, sired by four noted imported boars. Orders booked for spring pigs in pairs not akin. All breeding stock recorded. Correspondence solicited. Single rate by express. 286-y

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Importer and Breeder of **Ohio Improved Chester White Swine**

I have bred fourteen choice sows for spring trade; have used four imp. boars. Orders booked for spring pigs in pairs not akin. Pedigrees furnished. Prices right. Special rates by express. 282-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 COLLEGE, 419 Main-St., Buffalo, N. Y.** 287-y

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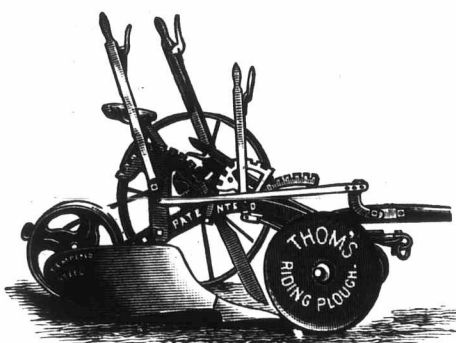
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YONGE ST.  
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The oldest and most reliable of its kind in the Dominion. All subjects pertaining to a business education thoroughly taught by able and experienced teachers.  
C. O'DEA, Secretary.

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A so-called "Webster's Unabridged Dictionary" is being offered to the public at a very low price. The body of the book, from A to Z, is a cheap reprint, page for page, of the edition of 1847, which was in its day, a valuable book, but in the progress of language for over FORTY YEARS, has been completely superseded. It is now reproduced, broken type, errors and all, by photo-lithograph process, is printed on cheap paper and flimsily bound. A brief comparison, page by page, between the reprint and the latest and enlarged edition, will show the great superiority of the latter. These reprints are as out of date as a last year's almanac. No honorable dealer will allow the buyer of such to suppose that he is getting the Webster which to-day is accepted as the Standard and THE BEST,—every copy of which bears our imprint as given below. If persons who have been induced to purchase the "Ancient Edition" by any misrepresentations will advise us of the facts, we will undertake to see that the seller is punished as he deserves. **G. & C. MERRIAM & CO. SPRINGFIELD, MASS.**



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**PATENTED.**  
The greatest improvement in Sulky Plows ever seen. We manufacture the Standard Walking Plows of the Dominion, Nos 4, 5, 7, 8 and 30; also the strongest and best working Twin Gang on the market. Farmers, ask for the Famous Watford Plows. None genuine unless stamped "Watford" on the handle, and "Famous" on the land side.  
**THOM'S IMPLEMENT WORKS, Watford, Ont.**  
Established 1875. Send for circulars. Agents wanted in unoccupied territory. 292-f

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Around Winnipeg, and in the best districts, on terms most favorable to actual settlers.

Write for Descriptive Catalogue and Price List, including map of the province.

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At lowest Current Rates of Interest, to enable Farmers to Purchase Land, Buy Stock, etc.

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## FARMS Joseph Pollard, Jr. LANDS

Washington, Iowa, U.S.  
has bargains in Iowa, Southern and Western States. 294-y-OM

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to canvass for the sale of our Home-grown NURSERY Stock  
**Unequaled facilities.** One of the largest, oldest-established, and best known Nurseries in the country.  
Address **W. & T. SMITH, Geneva Nursery,** Geneva, N. Y.  
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**FOUST'S PATENT HAY LOADER, GRAND RAPIDS HAY TEDDER**

**WISCONSIN DEAD LOCK HAY CARRIER AND FORK,**

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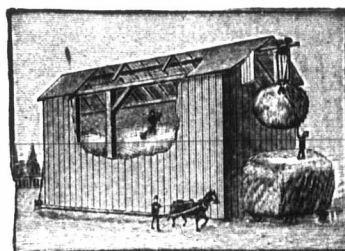
The above mentioned implements are the most popular Haying Tools in the market. Send for descriptions and prices.

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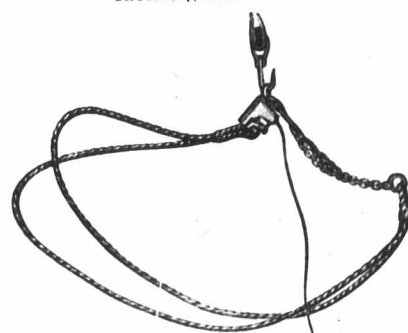
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HAMILTON, - ONT.  
294-a-OM

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For unloading hay and all kinds of loose grain.



Unloads on either side of barn floor without changing car. No climbing necessary. Malleable Iron Cars. Steel Forks. Knot Passing Pulleys. Will work on stacks as well as in barns. Satisfaction guaranteed.



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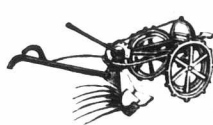
Works in connection with Pitching Machine, and is the most complete apparatus ever offered to the public for pitching sheaves. Sheaves left in the most just as they come from the load.

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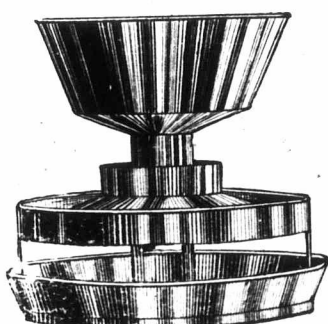
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294-c-OM

**LONDON P. O., ONT.**

## Dairymen, Attention!



### Thomson's Milk Aerator!

PATENTED 1888.

#### EVERY CHEESEMAKER

Knows the necessity of the thorough aeration of milk. This Aerator works automatically, strains and aerates the milk on the milk stand or in the wagon or any other place required. When milking is finished the milk is in the finest condition for making a first-class article of cheese. Endorsed by the best dairymen in the Dominion. All information, with circulars, testimonials, etc., sent free on application to

**ALEX. THOMSON, General Agent, Gaintown, Ont.**

Right for sale for Manitoba and the Northwest. Agents wanted in every county in the Dominion. 294-d-OM



**ARE YOU PAINTING THIS SPRING ?**

—BUY—

**JOHNSON'S  
PURE · LIQUID · PAINTS**

DURABLE PAINTS.

BEAUTIFUL PAINTS.

READY TO APPLY.

**No Mixing. No Difficulty About Getting the Right Shade. Always the Same.**

Genuine Old Fashioned Paints  
Covering capacity equal  
To pure white lead and linseed  
Oil. They will last longer,  
Look better, work easier, and  
Give better satisfaction.

**WE GUARANTEE**

That Johnson's Liquid Paints will cover a similar surface as well as Pure White Lead and Linseed Oil. They will look better, work easier and give greater satisfaction.

**THE WILLIAM JOHNSON CO., Montreal.**  
(INCORPORATED.)

Good results can only be  
Procured by the use of  
Good materials. The main  
Expense in painting is  
Not the cost of the paint, but the  
Cost of labor and oil.

It costs more labor and more oil to apply inferior paint than to apply the best that can be obtained. We will repaint, free of charge, any building or decoration painted with Johnson's Liquid Paints, where results are not in accordance with the guarantee.

**WE STAKE OUR REPUTATION ON THE QUALITY OF OUR GOODS.**

FOR SALE EVERYWHERE.

**THE WILLIAM JOHNSON CO.**  
MONTREAL, CANADA.





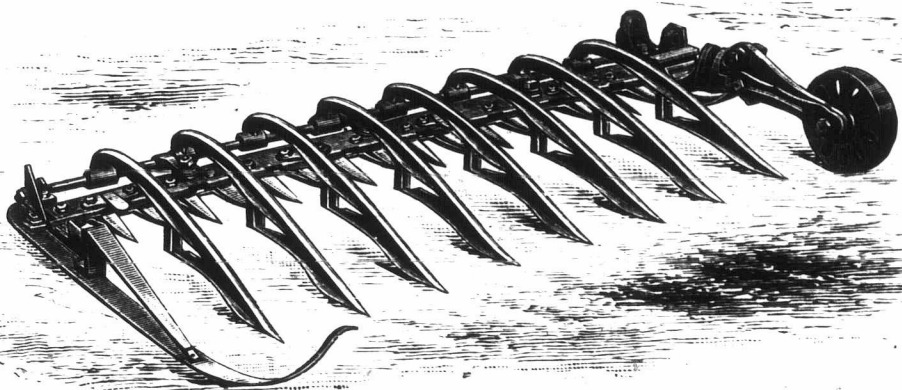
BAIN WAGON CO.'S  
**FARM TRUCK**

THIS cut represents the most convenient Wagon ever put on a farm, because it is suitable for all kind of work, and always ready, no changes being necessary.  
THIS WAGON was invented and first introduced in Michigan, U. S., and is now very extensively used by leading farmers in the United States.  
AND EVERY WAGON made and sold by us in Canada is giving entire satisfaction. For further particulars and prices.

288-1f

Address BAIN WAGON CO., Woodstock, Ont.

**THE GENUINE TOLTON PEA HARVESTER.**



**THE MONARCH OF THE PEA FIELD.**

The most successful harvester manufactured, and the greatest labor-saving machine in use—harvesting from eight to ten acres per day in the most complete manner. It is endorsed by all first-class farmers who have this Harvester, to be as useful in the pea field as the mower is in the hay field. It can be attached to any mower bar, and has the only Vertically Acting Lifter, having a practically successful movement to suit the unevenness of the land, of which we are the Sole Manufacturers and Patentees.

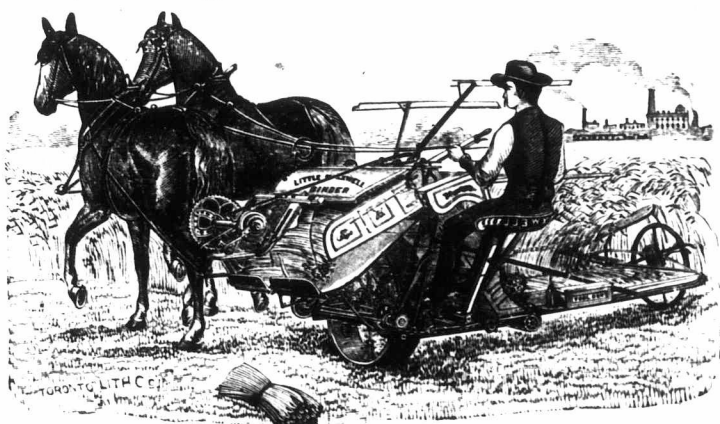
294-b-0

TOLTON BROS., Guelph, Ont.

**ST. MARY'S AGRICULTURAL WORKS.**

**Binders, Reapers, Mowers and Rakes**

Harvest is Coming.



Cut With Maxwell Machines.

**MAXWELL BINDER IN THE FIELD.**

The Maxwell Binder is the lightest in draft, the easiest operated, the most capacity, the strongest and best manufactured, and THE ONLY RIGHT HAND CUT. We are still making the well known and reliable Maxwell Reapers, Mowers and Rakes, and do you want any harvesting implement? See a Maxwell agent or send for our illustrated pamphlet, and do not fail to see a Maxwell machine before you buy.

DAVID MAXWELL & SONS,  
ST. MARYS, ONT.

294 a-0

**STOCK GOSSIP.**

In writing to advertisers please mention the Farmer's Advocate.

Messrs Sydney Barclay & Son, of Port Hope, have secured from the Greenwood herd of Mr. Arthur Johnston the very excellent young bull War Trumpet, a short-legged, deep-bodied, thick young bull, with plenty of substance, style and finish. He was sired by Imp. Warfare, and out of Fashion's Lavender, by Imp. Duke of Lavender.

E. R. Polehampton and C. French, Turo, N.S., have entered into partnership for the purpose of importing and breeding Improved Large Yorkshire swine. We have also a fine crop of Shropshire lambs, four prize-winning imported ewes and ram, all of which will be ready to offer for sale in August. They claim to be the first importers of these hogs in Nova Scotia or the Lower Province. They imported a pair last fall. Several fresh importations are now on their way from F. Walker Jones, England.

W. C. Edwards, M. P., Rockland, Ont., writes us:—We have a crop of 12 Scotch Shorthorn calves, among them six bull calves, all of which will be for sale. We have also a fine crop of Shropshire lambs, four prize-winning imported ewes and ram, all of which will be ready to offer for sale in August. Of our 20 Ayrshire cows nearly all have calved, and all are doing well, as well as all our other stock. Of our 1889 product of calves we have only one Ayrshire bull remaining for sale. Our late sales were one bull and two heifers to Mr. J. Lockie Wilson, Alexandria, Ont., one bull to Mr. John McLachlan, Lochaber, P. Q., and one bull to the Kent (N. B.) Agricultural Society.

R. & S. Nicholson, Sylvan, write:—Since last report we have made the following sales:—To T. I. Hobson, Mossboro, the Shorthorn bull 20th Duke of Sylvan, who took 2nd prize at London, 1st at Toronto, and 1st at Hamilton as a yearling last fall; to T. Crawford, Widdler, the 21st Duke of Sylvan, he took 2nd at Toronto and 1st at Hamilton as a calf; to W. Irwin, London, the bull calf 7th Crown Jewel, 2nd at Hamilton as a calf; to W. A. West, the heifer calf 18th Maid of Sylvan, she took 1st at Hamilton as a calf—these four won 1st prize at Toronto last fall as herd of calves—to A. Donald, Jericho, bull calf Brideman 14th, we consider this the best bull calf we raised last year; to David Waters & Bro., bull calf 22nd Duke of Sylvan, he sustains the high average of the preceding. When six calves of our year's crop will sell at an average price of \$123, and three having been sold before at a still better average, we think there is money in the business. The above were all sired by imported Warrior, and although we gave a high price for him, we consider it the best investment in stock we ever made. We have nineteen calves to date without a single loss. The two bulls advertised in this issue are fully up to the average, but will be sold very much cheaper to make a complete clearance. We also sold to Frank McIlhargey the pure bred sow Josephine for a good price; she goes to Pinnebo, Mich.

H. George & Sons Crampton, Ont., write us:—They have been very successful at the Spring Stallion Shows with their imported Shire stallion Lenox, No. 7574, rising three years old, having won first at Belmont for the best heavy draught stallion three years old, and sweepstakes for the best draught stallion any age; also first at Ingersoll in a class were five imported Clydesdale stallions showed. Lenox weighs now 1,725 lbs. They also write us that since our last issue they have made the following sales of imported Chester White and Berkshire swine:—One pair of Chesters and one pair of Berkshires to the Model Farm, New Brunswick; one pair of Chesters to James Ruthe, Livingspring, Ont.; one Chester boar to John Hickbottom, Blythe, Ont.; one Chester boar to Wm. Q. West, Campbellcroft, Ont.; one pair of Chesters to Frank Night, Bridgen, Ont.; one Chester sow to C. High, Beamsville; one Chester boar to David Rudy, Tavistock; to Thomas O. Bowles, Springville, one Chester boar; to R. M. Brown, Cowanville, P. Q., one Chester sow; to Donald Jack, Newton, one Chester boar; to Wm. Hancock, Little Britain, one Chester boar; to G. D. Ellis, Thedford, one Berkshire boar; to David Doble, St. Augustine, P. Q., one Chester boar and two sows; to W. H. May, Trenton, one Chester sow.

J. E. Brethour, Oak Lodge, Burford, Ont., in a letter under date of May 21st, says:—I beg to enclose a list of stock notes and recent sales of live stock. My agent, in your paper keeps me busy replying to communications and inquiries for stock. My sales are as follows:—Shorthorns—Miles & Smith, Oakville, one cow and calf; Reginald Gray, Burford, two yearling heifers; Ontario Experimental Farm, Guelph, one yearling and one two-year-old heifer; Messrs. Green Bros., "The Glen," Immer- kip, two yearling heifers; Berkshire pigs, T. & J. McKenzie, Scotch Block, one sow; Wm. Thirlwall, Kentville, N. S., one sow; Abe Wilson, Walsh, one boar; Tobias Nash, Seaford, five boars and two sows; Wallace Tufts, Welland Station, one sow; John Allan, Clyde, one boar and two sows; Arthur Craig, Craighurst, one sow; Geo. Rath, Mitchell's Square, one boar; John Taylor, Ancaster, one boar; H. E. Southby, Haliburton, one boar; Improved Large White Yorkshires—John Kinney, Brantford, one boar and one sow; Duncan McEwin, Mohawk, one boar; P. J. McKee, Glanford, one sow; J. G. Tufford, Beamsville, one boar; E. W. Martin, Wexham, one boar. The demand for good stock has been very encouraging during this season, and the prospect for an increasing demand is very favorable. I am expecting during this month an importation from England of an Imp. L. W. Yorkshire boar and a few sows that are soon due to farrow. I have already "booked" a few orders, and inquiries are coming in with almost every mail.



## STOCK GOSSIP.

The Prize List for the Toronto Industrial Fair, which is to be held at Toronto from the 8th to the 20th of September next, has been issued. Those desiring copies can obtain them by dropping a post card to Mr. H. J. Hill, Manager and Secretary, Toronto.

We have just received from the Secretary, Mr. Mortimer Levering, of La Fayette, Ind., U. S., the fifth volume of the American Shropshire Record. Like all Mr. Levering's publications this volume is well printed and bound, and is nicely illustrated by lithographs of ideal Shropshire sheep. This is the largest volume ever issued by the Society; it contains the pedigrees of 6,283 Shropshire sheep. Every breeder of Shropshires should obtain copies of these volumes as issued.

Mr. Wm. Goodger, Woodstock, Ont., writes:—I find that the demand for Improved Large Yorkshires is constantly increasing. I like them exceedingly well for these reasons: 1. Because they are so docile and such good mothers. 2. They produce a large amount of meat for food consumed. 3. Their meat is very saleable, the fat and lean being in proper proportions. I have just sold to McKay Bros., Braemar, a fine young sow. I have also made arrangements to import from England early this summer another extra good sow.

H. J. Davis, Woodstock, has recently made the following sales:—To Messrs. H. & W. Scott, of East Oxford, the promising young bull Red Prince 1875, sired by Imp. Roan Prince, and dam Violet Arundel, sired by Imp. Lewis Arundel, and also the yearling heifer Verbena's Princess, got by Roan Prince, and dam Verbena the 19th, sired by Imp. Eclipse. The Messrs. Scott have been very successful feeders of high class cattle for a number of years. In Berkshires he has shipped to Mr. J. H. Holmes, of Norwich, Ont., a fine young boar and sow, which will give a good account of themselves later on.

Mr. J. R. Martin, of Cayuga, Ont., writes:—My herd of Durhams have gone through the winter very well. Notwithstanding the want of roots this season calves are making a good show. Sheep I am out of for the present. Am in expectation of an importation of Roscommon at an early date. Pigs, Improved Berks, in a very healthy condition. Horses looking splendid after a winter of idleness, which I will send advertisement when duly fixed. I am preparing for an importation of Kerry Dealers, which I trust will prove only second to the Durhams, their milking qualities being A1, and though small, are excellent milkers, good fatteners, and the genuine poor man's cow.

Mr. Arthur Johnston, of Greenwood, writes to say:—All kinds of farmer's store stock, excepting horses, are exceedingly high, probably the highest ever known in this country. Young Shorthorn bulls, good enough to head pure bred herds, have been in brisk demand, but breeders have not been able to maintain former prices. Nearly all young bulls fit for service have been sold. There have been quite as many enquiries for females as in former years, but not so many sales. Stallions are not in as active demand as they have been in former years. Registered mares are also somewhat duller than formerly. Ordinary useful work horses have been absolutely a drug in the market. Shorthorn herds in these parts are looking extra well, as well as they have looked for years past. I have still a few young bulls fit for service. Send for my catalogue.

Dr. J. D. O'Neil, of this city, has recently purchased the thoroughbred three-year-old stallion Gold Fox. This horse deserves more than passing notice with those interested in horse breeding, being a dark chestnut almost free from white, standing fully sixteen hands, with extra good feet, with a capital set of legs under him, with good bone, exceedingly well muscled thigh and forearm. He is very promising as a sire of horses for wear. He carries plenty of carcass, appears perfectly well-mannered, and should prove quite an acquisition to breeders in this vicinity. The thoroughbred cross is becoming more and more popular. The class of horses that this breeding produces is now selling exceedingly well, and wherever mares of nice quality and good size are owned, this way of breeding them will be fruitful in good results, not only for saddle horses of the different sorts, but the cross lays a good foundation for breeding in any line of road and carriage, as it is certain to produce quality and give good staying power, most essential points in this line.

Too late for an extended notice here, in next issue we will give a more detailed account of the herds mentioned below:—

The Messrs. Bollert, Cassel, Ont., have a large choice in Holstein-Friesian cattle. See new advertisement page 193.

Those on the lookout for dairy cattle of the Holstein-Friesian sort, should note the advertisement of A. C. Hallman & Co., New Dundee. See page 193.

Attention is called to the advertisement of Mr. James Cretar, page 192, who has some choice Shorthorns for sale.

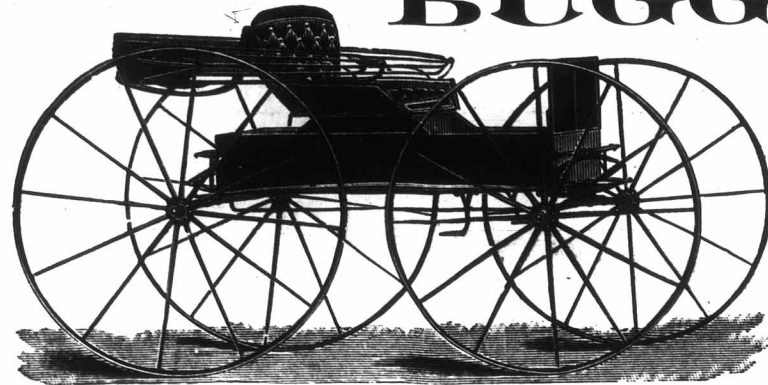
Those looking for a first class stock farm, should read advertisement of Mr. Robert Ballantyne, Sebringville. Page 191.

Some very choice Shorthorn bulls and cows are for sale by Mr. Geo. Thomson, Bright. See page 192.

Berkshires of the right quality are kept on hand by Mr. Geo. Green, Fairview. See page 194.

Among our oldest manufacturers of agricultural machinery is the firm of David Maxwell & Son, St. Marys, Ont. Their binder is well spoken of by those using it. See page 197.

## BUGGIES



We make a specialty of  
**PIANO BOX  
TOP BUGGIES**  
specially adapted for  
farmers' use.

Our output for 1888 was  
over 1000.

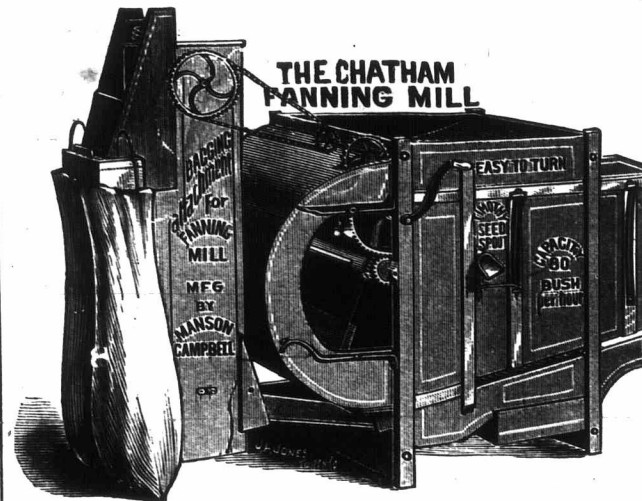
Agricultural agents will  
find it to their advantage  
to send for Catalogue  
and Price List.  
All work is guaranteed.

**B. J. NASH & CO.,**

We sell only to the trade.

294-e

111 YORK ST., LONDON, ONT.

THE CHATHAM FANNING MILL  
FOR 1890,

Has some valuable improvements,  
and the following sales show that it  
still takes the lead in all parts of  
Canada. An order has been booked  
this month for sixty-five mills and  
baggers to go to London, England.

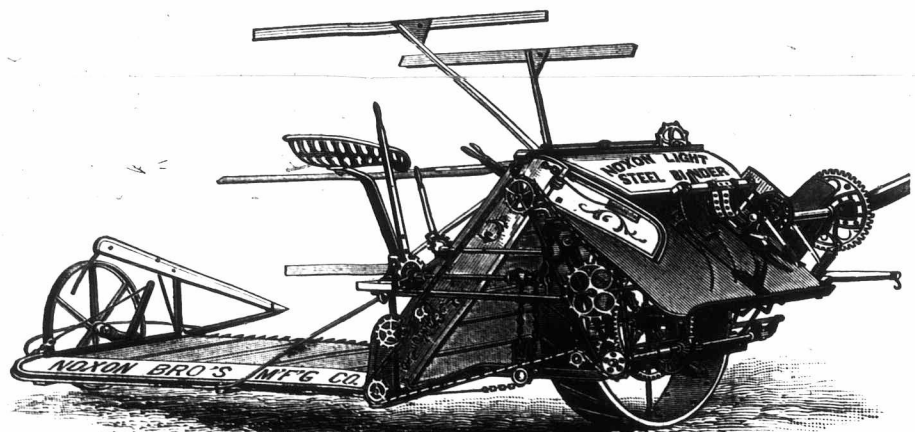
|                          |
|--------------------------|
| 2,000 MILLS SOLD IN 1886 |
| 2,300 " " " 1887         |
| 2,500 " " " 1888         |

3,600 Mills and 1,500 Baggings  
Attachments sold in 1889.

More than three times as many as  
have been sold by any other factory  
in Canada.  
The Bagger is now run with chain  
belt that will not slip.  
My new Patented Attachment for  
taking clay out of beans works first-  
class. For full particulars apply to

**Manson Campbell,**  
293-a-OM CHATHAM, ONT.

## The Noxon Light Steel Harvester and Binder.



## SUPERIOR TO ALL OTHERS IN THE FOLLOWING POINTS:

- BEST SHAPE OF FINGER BAR for low cutting.
- A SIMPLE, STRONG, DURABLE DRIVING GEAR.
- A LIGHT, STRONG GRAIN DIVIDER made of flanged steel.
- A FLANGED STEEL FRAME in a single piece, light and strong.
- ENTIRE ELEVATOR FRAME MADE OF FLANGED STEEL.
- TABLE FRAME OF FLANGED STEEL in one piece with strong, simple connections.
- A DRIVE WHEEL SIMPLE IN CONSTRUCTION, large, durable, and neat in appearance.
- POWERFUL CUTTING APPARATUS with direct Pitman connection.
- BOTH ENDS OF MACHINE RAISED OR LOWERED BY DRIVER without leaving his seat.
- CONVENIENT ARRANGEMENT for adjusting machine to suit variations in crop.
- THE LIGHTEST BINDING PART AND SIMPLEST KNOTTER ever produced.
- A KNOTTER THAT POSITIVELY SAVES from two to four inches of twine for every bundle.
- FOUR DISCHARGE ARMS, making perfect separation and delivery of sheaf.
- A MACHINE OF LIGHT DRAFT, easy to operate, and contains fewer parts than any other.

289-f-0

**NOXON BRO'S M'F'G Co. (Ltd.), Ingersoll, Ont.**

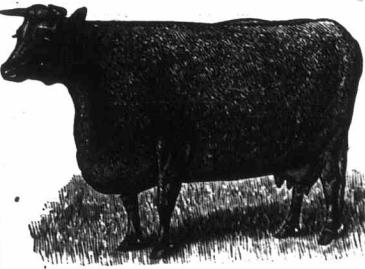


**DR. CARVER 7369, Rideau Stock Farm PALM LEAF 7634,**  
 two-year-old record 2.40.  
 KINGSTON, ONT.  
 Standard-bred Trotting Horses,  
 Registered Holstein (H.F.H.B.)  
 and Jersey Cattle (A.J.C.C.)  
 YOUNG STOCK FOR SALE.  
 F. A. Folger, Box 579. Send for catalogue.

**H. CARGILL & SON,**  
 CARGILL, ONT.,  
 BREEDERS OF SCOTCH-BRED

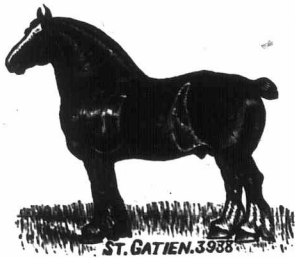
**Shorthorn Cattle!**

With Campbell, of Kinellar, bull, imp. Albert Victor, at the head of the herd; also several imp. Urvs, also bred at Kinellar, and a daughter, and grand daughters of the sweepstakes cow Rose of Strathallan 2nd, and other useful sorts. A nice lot now on hand for sale. 283-y-OM



**Imported Clydesdale Stallions and Mares for Sale.**

Highest Prize Winners in the Leading Shows of Scotland and Canada,  
 AND THE GET OF FAMOUS SIRES

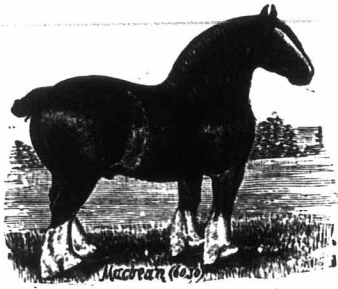


Such as Lord Erskine, Darnley, Old Times, McCammon, Prince Lawrence, Lord Hopton, Bold Magee, Sir Wyndham, Good Hope and Fireaway.

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. 289-y

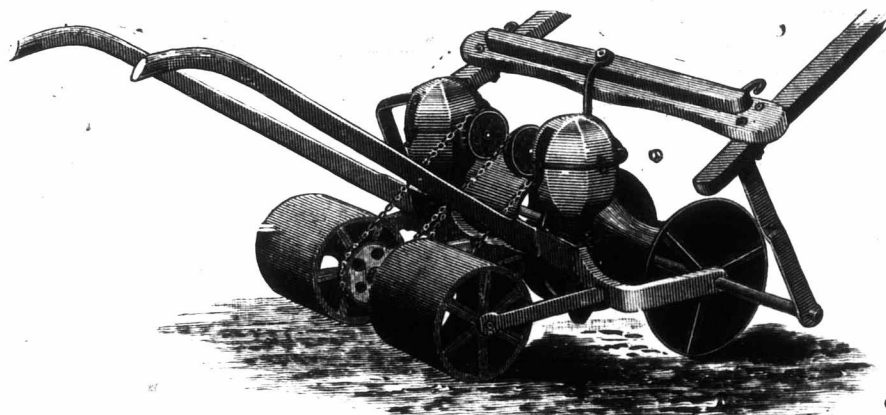


IMPORTED AND REGISTERED  
**CLYDESDALE AND HACKNEY**  
 STALLIONS AND MARES

Constantly on hand, and For Sale at Reasonable Terms.

Our last importations 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 BROTHERS**  
 Twenty-five miles east of Toronto, on the C. P. R. 289-y CLAREMONT, ONT.



**TURNIP SEED DRILLS**

Sows two rows at once at any required depth.

**LAND ROLLERS**

With two large, wooden rollers, having iron ends, and rolling eight feet of land, frame and drums made of seasoned oak.

**MOWERS**

With all the latest improvements.

**PLOWS OF ALL KINDS**

ETC., ETC., ETC.

MANUFACTURED BY  
**THE GOWDY MFG. CO., GUELPH, ONT.**

SEND FOR CATALOGUE.

**STOCK GOSSIP.**

In a recent letter, James Tolton, Walkerton, Ont., says:—At present it is our intention for my son, Henry R. Tolton, to go to England with a view of importing Oxford sheep; if found advantageous, will import quite a number of both sexes. He will start about the first of June, returning about the middle of July.

Since our last issue Mr. W. H. Beattie, Wilton Grove, Ont., W. S. Hawkshaw, Glanworth, Ont., and David Dale, Glencoe, Ont., called for England, the two former to select and import Shropshire sheep. Mr. Dale has gone specially for Southdowns. These gentlemen expect to buy sheep of very high merit both in breeding and quality.

Mr. John Jackson, Abingdon, Ont., intends to import Southdowns from England this season. He reports his flock as doing well, with sales satisfactorily. Every one of our readers should read his letter on the Messrs. Dryden-Snell controversy, viz., "Quality vs. Quantity." Mr. Jackson is one of Canada's most successful breeders.

T. W. Evans, Yelverton P. O., Ont., wrote us as follows since last issue:—I sail on Wednesday, the 20th, by the Donaldson steamer Concordia, for Glasgow, for the purpose of returning, I hope, with a very choice selection of Clyde stallions and fillies, that will not only do us credit in our show rings in the near future, but will make a further and marked impression on the stock of our country. I have been successful in disposing of my last importation, there remaining only a superior prize-winning stallion, rising three years old, Jubilee Sovereign, Vol. XI., B. C. S. B., and the grand filly Paisley Gem (978), winner of the Paisley Derby.

Under date of May 14th, Mr. J. L. Campbell, Simcoe, says:—I have sold the bull advertised in the May number of the ADVOCATE to Mr. J. R. Martin, of Cayuga, and Mr. Martin has an animal he may be proud of. I had intended importing a few Oxford Down sheep this year, but have got such nice looking lambs this spring that I have decided to wait another year before infusing new blood. I am obliged to make an addition to my barns this year to provide accommodation for a number of young road and carriage horses that are coming in, and intend this year breeding all my mares to thoroughbred sires, to meet the increasing demand for saddle horses.

Mr. Wm. A. Reburn, proprietor of the noted St. Anne's Herd Jerseys, which are kept at his farm near Ste. Anne de Bellevue, P. Q., writes us as follows under date of May 19th:—Enclosed please find copy of ad. for your paper for June issue. Kindly place it in a favorable place, so that it will be noticed at once, as I wish to make quick sales. My herd—seventy-seven in all—have wintered nicely. Jolie of St. Lambert, the sweepstake champion milch cow, is due in August. Her daughters, Jolie of St. Lambert 3rd, 4th, 5th and 6th, all bid fair to equal their dam. Jolie 5th will, I think, excel her. She calved last month, and is milking well; has a large well-formed udder similar to old Jolie. See his advertisement in other columns.

The Bollert Bros., of Cassel, write:—That the demand for Holsteins is better than ever, this spring. They, during the last few weeks, sold three fine young bulls. One goes to Mr. A. E. Plumer, of Waterville, N. B., and the others to Wm. Forrest, Jamestown, Ont., and Mr. Geo. Green, Oxford Centre, Ont. Both these latter gentlemen have used Holstein bulls for several years, and are now getting fine grade herds. They also sold a fine young cow to Mr. Thos. Thompson, Iron Bridge, Algona. The young bull shipped some time ago to Mr. N. H. Meagher, Q. C., Halifax, N. S., gave good satisfaction. Mr. Meagher expresses himself thus:—"From what I have seen of him he far exceeds your representation regarding him." They also purchased the fine imported cow Heimke from Mr. B. B. Lord, of Sinclairville, N. Y. This they claim to be the best Holstein cow ever brought to Canada.

**NOTICES.**

We have received from Mr. J. D. Warde, of the Provincial Secretary's office, Toronto, Ont., a copy of his work, entitled "Joint Stock Companies' Manual." On perusal we find it a valuable work, a copy of which should be in the library of every business man, particularly those interested in joint stock companies.

The Dominion Illustrated is a handsome illustrated weekly paper, published in Montreal, P. Q., by The Dominion Illustrated Publishing Company. It contains much valuable reading. The illustrations—all purely Canadian—are very entertaining and instructive. It is undoubtedly the best paper of the kind published in Canada.

W. R. Callaghan, District Passenger Agent, Toronto, Winnipeg, May 27. Reports just in from sections of country to Regina, Moosomin, Glenboro, Plum rock, Deloraine and Brandon showing an increase of about twenty per cent. in acreage under crop. Farmers in good spirits over prospects for large yield. Grain well rooted and promises for good crop could not be better. —L. A. HAMILTON.

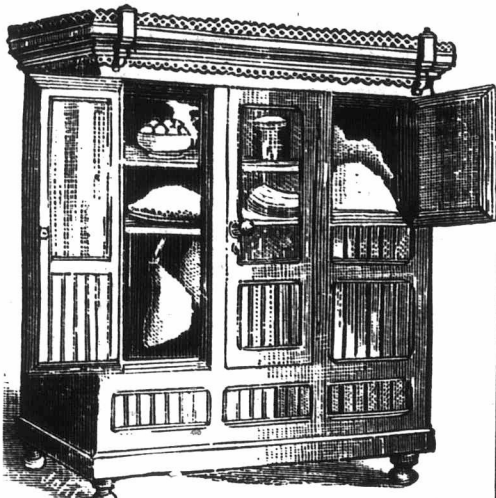
We are pleased to announce to our readers that Messrs. Geo. White & Sons, of the Forest City Machine Works of this city, have recently purchased, and added to the adjoining premises to their already large establishment. This will give them fully one-half more room, which they have greatly needed for some time. The White engines are well and favorably known from the Atlantic to the Pacific. Every engine, before leaving the shops, is thoroughly tested by some one of the firm, who are all practical machinists.





**DRS. ANDERSON & BATES**, Surgeons of the Eye, Ear, Throat and Nose, 34 North James St., Hamilton, and 17 Grange Road, Toronto. Sole agents for Prof. North's Earphone for the incurable deaf. 284-y

**AUTOMATIC REFRIGERATOR COMPANY,**  
—MANUFACTURERS OF—  
**HANRAHAN'S PATENT REFRIGERATOR.**

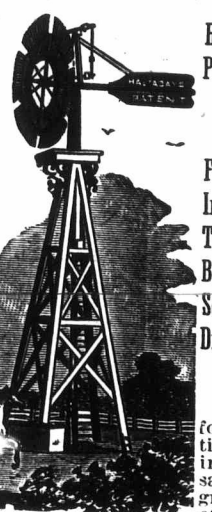


Specially adapted for the preservation of fresh meats, fish, milk, butter and other perishable articles. A thorough circulation of dry, cold air. No one article will take taste from another. All are kept in the same chamber. For full particulars write 333-335 Wellington St., Ottawa, Canada. Toronto Branch: Office and Warehouse, 70 King St. West. Montreal Branch: Office and Warehouse, 1749 Notre-Dame St. 293-c-OM

**HALLADAY STANDARD WINDMILLS**

For supplying constantly pure and fresh water for the following purposes, viz.:-

- Pumping Water For Stock,
- Farm Buildings
- Mansions,
- Villa Residences,
- Public Institutions,
- Gardens,
- Green Houses,
- Town & Village Water-works,
- Hotels, Colleges
- Pumping for Railway Stations,
- Fire Protection,
- Irrigation,
- Tanneries,
- Breweries,
- Sewage, Mines, Draining
- Low Lands.



These celebrated Windmills are made from one man to forty horse-power. They are perfectly controllable in gales, and uniform in speed. Catalogue and Price Lists with references mailed free on application to

**ONTARIO PUMP CO.'Y,**  
TORONTO, - - ONTARIO. 279-y

**MICA ROOFING**

**USE Mica Roofing**

On all your Buildings.  
It is Cheaper than Shingles.  
Water Proof and Fire Proof.



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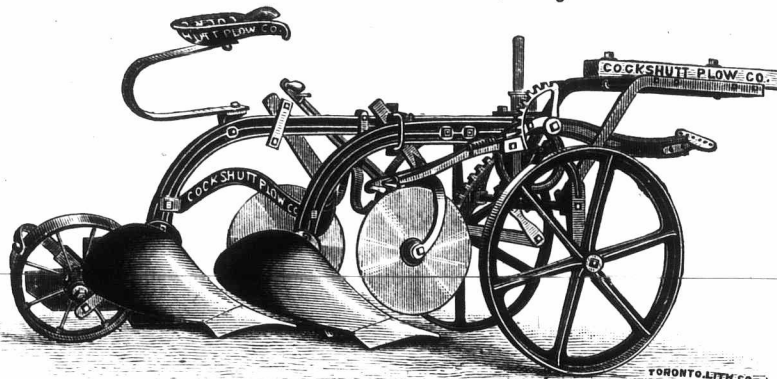
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