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THE FARMER'S ADVOCATE & HOME MAGAZINE

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Address—THE FARMER'S ADVOCATE, OF
THE WILLIAM WELD CO.,
LONDON, ONTARIO, CANADA.

The Ontario Government Appoints a Commissioner to the World's Fair.

The Ontario Minister of Agriculture has appointed Mr. Nicholas Awrey, M. P. P., Binbrook, Ont., Commissioner for Ontario to the World's Fair to be held in Chicago in 1892. The Minister is to be congratulated on the wisdom of his choice. No fitter man could have been chosen, nor one who would have been a greater credit to the province, nor a harder worker in her interests. This year \$15,000 were included in the Ontario estimates to forward the interests of the province at Chicago, but as yet no decision has been arrived at as to how this money is to be spent. Mr. Dryden is surrounding himself by capable and practical men. No doubt the wisest course will be followed, but time is passing and decisive action should soon be taken.

The Dominion Parliament voted \$150,000 to forward the interests of Canada at the Columbian Exposition.

Mr. N. Awrey, Mr. R. Gibson and Mr. Henry Wade were appointed a deputation to wait on Hon. John Carling and Prof. Saunders to bring before these gentlemen the importance of the stock interests of the Dominion. The Minister, on behalf of the Dominion Government, promised transportation and maintenance of all Canadian stock from the time of leaving their respective homes until their return, and also has the matter of insurance under consideration. The other provinces should follow the example of Ontario and appoint commissioners at once to co-operate with the Dominion Commissioner.

Editorial.

The Prize Essays.

Never in the history of the ADVOCATE has so many good essays reached our office in one month as was received in reply to the prizes offered for essays on corn and potatoes. We publish two on corn which were considered by the judges the best. Over thirty excellent articles, every one of which were good enough to publish, were left unused for the present, though we will try to arrange with the writers to use them in a future issue. Nearly all of them were written by practical farmers, and with few exceptions, any one of them would have done credit to an agricultural professor. They were exceedingly practical, and the thoughts well expressed. We hope the writers will give our readers the benefit of their ripe experience by contributing to our columns articles on other agricultural subjects. We desire to make the ADVOCATE the best and most practical paper possible. We ask each of our readers to aid us. Send us notes of your experience with any farm subject that you think has been of benefit to you and will benefit others, who, seeing your remarks, may reply, and you will perhaps learn as well as impart. If the farmers will assist us in this respect, together we can make the ADVOCATE of incalculable benefit to the country at large—an organ in which is recorded the experience of practical men residing in all parts of Canada.

We have also to congratulate the writers on the very excellent class of essays received upon potato culture. Not only were these sent in large numbers, but also display thought and knowledge of the subject ably and fully expressed, which shows a laudable disposition to impart what they know for the benefit of their fellow farmers. "In a multitude of counsellors there is wisdom," and it is a consensus of experience that has most value in a practical sense. We only regret that our command of space forbids more of them being published in full.

The first prize essay will be found in our columns, together with extracts from several others.

The articles contributed by Mr. Thos. McMillan and Mr. W. C. Edwards, M. P., were not entered in competition, but written at the request of the editor, who desired to publish a statement of their experience and views.

Ladoga to be Further Tested.

In view of adverse reports regarding the milling qualities of Ladoga wheat, Prof. Wm. Saunders writes that arrangements have been completed with the Dominion milling Co., of Toronto, whereby a test is to be made that is expected to settle definitely the relative value to the miller of Ladoga and Red Fife wheat, a carload of the former, grown in the north for that purpose, being secured. Until the results of this trial are made known it would be well not to attach any great weight to the reported Minneapolis test.

The Co-operation of Farmers is Being Realized.

The outcome of the Grange, and the after co-operation of its members in handling all kinds of goods required by the farmer, has led to founding of what is known as the Grange Wholesale Supply Co., whose place of business is 35 Colborne St., Toronto. This company was organized, and is owned and controlled by the farmers for the purpose of procuring their supplies as nearly as possible as at first cost of production. The popularity of this institution is proved in the rapidly increasing trade that has developed in the last six months. It is also not surprising that the movement should have found enemies. Prominent among these are the retail druggists, who, through their association, have declared that they will not purchase goods from any firm that will sell to the Grange Wholesale Supply Co., and have thus determined to boycott the Grange in the drug line, and thus stop them from selling drugs. The result is that Lyman Bros., who heretofore have supplied the company with drugs for the past ten years, have recently refused to sell to them rather than lose their trade with the retail men. Fortunately the company have a large supply on hand, and will continue to give their patrons the benefit of securing the best drugs at the lowest possible figures.

A number of the members of the more newly formed association of Patrons of Industry, during their late convention held in Toronto, visited the company's store, and became so interested in the principles of co-operation carried out by the company that they appointed a special committee to investigate their mode of business, with the result that the following report was unanimously received:—"That this store deserves the patronage and support of every farmer who is loyal and true to his own best interests, and is daily receiving the co-operation of this thinking community."

Improved Farm Implements.

We are always glad to call the attention of our readers to firms that are engaged in manufacturing agricultural machinery or implements for farm work. Such is the Thoms Implement Works at Watford, in the county of Lambton. The proprietor, originally a farmer himself, has been engaged in building farm implements for over twenty years, therefore he claims that he should know what are practical tools required for farm work. He is the patentee of several valuable improvements in Canada and the United States, and is now making a specialty of building riding and walking ploughs and corn cultivators. A special feature is their two-furrow gang plough, which is now entirely superseding the three-furrow gang plough once in use. Another capital implement is their lever corn cultivator, by which the operator can perfectly control the depth, whether used in baked or mellow soil, and should prove just the thing for cultivating among small fruits, as well as roots and corn.

Lathyrus Sylvestris.

In our advertising columns will be found the advertisement of Mr. F. E. Clotten, of London, England, who is Prof. Wagner's sole agent for the sale of seed. As this plant is a comparative stranger in this country, a few words about it may interest our readers. This plant, which belongs to the natural order, *Leguminosae*, is a native of Hungary, where it grows in immense quantities in a wild state, but owing to an excess of Tarmic and Gentic Acid, is totally unfit for feeding to animals. Prof. Wagner, the originator of the improved *Lathyrus Sylvestris*, noticing the luxuriance with which this at that time poisonous weed flourished, commenced some thirty years ago to cultivate it, in the hope by so doing of eliminating the poisonous matter. This he claims to have succeeded in doing, and he now offers seed of his improved *Lathyrus Sylvestris* to the public. The advantages claimed for this plant are as follows:—

It grows most luxuriantly, producing, it is claimed, no less than 18 to 20 tons of green fodder to the acre in four cuttings.

Its feeding qualities are very great, it being claimed for it that it is four times as valuable as corn (fodder) in its nutritive qualities.

It requires no further cultivation after the first year, and will last for fifty years.

It possesses to an extraordinary extent the power, conceded to all *leguminosae*, of absorbing the free nitrogen of the atmosphere, and then yielding it by its roots to enrich the soil.

That there is a great deal of truth in these assertions is proved by the experiments conducted at Woborn Farm by the Royal Agricultural Society of England, and also by the reports of leading agriculturists throughout the world, and we would like to see a fair test made in Canada of the *Lathyrus Sylvestris*, for should it prove to be what it is represented, it will undoubtedly be a great boon to the stock-raisers of any country. Owing to the fact that the supply of seed of the improved plant is still very limited, the price is very high, being \$10.00 per lb. Orders sent direct to Mr. Clotten, or in the meantime to the FARMER'S ADVOCATE, will be attended to at once. Remittances for amount must be made with order. Mr. Clotten will be pleased to give any information to parties wishing it.

Warring with the Credit System.

There are, undoubtedly, times in the history of some farmers, especially in a new country such as Manitoba, where a mortgage incurred for the purchase of land proves a very great stimulus to effort and enables them to secure a standing not otherwise possible in so short a time. However, the credit system as it exists generally is most unfortunate and wasteful, and should, as far as possible, be discredited and got rid of. The condition of the farmer, whether prosperous or otherwise, very speedily makes itself felt upon the whole business life of the country. It is not to be wondered at, then, that a journal enjoying the standing in mercantile circles of The Commercial, of Winnipeg, should devote a good deal of space to the question of the farmer's business relations. Referring to the views of our correspondent, "Invicta," in favor of making a sharp distinction between cash and credit business in favor of the former customer, the Commercial computes that as much as every ten per cent. should be added by the merchant to the cash price, to cover interest and cost of book-keeping, and a further addition to cover losses from bad accounts. In conclusion The Commercial adds:—

"The writer in the *Farmer's Advocate* referred to speaks of the organization known as Patrons of Industry as a means of placing business upon a cash basis. The writer, judging from his remarks, is evidently not a Patron himself, but he commends the efforts of this order in the direction of encouraging cash business. So far as the Patrons are concerned, all we have to say is, that if they are going in for cash business, and if it is their aim to educate the farmers to do business on a cash basis, then we welcome them. They may cause some temporary inconvenience to merchants at certain points, but if they succeed in

reducing business to a comparatively cash basis they will accomplish a great good for Canada. The Commercial is with them heartily in this respect at least. We have always held that the free credit system is an injury to the farmers as well as to the merchants, and we are glad to see that some of them are getting their eyes opened to this fact. Farmers who buy for cash should not be obliged to pay credit prices, neither should credit customers be allowed to buy at cash prices. If merchants would reduce their business to this system, doing cash business on a cash basis, and credit business on a credit basis, we do not think they would have much to fear from the order of Patrons of Industry."

The Provincial Fat Stock Show.

The question of holding a Provincial Fat Stock Show has been under consideration for some time by the Ontario Agriculture and Arts Association, the Dominion Swine Breeders' Association, the Dominion Sheep Breeders' Association and the Fat Stock Club of Guelph. Representatives of each of these bodies met in Toronto on the 7th of April and decided upon holding a Provincial show in the city of Guelph some time about the middle of December next. The terms agreed to were as follows:—

"That the Agriculture and Arts Association agree to hold a fat stock show in Guelph, in December next, in connection with the Fat Stock Club, the Sheep Breeders' Association and the Swine Breeders' Association; upon this basis the local Fat Stock Club and the city of Guelph to provide all the accommodation necessary to hold a creditable show; the Sheep Breeders' Association to provide \$300 or more towards the prizes, the Swine Breeders' Association \$300 or more, and the Agriculture and Arts Association \$1,000; that three representatives from the Fat Stock Club, five from the Agriculture and Arts Society, and two from each of the Sheep and Swine Breeders' Associations be the Committee of Management, the Agriculture and Arts Association to pay all expenses, with the exception of the Sheep and Swine Breeders' committee expenses, and to collect all receipts. In case all the prizes in the sheep and swine departments are not paid out the proper proportion of such unpaid prizes be paid back to the two different associations."

Besides the space provided for the exhibition of live stock, Mr. John I. Hobson, the representative of the Guelph Fat Stock Club, promised that ample accommodation would be provided for an exhibition of poultry, and Mr. Henry Wade was instructed to communicate with the officials of the Ontario Poultry Association and request that their association co-operate with the above-mentioned associations in offering prizes for poultry. Mr. F. W. Hodson, of the FARMER'S ADVOCATE, was requested to correspond with the seedsmen and dairy supply men and request that they also co-operate and prepare a prize list for seed grain and dairy goods.

There has been several very good Provincial fat stock shows held in Ontario, but this promises to be far the best ever held in any part of Canada. The prize list will be issued at an early date when we will publish the greater part of it, which will be a guide to the other provinces. There should be a first-rate winter show held in every province, and we trust that the example set by Ontario will be followed by Manitoba and other places. Some of the leading seedsmen have been approached and have promised their hearty co-operation in this matter.

Stock.**Year's Test of Massena, 16 Years Old.**

If, while testing a cow for a year, I take her to the exhibition for the whole month of September and resume test on return, is it not fair to take her *actual* yield of milk and butter for August, the month before she left, and for October, the month after she returned, and take the average of those two months for September, the month she was away?

I do not think the most prejudiced person in the world could find fault with this mode. I am as much opposed to guess work as anyone, but there is reason in all things, and when a person takes pains to churn a cow's milk separately for a year, but takes her to the fair during test, it is only right that they be allowed to make *some* estimate of what the cow would have done had she not been absent that month, provided always that the month of absence is distinctly labelled "estimated", and then your readers can add it on to the cow's actual churning or leave it off, just as seems best to them.

On this basis I give the test of the most wonderful cow of her age I have ever known. March 1st, 1891, Massena dropped a bull calf, she being then 15 years old, and her test began 7 days afterwards, viz.:—

| | Milk. lbs. | Butter. lbs. oz. |
|--|---------------|---------------------|
| March 7th to Sept. 6th (inclusive), just 6 months, the cow <i>actual</i> <i>by yield</i> | 5,413½ | 416 10 |
| Sept. 7 to Oct. 6, (estimated)..... | 751½ | 61 4¾ |
| Oct. 7 to Nov. 6, inc. (actual)..... | 629 | 54 8 |
| Nov. 7 to Dec. 6, inc. (actual)..... | 580½ | 51 15 |
| Dec. 7 to Jan. 6, inc. (actual)..... | 595½ | 43 1½ |
| Jan. 7 to Feb. 6, inc. (actual)..... | 383 | 21 4½ |
| Feb. 7 to 15, 9 days (actual)..... | 67½ | 5 |
| Total for 11 months and 9 days..... | 8,290½ | 654 0¾ |

From Feb. 15th her milk was thrown out till the morning of the 28th Feb., when she dropped a nice heifer calf, sired by her own son, Massena's Son, that had such a glorious success at our exhibitions last fall, winning first over all Canada, Toronto, 1891; sweepstakes, Toronto, 1891; headed first prize herd, Toronto, 1891; second prize at Ottawa, 1891; headed first prize herd, Ottawa, 1891; headed special gold medal herd, Ottawa, 1891; first at Montreal, 1891; sweepstakes, Montreal, 1891; headed first prize herd, Montreal, 1891. His grandson, Massena's Combination, took first as bull calf at Toronto, 1891; second as bull calf at Montreal, 1891; first as bull calf at Ottawa, 1891. His g. daughter, Massena's Maggie, took third prize as three-year-old, Montreal, 1891; second prize as three-year-old, Ottawa, 1891. First prize *everywhere*, as well as sweepstakes at Montreal, being taken by my three-year-old g. daughter of Stoke Pogis 5th, Jetsam's May—14½ lbs. a week at two years.

To return to Massena's test, it was made

DURING HER SIXTEENTH YEAR.

She had dropped two mature calves within the year. She had travelled over 1,100 miles by rail within the year and stood three weeks on fair grounds. She had been in *no way* forced, as being far too valuable, and for nearly two months before calving she had no grain whatever.

During the 19 weeks previous to calving she averaged over 9½ lbs. butter a week for the whole period. Until the last 7 weeks, when she was only eating thin bran, it took but 11½ lbs. of her milk to make 1 lb. of butter.

What cow of her age can beat the record? If she is alive and well, I think she could surprise the world yet at Chicago, and she has never been one hour sick in her life. It is almost needless to add that Massena was in my prize herd everywhere we exhibited.

MRS. E. M. JONES.
Brookville, Ont., Can., Mch. 2, 1892.

International.

The accompanying illustration of the imported stallion International represents a grand specimen of the modern Clydesdale. It is the importation of horses of this class that has made the Clydesdale horse the favorite draft horse of Canada. While the importers of other breeds have too often been content to bring horses that would give them a profit, Clydesdale importers have determined to bring the best. International is by that popular sire Flashwood, that has won innumerable prizes throughout Scotland; and the fact that he was chosen to travel four succeeding seasons is sufficient evidence of his popularity as a breeding horse. International himself is a horse of great quality. His feet and legs are just the type that delights the eye of a Scotchman.

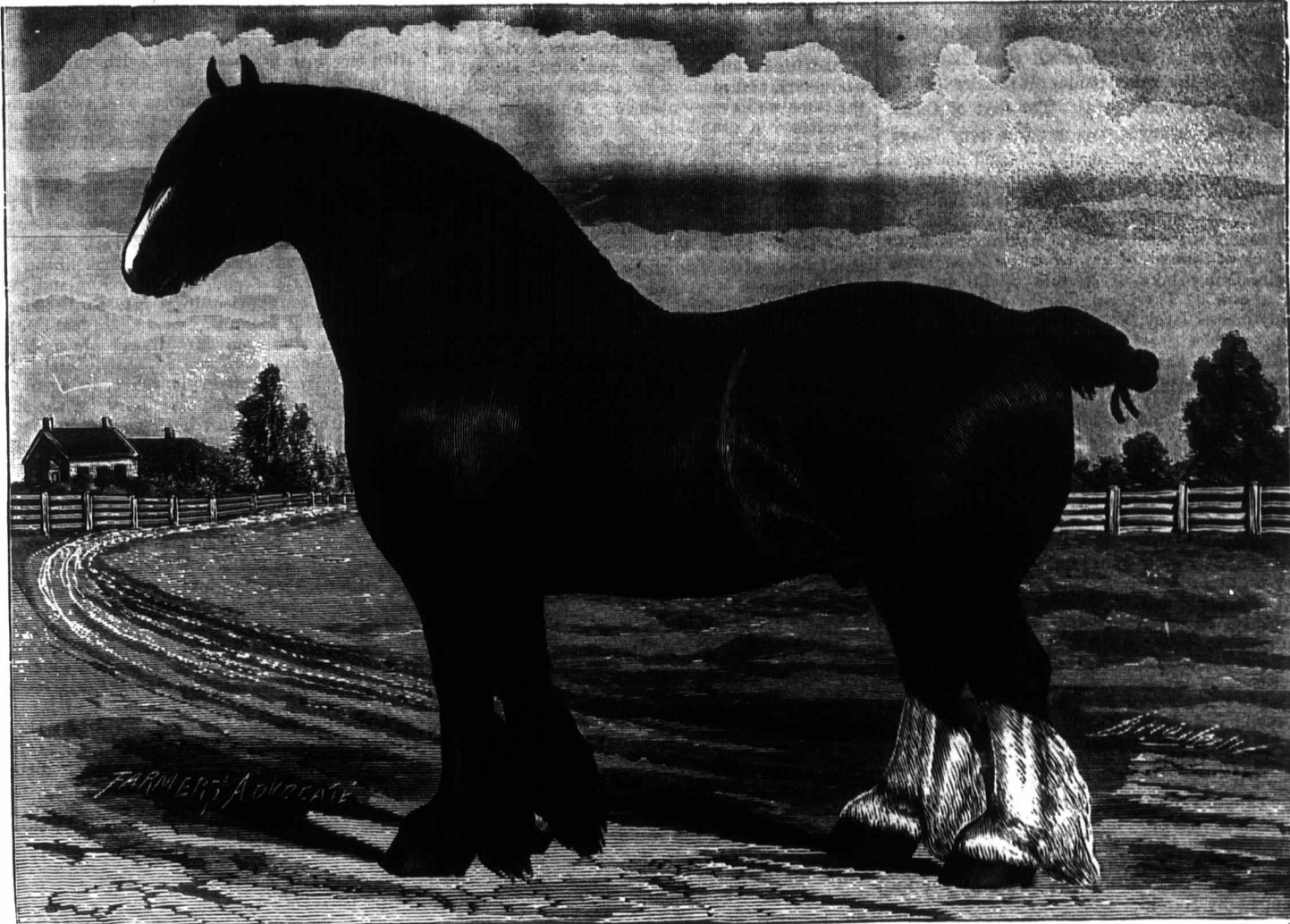
and sheep feeders have been "in it" with a vengeance. Some 89-lb. grass Texas sheep sold at \$5.90. At the middle of April the best prices, compared with the corresponding times last year, were as follows:—Native steers, 1600 lbs., \$4.65; Texas steers, 1252 lbs., \$3.70; native cows, 1200 lbs., \$3.25; feeders, 1200 lbs., \$3.75; western sheep, 145 lbs., \$5.90, 126 lbs., \$6.10; and lambs, 67 lbs., \$6.65. Top prices at Chicago a year ago: Native steers, 1462 lbs., \$6.25; Texas steers, 931 lbs., \$4.60; native cows, 1046 lbs., \$4.30; feeders, 816 @ 1124 lbs., \$4.50 @ \$4.70; western sheep, 90 lbs., \$5.95; lambs, 99 lbs., \$6.50.

With corn selling 25 @ 27 cents per bushel less than a year ago, the farmers who refused to

Colts with Weak Joints.

BY THOMAS J. FAIR, FRANKFORD, ONT.

As foaling time will soon be here, I will give to the readers of the *ADVOCATE* a simple cure for weak joints, which, if put into practice intelligently, will be the means of saving many otherwise promising colts from being destroyed or remaining unsightly cripples all their lives. The remedy is a pair of boots made as follows:—For each boot you want a piece of sheet-iron 6x10 inches, which may be cut from old stove pipes or old milk-cans, one piece of leather 7x10½ inches, and one 8x10½ which may be taken from old boot-backs. Turn the iron up one inch at bottom end of boot and press it down; this makes a smooth edge that will not cut the leather; put narrow



THE IMPORTED CLYDESDALE STALLION INTERNATIONAL, THE PROPERTY OF MR. JOSEPH O. HALL, DRUMQUIN, ONT.

He is also very handsome above, and is certainly to be numbered among the best horses of the day in Canada. He was imported the fall of 1890 by Messrs. Graham, Claremont, and has recently been purchased by Mr. Joseph O. Hall, of Primrose Farm, Drumquin, Ont.

Chatty Letter from the States.

Fat cattle have lately been losing feeders so much money that the latter have not been putting enough corn into them to make good quality. Fat cattle are \$2 per 100 lbs. lower than a year ago; best 300-lb. hogs at \$4.80 are 50 cents lower than a year ago, and sheep are about the same. The cattle market has lately been so low that every cut in prices was severely felt by farmers and feeders. Good 1350 @ 1500-lb. export steers at \$3.80 @ \$4.10 is "drawing blood." The cattle market has been very low all year. Hogs have been fetching good money,

feed it during the winter, and now have the alternative of taking the low price or feeding it to low priced cattle, feel that they are being whipsawed very badly.

Country roads have been extremely bad of late, and feed lots in many sections have been belly deep in mud.

The cattle and horse thieves in Wyoming and Montana are running things with a high hand. They seem to have the sympathy and aid of the small settlers, who are opposed to the big range companies, and the latter are having an exceedingly unpleasant time of it.

The American Fat Stock Show will be held no more in the old exposition building on the lake front. The Union Stock Yard and Transit Company is beginning the erection of a fine large pavilion at the stock yards, which will hereafter be used for that purpose. It will be used also as a pavilion for the display and sale of fine horses.

piece of leather inside this and turn it up over bottom of iron, and it will project one-half inch at top and sides; this prevents iron coming in contact with the leg; place the other, after punching holes along the edge one inch apart and one inch from edge of leather, on outside, with lower end slipped under iron where turned back; then put a copper rivet in each lower corner through both leathers and the iron, and the boot is done. Draw the boot around the leg below the knee with lower edge nearly to the hoof and lace it up middling tight, though not so as to prevent circulation. If the boot is too large you can make it smaller by trimming the edges of the leather. I put a pair on a foal unable to stand, and it got up at once and nursed, and in three days could follow its dam, and an uncle saved one which he sold afterwards for \$170.

Among English Breeders.

While on a visit to England the past winter, a member of our staff spent a few weeks among the leading breeders looking over their herds and flocks, and we now give a few short notes on some of the principal farms visited, commencing with some of

ENGLAND'S SHROPSHIRE BREEDERS.

The first Shropshire flock we visited was that of Mr. Herbert Parker, The Park Farm, Alcester, Warwickshire, who has been for some years past quietly building up a flock on a foundation stock of ewes, selected from the very best flocks in England, purchases having been made, regardless of cost, from such breeders as Bradburne Bros., J. Pulley, etc. At the time of our visit the flock consisted of 100 breeding ewes, a number of them sired by the Bradburne ram, The Mitre (4863), he by Buffalo Bill (3396), dam by The Rector (1769). Most of these had been mated with the rams Senior Wrangler (4814) and Royal Astwood (5494). The first of these, a very large, heavy sheep, with a very heavy fleece, is a son of Chorister (3747), and his value as a breeding ram is shown by the fact that he sired the 1st prize pen of ram lambs at the Bath and West of England Show, afterwards sold at \$100 each; the second, Royal Astwood, is from the flock of that well-known breeder Mrs. Barrs, his sire being Duke of Norfolk (3033) and his dam a ewe by The Doan (2356); although not by any means large, this is a very thick useful sheep, with a great deal of quality. Besides these two Mr. Parker has bred a limited number of ewes to the Bradburne rams, Pride of Warwick and Make Way (5341), by Precentor (4733), for whose service, he tells us, he paid a fee of \$5 a ewe.

One thing that struck us forcibly was that at "The Park Farm," while all the stock was in good condition, nothing was pampered, the ewes all being in store condition, while the lambs, which were coming strong and healthy and in no small numbers, were lying out with their dams every night.

Mr. Parker is a life member of the English Shropshire Record Association, and while he is interested in Shire horses, Yorkshire hogs and fancy poultry as well as Shropshires, it is to the latter that he devotes his special attention. He has made a number of sales in the last few years to Canada and the States, and we can confidently recommend any of our readers who are visiting England in search of Shrops to pay a visit to "The Park Farm," Alcester.

We cannot close this notice, however, without mentioning that we noticed here among the horses a very useful mare, by Right Sort (2483), the sire of Mr. G. Brown's well-known stallion, Holland Major, and also a nice yearling filly by Coton, he by Harold.

In the piggeries were a bunch of Yorkshires, bred direct from S. Spencer's stock, among them a couple of young boars that promised to make a grand pair of pigs, while the poultry yard was stocked with pure-bred Lungshans (Croad's strain) and Minorcas.

ASTWOOD HILL SHROPSHIRE.

After leaving The Park we drove across to Astwood Hills and paid a visit to the well-known flock owned by Messrs. T. & S. Bradburne, which has sent so many of its representatives to conquer again and again at the Royal, the Bath and West of England, and other leading shows. As our time was limited we were only able to take a hurried look through the flock, but even that was enough to show us that its owners are fully deserving of the position they have won for themselves among English breeders. Among the stock rams the first we noticed was the ram Lord Kingston, a grand, thick, even sheep, short-legged, and showing a wonderful deep, well-sprung rib, with a well woolled head. This ram was purchased last year from the flock of Chas. Coxon, Esq., at whose sale he brought the highest price of the day. He is now being fitted for the Royal Show. Another very useful ram

in this pen attracted our attention also; he was bred by Mr. J. Beach, and has sired some of Messrs. Bradburne's best lambs this year, while another extra good sheep was a two-shear ram bred by Messrs. Bradburne themselves. This ram, his owners claim is the best sheep they ever bred; he is a half brother to their Royal winner last year at Doncaster, and a full brother to one of their ewes that won at the same show. One point that we would like to draw our readers' attention to is that both this ram and the next shown us, the well-known One Above All, were hired out last season for more money than most Canadian breeders are willing to pay for the purchase of a ram. Besides these two-shear rams we were shown a pen of eight shearing ewes, and one of fifteen shearing ewes, all being prepared for the Royal Show at Warwick, and a grander lot it would be hard to find—all beautifully woolled about the head and legs, and standing squarely on the shortest of legs, with thick, even carcasses.

As at the Park farm we again found the ewes and lambs lying out in the pastures, and a grand lot they were, numbers of the ewes having been prize-winners at the Royal and other shows, in past years, and most of the lambs being sired by the rams we have mentioned. Among the ewes we noticed a grand lot of eighty shearlings, which we were told would be for sale this season. We are but doing them justice in saying that for size, quality, breeding, they equal anything we saw in England, and we strongly recommend them to the notice of intending buyers. Besides their Shropshires, Messrs. Bradburne carry a small stock of Shorthorns, as well as Shire horses and hunters.

We would, before leaving Astwood Hills, draw our readers' attention to the magnificent average made last year by sheep sold from this flock by Messrs. Lyttell, Mannsall & Walters, 93 sheep and lambs realizing no less than \$6.650 or an average of over \$70 each.

MR. G. THOMPSON'S SHROPSHIRE AND SHORTHORN.

After leaving Astwood Hill a couple of hours on the train took us from Alcester to Hatton and then a short drive brought us to the farm of Mr. G. Thompson, at Wroxall. Mr. Thompson has for a number of years been an enthusiast on fine stock, and the result of good judgment, combined with the determination to buy only the best, is easily seen in the quality of his stock. As Mr. Thompson was absent from home at the time of our visit, we were unable in going through the herd of Shorthorns, numbering some forty head, to get as much information as we would have wished. It did not need an expert, however, to see that the cattle were not only well-bred but well-fed. Among them we especially noticed the roan two-year-old heifer Fairy Duchess. This is a grand type of a milking Shorthorn, smooth all over, with a grand back and rib, and a beautiful head. As a yearling she won 2nd at the Bingle Hall Show in Birmingham, and as a two-year-old she has been shown only three times, winning one 1st, one 2nd, and a Reserve No. Among the younger animals we very much fancied a bull calf eight months old, by Grand Duke Winsome, out of a cow bought at Lord Moncton's sale for \$1,200. This calf, a rich roan in color, struck us as being very promising. Short-legged, and with an excellent top, he shows a wonderful lot of quality. But if the Shorthorns were good of their kind, the Shropshires were even better. When Mr. Thompson first founded his flock he made purchases of ewes from such flocks as those of Messrs. Evans, of Uffington; Farmer, of Ludlow; Felton, of Ludlow; and Barrs, of Nailstone. On these ewes he has been using rams of the very best strains, the result being that last year at the Royal Show at Doncaster this flock won the following prizes: H. C. on two-shear ram, H. C. on shearing ram, and 2nd on ram lambs. When we add that this was Mr. Thompson's first exhibit at the Royal, and that these classes were the only ones in which he competed, our readers can see for themselves the credit such a record deserves. The rams last used at Wroxall have been Lord Rowington (5331), winner of Reserve Number at the Royal, 1890, and H. C. at Royal, 1891, and a ram from the flock of Mr. J. E. Farmer, Ludlow, Squire of

Wroxall (5557). We have very little doubt but that Mr. Thompson's Shrops will be heard of again this year at the leading shows. His shearing ewes especially struck us as a wonderfully good lot, and we can confidently recommend any of our Canadian importers who intend visiting England to give Mr. Thompson a call before they purchase. We also understand Mr. Thompson intends having an auction sale of pure-bred stock on August 2nd, which will be well worth attending.

WOLF'S HEAD FARM.

Leaving Warwickshire, a few hours run by train brought us from Hatton to Baschurch, a small station a few miles from Shrewsbury, and here we found a trap waiting to take us to Wolf's Head Farm, near Nesscliff. Here we found an old friend in the person of Mr. Jno. Thonger, so well and favorably known to many American and Canadian Shropshire fanciers. Mr. Thonger's flock was founded twenty-two years ago by the purchase of almost the entire flock of the late R. Pembry, who for over forty years was in the front rank of English breeders. Since its foundation the flock has been bred with the greatest care, none but the best of blood being introduced. The flock now numbers over two hundred head of ewes, combining the blood of such flocks as those of Messrs. J. Bowen Jones, Rd. Thomas, Rd. Brown, Crane & Tanner, etc. Among these ewes were a choice lot of shearlings, as well as some very nice shearing rams, sired by The Fleece, bred by T. S. Minton; Stalloe's Choice, bred by J. Bowen Jones, and Wirral. This last named ram, winner of 1st at Birkenhead and H. C. at the Bath and West of England, was hired for a long price from Mr. R. Brown, of Ruyton. This sheep was used again last season, as well as a ram from Mr. Bowen Jones' flock, and two home-bred rams. Until lately Mr. Thonger never showed his sheep, being of the opinion that the fitting necessary for the show yard did them no good; but last year he made a few exhibits and was very successful, winning two firsts at the West Midland show with three pens of sheep, as well as several prizes at local shows. Mr. Thonger makes it a rule never to pamper his stock in any way; and, indeed, at the time of our visit, although the weather was bitterly cold, we found all the young lambs lying out with the ewes, and a grand lot of lambs they were—strong and healthy.

Mr. Thonger has paid several visits to both the United States and Canada, and numbers among his customers such well-known men as G. E. Breek, Paw Paw, Mich.; Blake Bros., Galesburg, Mich.; Fields Bros., Cedar Rapids, Ia., and Wm. Medcraft, Sparta, Ontario. He is always open to assist buyers in making selections, and we need hardly say that being situated right in the heart of the Shropshire country, and having an intimate acquaintance with all the leading breeders, Mr. Thonger's assistance should be very valuable to foreign buyers.

THE BEAM HOUSE FARM,

the property of Mr. Wm. Thomas, a name well known in Shropshire circles, is situated a few miles from Mr. Thonger's, who kindly drove us over there. Mr. Thomas founded his present flock on ewes bought from his father, Mr. Richd. Thomas, who is well known as the oldest member, but one, of the Shropshire Record Association. Since it was started this flock has achieved an extraordinary amount of success in the show ring, winning a great number of prizes at the Royal, the Bath and West of England, the West Midland and other leading shows. The flock now numbers over 350 ewes, of which 140 are shearlings, most of them being sired by such rams as Blue Blood (1360), Honest Richard (4016), Park Hero (4707), Royal Clive (5495) and Leicester Hero (5293). This latter sold when a two-shear for the handsome figure of 110 guineas. The breeding ewes, over 200 in number, combine the blood of Patriot (1198), Grandeur (133), Prince Victor (158) and Prince Royal (971), all well known as Royal winners. At the time of our visit nearly half the ewes had lambed, and Mr. Thomas reported that so far 97 ewes had brought him 181 lambs. When we add that among the sires used last season were the well-known Royal winner, Lord Ashby (3581), and the champion ram at the West

Midland show, Mr. Geo. Lewis's Timewatch (5624), it is almost needless to say that the youngsters were all that one could wish. Still, blue as is the blood that runs in the veins of these baby Shopshires, and destined as many of them are to win still more fame for the Beam House flock, we found that, as on the other farms, all the lambs had to be out day and night with their dams, in spite of the fact that a cold raw wind with frequent flurries of snow was blowing. Mr. Thomas's card will be found in our advertising columns, and we need hardly say that a visit to Beam House is essential to all lovers of Shrops who may visit England.

Studs, Herds and Flocks.

SHORTHORNS AT MESSRS. J. & G. TAYLOR'S.

Closely adjoining the Rockwood station on the G. T. R., and about eight miles east of Guelph, are situated the Shorthorn herds of Messrs. J. & G. Taylor, whose farms lie side by side, the barns standing a few rods from each other. When coming to this country these gentlemen began farming in the county of Hastings, while there, as well as in their native county of Banffshire, Scotland, they early found the benefit of using bulls of the thick-fleshed, easy-feeding, Shorthorn sort, by which means the profitable butcher beasts are produced, for which the "North Country" is so justly celebrated. The knowledge thus gained led them to embark in the more interesting and enterprising work of breeding Shorthorns. With this in view the cows Nelson Queen, by imported Count Grindelwald, Lady Lorne of the Roan tribe, Grace Darling, tracing to the Cox importation, and other early standing families, were first purchased. These have been topped out with choicely bred bulls such as the Kinnellar bred British Flag, Montcoffer Hero, bred by John Isaac, Markham, and sired by Baron Lenton, dam Claudia of the Campbell Claret tribe, Radjay, imported by John Isaac, and Romoe of J. & W. Watts breeding. Fresh blood has also been infused through the purchase of cows and heifers of more recent importation. And, again, the imported cows Rose of Aberdeen and Minnie, both bred at Kinnellar, and got by Gladstone of Kinnellar, Mina tribe. Cows and heifers of similar breeding bred in Ontario, have also been added from time to time. The bull at present at the head of the herd is imported Prince Royal, bred by Mr. E. Cruickshank, of Lathenty, and imported by Hon. John Dryden. This is a lengthy, smoothly finished, thick-fleshed bull that gives evidence of being a good keeper. Altogether something like seventy head of Shorthorns are included in the herds at the present time, of which a large proportion are a very promising lot of heifers that are being bred to Prince Royal. A useful flock of Cotswold sheep is kept, in which care in breeding is plainly discernible. The Messrs. Taylor find it hard to keep up numbers of their flock on account of the demand that has lately arisen for sheep of this as well as other breeds. Rockwood is in the centre of a fertile part of the country that is carefully farmed, and good cattle are thoroughly appreciated.

MESSRS. GARDHOUSE & SONS.

A short distance northeast of the Matton station on the G. T. R., the farms of the above firm are conveniently situated for visitors on the lookout for improved stock. Both Shire and Clydesdale horses are bred for sale, and are also employed in necessary work on the farms. A good selection of mares and fillies of both these breeds is always on hand. The well-known stallion King of the Castle held first place for a number of years in this stud as well as in the show rings of Toronto Industrial, and other leading shows. Choice coach and carriage mares and fillies have also found a place among the horse stock.

Strict attention has always been paid to Shorthorn breeding. In the herd as well as in

the stud, both English and Scotch lines of breeding have in turn held sway. Many notable herds have been represented by specimens imported by the firm, as well as those purchased from other importers. For many years nothing but imported bulls of the very best type have been in use, the following names attesting to the class purchased:—

Count Grindelwald, bred by Mr. T. Stamper, Yorkshire; Prince of Ingelwood, bred by Mr. Thompson, who twice won the "Royal" with Mollie Millicent, while of later years, such bulls as Eclipse, bred by Mr. Duthie, of Collynie, Premier Earl, bred at Sittyton, and Albert and Warfare, bred at Kinnellar, are all of the thick-fleshed sorts, that have left their mark alike on this as well as other first-class herds of the country. The cows that have been purchased to place in the herd, have been of an equally good type. Of these imp. Verbena, by Royal Windsor, bred by Mr. Outherwaite, Yorkshire Eng., the two Kinnellar cows, imp. Rose of Kinnellar, by Vermont, and Cleto of the Claret tribe; all have produced some beautiful heifers to the credit of the herd. The latest arrival is imp. Sowerby's Gem, purchased at Mr. Wm. Linton's late sale, which should give a good account of herself, if we are to judge from either breeding or merit.

Leicester sheep that display good breeding are the sort favored, and in each line it is evident that it has been the aim to breed from the best.

HOLSTEINS AT SMITH BROS., CHURCHVILLE.

In a short visit recently paid to the establishment of the above named firm we were most favorably impressed with the thoroughly practical manner in which the different details are carried out. Although a part of the business consists in shipping a goodly number of cans of milk to Toronto daily, we were agreeably surprised at the thrifty and growthy condition which the calves of all ages displayed, showing what care and skill in feeding will accomplish. As we entered the yards a herd of some thirty black and white beauties were taking their morning airing, and enjoying the fine weather out of doors, preparatory to their again being tied for their midday meal. This lot consisted of the milking cows, which in age date from two years upward, the Smith Bros. appearing to favor early development in order to obtain good results at the pail. Among such a throng space will not allow an individual criticism. Viewed as a whole the herd exhibited a smoothness of finish combined with quality and touch that indicate the highly bred dairy cow, while numbers of individuals carried all the characteristics of heavy milk yields in their largely developed udders and prominent milk veins. The success attained by any herd depends quite as much upon the character of the bulls in use as the selection of the females, and in this particular this herd has had the benefit of exceptionally fine individuals. Mink's Mercedes Baron, that has heretofore held premier position at the head of the herd, has for a length of time given most satisfactory results. He is now four years old and is still fresh and vigorous as a yearling, and shows the fine form that is the unmistakable criterion of good breeding. The bull is strongly bred in performing lines that doubtless will tell when his heifers come to be tested. The two-year-old bull Tirrannia 2nd's Prince Castine was purchased to mate with the heifers sired by the foregoing. He is a bull of very fine finish, remarkably smooth, and very large. He, too, is richly bred; his dam when tested proved an extraordinary butter producer, as well as an exceptional milker, while his sire is also bred equally strong in producing lines. Altogether, the herd displays skill in handling and a choice of selection that has awakened a popularity that is evidenced by the demand that is found for both bulls and heifers, as we were assured that over fifty sales were effected during the last year.

A choice herd of Yorkshire pigs are kept, some of them exhibiting more than ordinary merit. In smoothness of form and coat they were exceptionally fine, displaying good feeding qualities. Those who are interested in the above breeds should send for Messrs. Smith Bros. catalogue, which will give all the information desired.

The Raising of Dairy Calves.

BY W. J. PALMER.

In all branches of dairy farming the farmer must necessarily depend to a large extent on his cows to enable him to carry on his business successfully. In some cases, especially when milk is supplied to cities, the dairyman finds it more profitable to purchase milk cows as he needs them, fattening or selling off those that show a tendency to become dry. But in the majority of cases it is found to be more profitable and satisfactory for each dairyman to raise his own calves, as by so doing he can breed his best cows to a first-class dairy bull and thus get calves which, under proper care and treatment, will develop into superior dairy cows. By continuing this course of action he will greatly improve his herd and increase their producing power.

Some people tell us that it is impossible to raise good dairy calves profitably, as they require abundance of new milk to keep them thriving, and this new milk is a very expensive food. Fresh milk certainly is the best food for the young calf, and the natural method of taking it is for the calf to draw it from the udder of the dam, but there are many considerations among dairymen that come in to prevent this method of feeding. This is only practicable among the breeders of pure-bred and high-priced stock which are grown primarily for beef. Dairy products have become too valuable to permit calves intended for the dairy or for beef to be raised upon whole milk; they must and can be grown just as well upon the refuse of the dairy, skim-milk and whey, if other and cheaper foods are used in conjunction.

In order to understand the real feeding value of skim-milk and whey, it is necessary first to study the composition of new milk, and then see what constituents are removed in the processes of butter and cheese-making. The composition of new milk is generally constant with the exception of its fat, which is the variable constituent. Its average composition is: water, 87.5 per cent.; fat, 3.60 per cent.; albuminoids (casein and albumin), 4.00 per cent.; sugar, 4.20 per cent.; ash, .7 per cent. In buttermaking the sole object is to remove as much of this fat as possible, hence skim-milk has practically the same composition as the new milk, with the exception of the fat, which is removed in the cream and goes to make butter; a small proportion of the casein is also removed with the fat. Skim-milk from deep or shallow pans has about the following composition:—Water, 90 per cent.; fat, .7 per cent.; albuminoids, 3.50 per cent.; sugar, 5 per cent.; ash, .8 per cent. Hence, we see that it is almost a perfect food, containing all the essentials necessary to build up and sustain the body, with the exception of fat. This can be supplied in oil meal or some of the grains, such as oats, pea meal or bran. One hundred pounds of skim-milk contains about 3½ lbs. albuminoids, or material for forming muscle and flesh; 5 lbs. sugar, which goes to keep up the heat of the body and perhaps to form fat; about four-fifths of a pound of ash which builds up the bones, and over ½ lb. of fat. Hence, if calves are fed skim-milk (warm) in small quantities at a time, with a little oil meal or grain in addition, they will thrive and grow rapidly. It has been valued at from 20c. to 25c. per 100 lbs. (10 gals.) for feeding purposes, but this is a low estimate. Practical men give it a higher value than this.

In cheese making, on the other hand, the object is to get as much of the albuminoid and casein out of the milk as possible and with it a large proportion of the fat; hence, whey is not so valuable for feeding purposes as skim-milk. It, however, contains valuable ingredients, and if fed carefully, sweet and warm, with the constituents in which it lacks, supplied in other foods, it gives good results. One hundred pounds of whey will contain about 93 lbs. water, 1 lb. albuminoids or muscle formers, $\frac{1}{2}$ lb. fat, $4\frac{1}{2}$ lbs. sugar and 3-5ths of a lb. of ash. We thus see that it is chiefly valuable on account of the sugar it contains, so that in feeding it to growing animals we should add a liberal supply of a buminoids and fat. These can be given in flax seed, oil meal, shorts or pea meal. Sweet whey is generally estimated at about 15c. per 100 lbs. for feeding purposes; but it must be sweet, for directly it turns acid a portion of the sugar, its most valuable constituent, has become converted into lactic acid and thus loses its feeding value.

In feeding a heifer calf for dairy purposes much less forcing food is required or even desirable than when feeding for beef. Rich milk or fatty pods are not required, but food which will build up a good frame of bones covered with solid muscular tissue. If a calf intended for the dairy is so well fed on fat-producing foods when young that it gets into the "habit" of putting fat on its ribs, this habit will very likely follow it through life, with the result that the milk pail suffers. If a heifer becomes fat on liberal feeding, instead of enlarging her growth and retaining her milk form, she should be discarded from the herd, as she will rarely prove a profitable milch cow.

When feeding skim-milk and whey to calves much trouble and loss has been occasioned by not giving proper attention to the small matters of detail. It is these small matters that determine the difference between profit and loss every time. It cannot be expected that the calves will thrive when fed these foods cold or sour; they must be fed warm and in small quantities at a meal. Overfeeding, especially when the calf is young, is to be avoided, for if sucking the cow it will only get a small meal at a time, and its digestive organs are not yet developed sufficiently to dispose of several quarts at once. Feeding much milk and other concentrated foods does not give that large development of stomach which will be necessary in after-life, when the cow will need to consume and assimilate large quantities of bulky and coarse foods. Hence the calf should have access to good clover hay at all times; it will thus soon develop its first stomach and commence to chew the cud.

Several of the successful breeders of thoroughbred stock in Ontario are feeding skim-milk to their calves with good results. A prominent breeder near Ailsa Craig, feeds his calves as follows:—For two weeks they get a full allowance of new milk; then skim-milk and flax seed tea is gradually introduced, until at four weeks they get all skim-milk; at this age two calves get about half a pint of flax seed between them; this is increased until two calves get one pint between them. They are also allowed all the meal they will eat and early cut clover hay cured in cocks. The calves have grown remarkably well under this treatment.

Smith Bros., near Churchville, the large breeders of Holstein cattle, allow the calves to suck for three days, three times a day; they are then weaned and five to six pounds warm new milk given three times per day for the first month; this is then reduced to seven pounds new milk fed twice a day until the calves are three months old, when skim-milk is fed, eight to nine pounds twice a day; this is continued as long as possible. Meal (mixed oats and oil cake) and good hay are placed within reach at all times. The calves are kept in lots of six or more in pens, tied up before giving them their milk and kept tied for a half hour after feeding to prevent them sucking one another. This is an important point, as many calves are ruined by forming this habit of sucking after drinking their milk.

A good plan in feeding dairy calves is to give whole milk for the first week; then skim-milk three times a day, fed blood warm, mixed with flax seed gruel, in proportions of three parts of

milk to one of gruel. This gruel can be made by boiling one pint flax seed and one pint oil meal in ten or twelve quarts water, or flax seed alone in about six times its bulk of water. If flax seed is difficult to procure, about two tablespoonfuls of oil meal per day, dissolved in hot water, can be added to the skim-milk. This oil meal can be increased up 1 to lb. per day. This will be sufficient until the calf is about two months old. Oats, bran or middlings can gradually be fed as the calf grows and improves. If diarrhoea occurs one quart of new warm milk will stop it if no other food is given.

If whey is the only part of the milk that can be reserved for the calves, then it must be supplemented by foods rich in muscle formers and fat. Oil meal is probably the best food for this purpose, as it contains 28 per cent. albuminoids, 10 per cent. oil and nearly 8 per cent. ash, the very constituents which are lacking in whey. Pea meal and shorts are also rich in these materials. If about $\frac{1}{2}$ lb. of oil meal or cake, dissolved in hot whey, be added to each gallon of whey it will be found a good food for the calf ten days to two weeks old; after that add an equal amount of bran, ground oats or barley to each gallon and increase the amount fed. After the calf is about two months old about $\frac{1}{2}$ lb. wheat middlings may be used in the mixture.

As in all feeding operations, calf feeding requires the greatest care and attention. To keep the feed boxes perfectly clean and sweet, and to handle the animals kindly and gently, are very important points. The calves should have plenty of exercise. Those calved in the spring should be kept in during the hot days of summer so as to avoid the flies, and allowed a pasture run at night until the cool autumn weather comes on.

In a well regulated dairy, when it is desired to keep up the herd of cows, about one-fifth their number of calves should be raised each year. These should be the pick of the lot and bred so as to "come in" at about two years old. The calves from the poorer cows can be sold for veal or destroyed.

Is the Shorthorn the General Purpose Cow?

BY JAS. TOLTON, WALKERTON, ONT.

In which breed, or in the crosses of what breeds, can the general cow be found? is a question that has been many times asked, but so far as I know has not been definitely answered. Neither do I suppose will it be settled for all time by this paper. The cow that is bred for special purposes, such as for beef, either by stall feeding or grazing, or for dairy purposes, has and always will have its admirers; but after all, what the general or average farmer wants is a cow that has, to as large extent as possible, all these qualities combined.

Before endeavoring to answer the question, it might be proper to try to define briefly what would constitute the general purpose cow. Would it not, to as large a degree as possible, be the cow that when judiciously mated, the produce, if a cow calf, in type should be equal or superior to the dam, or if a steer calf, be fit for the market in the shortest possible time, making the highest returns for the feed consumed? Would it not also be the cow which for the feed consumed produced the greatest number of pounds of butter or cheese of the finest quality, and when she has answered her time for breeding and for dairying purposes, can be turned into beef of the highest quality at the least cost? If the line of argument so far is sound, we readily perceive that it would be of no avail to look for this cow in those breeds which are specially bred for beef purposes, neither will it be of use to look for her in those breeds which are bred exclusively for dairy purposes. Now, I presume it will require but little or no argument to de-

monstrate that the Shorthorn cow will nearly always produce her own type. If bred with the main object being for beefing purposes, she takes a prominent and conspicuous stand among the beef cattle fed in this country, and I think the same might be said of every other country where improved breeds of cattle are kept. As an instance, at the late Fat Stock Show held at Guelph, all the animals exhibited, with the exception of one or two, were Shorthorns or grade Shorthorns. Again, in early maturity she takes a prominent place among other breeds. A friend of mine last winter fattened a number of yearlings that were two-year-old steers when shipped in June last, and weighed from 1,400 to 1,435 lbs., and heifers of the same age that averaged 1,375 lbs., and there are many instances of them making from 1,100 to 1,200 lbs. at that age; and again, are there any finer specimens of cows, heifers and calves found in any of the breeds than we see among the Shorthorns exhibited at our agricultural exhibitions? Now, what is the record of the Shorthorn cow as a dairy cow? I am free to confess it may be difficult to prove that she comes up to the qualifications laid down in this paper, and if so, I think there are at least two causes why she does not. First, I think it may be safely asserted that Shorthorn breeders generally have paid more attention to their feeding and beefing qualities than to a good performance at the milk pail. With this I do not propose to find fault; it is not the intention of this paper to find fault, for the breeders may have good cause for the particular line of breeding which they have followed. Second, if there have been competitive tests in this country not only with other breeds of cattle, but individual records showing what can be done with a Shorthorn for a stated period—as I say, if there have been such competitive records, they have not come under my observation. I give the following, clipped from an agricultural paper, as the results of the British Dairy Show of 1890. At this show there were 437 cattle entered for the competition, and the tests were as follows:—Shorthorn, 121.1; Dutch, 115.5; Ayrshire, 93.8; Guernsey, 98.1; Jersey, 90.8; Red Poll, 69.1; Dexter Kelly, 68.1. The second prize-winning Shorthorn scored 117.9 points, but had the greatest milk yield of any in one day, being 61.3, but being under 3 per cent. in fat. So you see in Britain where some of the breeders breed for milking purposes the Shorthorn cow can show a good record. At a Farmers' Institute meeting which I attended lately, one gentleman stated that the best dairy cow was a cross between Shorthorns and Ayrshires. To get the best you will notice it required a cross with a Shorthorn. Now, is it not a fact that public opinion is a fairly safe guide in domestic matters as well as other questions? It is true that it may and does sometimes err. Well, how is public opinion on this general purpose cow question? Although we have in Ontario nearly all the breeding breeds of improved cattle, and have had them for many years, what do we find? Why, about nine-tenths of the cows kept by the general farmer are Shorthorns and their crosses. Now, you have noticed that the title of this paper was the query, "Is the Shorthorn Cow the General Purpose Cow?" I have endeavored to present some facts and figures with the view of answering the question in the affirmative, but will leave it with you to say whether I have done so or not.

Rules Governing the Canadian Swine Records.

The Directors of the Dominion Swine Breeders convened March 10th in the office of the Agriculture and Arts Association, Toronto. The following rules were accepted and will govern the entries received for registry in the various divisions of the Canadian Swine Record:—

BERKSHIRES.

1. Animals to be eligible for entry must have been bred by reputable breeders in Great Britain, or satisfactory evidence given that they are directly descended from such animals with every cross recorded.
2. All animals imported after April 1st, 1892, must be registered in the British Berkshire Record, or the dam and sire must be recorded therein.
3. An animal recorded in the American Berkshire Record shall be eligible to record in the Canadian Berkshire Record.
4. Boars and sows may be entered at any age.
5. The date of birth of each animal must be given correctly, and the name and address of the breeder and owner.
6. When forwarding the pedigree of an animal to be recorded, give the number of pigs in the litter to which it belongs.
7. The owner of a sow at the time she was served will be considered the breeder of the pigs.
8. No pedigree will be received unless written on the printed forms furnished by the Recording Secretary, and must be certified to by the breeder and owner or agent or representative of each.
9. All applications for the registry of pigs sired by boars not the property of the breeder must be accompanied by a certificate giving the date of service, name and number of boar, signed by the owner of the boar, whose full address must be given.
10. All registered animals when sold must be transferred on the books of the Association before their progeny is eligible to register. If a female is pregnant when sold the seller must give the name and number of the boar by which she was served.
11. Transfers sent in during the year shall be published in the first succeeding volume of the Record.
12. Entries must be accompanied by the necessary fees, as follows:—Members of the Dominion Swine Breeders' Association will be charged for registration and certificate fifty cents each, transfers twenty-five cents; non-members, double fees.

RULES GOVERNING THE SUFFOLK RECORD.

1. Animals to be eligible for entry must have been bred by reputable breeders in Great Britain, or satisfactory evidence given that they are directly descended from such animals, with every cross recorded.
2. All animals imported after April 1st, 1892, must be registered in the Middle or Small White Sections of the National Pig Register of Great Britain, or the dam and sire must be recorded therein.

Rules 3 to 11, inclusive, are the same as are from 4 to 12, inclusive, in the Berkshire Division.

RULES GOVERNING THE TAMWORTH DIVISION.

1. Animals to be eligible for entry must have been bred by reputable breeders in Great Britain, or satisfactory evidence given that they are directly descended from such animals, with every cross recorded.
2. All animals imported after April 1st, 1892, must be registered in a reputable British register, or the dam and sire must be recorded therein.
- 3 to 12, inclusive, the same as 4 to 12, inclusive, of the Berkshire Record.

RULES GOVERNING THE REGISTRY OF IMPROVED LARGE YORKSHIRES.

1. Animals must trace in all crosses to ancestors registered in the section for large white pigs in the English National Pig Register.
- 3 to 10, inclusive, the same as 4 to 12, inclusive, of the Berkshire Record.

RULES GOVERNING THE POLAND CHINA DIVISION.

1. Animals to be eligible for entry must trace in all crosses to United States Records for Poland Chinas in good standing.

Rules from 2 to 10, inclusive, the same as 4 to 12, inclusive, in the Berkshire Division.

The rules governing each of the Chester White, Jersey Red and Victoria Divisions are similar to those governing the Poland China Division.

In each division an animal whose dam and sire is recorded therein is eligible for entry in that division.

Mr. Henry Wade, Toronto, Ont., is the Recording Secretary. He will furnish entry blanks, etc., free of charge, on application.

Mr. Ackrow's Sale of Shorthorns.

This public sale of cattle, held on the 6th of April, was a real success in every respect, and proves that good Shorthorn cattle, when offered in good condition, will bring satisfactory prices. A healthy feature in the sale was that the animals were bought upon their merits as individuals, irrespective of what are called fashionable pedigrees. Animals of good old fashioned lineage, as well bred as any, and carrying their claims to favor in their faces and forms, realized right good prices. Another healthy sign of the times was the exceptional demand displayed for young bulls, which proves that farmers are still alive to the advantage of using good, thick-fleshed Shorthorn bulls, in order to breed the best feeding cattle. The first eleven cows and heifers were of orthodox Aberdeenshire breeding. These, with two imported cows, bred at Kinnellar, were the offspring of Sittyton and Kinnellar bulls, from cows with one or more crosses of this blood on the imported cow, while a wonderfully thick and smooth lot of cows of several of the old standard Canadian families, in some cases topped out with three or more imported bulls of similar breeding, festifies alike to the popularity of good, thick cattle, as well as to the fact that Ontario can produce and retain the type as well as any country in the world.

Let us hope we have seen the advent of a new era in pure-bred cattle, and there will be found encouragement for even comparatively obscure and unknown breeders like Mr. Ackrow and his late lamented and highly esteemed son to do as they did in building up on an unpretentious foundation, such as they possessed, a herd of cattle that claimed the admiration of the large company of professional breeders, as well as the large assemblage of practical farmers present at the sale.

Much credit will be cheerfully conceded to Mr. J. C. Snell, of Edmonton, to whom was entrusted the management of the sale, which was complete in every particular, and much credit is also due to the popular, prudent and gentlemanly auctioneer, Mr. John Smith, of Brampton, of rising fame in the disposition of pure-bred stock; but to the men who bred and fed the cattle belongs the highest meed of praise, for the skill and judgment displayed in years of patient care in building up a herd of thirty head good enough to bring an average of over \$130 in these days of comparative depression.

We give below a list of the animals with prices and purchasers:—

COWS AND HEIFERS.

| | |
|--|--------|
| Imp. Cleopatra—John I. Hobson, Mossborough | \$ 255 |
| Imp. Charlotte—S. & R. Brown, Iona | 195 |
| Bella 4th—J. Gardhouse & Sons, Highfield | 170 |
| Julie's Rose—C. J. Wilson, Dunkerron | 110 |
| Josephine—Robert Miller, Brougham | 160 |
| Jubilee—R. Somerville, Teston | 205 |
| Jilt—S. J. Pearson & Son, Meadowvale | 210 |
| Jolie—Robert Miller, Brougham | 100 |
| Clementina—Jas. Johnston, Brampton | 100 |
| Crescent—S. Barker, Thistleton | 85 |
| Juliet—G. Garbutt, Thistleton | 90 |
| Rose of Kentucky 9th—W. R. Elliot, Everton | 95 |
| Rose of Kentucky 8th—J. Wallace, Newbridge | 100 |
| Rose of Kentucky 3rd—G. Garbutt, Thistleton | 210 |
| Rose of Kentucky 6th—Jas. Brown, Norval | 95 |
| Rose of Kentucky 10th—Wm. Thomas, Teston | 125 |
| Rose of Kentucky 11th—Wm. Wilson, Brampton | 40 |
| Kentucky Rose—Samuel Johnston, Fordwich | 85 |
| Ada 2nd—J. I. Hobson, Mossborough | 200 |
| Ada—R. Somerville, Teston | 150 |
| Adaline—S. Johnston, Fordwich | 85 |
| Annie's Favorite & calf—J. Hillock, Brampton | 90 |
| Amelia—W. Thomas, Teston | 80 |

BULLS.

| | |
|------------------------------------|-----|
| Reporter (Imp.)—E. Sarles, Everton | 300 |
| Royal Saxon—Jas. Kidd, Bradford | 125 |
| Clarendon—D. Downey, Castlederg | 80 |
| Baron Temple—Jas. Kenny, Lockton | 100 |
| Cavaller—R. Somerville, Teston | 150 |
| Premier—A. Cameron, Teston | 95 |

29 head—Average.....\$3,935
\$135

The Farm.

Our Farmers' Sons.

IMPRESSIONS MADE BY A TOUR THROUGH ONTARIO.

BY JAMES ELDER, VIRDEN, MAN.

Having spent three months on a stroll through Ontario, I would like to give our Manitoba farmers' sons the benefit of the impressions made by that stroll. And the first thing that impressed me was the number of commercial travellers we find on the road. No matter what train we boarded we found from two to a half dozen of these gentlemen, most of whom, of course, put on a good deal of style, and seemed to be enjoying what we call "a soft time;" and the question which arose in my mind was: "Do I envy these men?" and the answer was: "I envy them not."

First of all, because they have no home; or if they have, they are very seldom there. Whilst this may not be a serious objection with the young man—it is, or ought to be, with the man who has a family. The man who has a family must often feel that longing for the society of the home circle which only he who has experienced it can describe, or, if indeed, he ceases to feel it, then he has lost appreciation for the warmest and most sacred spot on earth. The young man, however, without perhaps thinking of the above consideration, is struck with the dignity and style of these fellows, and the position they hold. But let us just follow one of them into one of the places where they go to solicit orders, and here we find that the exceedingly pompous individual of the railroad train has to take second place to the plain farmer, or country lassie who may be in at the same time, and has to quietly wait while these are being waited upon, or till the merchant has nothing else to do.

The next thought is the amount of anxiety to wholesale men which is represented by these hordes of commercial travellers. How many anxious days and sleepless nights can only be partly realized by the failures reported every month.

The next thing which impressed me was the number of tradesmen, clerks, and office men who enquired for situations in Manitoba. Had I been able to place them, I could have brought up a great number of these; but, unfortunately, among this class the supply exceeds the demand. The fact is there are too many engaged in professional, mercantile and mechanical pursuits. The next thing that impressed us was the fact that the farmers are beginning to assert their position. The Farmers' Institutes are doing a good work in this direction. We find that at the Institute meetings farmers are able to discuss questions relating to their own calling in a manner most creditable to themselves—a fact which is bound to give them a much higher position among their fellows than they have hitherto held. This improvement is no doubt due largely to the fact that our young men have had the benefit of a better education than their fathers, and are being encouraged to improve their talents in the way of public expression.

The next thing that impressed us was the intelligence used and the improved methods adopted by the best farmers of Ontario, which we believe is due partly to competition, but chiefly to the Farmers' Institutes, and the dissemination of agricultural literature, among which the FARMER'S ADVOCATE takes a prominent place. And now the result of all these impressions is that I am more convinced than ever that our farmers' sons are not acting wisely in leaving the farm and rushing to the city or town in search of a "soft time." Better far stay on the farm and make good use of your brains in lightening the strain upon your muscles, and help your father to make a success of the most ennobling and independent occupation in which a man can engage. So much for the boys. In my next I will have something to say to the fathers.

Ashes as a Fertilizer.

BY JOSHUA BOBIER, INGERSOLL, ONTARIO.

It is the advantage gained by the use of ashes in growing potatoes that has led me to give my experience of the vast benefit to be derived from the use of ashes on other farm crops.

It is intended that this article should arrest the attention of my brother farmers to the loss they sustain by allowing this cheap, reliable fertilizer to be sold from the farm, as they place so little value on their ashes, that they are in the habit of exchanging them for a mere trifle to peddlars who sell them to men who are making a business of exporting them to fruit growers and gardeners across the lines, who appear to better appreciate their value.

Here in Ingersoll sheds have been erected near the railway purposely to carry on this trade. When we take into consideration the cost of gathering, storing, loading and freight charges, the thought arises, What do these ashes cost those who use them when they get to their destination, and how much cheaper they would be for farmers here who produce them?

It is all right for the residents of cities and towns who have no use for them to dispose of them to the highest bidder, and the best price should be paid by farmers of the locality, but on no account should farmers sell their ashes. I have been farming for twenty-seven years, part of that time on a rented farm, yet never but once did I allow ashes to leave my premises. At that time one bar of soap was received for nearly one-half a year's make from one stove.

About twelve years ago I fallowed part of two fields for fall wheat, and having about 60 bushels of unleached ashes in the ash house, I hauled out about twelve bushels to field No. 1. These I spread evenly on forty square rods, but unfortunately being called away, I left the remainder of the ashes to be applied by my man, with orders to spread them in the other field at the same rate. On returning, to my dismay, I found he had covered about the same quantity of ground with four times the amount of ashes. The result was that in the plot in field No. 1 the wheat was fully one-third heavier crop with decidedly better sample in both grain and straw, and it was also noticeably better in the next grain crop. In field No. 2, where the overdose of ashes was applied, the wheat and timothy both came up all right, and looked well in the fall, but in the early part of the summer the wheat turned yellow and sickly, and in the end died out entirely; but the timothy grew a perfect mat, and every season since in which this plot is sown the grain is more or less affected, especially should the season be dry. Again, in the fall of 1886, at the time of the first snow, I hauled out what ashes were in store and spread them on a strip of timothy meadow, and next spring the difference could be plainly seen when the grass started, while at mowing time a much heavier crop was cut. In the spring of 1888 this plot, along with an additional piece—enough to form three acres—was top dressed with stable manure, well harrowed to make the manure fine. It was then skimped, rolled down and harrowed, and one bushel of corn to the acre drilled in twenty-four inches apart with grain drill. When the corn came up a few inches the difference could be plainly seen in favor of the plot to which the ashes had been applied, and in 1889, when sown to spring wheat, this crop had a decided advantage. The grain ripened earlier, a brighter straw and heavier grain—thus showing that the benefit of ashes is not exhausted the first season.

In 1887 I broke up a piece of a rough old pasture, cropped it with corn, and after harvesting ploughed the ground deeply, tile drained it, then leveled it and worked it thoroughly with spring-tooth cultivator. I then carted out about 50 bushels of ashes, spreading them as evenly as I could on half an acre at one side of the field and finishing with a line of drain parallel with the fence. The ashes were thoroughly incorporated in the soil by means of cultivator and harrow, and after remaining in this state 10 days drills were opened with the plow and potatoes dropped and covered, the rest of the ground being treated

exactly the same as that to which the ashes were applied. From the time they came up to the time the vines died away the difference was plainly discernible. At digging time I determined to test the difference in the yield, and found on the plot treated with ashes the drills yielded 9½ bushels, while those without ashes yielded 7 bushels to the drill, while the former were of much better quality, larger and smoother, and freer from small ones and less eaten with grubs and wire worms. In this case besides the difference in quality there was over 25 per cent. in quantity. I find that I average 50 cents per bushel for potatoes one year with another. Now, if I can raise 25 more bushels of potatoes on half an acre by applying 50 bushels of ashes, then my ashes are worth 25 cents per bushel for the potatoes without making allowance for following crops. Since the above trial, I keep my ashes for my potato land, and can see the benefit derived from them every time. I have not written this article thinking that I know more of the value of ashes than others, but I am glad to have found their worth, and hope it will awaken those that have yet not found their utility, which is proved by farmers selling them from their premises at a mere trifle, or less than five cents per bushel.

Crops on Forty Acres.

BY JAS. W. ROBERTSON.

In the spring of the year it was arranged that about 40 acres of land should be set apart for the particular object of growing feed for cattle, in order to ascertain and illustrate how many cattle could be fed for the whole year upon the product of that area. In many parts of Canada an impression has prevailed that farmers cannot keep or feed at a profit large herds of cattle unless they have large farms. In most instances the estimate is that six full grown cattle, and an equal number of young growing stock, are as many as can be fed conveniently on the fodder and coarse grain crop on a farm of representative size, of say 55 acres of cleared land. As a matter of fact, the average number of horned cattle kept per farm is about four head of full grown animals, and an equal number of growing young stock. It appears to me that the numbers of cattle might be doubled, with increasing profit to the farmers, and decided gain to the fertility of the fields. A further extension and improvement in mixed farming, which will cause more cattle to be fed on fewer acres, is capable of great service to the whole agricultural interest of the Dominion. This experiment has been in progress for only six months of the year. The full report can be made with satisfaction only at the close of each twelve months. The following report of progress will show the areas of land under different crops, and the yield of each which were obtained. In a general way, it may be said that the yield of crops did not reach my anticipations. The corn crop was the lightest per acre which has been gathered for three years, and a disastrous hail storm on 13th August beat down the grain crops and battered the leaves of the corn to a very serious extent. The recurrence of an injury from that cause is unlikely in coming years, as it has been infrequent in past years. Continued rains during the harvest season caused further losses in the grain crops. Notwithstanding these drawbacks, the experience of the year points to the probability that 25 milch cows will be fed, wholly or nearly so, on the product of the 40-acre lot for eleven months. On 2nd July, 25 cows were put in one herd to be fed from its yields of crops. The milk from them furnishes a supply for experimental dairy work; and feeding experiments are being conducted with them on different rations.

TOTAL YIELD OF CROP FROM 40-ACRE LOT.

| Ripened Crops. | | |
|--|---------------|---------------|
| | Lb. of Straw. | Lb. of Grain. |
| 8 acres, mixed crop, as in Table I. | 26,454 | 13,245 |
| 3 acres, Golden Vine Peas. | 905 | 437 |
| 3 acres, Goose Wheat. | 1,003 | 437 |
| Beardless Barley. | 3,102 | 1,373 |
| Banner Oats. | 2,793 | 2,060 |
| 3 acres, in 5 plots of mixed crop, similar to plots 1 to 5 in Table I. | 10,442 | 4,345 |
| Totals | 43,791 | 22,315 |

Root Crops.

| | Lbs. |
|---------------------------------------|---------------|
| 1 acre, Carrots. | 26,785 |
| 1 acre, Mangels and Turnips } Mangels | 8,110 |
| 1 acre, Turnips. | 9,655 |
| Total | 74,134 |
| 1/2 acre Cabbage and Kohl Rabi. | 15,296 |

Cured Fodder Crops.

2 acres, Spring Rye, wilted 12 hours and put in silo, 14,060 lb.
Mixed crop, cereals, second cutting, 1,825 lb.
11 1/2 acres, Corn, wilted on an average two days, and put in silo, 130 tons 1,760 lb.
(That is equal to 183 tons, 450 lb. green weight.)
1 acre, Corn, stooked in field to cure, 11,940 lb., weighed February, 1892.

1 1/2 acres, Corn, fed green to the cattle (from 7th August) with mixed crop.
4 1/2 acres, mixed crop, as in plots 1 to 5, fed green; nearly 1 1/2 acres of this was used in erecting paddocks for the bulls, and the crop on it was partially spoiled by the traffic incident to the work.

The following Table and explanatory notes present the details of the different crops.

RIPENED CROPS.

Eight acres mixed crops.—The land had no manure applied for at least five years; it was cropped every year; it was ploughed in the fall of 1890; it was disc harrowed twice in spring of 1891; the smoothing harrows were used on it twice. It was divided into eight plots, each one acre in size.

A different mixture of grain was sown on each plot.

TABLE I.

| Number of Plot. | Mixture sown. | Date sown. | Date when ripe. | Date when cut. | Total per acre. | Quantity of straw and grain. | Grain from thrasher. |
|-----------------|--|------------|-----------------|----------------|-----------------|------------------------------|----------------------|
| 1 | 1/2 Golden Vine Peas, 1/2 Banner Oats, 1/2 Beardless Barley, 1/2 Goose Wheat, 1/2 Danish Chevalier Barley, 1/2 Flax. | 30 April | 12 May | 17 Aug. | 8 | 4,845 | 1,728 |
| 2 | 1/2 Golden Vine Peas, 1/2 Banner Oats, 1/2 Beardless Barley, 1/2 Goose Wheat, 1/2 Danish Chevalier Barley, 1/2 Flax. | 30 April | 12 May | 17 Aug. | 8 | 4,880 | 1,595 |
| 3 | 1/2 Golden Vine Peas, 1/2 Banner Oats, 1/2 Beardless Barley, 1/2 Goose Wheat, 1/2 Danish Chevalier Barley, 1/2 Flax. | 30 April | 12 May | 17 Aug. | 8 | 4,775 | 1,518 |
| 4 | 1/2 Golden Vine Peas, 1/2 Banner Oats, 1/2 Beardless Barley, 1/2 Goose Wheat, 1/2 Danish Chevalier Barley, 1/2 Flax. | 30 April | 12 May | 17 Aug. | 8 | 5,180 | 1,795 |
| 5 | 1/2 Golden Vine Peas, 1/2 Banner Oats, 1/2 Beardless Barley, 1/2 Goose Wheat, 1/2 Danish Chevalier Barley, 1/2 Flax. | 30 April | 12 May | 17 Aug. | 8 | 4,864 | 1,808 |
| 6 | 1/2 Golden Vine Peas, 1/2 Banner Oats, 1/2 Beardless Barley, 1/2 Goose Wheat, 1/2 Danish Chevalier Barley, 1/2 Flax. | 30 April | 12 May | 17 Aug. | 8 | 5,175 | 1,871 |
| 7 | 1/2 Golden Vine Peas, 1/2 Banner Oats, 1/2 Beardless Barley, 1/2 Goose Wheat, 1/2 Danish Chevalier Barley, 1/2 Flax. | 30 April | 12 May | 17 Aug. | 8 | 4,870 | 1,465 |
| 8 | 1/2 Golden Vine Peas, 1/2 Banner Oats, 1/2 Beardless Barley, 1/2 Goose Wheat, 1/2 Danish Chevalier Barley, 1/2 Flax. | 30 April | 12 May | 17 Aug. | 8 | 4,930 | 1,485 |

NOTES.—The mixtures were all sown on 30th April and came up on 12th May. Two pounds of flax seed were sown with the mixtures on plots 1 to 5. It ripened, and was ground with the grain for the feeding of cattle. I think at least 3 pounds per acre will give better returns.
The crop from plot 6—wheat and peas—gave the largest yield of grain per acre. That mixture of grain is also the most valuable for feeding in combination with corn ensilage. The second largest yield of grain was on plot 5, from a crop of wheat, barley and oats. I do not recommend this mixture.

as I consider that every mixture should contain either peas or vetches. These latter grains do not require to obtain their supply of nitrogen from the nitrates in the soil as the other grains of the mixture do.

Owing to a severe hail storm on August 13th, and rains before and during harvest time, the crops on all the plots were very badly broken down and lodged. In consequence, a large percentage of grain was shelled on the field.

Fodder Corn and the Silos.

It is not too much to say that no single subject closely related to successful agriculture, is receiving so much attention from the agricultural press of Canada, or is creating so much discussion at conventions and meetings of farmers, as that of the growing of fodder corn and the making of ensilage. The economical feeding of cattle in stables, and the increasing of the number of cattle which are kept per farm, are matters peculiarly important to the farmers of Ontario and the provinces that lie eastward of it. This brief chapter is presented for the purpose of indicating how the farmers in every district may obtain the largest service from this crop. No specific rule or direction will be found applicable to all soils, districts or seasons; but in all districts, in nearly all soils, and in every season, the corn crop will yield the farmers in the provinces which I have mentioned, feeding material for their cattle during the winter, with more profit and advantage than any other single crop, which can be grown with as little labor, and exhaustion to the fertility of the land, and which can be saved in a cured condition as conveniently.

From the corn which was grown on the Central Experimental Farm, Ottawa, some information bearing upon the comparative value of the crop of corn at different stages of maturity, has been obtained. The stage of maturity reached, has been recorded at the "tasselling," "silking," "early milk," "late milk" and "glazing" stages of growth.

The following table illustrates the number of ears and nubbins, obtained from planting in rows 3 ft., 4 ft. and 5 ft. apart, with from 3 to 4 grains per lineal foot in the rows

Number of ears and nubbins, in rows 100 feet long, on 15th September —

| VARIETIES. | Distance of Rows Apart. | | | | | |
|-------------------------------|-------------------------|----------|------------|----------|------------|----------|
| | Three Feet. | | Four Feet. | | Five Feet. | |
| | Ears. | Nubbins. | Ears. | Nubbins. | Ears. | Nubbins. |
| Red Cob..... | 20 | 49 | 16 | 95 | 22 | 109 |
| Pearce's Prolific..... | 102 | 22 | 91 | 20 | 143 | 39 |
| Longfellow..... | 87 | 23 | 121 | 30 | 134 | 34 |
| Thoroughbred White Flint..... | 13 | 51 | 45 | 43 | 63 | 59 |
| Average..... | 50 | 36 | 68 | 48 | 90 | 60 |

While the rows five apart showed the largest number of ears and nubbins per lineal foot in the rows, the three different methods of planting gave nearly the same numbers each per acre.

Information on the comparative percentages of water, dry matter, yields per acre, dry matter per ton, and dry matter per acre, at the different

stages of growth of the four varieties, "Longfellow," "Pearce's Prolific," "Thoroughbred White Flint," and "Red Cob," is found in the following table:—

TABLE II.

| Name of Variety. | Planted. | Tasselling. | Silking. | Early Milk. | Late Milk. | Glazed. |
|---|-------------|-------------|--------------|---------------|---------------|---------------|
| Longfellow..... | May 23..... | Aug. 1..... | Aug. 11..... | Aug. 27..... | Sept. 10..... | Sept. 21..... |
| Pearce's Prolific..... | do. 23..... | do. 3..... | do. 13..... | do. 29..... | do. 12..... | do. 22..... |
| Thoroughbred White Flint..... | do. 23..... | do. 18..... | do. 25..... | Sept. 22..... | Oct. 3..... | |
| Red Cob..... | do. 23..... | do. 22..... | Sept. 2..... | Oct. 3..... | | |
| Per cent. of water in green plants..... | 88.73 | 88.8 | 88.0 | 80.0 | 77.8 | 73.8 |
| do. dry matter in green plants..... | 14.27 | 16.17 | 19.95 | 19.95 | 22.14 | 26.18 |
| Yield per acre (green weight).....Lb. | 45,929 | 46,052 | 45,906 | 45,759 | 43,154 | 43,154 |
| Dry matter, per ton of green corn, do. | 285 | 282 | 399 | 443 | 524 | 524 |
| do. per acre..... do. | 6,468 | 7,770 | 9,138 | 6,467 | 11,298 | 11,298 |

These figures point to a very large increase in the weight of dry matter per acre as the corn approaches the ripe condition.

The analyses of these varieties of corn and the calculations have been made by Mr. F. T. Shutt, Chief Chemist. A more extended analysis of the corns will doubtless appear in his report for 1891 or 1892.

Corn of the same four varieties was also grown under a method of cultivation with from three to four grains to the lineal foot, in rows of 3 feet, 4 feet and 5 feet apart respectively in each case. The following Table shows the average yields per acre which were obtained from the different methods of planting:—

TABLE III.

Weights of four varieties of Indian corn sown in rows 562 feet long. Four rows of each variety were sown at the distances of 3 feet, 4 feet and 5 feet apart respectively. The corn was wilted two days before weighing.

| VARIETIES. | Distance of rows apart | | |
|-------------------------------|------------------------|-----------|-----------|
| | 3 feet. | 4 feet. | 5 feet. |
| Red Cob..... | Lb. 2,970 | Lb. 5,390 | Lb. 5,305 |
| Pearce's Prolific..... | 2,568 | 2,800 | 4,470 |
| Longfellow..... | 2,464 | 3,430 | 4,110 |
| Thoroughbred White Flint..... | 3,058 | 4,270 | 5,190 |
| Average per acre..... | 17,857 | 19,154 | 18,479 |

Taking into account the convenience of cultivation, the keeping down of weeds, and the quality of the stalks, it appears that the best results are obtained from planting in rows, 3 feet or 3½ feet apart, or better still, in hills, 3 feet apart each way.

The same four varieties of corn were also planted in rows, 3 feet apart, at the rates of 2,

4, 6 and 12 grains per lineal foot in each row. The land on which they were grown was so irregular in character, that no fair comparison of the yields, that may be obtained per acre from these different methods of planting, could be made. A brief report of the quality of the ensilage from these methods of planting the corn will be made.

These four varieties of corn were also planted in different combinations,—(1) two rows of each alternately, and (2) two of the varieties mixed in each row. The following table shows the results obtained from these investigations:—

TABLE IV.

| Method. | Varieties. | Stage of growth. | Weight per acre, wilted. | Green Weight per acre, (Calculated.) |
|---------------------------------|---|---|--------------------------|--------------------------------------|
| Two rows alternately..... | Red Cob..... Longfellow..... T. W. Flint..... Pearce's Prolific..... | Silking..... Late milk..... Early milk..... Late milk..... | Lbs. 20,795 | Lbs. 29,090 |
| Two rows alternately..... | Red Cob..... Longfellow..... T. W. Flint..... Pearce's Prolific..... | Silking..... Late milk..... Early milk..... Late milk..... | Lbs. 24,360 | Lbs. 34,080 |
| Seed mixed before planting..... | Red Cob..... Longfellow..... T. W. Flint..... Pearce's Prolific..... | Silking..... Late milk..... Early milk..... Late milk..... | Lbs. 23,688 | Lbs. 33,139 |
| do. do..... | Red Cob..... Longfellow..... T. W. Flint..... Pearce's Prolific..... | Silking..... Late milk..... Early milk..... Late milk..... | Lbs. 22,600 | Lbs. 33,040 |
| do. do..... | Red Cob..... Longfellow..... T. W. Flint..... Pearce's Prolific..... | Silking..... Late milk..... Early milk..... Late milk..... | Lbs. 21,745 | Lbs. 30,443 |

These five acres were all planted on 23rd May, cut on 12th September, and wilted for two days. The green weights per acre, would be about 40 per cent. more than the wilted weights.

There does not appear to be any advantage from the planting of different varieties in alternate rows, nor from the mixing of varieties in the same rows.

CONCLUSIONS.

In the making of ensilage from mixed crops, rye or clover, it is desirable to put the crops into the silo in a green and succulent condition. They should be run through a cutting box to provide for even distribution and close packing. They must be weighted heavily, either by the application of artificial pressure, or by being put into the bottom of the silo, which will be filled shortly afterwards with corn ensilage. The interstitial spaces between the fine stalks of such crops as oats, peas, rye, clover and grass, hold sufficient air to cause them to mould or decay, unless pressure be applied to expel it. The silo offers a convenient place for the saving of such crops when the weather is unfavorable, but the lighter yield which can be obtained of them per acre, hinders them from being as profitable to grow for ensilage, as a crop of corn wherever that can be grown to the "late milk," or "glazing" stage of maturity.

The experience of the season points to the following conclusions of silos, and the filling of the same.

SOIL.

If a field with a loose, warm, loamy soil be convenient to the silo, and can be used, it should be selected in preference to heavy clay or cold soils. Sod may be ploughed under shortly

before the crop is planted, with the probability of good results from that method of preparation. In all cases the land should receive a liberal dressing of barnyard manure, be ploughed in the spring, and be harrowed to a state of fine tilth before the corn is planted.

SEED.

The vitality and vigor of growth of the variety of corn, which has been selected, should be tested. The putting of a few grains in a flower pot in a warm place in the house, will enable any farmer to verify for himself these qualities in his seed grain. Frequent disappointment results from neglect in testing the vitality of corn before planting it. As a general rule the variety which will yield the largest weight per acre, and reach the "glazing" stage of maturity before the frosts come is the one to select for any district. The "glazing" stage may be otherwise described, as the stage when the corn is just past its best condition for boiling in the ear for table use. It is better to err on the side of selecting a variety of a habit of small growth, which certainly will reach the glazing stage, than a variety of large growing habits, which may not come to the dried stage of maturity.

The maximum quantity of seed per acre may be put at 25 pounds; excellent results have been obtained from the planting of 18 to 20 pounds per acre.

MANNER OF PLANTING.

Planting in hills three feet apart both ways appears to afford the corn a better chance for maturing early, and for producing a large number of ears. A hand corn-planter may be used to dibble in the corn. From four to six grains per hill should be planted. Corn may also be planted by the use of a hoe, and covered to a depth of at least two inches. In that case the foot should be pressed on the soil over the corn. For small areas furrows three inches deep may be ploughed three feet apart. A marker, which may be constructed by driving wooden pins or harrow teeth through a plank at distances of three feet from each other, may be drawn across the furrow. From four to six grains may be dropped at the points of intersection. They can be covered quickly and well by the planter's foot. For large areas a single or double horse corn-planter may be used with advantage. The planting of corn in hills affords an opportunity for the effective cleaning of land from weeds without much hand labor, by permitting cultivation in both directions.

If planted in rows, the rows should be from three to three and a-half feet apart, and the grains may be put in at rates of three to four grains per lineal foot. For small plots, a convenient method is to open a furrow with a plough; the seed may be dropped in at the rate already mentioned, when it may be covered. For large areas a single or double corn-planter will be found a serviceable implement.

DEPTH.

Corn seed should be planted to a depth of from two to three inches.

CULTIVATION.

In cases where a crust forms on the land before or immediately after the corn comes through, a light harrowing will prove very helpful to the vigor and growth of the crop. Harrowing of the corn until it is six inches high, will increase the rapidity of growth and the yield per acre. The cultivation between the rows, when the plants are small, should be close to them and deep. When the plants have grown to a height of more than three feet, the cultivation should be more distant and shallow in order to avoid injuring the side roots of the plant.

SILOS.

The main features that are required in a silo, are strength to resist the outward pressure of its contents, exclusion of air by the construction of the sides, and a fair depth of holding capacity, in order to permit the ensilage to settle into a compact mass. Sufficient strength of both sides can be obtained in most silos, by the use of 2 x 10-inch or 2 x 12-inch studs, placed from 18 inches to 2 feet apart. A clay or earthen floor is most economical, and as good as any that can be put in. The inside of the walls of the silo

may be finished by a single lining of lumber, nailed to the studs, horizontally. The lumber should be tongued and grooved and dressed on the inside. If each alternate board be allowed to extend at the corners, so as to make a lock-joint, that will give additional strength to the structure. The corners of the silo, on the inside, should be filled by the use of a board or plank, 10 inches wide, set on end. The triangular space behind it, should be filled with sand or sawdust. I consider that studs, 2 x 10-inch or 2 x 12-inch, with one ply of sound tongued and grooved lumber, nailed horizontally on the inside, are sufficient for an efficient preservation of the ensilage. Additions to that method of construction, may be advantageous in a few cases for convenience. If a portion of the ensilage around the sides becomes frozen, that is more an inconvenience than a loss. It should be mixed with the warm ensilage, from the middle of the silo, before it is offered or fed to the cattle.

CUTTING THE CORN.

The cutting of fodder corn by hand, has been found the most economical of the methods which we have tried. If the crop be allowed to wilt in the fields, until it loses from 15 to 20 per cent. of its moisture, a pleasant aromatic odor will be developed, which leaves the ensilage with a more agreeable smell. From an examination which was conducted with two tons of corn, left to wilt in the fields, in small heaps of about twenty-five or thirty stalks each, it was found that, with two days exposure during bright sunny weather, the corn lost 28.5 per cent. of its weight; and with four days exposure, 36.8 per cent. After twenty-eight days standing in "stooks," it had lost 52 per cent.; and after five months, it had lost 58.8 per cent. of its original green weight.

FILLING THE SILO.

It is advantageous to cut into the silo those varieties of corn, which have thick stalks, in lengths of from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch. Cut into such lengths, there is no waste, and the stalks and cobs are all eaten up clean by the animals. Provision should be made for a fairly even distribution of the corn in the silo, while it is being filled, and for tramping the sides and corners most thoroughly. The weighing of the corn does not appear to be necessary or advantageous. After the silo is filled, the surface should be levelled and thoroughly tramped; and after the lapse of not more than one day, it should be covered to a depth of 6 inches with cut straw. If a foot of cut straw be put on top of that a few days later, probably no loss at all from waste ensilage, will be found on the opening of the silo for feeding. The feeding should be effected from the top of the ensilage, and a quantity of the exposed ensilage should be raked from the top daily.

Promising Districts at the Coast.

BY SUBSCRIBER, DEWDNEY, B. C.

I have been a reader of the *ADVOCATE* for three years, and think more ought to be written from our province than praise of the grandeur of her mountains and rivers. Although too much cannot be said of the scenery of B. C., I for one would like to see more in the *ADVOCATE* about the agricultural and fruit growing resources of the province. Certain parts bid fair to become foremost in the Dominion for the above mentioned industries. One of the sections that is rapidly progressing includes the valleys of the Lower Fraser. On the north side of the river is Chilliwack where farming is now extensively gone into, and pedigreed stock is imported to this valley, from the eastern provinces, of all breeds. Fort Langley, with its hop fields, and Ladness, with its thousands of acres of grain-growing land, also deserve attention. Then on the south side there is Agassiz with its lime cliffs. Dewdney, which is a very large valley, is a comparatively new settlement, yet there are large orchards set out, and a number of hop fields, Port Hammond with its banks of clay, which are productive of a very fine quality of brick is attracting attention, besides the large tract of prairie land which is not yet brought under cultivation. I suppose the valleys here mentioned will be new to most of the readers of the *ADVOCATE*, but in the near future they are destined to be better known and more highly appreciated.

My Experience With Corn Ensilage.

BY W. C. EDWARDS, M. P., ROCKLAND, ONT.

I promised you some time ago to give you a short sketch of our experience in growing corn ensilage, but regret to say that lack of time has prevented me doing it sooner. We began some seven or eight years ago, and like many other beginners sowed our first crop broadcast, and raised a considerable crop of food that was little better than water. We performed this folly but one year, and ever since have sown our corn in drills, with the exception of a few acres, which we tried in hills one year, and while we found this system work very well, yet on the whole we prefer the drills, and now confine ourselves wholly to this plan. As to our method of preparing the land for the crop, something depends on conditions and the variety of soil. But our usual plan is to plough in the autumn, and manure, sometimes on the surface, and sometimes ploughed in. In the spring we prepare to seed about the 15th of May, or as early after that date as possible. We first harrow the ground well, then plough lightly, then harrow thoroughly and roll. On some of our farms we drill in with an ordinary seed drill, stopping up all but two of the drills. But on our farm at Rockland we have always marked off the drills with a plough three and a-half feet apart, and have dropped the corn by hand, aiming to place the seed five or six inches apart, then cover either with harrow turned up side down, or with roller drawn crosswise over the drills. And now for the cultivation. Just as soon as the weeds begin to appear we begin to harrow with a light harrow with rather short teeth and slanted a little backwards, and this we continue as may be necessary until the corn is fully six inches or more high, passing over it with a hoe afterwards, and trimming up a little wherever it may be found necessary. Then we begin to use the cultivator. Sometimes we find it necessary to use teeth same as harrow teeth in passing through the first time. But after that we use the knives and cultivate quite shallow. We now use the hand hoe very little, but we pass through the cultivator every few days until the corn is far above the horse and man.

As to the seed we use, we have tried different varieties. Mammoth Southern, B. & W., Compton's Early and Red Cob Ensilage, and while we have had good success with all these varieties, yet our preference is for Compton's Early and Red Cob Ensilage. But the greatest success we have ever had was last year with Red Cob Ensilage and Longfellow, a Canadian variety, sown in alternate rows. The Longfellow almost completely matured, but being a native variety it was of course very much smaller than the Red Cob; at the same time this permitted the sun getting in and about the Red Cob, and it grew to a larger size than if the whole crop had been of this single variety, and it also matured fairly well. On the whole I do not think the weight of the entire crop was much less than if it had been all of the large variety, and the feeding value was much greater. It has proved to be very satisfactory feed indeed. We have fed some sixty steers upon it for the entire winter, and are yet feeding them; they are ready to turn off in excellent beef, as soon as the market will take them, and the only addition to the corn ensilage has been about five pounds of cut oat straw per day to each steer, and an average of five to six pounds a day of ground feed. We began with two pounds per day, and it was the first of this month before we reached eight pounds per day.

As to soil for growing the crop, we have grown it on almost every variety except black muck—it we have never tried; but we have grown it on light sandy soil, sandy loam, sharp gravelly soil and clay loam, and have never failed to grow a good crop on any one of these soils, and we have done as well as any on a good clay loam. Of course, good drainage is always a necessity to sure success.

Last season, finding it necessary to plant more corn than we had calculated for the autumn before, early in the spring we ploughed a ten-acre field that had laid waste for some years; the soil is sandy, and was always considered too poor to grow anything. After ploughing we harrowed it well, and with the use of a disc harrow

running crosswise over the furrows, the sod was thoroughly cut up. We then manured and ploughed again, and planted the corn as herein before described, and the result was one of the finest crops we have ever raised. In conclusion I will say that we have had great general success in growing ensilage corn. We think highly of it as a most useful and cheap food, and one most conveniently handled. At some future period we shall be glad to give you our views as to silo construction, and our method of harvesting the crop, opening our silo and feeding the ensilage.

Corn and Corn Culture.

BY THOMAS M'MILLAN, CONSTANCE, ONT.

At the present time there is no question in our whole system of farm operation of greater importance to farmers than that of corn growing. As a result of the past system of continuous cropping and extraction from the soil without a compensating return, our lands have become impoverished to such an extent that we must change our system of farming, not only that we may be enabled to make ends meet for the present, but in order to allow us in the future to bring back that fertility which has been carted off and sold by the bushel or the ton.

In order to restore this fertility we might have recourse to the various artificial fertilizers in use, the application of which would, no doubt, render the soil more productive for a time; but we find that many of these fertilizers act greatly as a leach, rendering available for plant food ingredients at present in the soil, but not in a condition to be taken up by plants, so that in the end their action has been mainly that of a helper in depleting the soil of its remaining fertility. Therefore, in our study of soils and manures, we are led to discover that just as milk is the only perfect food, that is the only food which contains within itself all the elements of animal life, so is common barn-yard manure the only manure which contains within itself all the elements of plant food.

Hence we are forced to conclude that we must turn our attention to stock raising for the purpose of beefing and dairying; not that this system will allow us to crop less, but that it will enable us to grow more and better crops, as it reminds us of the truism which goes, "The more cattle, the more manure; the more manure, the more crops, and the more crops, the more cattle we can feed." In this connection, I need scarcely say that the only profitable way to feed cattle for whatever purpose we have in view is to feed them well; for when we know that it requires two-thirds of a full ration for the food of support, it becomes quite evident that the only profit is to be found by feeding the remaining third.

Thus, in our system of stock-keeping we must first feed our cattle well, keep as many cattle as can be well fed and raise as much food as we can. In our system of chopping we find that much more fodder can be grown to the acre in corn than anything else we can grow, and this is my reason for saying that corn growing is one of the most important features in our whole system of farm operation which presents itself to the Ontario farmer at the present time, and more especially is this so when it will enable us to have at our command such a quantity of valuable succulent food during almost any season of the year.

This idea leads us to the fact which every Ontario farmer must realize sooner or later and adapt himself accordingly, namely, that the climate and conditions of this section of Ontario are such that we are often subjected to lengthen-

ed periods of drought during the summer season such as totally unfit this district from ever remaining a profitable pasturing country. When Ontario farmers realize this fact in its practical sense the corn plant, along with the other soiling crops, will be the source of an untold mine of wealth to the agricultural population of this country.

The three most promising sorts, and in fact almost the only varieties grown in this immediate neighborhood, are the Mammoth Southern Sweet, Red Cob Ensilage, and what is known as the Thoroughbred White Flint. The Thoroughbred White Flint is the best variety for leafing. It is very leafy right to the top, grows about the highest and gives more weight to the acre than almost any other variety of flint corn. It also matures quite sufficiently for preserving in the silo. Red Cob Ensilage is also a rank grower and gives a heavy weight per acre. It does not mature quite so early as the flint. The M. S. Sweet differs very little from the Red Cob, only does not seem to mature quite so early with us. In our experience in growing corn we find it is a plant very much resembling peas in this respect, that it will never thrive well on cold wet soil. Therefore, for this crop, as well as all others, the land in the first place requires to be thoroughly drained.

Although we have had good crops on the second and third plowing, yet I believe it is a settled fact that corn will generally grow best on sod, and a clover sod is the very best land available. Corn is a rank growing crop, and I consider will pay a profitable return for a liberal application of manure. Our mode of preparation has usually been: Put on a dressing of manure, either in the fall before ploughing or in the winter after ploughing. Plough a good furrow in depth, but not too wide, using the skimmer that all the sod may be well buried. Harrow well in the spring; cultivate early, just deep enough for a good seed bed, and directly after the spring crop is in cultivate again the same depth; harrow well, roll, and sow with the seed drill, in drills north and south about three feet or three and a-half feet apart, by closing so many of the spouts, or perhaps what would be better still, plant in hills, which would allow you to cultivate both ways.

In sowing the grain we generally sow middling thick, perhaps from one-half to three-quarters of a bushel per acre, and after sowing roll. Our reason for sowing thick is to be sure and get a good crop of plants in the first place; as, if the land be rich, the wire-worm sometimes attacks it, drought may set in, some of the seeds may not sprout, or the after-harrowing process may tear out too many of the plants. When the plants appear just nicely through the ground we begin to harrow, and go over it, say about three times one stroke at a time, perhaps three or four days apart. This stirring of the soil will serve to break any crust which may have formed, stimulate the plants and destroy any weed seeds which may have sprouted. After the plants get too high to harrow we start the scuffer, and scuffle once every week till harvest time. Scuffle deeper at first, but gradually get a little shallower as the plant grows. My reason for shallow after cultivation is because the small rootlets through which the plant gets most of its nourishment come very near the surface of the ground and would be injured by deep cultivation. When once the plants get sufficiently high we go through it with the hoe, cut all the weeds and single the plants out to about six inches apart in the drill, as experience and experiment both go to prove that corn planted in rows about three feet apart, and the stalks at least six inches apart in the rows, give the very heaviest crop of fodder. Corn is a plant which requires plenty of room to grow and mature, and allow the sun's rays to get down to its roots. It is upon this account that we advise having the drills run north and south. If the corn plot is dirty with foul weeds it will require a second hoeing, which, if properly done, will make the land as clean as a summer-fallow. This is all that is required until the crop is sufficiently matured for harvesting, all of which conditions, if properly observed, will certainly ensure a satisfactory return.

(TO BE CONTINUED.)

FIRST PRIZE ESSAY.

Corn and Corn Culture.

BY ELMER LICK, OSHAWA.

The ultimate success or failure of the corn crop depends very largely on the cultivation given it. Without doubt, clover sod ploughed the summer before or in the fall, with a liberal supply of manure, is the best preparation for the land. The usual practice is for corn to follow some grain crop. The corn likes a loose and fine soil. After a crop of peas on sod there is a large amount of partially decayed vegetable matter in the soil, which assists in keeping the soil open and mellow. From the past season's experience under above conditions, I am strongly inclined to adopt such a rotation. The land intended for corn should be ploughed in the fall, and if possible the manure should be ploughed under at same time. In case manure is not then available, fresh manure may be drawn from stables during the winter and spread on the surface, or placed in large or small heaps in the field. Corn is a gross feeder, and does not require that manure should be thoroughly decayed—fresh and somewhat strawy being satisfactory. From ten to fifteen tons per acre is usually sufficient for most soils to ensure a good crop; more may be used to advantage, provided a person has it. In case the land is not very rolling, and the soil not frozen much, I would recommend spreading the manure when drawn out. Otherwise place in large piles to be drawn and spread in spring, or in small heaps ready to spread.

In spring cultivate, harrow, and, if time, roll as early as the soil can be successfully worked. This will ensure the destruction of a large number of weeds. Plough the corn ground thoroughly a few days before planting time, harrow thoroughly and roll. In case of heavy clay soils it may be found advantageous to cultivate in spring, and not plough, owing to liability of such lands to bake. The land is now ready for planting. The time of planting will depend largely on local conditions. Plant as early as possible and be safe from late frosts.

There are two methods of planting—hills and drills. When planting in hills the land is marked both ways with a marker, and either planted by hand, using either a hoe or the toe to corn, or else by a corn planter. The corn planter is much more rapid, a careful hand being able to plant three acres in a day, while by hand one acre is a good day's work. One difficulty with most corn planters is that they will not successfully handle tarred corn, sometimes dropping more than is required, but more often failing to drop enough. Tarring corn is done largely in our section for the purpose of deterring crows from pulling the plants after growth has begun. Either pine or coal tar will answer the purpose. Warm the corn and have the tar hot, dip a stiff corn cob or stick into the hot tar and stir thoroughly among the corn. Do not put on too much, simply blackening the kernel being sufficient, sprinkle on lime or plaster and stir well. The corn thus tarred will plant nearly as well in a planter as untarred, provided there is no brush in connection with planter. The distance apart of hills varies three to three and a-half feet; some for ensilage purposes plant as near as two feet each way. For the smaller growing varieties such as Yellow Canada, Compton's Early, Twelve-rowed, etc., three feet with four plants to each hill is sufficient. At three feet six inches, and four plants to a hill, more grain will be secured with less fodder. About one peck of seed is sufficient for planting one acre. When planting in drills a common seed drill will do the work. Arrange so that two rows are sown at once, and a guide left to come back by. To do this stop up all the feeds except two, and remove all feet not used in sowing. No marking is necessary. One man can drive and look after the drill, but it is better for one to drive and another look after the machine; the rows will be straighter and there is less danger of corn clogging in spouts or feed cups and being unnoticed. The greatest difficulty I find with drilling is to get rows as far apart as I would like. My drill is a ten spout seven inch drill, consequently can only get rows thirty-five inches apart. About twenty to twenty-five pounds of seed are required by this method. There are advantages and disadvantages connected with both of these systems of planting.

The advantages of hill planting are less hand hoeing to keep down weeds, less work in harvesting, the land is cleaned more thoroughly of weeds. The advantages of drilling: Takes less time to plant, done as easily as marking for hills, safer to harrow in order to kill weeds, as more corn is sown, therefore we are not so afraid of tearing up too much, permits use of an open back binder for harvesting the corn, which is not satisfactory when planted in hills, gives plants a better chance than when crowded into hills. It would be well to mention that care should be taken that corn is not left too thick in row. In three foot drills plants should be nine inches apart in the row.

During the past season I grew eight acres of corn planted in hills forty inches each way, and also six acres drilled thirty-five inches apart. The eight acres was cultivated with horse three times one way and twice the other way—twice run over by hand hoes to remove any stray weeds around hills. The six acres planted for ensilage purposes was cultivated three times, and of course only one way. About four acres was hand hoed once, the remaining two acres not requiring it, as scarcely a single weed was to be found. The eight acres was comparatively a dirty piece of land—some thistles and lots of foxtail. The six acres being after a crop of

peas, on an old pasture of eleven years standing, naturally was free from weeds with the exception of those in the manure. Only in rare instances could a single weed be found in either piece at harvest time. Calculating a man at one dollar per day, and a man and team at three dollars, the comparative cost per acre (accurate account was taken of all time employed in planting, cultivating and hoeing) was, for the hill planted, \$5.37½; for the drill planted, \$2.64, showing an apparent advantage of 73 cents in favor of drill planting. Had the six acres been equally as full of weeds as the eight acres another cultivating and extra hand hoeing would have been required, which would have raised the cost of cultivating, hoeing, etc., on the six acres to \$4.01, thus making the work on the eight acres, under equal conditions, 64 cents less per acre than that on the six acres.

The corn crop needs frequent stirring of the soil, especially during the first month of growth. Harrowing the corn when two or three inches high is very effective in stirring soil, and also killing weeds. The harrows should have dull teeth. A good cultivator, scuffer or horse hoe is an essential feature in a corn crop; such implement should have the following qualities: 1. Cut a wide surface, and cut it clean; my own cuts three feet and cuts it clean. 2. Be easily handled, changed in width, depth of working, and have a variety of steels for various work. 3. Should be such that it can be arranged to shove some dirt up to the plant when six or eight inches high; this covers up small weeds, and yet does not cover up leaves of corn. When cultivation is finished, I like a ridge along the row about three inches high and six to eight inches wide. I would prefer level cultivation, only I know of no method so economical in killing weeds. When planted in hills I would recommend to cultivate three times each way; hand hoe once or twice, according to amount of weeds. Above all, keep the corn crop free from weeds; it costs a little more to do it, but it is the most economical in the end.

Calculating from the eight acres of corn planted in hills the following approximately would cover cost of growing a crop of corn:—

| | |
|---|-----------------|
| Ploughing eight acres twice, or sixteen acres at \$1.50 per acre..... | \$ 24 00 |
| Harrowing eight acres twice, or sixteen acres at 15c. per acre..... | 2 40 |
| Rolling eight acres at 15c. per acre..... | 1 20 |
| Marking eight acres, ¾ dy horse and ¼ dys. man..... | 2 25 |
| Planting eight acres, 3¼ dys. man..... | 3 50 |
| Seed Corn eight acres, two bushels at \$1.40 per bushel..... | 2 80 |
| Hand hoeing eight acres twice over 6¼ dys. harrowing eight acres, 5/12 day man and team | 6 50 |
| Horse hoeing eight acres three times over, 5¼ days man and horse..... | 1 25 |
| Manure, eighty loads at \$1.00, ½ charged to corn..... | 10 50 |
| Rent, eight acres at \$4.50 per acre..... | 36 00 |
| Cutting and stooking eight acres at \$1.25 per acre..... | 10 00 |
| Total for eight acres..... | \$127 06 |
| Or for one acre \$15.88. | |

The stalks or stover will pay for husking and hauling. The yield under favorable conditions should be at least 100 bushels ears per acre, or fifty bushels shelled corn per acre; this, at 50c. per bushel, gives \$25, or a profit of over \$9 per acre, beside which there is to be considered the advantage of cleaning the land.

To put the matter in another light: fifty bushels of shelled corn cost \$15.88, or about 32c. per bushel. I, for one, do not know of any grain having equal feeding value that can be produced for anything like same cost. Certainly such a result as the above can only be attained provided a man takes pains and does his work thoroughly. In our own section the Canada Yellow is largely grown; it is nearly certain to mature in all seasons. The Twelve-Rowed is growing in favor; yields a much better crop; both grain and fodder is later than Canada Yellow. The Compton's Early, from one year's trial, is apparently superior to other varieties, especially for silo, when sown at rate of twenty-five pounds to the acre. It is rather earlier in maturity than Twelve-Rowed. The Smut Nose is heavy in straw, and leaves a good crop of grain; cob small and limber at first, giving the impression of soft corn, even when thoroughly ripened. At present this variety promises well; however, more experience is needed in order to definitely place its merits. The above mentioned varieties will ripen under average conditions in this locality, southern part of Ontario County. For silo purposes would name Compton's Early, Twelve-Rowed, Smut Nose. The M. S. S. and other late varieties will not mature sufficiently to produce best quality of ensilage, and I believe in having the best quality, even if I can not secure a large crop per acre.

In conclusion, let us recapitulate a little: 1. Prepare land thoroughly; manure liberally. 2. Select varieties suited to locality and purpose for which grown. 3. Test germination of seed. To do this place fifty or one hundred kernels in a box of sand, kept moist and near the stove, or in a hot bed; when germination has taken place count and thus find per cent. that will grow. 4. Plant carefully and uniformly, and as early as locality will permit. 5. Cultivate frequently; do not let soil bake hard after heavy rains during the early period of growth. 6. Plant at least five acres of corn for each one hundred acres you farm.

SECOND PRIZE ESSAY.
Corn Culture.

BY JAMES BEATTIE, FLORENCE.

There is no doubt on my mind that it is by far the most profitable crop on the farm. After eighteen years experience in its culture I consider corn a most valuable crop. I differ from a number of my brother farmers who say that it cannot be grown on all kinds of land, for my experience has been that where the land is in fair condition and properly worked there need be no failure. I do not believe in making a specialty of corn to the detriment of all the other crops. I corn my poorest and dirtiest land. My mode of culture is to plough deep in the fall so as to have the winter frosts pulverize our heavy soil, as our land when ploughed in the spring very often bakes, making it very difficult to work a fine seed bed, which is very needful. Then through the winter, or after spring seeding, to haul out about fifteen tons of manure to the acre, spread it evenly, and then use the disk harrow, lapping half in the same manner, then harrow once in a place each way and roll. I marked the land north and south three feet ten inches wide, check marked east and west, one foot eleven inches apart and plant with hand-planters, dropping as near as can be three grains in a hill. After the corn is about three inches high, the ground being dry, I have a light, wide iron harrow with straight teeth run over once in a place each way, and from four to six days after start the one-horse iron cultivator in the wide rows, keeping close to the east side of each row. When the field is all gone over in this way I go back to the place of beginning and do the west side of each row, still keeping in the wide rows, as I stir just double the amount of fresh ground I would by going back in the same rows, besides allowing the ground to get more benefit from the sun. We go through the narrow way from twice to three times and the wide rows from five to six times. A steady, slow horse is required to keep in the narrow rows. We rarely do any hand hoeing unless the season is so very wet we cannot use a horse, and when we have Canadian thistles in our field we sometimes require to cut them out of the corn hills. We cut all our feed and bedding during the winter in order to have the manure fit for this use. This mode of growing corn gives us more grain and considerably more stalks of a better quality than when planted further apart each way. My object in having the wide rows north and south is to more fully allow the sun in the rows. The three best kinds of seed I have found in our locality are as follows:—The eight-rowed Longfellow (yellow) is a large, hardy, very sound ear from eight to sixteen inches long. I have many times taken three ears from one stalk, and occasionally four. I would here place Smut-nose second, which is the yellow corn with the top end of the ear for about one inch a dirty color. It has a sound, large kernel, ears from seven to twelve inches long, two ears to a stalk very common, occasionally three, having eight rows of grain on the ear. Third, Strawberry Dent is, as its name indicates, the color of strawberries, from eight to twelve rows on each ear, and is a good yielder. All three of these kinds, the season being favorable, mature in from seventy-five to ninety days. I base my value on the crop remembering the feeding value of the stalks, as these three kinds produce fine, leafy and less woody stalks than some of the larger kinds; the cob being small they turn out twenty-five bushels per acre but an average crop. I have grown one hundred and fifty bushels per acre on the whole field. When grown from eight to twenty acres per year. When grown through our crop for the last time I have one-half pound of turnip seed sown to the acre. This gives a lot of good sheep feed for late fall. If it is not required for feed it will pay as manure on the land. Cutting costs me \$1.50 per acre without board. We put from twenty to thirty-five hills in a shock, leaving one hill in the center of each shock uncut. I had one man cut two hundred shocks and over each day. Husking costs three cents per bushel without board. This same man has repeatedly husked from sixty to seventy bushels of ears per day. Before cutting, seed for the following year should be picked; select the early and best matured ears. The stalks we have drawn to the barn, and sometimes put in stacks close by the barn where they are ready for winter use. I never leave them in the field through the winter, as I consider they bleach and waste. I fed fourteen head of horses and colts and sixteen head of cattle on corn stalks and wheat and oat straw, mixed and cut, since last fall, and we had sufficient stalks to do until the end of March, being the product of twelve acres. To these we fed no hay, but we fed from two to four quarts of oats per day or its equivalent in chop. All are thriving well. I have had no personal experience with ensilage, not having a silo. I went a few weeks ago to see one and examined the feed as well as the cattle fed on the ensilage. I think it is going to be a great boon to the farmers to grow corn, make ensilage, finish our cattle for the English market, at the same time enriching our land and enabling us to bid defiance to the McKinley Bill as far as our cattle trade is concerned.

REMARKS.

Now there may be some who think that I plant too close. To those I would say no. In the fall of 1890, before being cut, and about the time the corn was ripe, John Wood, Esq., Reeve of Dawn township, a practical farmer, as well as many others, went all through a twelve acre field, one half of said field planted three feet ten inches both ways, the other

half close as above stated. Mr. Wood pronounced the corn, where planted thick, just as good as the other with double the quantity per acre. But after husking I claim I got one-third more stalks per acre of a better quality, and from 15 to 20 per cent. more corn. The ears were not so long, and I did not see any more soft corn in the thick than in the other, and there was no difference in the field ripening, as many who saw it thought there would be. Why I planted one foot eleven inches was that I used the same marker, having put one additional stalk in the centre between the markers for the three foot ten-inch rows. Perhaps a better way would be to use two markers, the close way being two feet or two feet three inches, as it would give more room for the horse. I do not recommend this section we are located centrally between Lake Huron and Lake Erie, and summer rains is an exception, not the rule, and we find the fall ploughing, as well as being mellow, holds moisture through the dry season better than spring ploughing. It has been said of corn, and properly so, that corn is a gentleman, and that he requires a deal of waiting on, in fact I find the more work we put on our corn the larger pay we have for our labor. By growing corn I can keep my land without summer-fallowing, thereby getting returns each year, and at the same time keeping up the fertility of the land, as I consider a farmer who grows small grain for market to enable him to pay off the mortgage of say half the value of his farm, is very little ahead when the same is paid, as he has sold the best of his soil when it should be our aim to sell as little grain as possible, but to feed and finish our stock for the best market. Remember, there is no profit in stock if we do not finish them. Our government refused us free corn, to enable us to feed more stock, and thereby enrich our soil, but in their wisdom they allow it free for malting purposes. Were they looking to our interests as farmers in so doing? I consider the best time for planting is from 15th to 24th May.

FIRST PRIZE ESSAY.
Potatoes.

BY D. BUCHANAN, HENSALL, ONT.

About 150,000 acres of Ontario's arable land is annually devoted to the growth of the potato crop, and gives an average yield of 118 bushels per acre. For many years the Pink-eye variety was almost universally grown. When it became exhausted the Early Rose was introduced, and now that it has given way several other varieties are struggling for the supremacy. Among the most promising in this vicinity are the White Elephant, Crown Jewel, Beauty of Hebron, White Star, Late Rose and the Grange potato. The Grange is a large, round, white potato, with the skin slightly tending to roughness. The tubers are uniform in size with but few eyes, deeply set and pinkish in color. It matures in good time though not early, and in eating qualities it is about medium. The vines grow luxuriantly, yet are more subject to the attack of the beetle than some other varieties. In yield it is exceptionally scarce.

The Late Rose yet finds favor with quite a number, although it has been grown in the locality for many years. This is a large, oblong, rose colored tuber with a goodly number of eyes. In table qualities it is equal to the best; grows luxuriantly, is somewhat late in maturing, and resists the beetle fairly well. It was proportion of small tubers has so increased that at present it is but average.

The White Star is a long, clean skinned, beautifully white potato with but few eyes. It is one of the heaviest yielders, and has a well developed vine. Were it not for its solid and moist nature when cooked this variety would be much more generally applied in the autumn or early winter; when kept until spring they cook equally as well as others, often pronounced much superior.

The Beauty of Hebron, one of the most popular varieties, resembles in many respects the Late Rose. It is a heavy yielder though not equal to the White Star. The vines are strong and not easily blown down. The small potatoes are rather plentiful. For table use it probably tops the list.

A promising and somewhat early variety now being introduced is the Crown Jewel, a smooth, clean potato, oblong in shape, and a splendid cooker. Though it gives a large yield the vines do not grow as vigorously as might be desired, thus the ravages of the beetle are more disastrous than with most other varieties.

The White Elephant has been very generally grown in this vicinity, and has met with general favor, yielding a heavy crop of large tubers. This potato is of a rose color with pinkish patches. Though large they cook well, and are dry and mealy. It might be termed a late variety, and is thought by some to be more subject to the attack of the rot than many others.

The best method of cultivation is as follows:—Plough deeply in the autumn, or plough on the rut and cover principle, and thus leave the land in drills. When left in this shape a larger surface is exposed to the action of the frost, and a fine tilth will be more easily secured in the spring. If the land is not too rolling apply the manure in the early winter with the first light snow, and scatter from

the sleigh. If it will not permit of this the manure will require to be put on in the spring and worked in. The amount to apply is from about sixteen to twenty loads an acre according to the condition of the field. A shallow ploughing, with sufficient surface cultivation to give a fine tilth, is what is required before planting. Early seeding will not give as large a crop as when it is done later, say the last week in May. Plant by what is termed ploughing in. This consists simply in ploughing the field and planting in every third furrow. This furrow should be drawn quite shallow, and the following one deep enough to cover the sets to a depth of about three inches. Let the sets be of a good size—a medium sized potato being cut in two, and a large one into three or four. I prefer the seed cut but a few days before planting. Place the sets from twelve to fourteen inches apart in the row, and gauge the plough so that the distance between the rows will be thirty-two inches. When the young shoots are peeping through the ground harrow well. As soon as the rows can be distinctly traced get the horse-hoe going, and from this on all weeds should be kept down, and the soil frequently stirred to keep it loose and retain the moisture. The horse-hoeing should be continued as long as it is safe, but as the season advances and the tubers commence to develop the cultivator should be narrowed and not allowed to run as deeply as when the plants were young. The application of paris green for destroying the beetles is too well understood to require mentioning; suffice it to say that a dessert spoonful to a pail of water is a sufficient quantity, and that while applying the mixture it should be frequently stirred as the poison does not dissolve in, but simply mixes with the water. The process of hilling up is unnecessary, at least to the extent to which it is ordinarily practiced, and it is now being done away with, as level cultivation gives equally good, if not better returns.

Another method which, though not so universally practised, has given even more satisfactory results when tried, is to apply the manure in the way already mentioned to a clean sod that has been down one or two years. Leave the land in this condition until planting time, then plough in the potatoes as already described. The young sprouts will come through at the heel of the covering furrow slice, and as the sod decays it serves as a manure, and thus stimulates the growth of the young plants. I believe this method to be the most common in some localities, and it is rapidly growing in favor here. It may be that ere long the greater part of our potato crop will be grown in this way.

Mr. Thos. J. Fair, Frankford, Ont., in a very practical, well written essay, states that he has a high opinion of the Early Vermont which, according to his views has more good qualities than any sort grown in his locality. It is extra early, a strong grower, a heavy yielder, a good keeper, excellent for the table and free from disease. It has the faculty of recruiting after prolonged dry weather when rain or more favorable weather appears. This writer who has tested the Early Vermont for twelve years and along side many new and old kinds under the same conditions, is more favorably impressed the longer he grows it. He selects the most perfect specimens at digging time for next season's seed, and again, when cutting the sets the best are placed by themselves, and from the produce of these the next year's seed is again selected; by this means there is no fear of deterioration. The drought is the greatest enemy to contend with; the potato being largely composed of water, in a dry season the tops dry prematurely and the tubers are small and of poor quality. The cultivation that secures the most moisture will give the best results. He considers thorough drainage a necessity and is also in favor of subsoiling. Mr. Fair is not in favor of fresh manure which he finds produces rot and disease, but contends that the best preparation is a green crop for which the land was manured and this ploughed under. The best of all is clover, the decaying roots furnish food and moisture to the potato. In trying level and hill cultivation in the same field and season he finds a broad, shallow hill gives the best results.

Mr. George McCormac, Charlottetown, P. E. I., gives a very full account of the mode of culture, as well as the most popular varieties grown on this fertile island. He mentioned the McIntyre amongst the best of the sorts. It is a good keeper and commands a ready sale in the United States market. The St. Patrick is also a good table variety with a beautiful white skin, medium, early and very prolific. As regards cultivation turf or sod land, which has been carefully ploughed the fall previous, and manure applied in the spring. Potash fertilizers, amongst which wood ashes are the cheapest, and potash sulphate has with him proved profitable. He also is in favor of planting at different dates as early as possible, and then again late in order to suit the season.

Mr. Henry Reeve, Highland Creek, Ont., writes an essay in which most of the points are ably discussed, particularly in regard to the varieties with which he appears to be quite familiar. He speaks highly of the Rural New Yorker No. 2, which he describes as large in size, white skinned, with few eyes, and of twenty varieties grown by him it gave the best results. The Crown Jewel, a beautiful potato, rather oblong in shape, with white skin, a vigorous grower and a long keeper, ripens early, and promises to be a leading variety. He also grew Barpee's Extra Early on a small scale, and found it about ten days earlier than the Beauty of Hebron or Early Rose, and as productive as the former. The tubers are of good size, oblong in shape, and very smooth with fine table qualities, and he believes it has come to stay. Mr. Reeve

argues that as the price of the potato varies, the strong point is to keep down the cost of production, so that if not disposed of the crop may be fed on the farm. In order to do this horse labor must be altogether employed.

Mr. John Gur, Newbury, Ont., in a capitally written essay, thoroughly believes in ashes as a fertilizer, and mentions that this, on account of the potash it contains, is required by the potato. Clean cultivation, frequent stirring of the soil are necessary, and also cleverly argues that he can see no reason for cutting a potato into three small sets and then planting them in one small hole. He also mentions that the potato crop is one of the most profitable to the grower, and should yield a sufficiently heavy crop to enable them to be used for cattle feeding. In addition to varieties mentioned by other essayists, he favors the Mawburn, Queen of the Valley, Minnesota Red, with Lee's Favorite as an early sort.

Mr. Edwin Chase, Cornwallis, N. S., makes a point of removing the potatoes he intends for seed to a warm out-building two or three weeks before planting time, in order that those that will sprout readily may be picked out, and those with dull eyes are discarded. He favors cutting them and drying the sets in air slacked lime or road dust, and argues this prevents any chance of the sets rotting in the ground. The growers in his locality have been noted for shipping potatoes to the West Indies. For this trade the old Garnet Chili proved a good sort, standing the heat remarkably well. He also mentions the Peerless as another suitable sort for shipping.

Mr. John Holborn, Belmont, Ont., states that although the land in his locality is heavy clay he now experiences no difficulty in growing a good quality of potatoes and in paying quantities. His plan is to apply twenty loads of farmyard manure to a clover sod, covering this with a jointer plough and thoroughly working the surface. He also believes in shallow planting after the soil becomes warm, and by this method has had no failure in thirteen years.

Weeds.

BY J. HOYES PANTON, M. A., F. R. G. S.

(Continued from page 55.)

Sisymbrium officinale (Hedge Mustard).

Plant one to three feet high; wide spreading branches; small yellow flowers; pods awl-shaped, closely pressed to the stem, and erect, of about same size as those of common mustard. A very common roadside weed, growing usually close to the sidewalks in villages and small towns, but seldom proving a nuisance on the farm.

PAPAVERACEAE (Poppy Family).

We are not troubled much with weeds from this order, of which the plants have a milky or colored juice, regular flowers, which soon fall to pieces and cover the ground where they have been in bloom.

Papaver rhoeas (Field Poppy).

This variety bears red flowers, which are exceedingly common in the fields of England, but as yet have not got such a foothold in Canada. The variety *P. dubium*, with lighter red flowers, is also making its appearance. Hand-weeding is a good method to get rid of these annual weeds bearing showy flowers.

Chelidonium majus (Celandine). FIG. 12.



Fig. 12.

Common Celandine

This is sometimes found by the waysides, having escaped from gardens, where it has been grown. The flowers are small, of yellow color, and arranged in a sort of umbel; the pods long and slender. The juice is a thick yellow fluid. It is not likely this plant will prove troublesome where thorough cultivation is carried on.

HYPERICACEAE (St. John's-wort Family.)

The only plant in this family that may be classed as a weed is:—

Hypericum perforatum (St. John's-wort).

This has a shrubby appearance, and is about 1½ feet high. It is very common along the railway track, where its yellow flowers present an attractive appearance. In some places it becomes a nuisance, and as the root is perennial, it is not easily destroyed. But where the land is thoroughly worked it is not troublesome. The spotted appearance of the leaves, especially when held between the observer and the light, together with the innumerable stamens in its yellow flowers, serve to distinguish it from other flowers of the same color.

CARYOPHYLLACEAE (Pink Family).

Herbs, of which the stems are somewhat enlarged at the joints; leaves mostly opposite and entire; flowers terminal, consisting of four or five parts. Some very beautiful flowers are found in this group, such as the Pinks, Carnations, Soapworts and Sweet William.

Lychnis Githago (Purple Cockle). FIG. 13.



Fig. 13.

Field Cockle

A beautiful flower, but in the wheat field it has lost its attractiveness, and is considered a pest. Its seeds are not so readily got rid of in cleaning the wheat as some, so that it injures the quality of the flour. The plant has a grayish look; is about 2 to 3 feet high, and bears beautiful violet-purple flowers. The seeds are black and irregular in form. The bright flowers make it readily seen, so that it can be pulled before seeding, and being an annual, be checked in its distribution.

Silene inflata (Bladder Campion). FIG. 14.



Fig. 14.

Bladder Campion

This plant bears a white flower; the calyx or outside floral cup is quite veiny and bladder-like in appearance. The pistil has three styles, while the cockles have five. It is a perennial, and in some parts quite common, but is not difficult to suppress by clean cultivation.

Lychnis vespertina (White Cockle).

This weed has a white flower, which, in general appearance, resembles the Cockle; but an examination of the flowers shows there are two kinds—those on one plant being all staminate, those on another pistillate, that is, each plant bearing one set of reproductive organs. This biennial plant is getting more common of late, but is not difficult to get rid of where thorough cultivation is practiced.

Cerastium arvense (Field Chickweed.)

This weed is usually found in dry fields, and is sometimes very common; leaves hairy and small; white flowers, with five-notched petals twice as long as the sepals; the stems are also hairy. Not a troublesome weed.

Stellaria media (Chickweed).

The stem of this annual is weak and spreading, with a line of hairs; leaves somewhat oval and many small star-like white flowers, and is generally found growing on damp ground. It is quite hardy, but is readily checked by under-draining and frequent cultivation.

Saponaria officinalis (Bouncing Bet). FIG. 15.



A strong, coarse plant in the Pink family; flowers somewhat pinkish, clustered in corymbs; leaves 3-5, ribbed, 2-3 inches long; lower ovate; upper more tapering; stem 1-2 feet. Being a perennial and vigorous grower, this weed spreads rapidly. It is very common by the roadsides, Lundy's Lane, Niagara, and other parts of Ontario. It does not appear to invade cultivated fields to any great extent, but is chiefly confined to the roadside.

Insect Life, the periodical publication of the Division of Entomology of the U. S. Department of Agriculture, contains among the editorial articles of its April number an account of a dangerous potato pest which has recently found its way into this country. It is known as the Potato-tuber Moth (*Lita solanella*, Boisdu), and was first noticed in 1855 in Tasmania. It has been very destructive to potatoes in Australia, Tasmania, New Zealand, and Algeria, but in this country did not attract attention until November, 1891, when it appeared in California. The remedy advised is the immediate seclusion and destruction of all infested potatoes.

The Prize Acre of Potatoes for 1891.

BY H. A. HALE, SHERBROOKE, Q.

Last season the Nichols Chemical Co., of Capelton, Q., offered prizes to the amount of \$200 for the best acre of potatoes grown respectively in the provinces of Ontario and Quebec, the conditions being that some one of their three brands of fertilizers should be the only enriching the crops were to receive. Although I was fortunate enough to secure the first prize for the Province of Quebec, and to outyield the best acre in Ontario as well, I cannot say that the average yield of all the competing acres was such as to warrant our being satisfied—it should more properly act as an incentive to better cultivation and greater yields. The action of the fertilizer was with me in every way most satisfactory, giving, by careful weight and measure, in several tested parts of the field, a crop at the rate of 726 bushels to the acre. My total yield was 438½ bushels of sixty pounds, and this reduced total yield I can largely trace to errors in cultivation. The results of these prize competitions, by stimulating farmers to extra efforts in properly preparing and enriching their land, and in taking better care of their crops while growing, are, it seems to me, of far more importance to the general welfare of the country than most of us are at first aware of. The actual average yield, year by year, of potatoes throughout the Dominion is, I fancy, not much over 80 bushels an acre, resulting in a probable loss, after deducting the seed, value of manure, and allowing for labor at \$1 a day or from \$10 to \$20 an acre, according to the mode of cultivation and the price for which the crop sells. The average yield in the Nichols Chemical Co.'s contest was, for the province of Quebec, 357 bushels; for Ontario, 246 bushels; total average, 320 bushels, or about 240 bushels an acre more than the average yield for the whole of the United States and Canada. (I see that in 1890 it was officially reported in the U. S. as 57½ bushels.) Still, as I said before, these results should serve only as incentives to better systems of cultivation, and proportionately better yields. The year 1889 was called an "off year" for potatoes, and yet, the first prize of \$1,100 in the fertilizer competition in the United States was won by Chas. B. Coy, of Presque Isle, Aroostook county, Maine (in about the same latitude as the city of Quebec), with a yield of 738 bushels on a measured acre. In 1888 E. S. Carman, of the Rural New Yorker, undertook, under a forfeit, to grow potatoes with commercial fertilizers alone at the rate of 700 bushels an acre, the fertilizers being applied at the rate of 1,746 pounds to the acre. The crop was dug and weighed in the presence of a committee who reported one piece as producing at the rate of 1,076 bushels an acre. These figures at first seem somewhat startling, but we have no reason for doubting their accuracy, particularly when it is known with what care the measuring of the results was carried on; and I myself dug from spaces of ten feet in different parts of the acre grown last season potatoes that gave 2½ pounds to the hill, or 25 pounds for the rows of ten feet, being a pound to every square foot of ground, or at the rate of 726 bushels an acre. Although one cannot expect such yields as these to be achieved by all, still they serve to show what is within the bounds of possibilities, and if such results can be obtained by the liberal use of superphosphates, then why may we not reasonably hope to see the average yield of potatoes throughout the country raised from 80 bushels an acre to at least double what it is now? and if not, why not? And if yes, then what a benefit to the country it would be when we think that the total yield in the United States last year was between 225,000,000 and 230,000,000 bushels!

The land chosen by me for the contest cer-

tainly was not virgin soil, having been under ordinary farm crop rotation for over fifty years; a sandy loam overlying a gravelly subsoil, and had been plowed while in sod early in the autumn of 1889, manure spread broadcast in the winter, and prepared for potatoes in 1890, but was sown with barley instead, and seeded to clover, being heavily disc harrowed and rolled. The barley was but a poor crop, though the clover took well, and by the 10th of May, 1891, had made a fairly heavy sod; on this was sown "Royal Canadian" superphosphate at the rate of 900 pounds to the acre, heavily disc harrowed both ways, and on the 25th ploughed, disc harrowed again both ways, and 900 pounds more of the superphosphate sown broadcast and worked in with an ordinary iron harrow. This was the best I could do, but it was not the ideal ground for potatoes I should have liked—the sod was too heavy and too fresh to allow of good even work in drilling with the double mould-board plow with which all the opening and covering was done; and the crop was planted at least three weeks later than it should have been, viz., 23rd, 29th, and 30th of May. Twenty bushels of seed was used, cut large—never less than two eyes, and dropped as soon as cut, the days being cool and cloudy. The drills were thirty inches apart, and the sets should have been twelve inches in the row, but in the hurry to finish on the Saturday night many rows had them from 18 to 20 inches, and this is where a heavy shrinkage in the yield occurred. A light roller followed the plow, and instead of a harrow they were twice gone over with a Breeds Weeder—the second time after the tops were five inches over ground. A Planet Junior cultivator was used between the drills three different times, narrowing the gauge each time. In hoeing the sods were found to be more or less troublesome (on stubble ground this hoeing would not have been necessary), taking the time of two good men three days to finish. The first light earthing-up was done with the same cultivator, completely checking any further growth of weeds, and a second earthing-up was given in a fortnight to protect the tubers from the danger of sun-scalding; and here was where another mistake was made. In order to facilitate the operation two teeth were set forward in the cultivator, then the two mould-boards behind, and the shovel-pointed tooth followed in the rear. All worked well till the second time of earthing-up, when it was found that the two forward teeth, though not set wide or deep, injured the roots of the plants, and wherever the cultivator ran close to the drills, either on one side or both, there the yield of potatoes was largely reduced. Before using paris green we tried hand gathering the potato beetles in pans by shaking them in with whisks and emptying these at the ends of the rows into pails of water on which floated half a pint of kerosene oil. This occupied three men for one day, and the weather being showery, was more expeditious in saving the tops than poison would have been. Had this been done earlier I am convinced that it would have been more effectual, less expensive, and in every way more satisfactory than using poison. After this paris green was applied in solution at a cost of \$4, and later on two men spent another day in hand picking as before. Early in August, while negotiating for a knapsack sprayer with which to try the bordeaux mixture as a preventive of rust, the blight came, and, acting upon an old time practice in the hope of preventing this from spreading to the tubers, I cut the tops from most of the rows, close to the ground, spreading at the same time air slaked lime over the drills. Here was another grave mistake, for not only were the rotten potatoes more numerous where the tops had been cut than where they were left to dry down naturally, but the yield as well was estimated to have shrunk at least 100 bushels an acre. Where the rot did appear was on those tubers which were upon or near the surface of the ground, and this is why I believe the practice of plowing up a furrow against one side of the tops, and heavy enough to bend them over, has often shown such good results in checking the rot; it not only covers the potatoes, but it places the tops over the furrows between the drills, and hence the rust spores are less liable to come in direct contact with the tubers. As to

the theory that the rust plants send their roots down the potato stems through the roots, and so into the tubers, it needs further proof; my own observations would lead me to believe that it is the direct contact of the rust spores with the tubers that causes them to decay, and that by covering these with a late earthing-up before the rust appears, and before the tops are too large to allow the passage of a horse and cultivator, or double mould-board plow, will more effectually prevent the potato rot than any means yet suggested, unless it be the bordeaux or similar mixtures. The digging was all done with broad-tined forks, assisted by first running a narrow toothed cultivator as close to the rows as possible. The variety grown was, as far as I can learn, the Scotch Champion, an enormous yielder, very free from rot in the field, and thus far entirely so from dry rot in the bins—a good winter potato and less liable to sprout in the cellar than any variety I ever grew. On the same ground the Early Rose yielded forty per cent. less, of which twenty-five per cent. were rotten when dug, and many are dry rotting now in the cellar.

The general results of these contests undoubtedly go to show that the use of superphosphates liberally applied is highly profitable. I only regret that the land I had prepared was not sufficiently large to enable me to try comparative experiments; but, in conclusion, I will quote from the report of the contests in the United States in 1889, given in the American Garden for January, 1890, in which the five best yields were given as 738 bushels, 669, 537, 532, and 523 respectively, and the report goes on to say that "It is noticeable that the largest yield on stable manure, either alone or in connection with fertilizers, was 419 bushels; therefore, it is self-evident that high grade commercial fertilizers are by all odds the most efficacious in crop producing capacity."

Methods of Hastening the Ripening of Wheat by Cultivation, and Modes of Preventing Injury by Frost.

[Read by D. F. Wilson before the Brandon Farmers Institute.]

(Continued from page 128.)

As to protecting wheat from frost I am convinced that a good cloud of smoke must have a decided effect on the atmosphere, but to be made a success there are no doubt certain principles to be observed. For instance, it is no use to hang the thermometer against the house even on the north side, and watch it so as to know when it is time to light the smudges, the house is warmer than the atmosphere, and the crop may be frozen before the fires are lit. Then it does not do to hang it on a fence or anything near the house, for the buildings are always on high land, sometimes the highest point on the farm, and it is the low land that freezes first. The thermometer should be kept where the land is lowest, and the smudges started while the temperature is still several degrees above freezing, as it is much easier to keep up the temperature than to raise it after it is down. Though I believe smudging may often save a crop, still I think in this case as well as in all others "prevention is better than cure," and that it will be much better for the country if farmers endeavored in every available way to hasten the ripening of the wheat, and so do away as much as possible with the necessity of smudging.

Farmers' Bulletin No 7, just issued by the U. S. Department of Agriculture, treats of the practice, methods, and efforts of spraying fruit trees for insect pests and fungous diseases. The subject of spraying is presented in the bulletin in a practical manner for information of the orchardist and fruit grower, and special attention is given to meeting the objections now being raised in Great Britain and other countries against the use of fruits produced in the United States. The facts brought together show conclusively that the spraying of fruit trees does not injure the fruit or make its use dangerous to consumers.

Garden and Orchard.

Grapes for the Farmer's Own Use.

BY G. W. CLINE, WINONA.

There are thousands of farmers throughout Ontario, and perhaps a few in the other provinces, who could grow, with a little trouble, all the grapes they would require for their own use if they only know how to grow them where soils are hard; but more often the trouble is the late spring frosts, when the young shoots are well out, sometimes a foot or more, and sometimes the young grapes are already formed. Of course, this is very annoying to those who plant vines, and when two or three crops are lost, the planter becomes discouraged and quits. Now, if the farmers will only take what little trouble I am going to tell them here, they will, I am sure, have plenty of grapes for their own use, and that is something they do not get when they buy them of peddlars or at the stores, although if they only would buy plenty there, at wholesale rates, it would not be so bad, as grapes are perhaps the most healthful fruit grown, and a cure for plenty of ailments of the human stomach. The soil for grapes is not hard to find; any soil that will grow anything else will grow grapes, if dry. In choosing soil where the cold is very intense, and where the ground is likely to freeze very deeply, I would choose a situation where the snow would fall and lie as deep as possible, as a protection for the roots against frost, but a mulch applied before hard freezing, of straw manure, six inches or a foot deep and extending out six feet or more from the vines, but let it be mostly straw, will be a sure preventive of root freezing. This mulch had better be taken away early in spring, after all danger of soil freezing, and good cultivation given all through the summer, cultivation being better than a mulch in summer; but if there is not sufficient cultivation given, then a light mulch given to keep down grass and weeds, is very much needed, and should be applied by all means before harvest time, if you want fine grapes.

Time to Plant.—As soon in spring as your soil is fit for planting garden stuff, and be sure and plant grape vines a foot deep if possible, or more. If soil is sandy or gravelly, this is none to deep. You can plant trees too deep, but grape vines will stand better by deep planting. Varieties for planting will vary according to the locality, but except in the best grape growing section, I think but few should be planted, and even in the best section there are but few that are profitable. These few varieties mentioned here will answer all localities as all are early, Concord being the latest, Champion Delaware, Rog. G. or Lindley, Wyoming Red, Worden, Concord, or three Red, three Black. The Champion is often condemned by some people as being unfit to grow. I know it is not as good in quality as some, but it is good enough to eat when ripe, and hundreds of tons of it are grown and eaten. It is a good grape to cook, perhaps one of the best stewing grapes we have, and it is the earliest grape to ripen, good grower, hardy and heavy bearer, and, all in all, for northern sections, perhaps the surest grape they can grow; it also makes a very fine wine. Delaware is perhaps the acme of perfection, being early, and quality of the best, but is not a strong grower, and will require a good deal of attention to succeed in many localities. Rog. G. is perhaps the best of Rog. Hybrids, being early, hardy, of best quality, and the skin being thick, will hang on the vines without deteriorating in quality, and will keep well with a little care until spring, but sometimes does not set its clusters well, and should be planted mixed in the row with other kinds to make it bear well. Wyoming Red, very much in vine and bunch like Delaware, but a little stronger grower and not so good in quality; about as early as Rog. G. Worden: this grape is, without a doubt, the best quality of all black grapes, good grower, strong, healthy vine, very large bunches. Every person should have a few vines of this very excellent sort for their own use as it is a heavy bearer, and good to eat as soon as berries turn black; but it has one serious fault—for market purposes

this is too soft to ship far. Concord, the last mentioned grape, is called the-grape-for-the-million. Well, it is for vineyard planting, and anywhere it will ripen, but for some localities and in some seasons it will be too late, without very short pruning; in fact all grape vines in cold sections should be pruned short, as long pruning means an overbearing, or an over abundance of fruit to sell, and the more fruit on the vine the later it will ripen, and the poorer the quality of that fruit, if it ripens at all.

Instructions for Pruning.—When the vine is first planted rub off all buds but three; when well started take off the poorest one and leave but two to grow through the season. The next spring trim off as before all buds but three, and allow but two to grow as before through the season. The third spring, if the vines have had good attention, the canes should be each from six to ten feet long, and should be cut back again, the poorest cane cut entirely off and the strongest cane left about three feet long for fruiting; but you had better be sure that your cane is not overloaded. If you think it has a pretty heavy load on pick off some of the smaller clusters. The fourth spring if the vine has grown strong leave only one cane on each side of your old wood about two or two and a-half feet long of the new wood, according to the length the buds are apart, which, in some varieties, are much longer than others, and the grower must judge for himself, as that is the way we who are oldest in the business had to learn, and we made many mistakes, having no one to teach us anything about pruning or planting; but you must always remember that grape vines require trimming every spring as early as possible, or in the fall after the leaves have fallen, and not forget that the grapes grow on the new wood of the last year's growth, and that vines in full bearing should not have more, as a general thing, than from forty to eighty buds left for fruiting, according to the strength of the vine, and remember to always keep your new wood as near as possible two to three feet from the ground. Every trimming time cut out old wood above, and leave new wood below. If you can't get a cane as long as you want, leave a spur of one or two buds to get a cane where you want it for next year. A very large, strong growing cane is not always the best for fruit; they are generally out at the end where you don't want them; cut them off and take a small or medium sized cane where you want one. For trellising use posts and three wires. We plant vines about nine or ten feet apart in rows, and use one post to two vines; but in sections where vines would be apt to freeze down I would strongly advise putting in short posts to come about ten inches or a foot above the ground, then bolt upright pieces to them. Bolt on a cap, put on three wires, the first two feet or two and a-half feet from the ground. Your trellis then will be like a trellis on a hinge. In the fall of the year you can lay it down and cover through the winter, and have no trouble from vines winter killing, and but very little more trouble than an ordinary trellis. For avoiding spring or early fall frosts you can very easily do so for a dozen or two vines. When you feel afraid of frost, get out blankets, old carpets, robes—it don't matter whether they are dirty or clean, it won't hurt them or the grapes—anything in fact that will keep the frost off. Just a little trouble taken, and you will have from fifteen to thirty-five pounds of grapes to a vine; but don't overbear when young; more vines are ruined when two or three years old than at any other time, and it takes several years to overcome what you have done carelessly, or by ignorance of how it should be done. For fertilizing the grapes some soils need plenty of barnyard manure, other soils ashes, then again phosphoric acid is all that is required; but as a general thing if you use ashes for potash, and fine ground bone for phosphoric acid, with a little barnyard manure for nitrogen, you have that bill well filled. The ashes you all have, and the bone can be easily purchased at the fertilizing works in Hamilton or Toronto, or of any of the seedsmen, as but very little bone is needed—about one or two pounds to a vine per year. Dissolved bone is best for quick results, as the raw bone requires time for

the soil to act on it before it can be taken up by the vines. Where to get your vines and how to get them is often a trouble, or, as is often the case, exorbitant prices are often paid to some agent. Many agents are all right and may be bought of; others buy cull stock and label to suit their orders, and when your fruit comes to bear you find you have not got what you paid for. Be careful of whom you buy. There are many good reliable firms in Canada. Send to some of the firms advertised in this journal or the Horticulturist and you will get well treated, as I know them to be honest nurserymen; but for those of you who have a good local nurseryman you may do as well or better with him. If you are likely to have trouble from mice when your vines are laid down and covered for winter, take some arsenic or paris green, cornmeal and grease, and mix up like a cake, thick, put in some tin cans so that cats, dogs or chickens cannot get it, and put a few of these under your vines, and if properly mixed you will have no trouble with mice peeling your vines. Now, farmers if you have no grapes growing, as soon as you read this look up some advertisements of nurserymen in these columns, and send them a post card asking for their free price list of trees and vines, pick out what you want, have it sent by mail or express, and start growing grapes at once for your own use, and if you follow my advice you will not be sorry.

Top Grafting Fruit Trees.

BY THOMAS J. FAIR, FRANKFORD, ONT.

In this I do not intend to give instruction on the process of grafting, for Mr. Coston's paper in March number contains full directions for successful grafting, but would say that when the grafting has been completed the work will be thrown away if the grafts are not looked after the remainder of the season. As well might a man plant fruit trees and then say I have done my part, take care of yourselves, as to set grafts and not look after them. A tree, if large, should be prepared for grafting, if pruning has been neglected, by cutting nearly all the small branches from the limb you intend to top graft a year before you perform the operation, for if too many branches are left below the scions when set, they will take too much of the flowing sap and not enough will reach the scion to give it a good start. After the grafts begin to grow, go through the orchard and where the scions are not making a vigorous growth, remove all the small branches below grafts; this will give to the graft a large part of the nutriment that went to these limbs; but if the grafts are making too much growth they may be pinched in about the middle of August, and remove the branches below the grafts the following spring. Always remember to keep the end of the limb where grafted covered with wax to exclude wet and prevent decay, and keep all succors rubbed off below grafts, which must be pruned judiciously, if you want fruit. One of the worst enemies to grafts is the tent-caterpillar which seems to have a great liking for their tender leaves, and will ruin your work if left in the orchard. The most effective way I have tried to destroy them, is to take one quart of soft soap, put it in a large pail and fill nearly full of warm water, then take a light cedar pole ten or twelve feet long, and the size of a stiff fish pole; on the end wind a coarse, wollen cloth, six or eight inches wide around small end and tie tightly in centre with a strong cord, and you are ready to battle with one of the worst enemies of the orchard. Go through the orchard early in the morning while the worms are in their tent, wet the cloth on pole in the soap and water, and rub out the nests of worms, which may be plainly seen when the leaves are very small. The alkali in the soap is death to every worm it touches whether small or large. The cheapest and best grafting wax is made from one pint pure raw linseed oil, four and a-half pounds resin, and one pound beeswax, melt all together over a slow fire, and when all is melted pour into a tub of cold water, and when cool thoroughly work it; it will not stick to hands if kept wet with cold water.

Pruning Fruit Trees.

BY G. C. CASTON, CRAIGHURST.

Perhaps there is no question about which such a variety of opinions are held by fruit growers as the question of pruning—"When and how to do it." There are some people who are never satisfied unless they are continually cutting and slashing at their orchard trees. Trees are often severely pruned when they should rather have cultivation and manure. Then there is the professional pruner, who, like the professional grafter, goes about seeking whom he can swindle. Whatever time of year they arrive at the place, that they say is the proper time to prune. I have seen some terrible butchery that these gentry have performed. I have known cases where large limbs 3 and 4 inches thick have been cut out, and the next year the trees would be a mass of water-sprouts or suckers and gaping wounds that would never heal, but would in a few years carry decay into the heart of the tree, thereby destroying it.

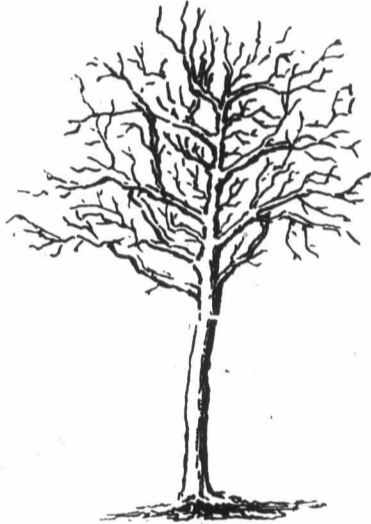


FIG. 1

The old adage, "Prune whenever your knife is sharp," is applicable to all fruit trees; that is, if properly done. The tree should be pruned as it grows, a little every year, and anything that requires to be cut out remove it while it is small, and on no account remove any limb after it has grown to any size. If the tree is attended to during the first few years of its growth it will not require very much pruning afterward. The main objects in pruning are to give the tree symmetry and to keep the top open, and if the surplus growths are removed while the twigs are small, it matters not much then at what time of the year it is done; so that the old adage is pretty good logic, whatever may be said to the contrary. There is another old adage: "To prune in winter for wood and in summer for fruit." The philosophy of this is that anything that checks the growth of wood in a fruit tree tends to the formation of fruit buds and causes it to bear better. This, it is claimed, will be the result of summer pruning, and I have no doubt that in the case of a young, thrifty orchard that has been allowed to grow as it liked, and where annual pruning has been neglected, a severe summer pruning would have a considerable tendency to produce fruitfulness. As to winter pruning promoting wood growth, I have my doubts. From my own experience I would not advise any pruning in winter. Certainly not while the wood is frozen. I would rather prefer the fall or early spring, when there was no growth, and when there was no frost in the wood.

But if I had an orchard that required a good pruning, I would prefer of all times the latter part of the month of June. I have found in my experience that wounds made at that time begin to heal over immediately, and if the wound is not large (and it never should be) it will be nearly healed over in one season. And, moreover, they never bleed at that time of the year, which is more than can be said of winter pruning.

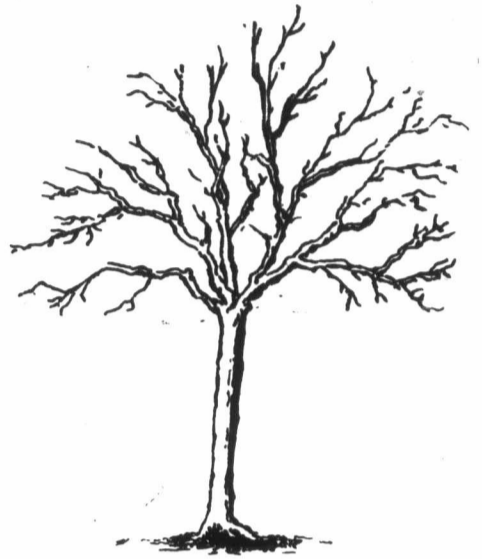


FIG. 2

There are some varieties of apples that require very little pruning, if any, such as the Duchess, Talmon Sweet, Baxter and many others, while such varieties as Spy, Russets, Astrachans, etc., require frequent thinning out of the tops.

But, to go back to the beginning, I would repeat again, prune the young as it grows—a little every year; if done with the finger and thumb all the better. When planting out an orchard select, if possible, well shaped trees, with the main stem running right to the top, and try to shape it so as to have the branches coming out at regular intervals and the tree a pyramidal form, as shown at Fig. 3. Then an annual thinning out of the surplus small branches and the removal of any that tend to cross each other, will be all the pruning required. Of course, the habits of growth of the trees are to be considered; we cannot make every tree grow alike. Some have an upright, others a spreading habit of growth. These must be studied, and we must prune accordingly.

Such trees as the Spy and the Baxter are easily trained in the pyramidal form, being upright growers. While such as Duchess, Talmon Sweet, Greening, etc., have a spreading habit, and are not so easily kept in symmetrical shape. But in selecting trees, or in shaping their growth, crochey trees, like the one shown at Fig. 2, should be avoided, as these, when loaded with fruit, invariably split apart, and the tree is ruined. When we cannot secure the upright or pyramidal growth, and we certainly cannot in all trees, we should do the next best thing, endeavor, in the annual pruning, to bring it into the best possible shape we can, and avoid, as far as possible, having crochey trees, which, besides being unsightly, are a source of loss, as they do not long survive after fruiting. I speak from experience dearly bought in this matter. I have had too many of this kind myself.

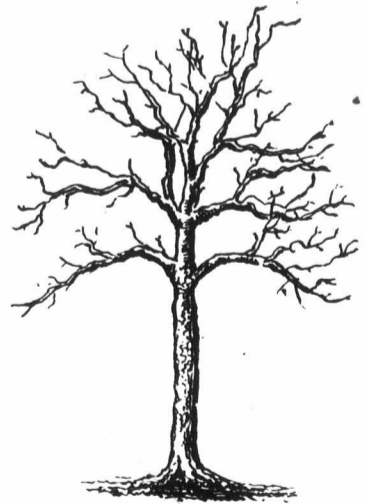


FIG. 3

In Fig. 1 is shown a rough sketch of an apple tree that has been neglected and has grown too much to brush, with the limbs crossing each other, as we too often see. Fig. 2 is a spreading and crotch tree—one liable to split, and a form of growth to be avoided as much as possible.

Fig. 3 shows a tree properly pruned and trained in the best form, as near the ideal form for a fruit tree as can be. And now a few pointers to sum up with. Prune everything while the twigs are small, and it don't matter when you do it. Never remove large limbs from any fruit tree. If pruning has been neglected for a long time, rather thin out the small brush and leave the large limbs alone. Use a sharp saw and cut close to the trunk, if you expect the wound to heal over; never leave a stub where you cut a limb off. Where any limb an inch or more in size has been removed, keep the wound covered over with grafting-wax till it heals. If pruning in early spring or late fall, do it while the wood is dormant, but never while frozen. And, finally, the less pruning we can get along with in this country the better, so long as we can keep the trees healthy, thrifty and in good shape.

Our Flower Garden.

BY J. W. HUNTER.

(Continued from Page 146.)

Sweet Alyssum.—This little plant, with its small, pure white, fragrant flowers is very valuable for the border, as a basket plant, or even as a pot plant. The seed should be sown very thickly, so as to make a mass of plants, or placed in lines for edging. Can be kept out back to any desired height.

Calendula (Pot Marigold).—Good cultivation has produced some very interesting varieties of this favorite flower, being perfectly double, beautifully striped, etc., and if cultivated as a pot plant will bloom almost continuously.

Echscholtzia (California Poppy).—Flowers about two inches in diameter, of yellow, white and orange, and produced all summer in the greatest profusion. Grows about a foot in height, with foliage of a grayish-green color.

Mimosa Pudica (Sensitive Plant).—A very pretty plant which affords a great deal of amusement; being very sensitive to the touch, it instantly curls up its leaves, giving it the name of Sensitive Plant. A plant or two reserved for the house will afford a great deal of pleasure for the winter.

Pansy.—The pansy will flower better in the middle of the summer if planted where it is somewhat shaded from the hot sun and furnished with plenty of water. Seed sown in a cool place in June or July, and well watered until up, produces fall flowering plants. To have good flowers the plants must be vigorous and make a rapid growth. Often plants that produce large flowers in the cool, showery weather of spring will give very small ones during the dry weather of summer.

Marvel of Peru (Four O'clock).—About two feet in height, with bright foliage, fragrant flowers and desirable colors. Flowers open in the afternoon, hence the name Four O'clock. Sow the seed where the plants are intended to bloom.

Balsam.—No plant will give more return for the care bestowed on it, and yet none is more frequently neglected. Being a native of India, it likes a bright sun and warm weather, and our seasons are usually well suited to it. Set the plants at least a foot apart in soil that has been well enriched, and they will branch out in every direction, making handsome little pyramids which will soon be covered with flowers.



Manettia Vine.—This is the most magnificent vine in cultivation, either for the house or garden; it is loaded with bloom every day in the year. In the garden its charming beauty surpasses everything. Flowers of intense scarlet, tipped with yellow, the most brilliant and striking combination. It is of the easiest culture and sure to succeed with ordinary care. It can be trained on a trellis, strings, or used for hanging baskets.

A FEW SUMMER BULBS THAT ARE VERY DESIRABLE.

Gladiolus.—The cultivation of the Gladiolus is very simple. It thrives in any ordinary garden soil. Planted from the last of April to the middle of June, from four to five inches deep, it always flowers, and is one of the most useful and magnificent cut flowers for house decoration. The bulbs should be taken up after the frost has wilted the foliage, dried, and packed in dry sand or sawdust until another season.

Dahlias.—The Dahlia is the grandest autumn flower we have. It is in its glory during September and October, when other flowers are fading, and surrenders only to the Frost King. Put Dahlia tubers in the ground when the season becomes warm, covering the neck some three inches. If many shoots start thin them out. After flowering, and before hard frosts, take up the plants, remove the tops, dry the bulbs a little and put in the cellar until spring, when they can be divided and replanted. Look at them occasionally to see that they are not shriveling from too dry an atmosphere, nor starting the eye early in consequence of too much moisture and warmth.

Caladium Esculentum, or Elephant's Ear.—One of the handsomest of the ornamental-leaved plants. They bear immense leaves three feet and more in length and nearly as broad, which give them a very tropical appearance. For the centre of a bed there is nothing to compare with the Caladium. In the fall they should be taken up and stored in the cellar.

All coverings on flower beds, where bulbs are planted, if not removed should be taken off at once.

Dahlias should be started now, and increased by division later on, to be planted out about the first of June.

Start Castor Oil Beans now; nothing better for the centre of flower beds.

Hardy Annuals, such as Sweet Peas, Mignonette, Candytuft, Larkspur, Alyssum, etc., may be sown any time now in the open border.

Dormant plants in cellars or pits may be started now.

Apply fertilizers to the lawns, rake over to remove the rubbish, then roll and reseed where needed.

Hardy Russian Apples.

[Abridged from the Evidence given by Mr. John Craig, Horticulturist of the Dominion Experimental Farms, before the select standing Committee on Agriculture and Colonization of the House of Commons, August, 1891.]

Ever since the introduction of the Duchess of Oldenburg from Russia, by way of England, about 40 years ago, there has been a growing interest in the fruits of that cold climate. The first large importation was made in 1870 by the United States Department of Agriculture. This comprised 252 varieties, but owing to the very crude state of Russian pomology, evidenced by the many synonyms afterwards found in the collection, coupled with long unpronounceable names, the work of sifting the good from the bad in this cumbersome list has been laborious and slow. Without going into details in regard to their merits and demerits, I might say that already a sufficient number of valuable varieties have been found to repay all the expenses incurred in the work of introduction and trial; and when we look at the possible advantages to be derived from these foreigners by uniting them with our native varieties, thus obtaining hardiness on one side and quality on the other, the benefits likely to accrue are inestimable. I have said that the first importation was made by the United States Department of Agriculture, but the credit of bringing this work to a practical and a successful issue is due to a Canadian—one now departed; I refer to the late Charles Gibb, of Abbotsford, Quebec. At great personal expense he undertook the arduous task of visiting the various localities in which these fruits were growing, making notes on condition and quality of tree and fruit. The result of those investigations—a fair and unvarnished statement of facts—was published, but not until he had made a visit to the original home of these apples. Of this visit and its object I quote his own modest statements:

"But what was the record of these varieties in Russia, and in what climates? This we did not know, and it seemed, could not know unless some one went. The fruit regions of the older parts of this continent were all looking anxiously to the Russian fruits. Here was work that had to be done, and at once. This resulted in the journey of Professor Budd and myself to Russia. We did not get the information we needed at St. Petersburg and Moscow, and, therefore, hastened into the fruit growing region of the upper Volga. We roamed about in a tarantas, a basket on wheels without springs, drawn by three horses abreast, with a cow bell over the middle horse; and sometimes lived on black bread and slept on a bundle of hay. We were in the coldest orchard region of the old world at the time that the fruit was ripe on the trees. The winter temperature at Kazan is 3° colder than Chicoutimi, which is the coldest part of the province of Quebec where we are likely to try apple growing." This journey was undertaken in 1882. Again in 1886 he went alone over the ground, verifying the observations of the first trip. Importations of scions and trees followed both visits. Through the courtesy of Mr. Gibb and Prof. Budd, we have growing at the Experimental Farm representatives of all varieties introduced in these various importations. In my report for 1890 I considered that sufficient experience had been gained to justify me in calling attention to four or five varieties of these apples which seem to me to be worthy of propagation and more extended trial, and I have no doubt these will be taken up by nurserymen in a short time, as they should be, and brought before the public. I always drew attention to the fact that they were of special value to the colder parts of the country, and although they may develop qualities that will render them valuable to the southern parts, yet at the same time we cannot make such a statement with certainty, and should keep their chief aspect of usefulness in view. As far as we know at present, any apple tree not up to the grade of hardiness of Duchess, Tetofsky, Wealthy or Pewaukee, is of doubtful usefulness for planting in the district of Ottawa or similar latitudes. I have referred to the work in apples. Experiments of a like nature have been carried on with pears, cherries and plums. I will only touch on

the most promising features in connection with these fruits.

MR. TROW—What were the four varieties you were going to refer to?

MR. CRAIG—The great difficulty with many of these Russian fruits is their long unpronounceable names. These have been translated, but even then it is difficult to indicate them with English equivalent. The first is the "Zolotareff." It is a very large, handsome apple, a rich carmine in color with light dots and stripes on the shady side, a little later than the Duchess and of much the same style and quality. The tree is a vigorous upright grower with large glossy leaves. The next one is the "Royal Table." The tree is a compact grower, round top, slender twigs, medium sized leaves, and is of north German origin. It has borne at Abbotsford, Que., abundant crops for three successive years. The fruit is medium to large, keeps well—last year into April—and I regard this a very promising apple. The great lack in this portion of the country, and through the province of Quebec, is a good hardy tree that will give us a winter fruit, and this I think we have in the variety just mentioned. Another winter apple which has done well for a number of years is known as the "Winter Arabka." It was imported by Elwanger & Barry, of Rochester, N. Y. It is larger and keeps as well as the last, but is not as fine in quality. The tree is productive and hardy. Another variety of great promise is called "Gipsy Girl." It is a little earlier than the last one referred to. It is an extremely handsome apple, and the tree is strong and healthy, a model of vigor and beauty; one of the best in our trial orchards. It gives us specimens the second year after planting, and it is bearing fruit again this year.

The Mulberry.

To the Editor of the FARMER'S ADVOCATE—

SIR,—My attention has just been directed to a note in the January number of the ADVOCATE on the "Mulberry as a Windbreak," by W. S. H. This was called forth by an article over my signature in your issue of December '91 on "Poplars and Willows for Manitoba and the Northwest."

In considering varieties of forest and other trees suitable for Manitoba and the Northwest, *hardiness* is the first essential, as pointed out by your correspondent. This is just where the Russian Mulberry fails. I had expected it would succeed at least in Southern Manitoba, and to test the matter, several thousand were distributed, with other forest tree seedlings, in the spring of 1890. My correspondence shows that it was among the first to be cut down with autumn frosts, and I have yet to learn of a locality within the region referred to where it was not killed to the ground or snow line. The seedling trees were obtained direct from Mennonite settlements in Nebraska where the original stock was introduced, and is now growing. At Ottawa it kills back annually, but not severely. As a hedge plant it bears pruning well, and makes a dense barrier in which form it stands the winter fairly well. The largest trees I know of in this country do not exceed twenty feet in height planted about as many years ago. Being propagated, the fruit varies from that which is entirely worthless to that which under certain circumstances might be relished. On the whole we have more desirable trees, and many far better adapted to northern localities.

Yours truly,

JOHN CRAIG,
Experimental Farm, Ottawa.

Dairy.

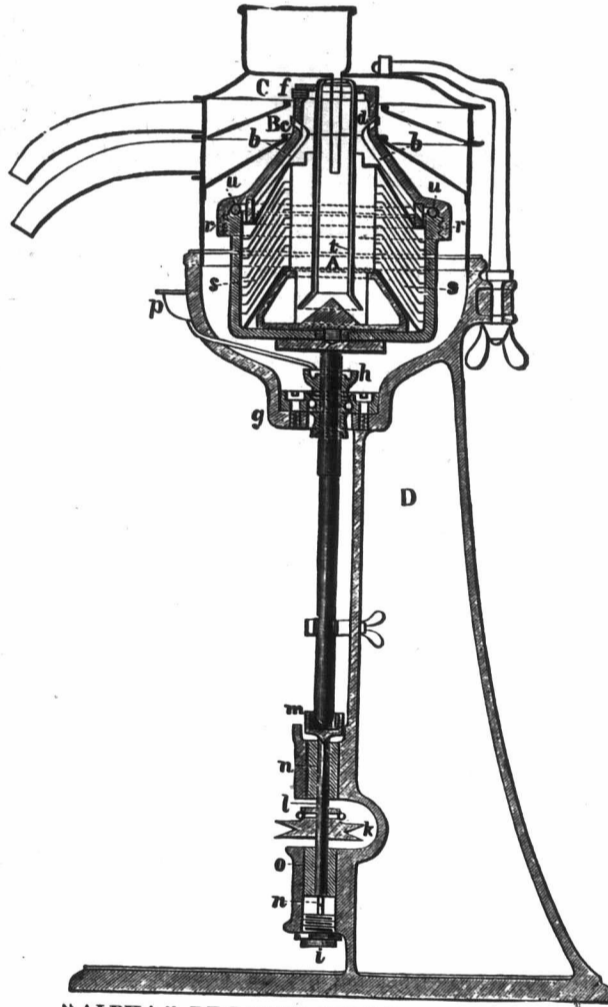
Cream Separators.

BY FRANK WILSON, MONTREAL.

The above heading and accompanying cut present a subject of deep interest to everyone thinking of buying a cream separator. The purpose of this article is to briefly discuss the points which should be taken into consideration. That the cream separator is a complete success no one can question or dispute. Its use means more and better butter, and the improvement of the industry of butter-making generally. Every make of machine will be found to have some adherents, and this is but reasonable since, unquestionably, all of the different separators have advantages over the older setting or gravity process, and every machine if well and durably made mechanically will certainly prove pleasing to one who is using a separator for the first time. A man doing 10 per cent. or 20 per cent. better than he

and so it has in separators, but the "ALPHA" invention puts the NEW De Laval as much above all other machines for the future as its older styles have in the past been proved superior to the setting systems. The same considerations that have brought about the use of the present separators must eventually result in practically the universal use of the "ALPHA." It is no longer a question of gain merely, but of the GREATEST POSSIBLE GAIN—not a better product, but the BEST POSSIBLE product. Where other machines show one-tenth, two-tenths, and often under average operating conditions, as much as five-tenths of a per cent. of fat left in the skimmed milk, the "ALPHA" leaves NONE AT ALL, or, at the outside, a bare trace. This saving may seem of little moment, but in the course of a week, a month or a year, it counts very materially. In one very carefully operated creamery, where a daily record is kept, the gain has been found to average thirty-six pounds of butter daily from 12,000 lbs. of milk.

The practical utility of the separator does not stop with the separator, however thorough, since it is equally as important to get *all the butter out of the cream* as all the cream out of the milk. The nearer the cream is held to the centre of motion in the separator bowl, the less and more uniform the time it is held therein, and more especially the nearer to the centre the actual point of delivery is the more uniform will be its texture and the less concussion and turbulence it will have sustained. If the position of the cream wall or space in the bowl be such that some of the cream forming same must remain in the bowl longer than the rest, or that it must follow a circumlocutory route to reach the point of delivery, it will have undergone different degrees of separation or force. And as the centrifugal force multiplies very rapidly as the centre of motion is departed from, if the point of actual delivery be not very near thereto, the cream is discharged into the receptacle with such force as to cause a sufficient concussion to result in a partial and varied degree of churning of some of the cream. In the De Laval machines, particularly the "Alpha", the cream is held much nearer the centre and the top, is retained in the bowl a shorter and more uniform time, and is discharged from much nearer the centre than in any other machine. In other separators of recent make everything has been sacrificed to secure capacity compelling the placing of the cream outlet even further from the centre than in the older machines, or else they have been so made as to cause interference with and consequent disturbance of the cream wall itself. In most of these machines the actual cream delivery is as far from the centre as is the extreme periphery of the "ALPHA" bowl. In the "ALPHA" the capacity is obtained in a radically different manner from that in any other machine, that while even greater capacity is attained the point of delivery is, at the same time, brought almost to the exact centre.



"ALPHA" DE LAVAL CREAM SEPARATOR.

did before is pleased, and does not stop to consider that he might do another 5 per cent. better still. Hence, there are those who express and believe themselves satisfied with each make of machine.

The intending buyer must, therefore, look into and weigh together for himself the various points and qualities which make a cream separator not merely practical, but *most* practical—not merely profitable, but *most* profitable. This, it is my purpose to demonstrate the "ALPHA" De Laval separator to be, and that coming to this conclusion no mistake can be made.

Nothing is claimed for the "ALPHA" that facts and authorities will not bear out in every detail. It stands on its merits and needs no other basis. It needs no apologies, no explanations; there is nothing to be changed, nothing to be remedied. The De Laval Separators are known to everyone; first in the field and always in the van in every stage of improvement. Their prestige is greater to-day than at any previous time. Success, however, always brings Imitators,

These machines require no special foundation, and can be easily and quickly operated by any one with ordinary common sense, though they may never before have seen a separator of any kind. It takes no experience to run them with the best possible results, and no expert needs to be sent to teach them. They are simple and durable in every part, and in case of possible accident or eventual wear, each part is easily and cheaply replaceable.

These machines are made to suit all requirements, from the small "Baby" size for dairies of from 10 to 50 cows to be worked by hand, to the steam power machines with a skimming capacity of from 1,200 to 3,500 pounds of milk per hour.

There are supposed to be in Spain about ten millions of fine woolled Merino sheep tended by about fifty thousand shepherds and guarded by thirty thousand dogs.

Paying for Milk at Cheese Factories on the Basis of its Fat Contents.

BY H. H. DEAN, O. A. C., GUELPH.

As a few factories in the province intend during the present season to distribute the proceeds to the patrons according to quality or per cent. of fat contained in the milk, it might not be out of place to say a word in reference to this very important question now agitating the minds of dairymen.

IS IT THE PROPER BASIS?

That the fat contained in the milk is the proper basis on which to distribute proceeds at a creamery is admitted by nearly everyone. Why? Because butter consists nearly altogether of butter fat—84 per cent. on the average.

That it is the proper basis on which to distribute proceeds at a cheese factory is not admitted by some, though I am happy to say that the leading dairymen, both scientific and practical, are of the opinion that the fat basis is just and right. Why do some object? Because two other compounds of milk, water and casein or curd, also enter largely into the manufacture of cheese. On the average there is about one-third each of water, casein and fat in a Cheddar cheese. Those who object to the proposed plan say that curd has a value and should enter into the method of distributing proceeds. So good an authority as Prof. Cooke, of the Vermont Experiment Station, proposed, at first, to pay a certain stated sum per 100 lbs. for all milk—say 30 cents—and then distribute the rest of the proceeds on the fat basis. That he has given up this plan is seen by his article in "Hoard's Dairymen," Aug. 7, 1891.

REASONS WHY CHEESE FACTORIES SHOULD ADOPT THE FAT BASIS OF PAYING FOR MILK.

1. "The present system is a premium on dishonesty," and by the proposed new plan each man will be paid more nearly for the value there is in his milk.
2. The serum, or pure skim-milk, is worth only from 15 to 20 cents per 100 lbs., while the fat is worth from 15 to 30 cents per pound.
3. It is the fat that gives value to milk for cheesemaking, as skim cheese is better fitted for cannon balls than for food.
4. The casein or curd does not vary widely in different samples of milk, the widest variation being 2½ per cent., while the fat, the most valuable constituent, may vary as much as 8 per cent.
5. The richer the milk in fat, up to a certain limit, the more pounds of cheese may be made from a given number of pounds of milk.

According to Prof. Robertson, Dairy Commissioner of Canada, every increase of two-tenths of one per cent. of fat between 3 and 4 per cent. will make three-tenths of a pound more cheese worth one-eighth of a cent more per pound.

Experiments at Geneva, N. Y., Wisconsin, and Minnesota have shown similar results in regard to yield.

6. It is not true that milk poor in fat is rich in casein or curd, as is commonly supposed. Numerous analyses have proven that the higher the per cent. of fat the higher the per cent. of casein within its limits of variation.
7. Besides giving to each patron what is his just and due reward for the labor expended in breeding his cows, feeding them, and caring for the milk, it will do away largely, if not altogether, with the unpleasantness caused by to-be-aborred-by-all law suits arising from the fact that some persons cannot resist the temptation to take from or keep back something which belongs to milk, or add something which it does not require to make cheese.

HOW TO DETERMINE THE FAT.

Milk chemists, dairy commissioners, cheese factorymen, creamerymen and dairymen generally nearly all acknowledge that what is known as the Babcock test is the most simple, inexpensive, accurate and rapid test now in use. Nearly all the experiment stations in both the United States and Canada, and the method is spreading to Europe and Australia, are using this test for the fat determinations in connection with a great deal of their work. This test, together

with the lacto-thermometer, is also able to give approximate results as to per cent. of water and solids not fat present in a sample of milk.

To find out the amount of fat delivered by patrons of a factory in a month or for any given time, weigh each patron's milk as formerly, take a sample each day and test it. The pounds of milk delivered multiplied by the per cent. of fat found will give the total pounds of fat delivered that day. For instance:

| | |
|-----------------------------------|----------------------|
| T. Skimmer delivers 150 lbs. milk | Test 2% = 3 lbs. fat |
| John Fair " 200 " " | 3% = 6 " " |
| Wm. Good " 230 " " | 5% = 10 " " |

Or it may be done in this way:—

Take a sample from Mr. Skimmer's milk each morning—do so with each patron—place it in a jar numbered so as to correspond with his name. At the end of the week take a sample from this jar, which will be his average quality of milk for the week. Suppose that it tests 2½% fat. Suppose further that he sent in 150 lbs. each morning for six mornings, then altogether that week he sent 900 lbs. of milk, which contained 900x2½ or 22½ lbs. of fat. And so on with each patron.

HOW TO DISTRIBUTE THE PROCEEDS.

At the end of the month, or whenever the books are made up, instead of adding up the pounds of milk sent in by each patron for the month, add up the pounds of fat delivered as found in the manner previously indicated. Having done this for each patron total the pounds of fat delivered by all the patrons. Then divide the dollars to be distributed by the pounds of fat delivered, which will give the value for each pound of fat sent in by the different patrons.

Some time ago I wrote Mr. I. L. Farrington, of Norwich, Ont., who owns and operates a number of factories in that section, asking for his method of distributing proceeds to his patrons. He sent me the following illustration:

| | |
|--------------------------------|-----------|
| Month June. | |
| Total lbs. milk delivered..... | 312,250 |
| " " " " " " " " " " " " | 30,321 |
| Total value cheese..... | \$2909 54 |
| Cost of manufacturing..... | 363 85 |
| Amount to be distributed..... | \$2545 69 |

| | | |
|--|---------|-----------|
| Value one lb. milk..... | 2245.69 | .719c |
| John Smith.....Cr. 4804 lbs. @ .719c.= | | \$ 34 54 |
| T. Jones.....Cr. 300,000 lbs. @ .719c.= | | 1438 00 |
| A. Barber.....Cr. 107,455 lbs. @ .719c.= | | 772 60 |
| | | \$2245 14 |

(Mr. Farrington sent but one name, but for the sake of completing the distribution I have assumed that the rest of the milk was supplied by two patrons, while as a matter of fact it was doubtless supplied by 40 or 50 patrons.)

By distributing proceeds on the basis of its fat contents, assuming that the pounds of cheese made, cost of manufacturing, etc., were the same as in the instance previously cited, and everything similar except that the milk has been tested, the account would stand thus on the assumptions made:—

| | | |
|---|----------------|-----------|
| John Smith, Cr. 4840 lbs. 3% milk | 144.12 lbs fat | \$ 28 28 |
| T. Jones, Cr. 300,000 lbs. 3% " | " " " " | 1373 40 |
| A. Barber, Cr. 107,455 lbs. 4% " | " " " " | 843 30 |
| Total lbs. fat delivered..... | 11442.32 | |
| Value one pound fat..... | 11442.32 | 19.62c |
| John Smith's share..144.12 lbs. fat x 19.62c= | | \$ 28 28 |
| T. Jones' " " " " " " " " " " " " | | 1373 40 |
| A. Barber's " " " " " " " " " " " " | | 843 30 |
| | | \$2244 98 |

(To be very exact it would be necessary to carry the decimal point to the third place instead of to the second as I have done in calculating the price per pound for the fat.)

In conclusion I would quote the opinion of Mr. A. T. Bell, of Tavistock, who had charge of the Dairy School last year, and who is not unknown to Ontario dairymen:—

"In answer to yours re distribution of proceeds at a factory, would say that after the experiments which have been made here and elsewhere with the different qualities of milk for cheese, and noting the different yields of cheese from same, I am strongly in favor of paying according to the butter fat, considering it much the fairest way. I am very much pleased that some of our factories are adopting that plan the present season.

Dairy Notes and Comments.

At a meeting of the Executive of the Western Ontario Dairy Association held a short time ago it was decided by them to continue the dairy school at Tavistock under the supervision of Mr. Bell. This school is open and free to any cheesemaker who may wish to avail himself of the advantages of any information or instruction that he may wish. The Executive also decided to employ an assistant who will be at liberty to go out and visit any factories throughout the western district and give the cheesemakers instructions and help them out of difficulties or instruct them in the handling and manipulation of the Babcock tester. For cheesemakers who can spare time to avail themselves of the advantages of this school it will be time and money well spent.

Prof. Robertson, Dairy Commissioner, is now arranging an outfit of cheesemaking apparatus to send down to New Brunswick. He intends to start a dairy school in that province, and Mr. T. J. Dillon, who has been with him for the past year, will go down and take charge of this school and give the Lower Province cheesemakers some pointers on cheesemaking and the manipulation of milk.

The Mount Elgin factory, which has been running as a winter creamery all winter under the supervision of Prof. Robertson, is now closed, and the milk is now being made into cheese. The results of the past winter's operations have been very satisfactory to the patrons, and they will in all probability continue this work next winter on a much larger scale.

The Avonbank cheese factory has put in a Number One Alexandra separator this spring, which has been running for some weeks, but they will change and prepare to make cheese about the first of May. The patrons are very much pleased with the result, and it is the intention of this factory to run as a winter creamery next winter.

The Winthrop cheesefactory will be converted into a creamery for the coming season, and will be run under the management of Messrs. Wenger, of Ayton, and Hannah, of Seaforth. They are putting in a Number One Alexandra separator. The separator has been forwarded to them by Mr. John S. Pearce, London, and will be ready for operation about the first of May.

The chairman of the dairy department of the Western Fair has again secured a number of special prizes for cheese and butter to be competed for at their exhibition, which will be held at London in September next.

The effect of the Babcock tester in inducing and persuading the patrons to send honest milk is most marvellous. A prominent factoryman in Western Ontario who had one of these little machines in his factory all last season, said to a number of gentlemen some time ago that his patrons were actually paid \$2,000 more money the past season for the same average quantity of milk as sent the previous year. This is due to the simple fact that the patrons did not know what day their milk was being tested, although the patrons were not paid on the basis of the Babcock machine. This is very remarkable, and a very strong argument in favor of factories adopting the Babcock as the basis of estimating the value of milk and paying the Patrons on that basis.

There has been a so-called separator before the public for some little time, and is advertised in the American papers, which is called the "Berrigan" separator, and the inventors claim some remarkable improvements and advantages over the regular separator, but these advantages have not been borne out by the test of this machine which was made at the Wisconsin Dairy School. The concluding remarks of the committee who made these tests are these, "We would conclude that the Berrigan separator is of no benefit whatever to the creaming of milk, and in these tests

was a detriment." The names of the committee who made these tests was, E. W. Curtis, J. H. Shepherd, F. B. Fulmer, of Madison, Wisconsin.

The amount of butter consumed in England is something enormous, and when we see the fables giving statement of the amount shipped into England by other countries, we wonder where it all goes to and how it can be consumed. From tables lately printed it appears that 42 per cent. of all the butter imported into England comes from Denmark, a country so small that such areas could be placed in almost any one of the United States or Ontario. This little country has only about two millions of inhabitants, yet the other 58 per cent. that is imported into England comes from countries who have about one hundred millions of inhabitants. This shows what progress, concentration and co-operative work will do in buttermaking. England imported from Denmark in the year 1891, 89,023,000 lbs. of butter; from France, 54,375,000 lbs.; from Sweden, 23,874,000 lbs.; from Holland, 14,888,000 lbs.; from Germany, 11,735,000 lbs.; from United States, 6,471,000 lbs.; from Canada 4,700,000 lbs.; from other countries, 11,908,000 lbs. In addition to this large importation of butter, England imported in the year 1891, 126,000,000 lbs. of oleomargarin. These figures should be of interest to Canadian dairymen and will give them some idea of what may be done in this country in the way of increasing the production and manufacture of butter for export to England. There is no reason why Canada cannot compete with Denmark in the English market. Our opinion is that if Canadians set about it in a right way they can excell the Danes, and come to the front and gain a reputation for their butter quite as high as they now have for their cheese. Manitoba and the Northwest have wonderful facilities in this respect.

Poultry.

Lessons Learned in Poultry Keeping.

BY R. W. CASWELL, GULL LAKE, ASSA., N. W. T.

Having been a breeder of poultry for several years, I take great interest in anything about them, and am glad to see the ADVOCATE has a poultry department. I have been experimenting with a home-made incubator for four years, and will give you a plan of it soon. Having read a great many articles in poultry papers—some advocating "moisture" and others "no moisture," I started by putting in moisture on 17th day, and chicks died in the shell, from third day to the end of hatch, with 30 per cent. the result. The second time I put in moisture on 10th day and chicks died principally during the first ten days, result 50 per cent. The third hatch I put moisture in on third day, and increased it on 15th day, and got 60 per cent. Fourth I put in more moisture on third day and increased it on 10th day, and had still a better hatch. Now I have concluded the moisture question had to be arranged according to the climate in which the incubator was operated. While dry hatching would probably give good results in Ontario, it would not in western dry climate, and any person hatching with incubators must study the business thoroughly before he or she can make a success of artificial incubation.

My plan of keeping down lice in the poultry house, and that is necessary, if you wish to get eggs and have healthy fowl (lice and eggs are entirely separate branches of the poultry business; they cannot be produced together), is to cut a barrel in the middle, and place it in the poultry house, then nearly fill it with dry dust, into which I mix sifted ashes and a little Persian Insect Powder; the hens dust themselves in this, and you should see how they enjoy it. The lice have to look for other quarters, they cannot stand the dust bath.

I have tried several remedies for roup, and find that spirits of turpentine is the best article to be had. Take a piece of bread the size of top of finger, soak it in turpentine, put it down the hens throat, holding her until she swallows it, then rubbing the sides of head and comb a couple of times with the turpentine, which will generally effect a cure. If a large flock is to be

treated, spongia is good; it is put in the drinking water and is, therefore, easier given. It can be bought of any homoeopathic doctor or druggist. I would advise every farmer to breed pure-bred fowls. If he cannot afford to buy fowls, he can buy eggs of pure-bred stock, which are cheap, considering the stock, for it is not eggs he is buying, but purely bred birds in the eggs. They lay better, eat better and look better. Never use a common cock, as well use a common scrub bull as a common cock.

Poultry on the Farm.

BY IDA E. TILSON, WEST SALEM, WIS.

It may be remarked that hens are set like plants, and that eggs especially resemble roses, both being propagated by layers. So it is eminently proper the agriculturist and poultryman should be one and the same person. Very early sitters, like tender plants, need to be well covered at night or they will become chilled and exhausted. Their broods, on arriving, should have quite sunny places or a warm room, else they will likewise get chilled, and consequently stunted. Those poulterers who wait till later, sometimes have valuable eggs they desire to save for hatching purposes. Such eggs ought to be collected as soon as laid, or they may lose their vitality, especially if the weather is cold and windy. They can be kept in a fairly cool pantry or moderately warm cellar, and placed in a box of bran, no two eggs touching, or left a few in a dish, and often turned. Our grandmothers said, "put the small end down;" philosophers say, "large end down," while Biddy herself leaves eggs side down. Experts claim eggs brought from a distance should rest 12 or 24 hours before being set, because an inflammation is created in them by the jar and motion of cars. Some home eggs, presumably the same age, but distinguishable, can be mixed with those purchased, and two or three hens have each a few expensive ones under her, so if there proves to be any poor sitter, not all ventured will be lost. Fresh eggs make stronger chickens and hatch quicker, sometimes in 18 days, while old eggs often require 22. "Like produces like," and probably we wish for neither dwarfs nor giants. Medium-sized eggs best fit cooking rules and shipping crates, and are prophetic of useful fowl in turn. More than once, high-priced sittings sent me have contained flat eggs, a shape which should never be set; it has a much greater liability to break than the round, symmetrical form, that continuous arch which is nature's best construction for resistance to pressure. In cold weather 11 eggs are all a brooder can well manage; if too many are beneath her, those about the edge get chilled. That boy who set a hen on 50 eggs, just to see her spread herself, was a predestined experimenter and inventor. By the way, it is said that Edison, the electrician, when a child in dresses, was one day found sitting on a nest, trying to hatch its contents.

A nest-box can be so narrow and short as to prevent Biddy turning herself around or turning the eggs over without endangering their safety, thus uncomfortably cramping her limbs and proving a very literal sort of straightened circumstances. A nest too dishing will cause heaped and broken eggs, but, of course, a nest box need not be so large nor its filling so flat that eggs will scatter about and get away from the hen. Above all, if a square box is used, let corners be well packed and kept so, otherwise some egg or little chick will get lost down there. The sitter's heat will gradually dissipate a teaspoon of sulphur put in each nest as made a valuable insecticide. At least twice, for its effects last, but till a new hatch of parasites, the hen should have pyrethrum rubbed or blown into her fluff and head plumage. This kills only those parasites it touches, and does not affect the hard eggs of such pests. If too large and fat mothers are selected, their nests, eggs and chicks naturally will show evidence of some heavy sitting before. It is well to do any necessary cleaning before setting our hens, leaving everything reasonably quiet and soothing during incubation, after which dump all fillings out of their nests, wash the latter with kerosene and have a general righting up. The proud young mothers are perfectly willing to have a

celebration then. Kerosene, at other times our best insecticide, better be dispensed with during incubation. Should any oil get upon the eggs, it might fatally close their pores, and even its fumes, if strong, are believed to destroy their fertility. Unless quite young fowls are bred from, or very early eggs used, when more cockerels may be expected, the poulterer can usually count on half his chicks for future layers, and plan accordingly.

"With twelve white eggs in a downy nest
The old hen sits in a box in the shed;
And the children, yesterday, stood and guessed
Of the hopes that hid in her speckled breast,
Of the dreams that dance through her red-crowned head."

Their guesses were all very fanciful, until
little three-year-old had her turn.
"And what say you, little curly pate?
I see a thought in your merry eyes."
"She sink," says the bright-haired baby Kate,
As she lifts the latch of the garden gate,
"Vere'll be tickens to skatch for by and by."

How to Keep Your Poultry Healthy.

BY "PLYMOUTH ROCK."

The keeping of poultry is often rendered so uncertain and unsatisfactory at times by the invasion of disease that a great many give up one of the most delightful occupations we are acquainted with, just because the hopes of the would-be-fanciers are so often blasted by a lack of knowledge of the rules on which the whole prosperity of the undertaking must eventually rest. The most important two rules in the handling of poultry are, pure, sweet and sound food, and a warm, dry and well ventilated house free from draughts and sudden changes of temperature. To the beginner, and to those who have failed from the inroads of disease to acquire a reasonable degree of success, I would say, listen to my advice, based on years of experience, of failure and success, and you will probably pick up a point or two that will aid you to avoid the many mistakes the writer of this has fallen into. In the first place, no matter what kind of feed you feed, let it be sound and free from mould. It is my firm belief nine-tenths of the diseases of fowls are caused by damaged grain. It is poor policy to buy damaged grain, no matter how cheap; but supposing you have on hand a large quantity of feed that has suffered from mould, and cannot afford to throw it away, this may be rendered more wholesome by pouring scalding hot water over it—remember the water must be scalding hot, if not it will not kill the fungus or mould. Never give your fowls sloppy food; by doing this your fowls get more water into their crops than nature calls for, and causes trouble. See that they have plenty of pure, sweet water, and give them their food in a dry or crumbly state, and they will of their own accord regulate the supply of water needed.

Ground bone, oyster shell, or gravel from river bottom, should be kept within reach of your fowls at all times. A dust-box filled with clean, dry sand seems to gratify a peculiar desire, but here let me advise you never to give a dust either of coal or wood ashes, as the alkali will get into the feathers and dry out the oil and totally ruin the plumage of the birds. Ventilation—yes, perfect ventilation; and by this I mean ventilation without a draught. How to secure this altogether depends upon your fowl-house, location, etc. I will just say that the best time to admit air is during the middle of the day, when the air is warmest and driest. The third item of importance is light. Let the fowls have as much light and sunshine as possible. The fourth and last essential is, keep your fowls dry. Did you ever notice how uncomfortable and disconsolate a fowl looks when thoroughly wet through? Do you, reader, suppose they assume this aspect merely for fun, or to impose on the credulity of their owner, and induce him to sympathize with them? No; when a fowl gets fairly wet you can count on loss to yourself. My firm conviction, derived from experience and observation, is this: That fowls or chicks at all times, with probably the exception of the summer months, provided we have no cold rains, be kept dry as possible. Many of the diseases of poultry come from exposure to cold and wet; and if any one can prove to me that a fowl thoroughly wet through, and standing on one leg on the lee side

of a barbed wire fence, with its tail virtually between its legs, and the rain falling at the rate of a gallon to the square inch every minute, is improved either in health or looks, or egg producing qualities, I will submit, and apologize, and ask forgiveness for advancing a theory so utterly opposed to the practice and precepts of a large number of our so-called practical farmers and haphazard poultry breeders.

**World's Columbian Exposition—
Secretary Ontario Section.**

Just as we go to press we are informed that Mr. Henry Wade has been appointed Secretary of the Ontario section of the Columbian Exposition. Mr. Wade's long and faithful services as Secretary of the Agricultural and Arts Association entitle him to this appointment. His long association with and intimate knowledge of the live stock and agricultural interests of Ontario render him eminently fitted for the position.

In other columns will be found an advertisement which requests residents of Ontario who desire to exhibit at Chicago in 1893 to at once communicate with Mr. Wade. His office is corner of Yonge and Queen Sts., Toronto.

The Apiary.

Spring and Bee-keeping

BY R. F. HOLTERMANN, A. O. A. C.

There is probably nothing which excites the bee-keepers more than to feel the balmy spring atmosphere—that atmosphere to which the soft maple yields, and which opens up its blossoms yielding honey and pollen, which stimulates the colony to develop brood. It is a very important season, for upon the management during this portion of the year depends to a great extent the amount of crop which will be secured. I once heard a very well-known apiculturist remark: "Spring management depends upon your locality. If your first surplus is to be secured from clover, the management must be different than if the first surplus is to be secured from basswood. The former comes into blossom about the first week in June, the latter about the 12th of July." The above appears to me to be an attempt at a fine distinction, which does not exist. Bees cannot be pushed forward too rapidly in spring for the honey flow; for the greater the number of bees and colonies, the greater the amount of honey exceeds, all other things being equal. There is, then, a system to be adopted, which will secure the desired end. In the past a number have attempted to secure the desired result by feeding liquid sweets, and by spreading combs containing brood. This practice is wrong; the liquid sweets cause the bees to fly out and seek for more, often inducing them to fly out at a time when the winds are cold and they fall, chilled, to the ground, never to return to the hive. The principle of spreading combs of brood is wrong, because the bees and queen will of themselves enlarge the brood chambers as quickly as the number of bees, stores and temperature will permit.

What should be done is to give plenty of stores, such as solid sugar-candy, if the natural stores are insufficient, and keep the bees warm by means of packing, and a contracted entrance. The spreading of brood may occasionally, just as warm weather is setting in, be practised to advantage, but for any one to advocate the spreading of it, in a general way, is very injurious; only the thoroughly experienced should attempt it, for if brood is spread to a greater area than the bees can cover, the results are very injurious, namely, the bees when the temperature is low draw away from the outside brood, and it is chilled and destroyed, setting the colony back very much in its building up. Early or middle of May is the proper time to purchase bees; buy only first-class colonies, and if you are beginning without experience, buy not more than three colonies. Increase your apiary as your experience increases.

Minnie May's Dep't.

MY DEAR NIECES:—

So many of our occupations lie out of doors this lovely May weather that we should be properly equipped for them. A woman's good looks depend so much upon the skin and complexion, she should not think any labor lost that is bestowed in the proper care of them. Many of my girls are engaged in such suitable and profitable industries as poultry raising, bee-keeping, flowers, fruit, and even stock farming, that they must of necessity be out of doors nearly all the time; but let us not forget to try and preserve our fair looks just as long as we can. Nothing can be an excuse for neglecting them. These occupations for women, so far from being unsuitable, are some of the most life-giving pursuits, and instead of detracting from her good looks should make her healthier and happier. Do not think any nasty mixtures applied to the face can improve the complexion; there must be sound health and the roses and lilies will grow. Before you go to your work in the morning, dress for it, as you would dress for anything else. A broad brimmed hat should be worn always when in the sun and air, tied under the chin, the ties attached to the outer edge, thus forming a complete protection. Who has not suffered the discomfort of a sunburnt face!—the smarting and swollen feeling, and the nasty brown tint all over the face next day. Very tender skins will smart sometimes even with a hat on. Bathe the face in water as hot as can be borne, until all the heat has gone, then rub one drop of liquid honey over, and dry with a soft towel; the cooling effect is very soothing. Gloves should be worn all the time when out of doors. You will say they feel awkward. So they do; but you will soon become accustomed to them, and miss them. Do not scorn such helps to refinement. We should never forget we are women, and bring as much gentleness and nicety into our pursuits as possible. Gloves of leather, for such purpose, can be bought at a small price, or you can cut and sew them from strong cloth, or, better than all, crocheted or knit them of strong white cotton. When the hands become chapped wash in soap and water and rub a drop of honey on while still wet, and then dry thoroughly. If the weather is at all damp wear rubber overshoes, thus guarding against rheumatic attacks, which are too often contracted by damp or cold feet. Observe these rules, my dear girls, and never forget that you can dignify any occupation you engage in.

MINNIE MAY.

Minnie May offers a prize of \$2 for the best essay on "Travelling as an Educator." All communications to be in our office by the 15th of June.

PRIZE ESSAY FOR APRIL.

**The Policy of Tongues, or How
We Should Govern Our
Speech.**

BY MISS B. MILLER, ST. MARYS, ONT.

For the sake of our home lives alone it is most important that we learn to control our tongues. Did we indulge in scolding, grumbling and fault-finding; did we retort every irritating or impatient word, with one still sharper—what a perfect Pandemonium home would sometimes be! And has not nature, too, most prudent of lawgivers, placed double guard over the little unruly member, which is the organ of speech.

While it is not given to many to speak well and wisely on every occasion, to drop pearls at every word, it rests with each and all, the brilliant and learned, the illiterate and dull, the least and greatest, to cultivate a right and charitable frame of mind, a spirit that breathes good will to others of which our speech should be the outward expression.

In the first place we should always endeavor to speak the truth with charity; but if we would speak charitably, we must also think and feel charitably. How often we denounce and con-

demn others, forgetting that had we the same weak nature, the same lack of judgment or common sense, or had we been exposed to a similar temptation, we would, in all probability, have acted in precisely the same manner. Cato said, "There is nothing so delightful as the hearing and speaking of truth;" but there are many unpleasant truths told out of pure malice, rather than for the sake of the truth itself.

Important as it is at times to speak, it is often just as important to preserve a judicious silence. Lord Bacon said: "Discretion of speech is more than eloquence." As a rule, those who say but little obtain credit for knowing a great deal more than they do. Some will chatter away incessantly, about anything or nothing, till one quite agrees with the Irishman, in thinking their tongues might be glad when they are asleep, for they seldom get a moment's rest while they are awake. The habit of speaking out one's mind upon every occasion is by no means always wise, and is often the very essence of rudeness. If we can say no good of anyone, let us keep silence, since we know that criticizing faults will not cure them, and are conscious of many shortcomings of our own.

"Disgrace concealed,
Is ofttimes proof of wisdom when the fault
Too obstinate, and the cure beyond our reach."

We should be sincere. Insincerity soon shakes all faith in human nature; and at the present time, when falsehood, or as it is sometimes politely called, exaggeration is so alarmingly on the increase—when so much of what is said must be taken at a liberal discount, it behooves all truth-loving people to mean what they say.

In conversation, we should have regard for people's feelings, should be tolerant of their views and opinions, should seek to interest them and draw out their good qualities, rather than display our own powers or learning. Wit, jest and repartee, all add zest to conversation, and make it a delight; but better never make a joke, unless we are sure it will be taken in good part, than do it by wounding some sensitive spirit. Slang, vulgar phrases and meaningless expletives should be avoided. They are marks of uncultured minds and unrefined tastes. Ridicule and sarcasm are dangerous weapons, and should be handled with care. If we would convince another of an error, better employ tact and caution, else we only kindle resentment and thus defeat our own ends. Nor should we descend to frivolity or flippancy. Loquacity is to be deplored, unless coupled with good sense and intelligence. The reason given in Hudibras that people who talk on trifles talk so fluently is, that the tongue is like a race-horse, and the less weight it carries the faster it goes. While the conversation of the best bred people is about things rather than persons, it is, of course, no harm to speak a word of encouragement or commendation of or to anyone, and when prompted by sincerity, and devoid of any flavor of sycophancy or flattery, it is a graceful thing to do. Evil speaking and gossiping should be shunned as a pestilence. Those who seek to pick holes in the characters of others by gross misrepresentations, by cowardly insinuations they dare not utter in their presence, by spreading reports they know are not true, should remember they betray in themselves an evil disposition, a littleness of mind and nature, a "leprosy of soul," that is enough to make angels weep. Such people neither think nor care what harm they do. They are a sort of disturbers of the peace that are out of the reach of legislation.

"Good name in man or woman, dear, my lord,
Is the immediate jewel of the soul.
Who steals my purse steals trash; 'tis something,
Nothing;
'Twas mine; 'tis his, and has been slave to thousands.
But he that filches from me my good name
Robs me of that which not enriches him
And makes me poor indeed."

Lastly, we should guard the good name and character of another as we would wish others to guard our own. To listen, to smile, or to look approval upon anything which detracts from another's character without contradicting, when we know it to be untrue, is to become a participant in the mischief. This is surely one of the occasions which Solomon meant as "a time to speak."

So Tired!

This is a picture of me. Eight o'clock is my bed-time, but I was making a new dress for my doll. Her name is Marget Jane, and aunt came and gave me a piece of velvet off her winter's bonnet. The sleeves were too big or too little, and I couldn't get them right. I waited after my mamma said it was bed-time as if I didn't hear her, but she looked as if I must go the second time, but I didn't. She let me stay then, but I wasn't happy. Nothing went right and my mamma was very still, but she knew all I was doing. I got very sleepy; I was cross, too, and my mamma didn't come up with me to tuck me in when I had said my prayers, and kiss me good-night and perhaps tell me a nice story. She just sent me away up alone with a candle to see with. I cried with all my might so everybody in the house heard me, but I had to go alone.

My Uncle John draws pictures, and this is the one he made of me. It was up on the wall when I came down to breakfast this morning. He has a "Kodak" now, and he says he can show me myself in all my moods. I think he means when I am angry, because my mamma was telling him how I caused her such trouble with my bad temper. If I do what I am told and keep in good humor my Uncle John will forget to take my pictures, so I'm going to try.

I'm very much ashamed to have anybody see this, but I'm not going to be like that any more, and this picture will show me what I once was like and may serve as a warning to other girls and boys.

I hope the ADVOCATE will print my letter and 'scuse the ugly picture, and I'll try to write a big letter some day.

KIT.

Answers to Inquirers.

M. G.—Can you tell me how the terms "Whig" and "Tory" originated?

The word "Whig" was given to the Liberal party in England by the Royalists in Cromwell's day, from the initials on their motto, "We Hope In God." The word "Tory" may be traced to the Irish adherents of Charles II. during the Cromwellian era, when the words Tar-a-Ri (pronounced Tory), and meaning "Come, King," were so constantly in the mouths of the Royalists as to have become a by-word to designate them.

A LITTLE TOO MUCH.—"Miss Hjee didn't sing," remarked a friend to the leader of the church choir at the Church of the Offertory. "No; she has resigned." "I thought she had a good place. What was the trouble?" "She was offended about the selection of an anthem which she had to lead off last Sunday, and vowed she'd resign sooner than sing it, and she did." "That's odd. What was the anthem?" "It began, 'I have been young, and now I'm old.'"

Wishes.

BY EVELYN L.

"Wishing, of all employments, is the worst."

In these words the poet evidently refers to that idle wishing which is content to be complete in itself, and needs no action to bring it to perfection. Wishing for that which we cannot hope to obtain is, indeed, the worst of employments, but if the wish be the means of spurring us on to greater efforts after higher things, it will not be without avail. And yet how many are the foolish wishes that we make from day to day. Great indeed would be our unhappiness were it

which you shall wish; but, take care, for after having asked for three things, I will grant you nothing more."

The fairy having disappeared, the man and his wife were very much embarrassed, but presently the woman said: "For myself, if I am the mistress, I know well what I will wish. It seems to me that there is nothing so good as to be beautiful and rich."

"But," answered her husband, "with that one might be ill, one might die young; it would be wiser to wish for health and long life."

"And of what use would a long life be if we were poor?" said the wife. "That would only

serve to make us unhappy for a longer time. In truth, the fairy should have promised us a dozen gifts, for there are at least a dozen things which I shall require."

"That is true," the husband replied, "but let us take time to consider; from now until to-morrow morning we will examine into the three things which are the most necessary to us, and then we will ask for them at once."

"I will think all night," said his wife; "in the meantime let us warm ourselves for it is cold."

Taking up the tongs the woman mended the fire, and seeing so many hot coals, she said, without thinking, "Here is a good fire, I wish we had a yard of black pudding for our supper, we could cook it so easily." Scarcely had she uttered these words when there fell by the chimney a yard of the black pudding she had so thoughtlessly desired.

"Evil be upon the gourmand with her pudding," cried the husband. "Truly, here is a beautiful wish! I wish that you had the pudding at the end of your nose."

In a moment the man perceived that he was still more foolish than his wife, for by this second wish the pudding leaped to the end of that poor woman's nose, and she could not possibly tear it away.

"How unhappy I am," cried she; "you are indeed wicked for having uttered such a foolish wish."

"I assure you, my dear wife, that I did not think of it," said the man, "but what shall we do? I intend to wish for great riches and will have a golden case made for you in order to hide the pudding."

"Oh, no," she exclaimed, "I would kill myself if it were necessary to live with this pudding upon my nose. There still remains one wish, leave it to me, or I will throw myself from the window!" Saying these words she ran to open the window, and her husband, who loved her dearly, cried hastily: "Stop, my dear wife, I give you permission to wish what you like."

"Very well," said the woman, "may this pudding fall to the earth." Immediately the pudding detached itself from her nose and, turning to her husband, she said, "I see that the fairy mocked us, and she was right. Perhaps we should have been more unhappy being rich than we are at present. After this let us



SO TIRED!

possible for us to obtain all those things which we thoughtlessly desire. The following short story from the French illustrates this in an amusing manner:—

One winter's evening a man and his wife, seated near the fire, were talking of the happiness of their neighbors who were richer than they.

"Oh! if I were the possessor of all that I wish for," said the woman, "I would be very much happier than any of these people."

"And I also," said the husband, "I would wish to live in the time of the fairies, and that one might be found good enough to grant me all that I would desire."

At the same moment they saw in the room a beautiful lady, who, regarding them earnestly, said in a low and musical voice, "I am a fairy. I promise to grant you the first three things for

be content with such things as it may please God to send us. In the meantime we will sup upon our pudding, since that is all that remains to us of our wishes."

The husband thought that his wife was right, and they supped gaily, not troubling themselves further about the things for which they had intended to wish.

To be content with what you have, and to be content with what you are, are two entirely different things. It has been well said that the moment a man becomes satisfied with himself, at that very moment everyone else becomes dissatisfied with him. Let your wishes then reach out towards that which is noble and good and true, for such aspirations alone must lift you to a higher plane. Link with them an earnest, prayerful effort after the right, and you will find that they may be made the means of elevating your character, and leading you ever onward and upward.

"In idle wishes fools supinely stay;
Be there a will, and wisdom finds the way."

PRIZE ESSAY.

What is Economy?

BY JESSIE J. LAMBERT, JOCELYN, ALGOMA, ONT.

Economy is the most important element of success. Economy of money and economy of time. By economy I do not mean penuriousness; it is not necessary to write economy and spell stinginess. Miserly saving means the greatest extravagance, and necessitates the expenditure of the most valuable of heaven's gifts—health and strength. "Occupy till I come," is the commission by which everyone holds whatever of earthly possessions are committed to his care. We may forget the terms on which we received the property, but that will not alter the case. An account must be rendered hereafter regarding this commission. When they of old appeared to give their reckoning it was ten for the ten and five for the five. The talent in the napkin was put there by human hands, which choose to use it in this way, when they ought to have used it in that. All God's gifts have their use, but they can be abused too. The value of money is just the good it will do in life, and we ought to know and appreciate this value. Injudicious expenditure of money is a fruitful source of evil. Experience teaches how to save it sensibly, and not at the expense of health, strength and comfort. Such wholesome economy will disincite us to spend our time or money without adequate return, either in gain or enjoyment. Some of the finest qualities of human nature are related to the right use of money, such as generosity, honesty, justice and self-denial, as well as the practical virtue of economy. Economy is the result of a habit of self-denial. Like all habits it is well to remember it has to be taught early in youth.

"To be frugal is wise, and this lesson of truth should ever be preached in the ears of youth. The young must be curbed in their spendthrift haste. Least meagre want should follow on waste."

Economy and meanness are often considered by the young to be synonymous terms, and we can prove that this is not true by being generous whenever we can. There is a good old proverb which says: "He who will not save in youth will have his nose to the grindstone all his life." We know that wastefulness is wrong, and that if a thing has any value it is a duty to see that it is not thrown away, even if we do not want it for our own use. "Gather up the fragments that nothing be lost," was spoken by Him who became poor that many might be rich. If by using a little time, patience and ingenuity a saving may be made which enables the person practising it to buy a coveted book, picture or little gift to give to a friend, then it has not been economy exercised in vain. The art of Political Economy might well be supplemented in every school of our land by a course of Domestic Economy. Too many women know next to nothing about how to spend their allowance or earnings to the best advantage. No habit is more valuable than the careful keeping of accounts of money, received or spent. That there is as much pleasure as profit in the practice of household economy, is an acknowledged fact with all thrifty, painstaking women, but housewives, and particularly youthful ones, must be

careful, lest in their efforts to economize they diminish the nourishing properties of the daily food at the same time as they lessen its cost. Happy indeed is the housewife who has judgment enough to strike the fortunate mean. The woman who makes her life one dull grind, who tolerates nothing which does not tend towards earning or saving money, will find when too late that she has lost what is more valuable. You may save and you may get and yet be very unhappy. Worldly success, however universally coveted, can only be desirable in so far as it contributes to happiness. The woman who fails to make her home the sunniest place to her family, has a mistaken idea of economy; there are plenty of people outside of home who will entice them away, unless there is a strong attractive home influence. It is the petty economies which are the destroyers of genuine home life and comfort.

An economical application of time brings leisure. Method enables us to drive our business, instead of our business driving us. There is nothing attended with results so disastrous as such a miscalculation of our time and means as will involve us in perpetual hurry and difficulty. The brightest talent must be ineffective under such a pressure. The best recipe for succeeding in the world is this: "Work much, and spend little."

In the ordinary course of human affairs success ever waits upon economy, which is the condition by which prosperity must be earned.

Sir Walter Scott.

BY EVELYN L.

This great poet and author was born in Edinburgh in the year 1771; but in consequence of an illness in his second year which eventually left him lame, he was sent to reside with an aunt in Roxburghshire where he remained until seven years of age. His first associations were thus of that section of country around the Tweed which always occupied such a large place in his affections. He early showed evidences of those tastes which in his after life made him famous. It is said that when but four years of age a toy had less attraction for him than a border ballad, and before he was ten he had made a collection of several volumes of them, and was famous among his schoolmates for his extraordinary gift of story telling.

Strange to say, he did not distinguish himself either at school or university; but although he seems to have been an idle student, everything in miscellaneous literature which came in his way was eagerly read. The odd mixture of information he thus acquired, his wonderful memory enabled him almost entirely to retain and make use of in after years in his writings.

In his twenty-first year he was called to the bar, where he continued to practice till 1806, when he abandoned the law to become a Clerk of Session. In 1799, by the influence of the Duke of Buccleuch, he was appointed Sheriff of Selkirkshire, and established himself with his young wife, who was a lady of French extraction, at the farm of Ashiestiel on the Tweed. It was at this place that his first great poem, "The Lay of the Last Minstrel," was completed, and was followed soon after by "Marmion," "The Lady of the Lake," and others. His life at Ashiestiel was a very happy one. Rising at five o'clock he usually wrote three hours before breakfast, and also for some time afterwards. Then by noon he was, as he used to say, "his own man" for the day. After dinner he would go out on horseback with his greyhounds for some hours coursing, or with spear in hand, would watch for the salmon in the Tweed, for "in that day even sheriffs plied the leister."

In 1814 he published "Waverley," the first of that wonderful series of historical novels, many of the characters in which have become "as familiar as household words." A foolish whim caused him to publish them anonymously, and for some years the name of the author remained an open secret.

We have a charming description of Scott as he appeared in his everyday life, given by Washington Irving, in the account of his visit to Abbotsford, where he was received with the greatest hospitality. Genial and pleasant to all, he was an especial favorite with his dependents, who liked nothing better than to have a "joke

wi' the Shirra," as they expressed it. Strange to say the dignity with which he was invested as Sheriff of the county was greater in their eyes than that which his fame as a poet conferred upon him. Of all dumb animals he was exceedingly fond, but more especially of dogs, of which he had a great number, Maida being his favorite.

Speaking of his family, Irving says:—

"His daughter Sophia and his son Charles were those of his family who seemed most to feel and understand his humors, and to take delight in his conversation. Mrs. Scott did not always pay the same attention, and would now and then make a casual remark which would operate a little like a damper. Thus, one morning at breakfast, when Dominie Thomson, the tutor, was present, Scott was going on with great glee to relate an anecdote of the Laird of Macnab, 'who, poor fellow,' premised he, 'is dead and gone—' 'Why, Mr. Scott,' exclaimed the good lady, 'Macnab's not dead, is he?' 'Faith, my dear,' replied Scott, with humorous gravity, 'if he's not dead they've done him great injustice for they've buried him.' The joke passed harmless and unnoticed by Mrs. Scott, but hit the poor Dominie just as he had raised a cup of tea to his lips, causing a burst of laughter which sent half of the contents about the table."

Sir Walter was an enthusiastic antiquarian, and possessed a large collection of curiosities. Speaking of this reminds us of an incident in his tale of the "Antiquary," where Mr. Jonathan Oldbuck found a stone, carved, as he supposed, in the similitude of a sacrificing vessel, and bearing the letters A. D. L. L. upon it. These letters he surmised would stand for Agricola Decavit Libens Lubens, and from other indications the place where it was found had formerly been a Roman camp. Great was his disappointment to be informed that the letters stood for Aiken Drum's Lang Ladle, and his favorite theory was thus at once dispelled.

With Scott's increasing wealth and fame, the idea of becoming a Tweedside laird took fast possession of his mind, and he accordingly bought some land by that river to which he added by degrees until he had sufficient for his purpose. Here Abbotsford was built, which has been called "a Gothic romance embodied in stone and mortar." From the time of its building, however, a shadow was cast over his life, showing the dread reality which came only too soon. The expense of building, and after that of maintaining the mansion and entertaining with lavish hospitality the many guests who flocked to visit the Great Wizard of the North, was necessarily very great, and even the large sums which he received for his writings were not sufficient to cover it.

The crash came in 1826, when the publishing house of Constable and Ballantyne went down, and his liability as a partner in the firm reached the immense sum of over £100,000. This great misfortune served to bring out the true nobility of his character, for he resolved that his creditors should not suffer loss, and set himself at the age of fifty-five to pay off this enormous debt by the fruit of his pen. For the first novel, "Woodstock," which he wrote after the catastrophe, he received £8,228, and it is interesting to know that after his death the whole amount was entirely discharged. The last years of his life were very sad. His wife died in 1827, and for four years longer he toiled on, publishing volume after volume, until both mind and body gave way under the strain. In 1831 he was induced to visit Italy, but the change had not the looked-for effect upon his health, and he returned home to his beloved Abbotsford only to die, hearing at the last, as he had wished to do, "the gentle ripple of Tweed over its pebbles."

The one thing which this great man needed was a true sense of religion, for, although we notice a great respect for it in his works, it is as a sentiment rather than a life-controlling principle.

Although his poems are everywhere acknowledged to entitle him to the first rank as a poet, still it is upon his historical novels that his fame principally rests. His forte lies in depicting the picturesque, and some of his descriptions are wonderfully vivid in their minute correctness. For instance, what tourist would think of visiting Scotland without being familiar with his descriptions of the Trossachs, Melrose Abbey and

Ellen's Isle, where loch "Katrine in her mirror blue gives back to the shaggy banks."
Then, again, he is remarkable for his clever delineation of character. Indeed Collier says of him in this connection that "for variety and true painting of character he was undoubtedly the Shakespere of our English prose."

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES :-

The story is told of a Canadian school-boy, who, when asked to give the meaning of *responsibility*, did so by what teachers now call the "illustrative method". He said: "I have but one suspender on; the button in front is off, and there is great *responsibility* on the back button."
I may now say, and you will understand my meaning, that there is much responsibility resting on you at this time—the first of May. Already the fields are drying, and the plows, harrows, cultivators and seeders are ready for use. The farmer who does not value these sunshiny May days will not cease to lose by it until another year has rolled around, and another May may bring him another opportunity. The same with boys and girls. This is your May time of life, and it comes but once.

As you watch the men at work at recess time, are you longing to be with them, to turn the soil and sow the seed?

It is a worthy ambition—a calling true and noble. It is but natural, too.

Tennyson says:

"For my spirit leaped within me To be gone before him then,
In among the lightst looks at,
In among the things of men."

The boy who will succeed in his life work does not spring into it unprepared. By knowing what it calls for, he knowingly prepares to fulfil its needs. The girl who will be a good house-keeper, or good baker, is preparing herself for it by watching or by assisting others before making a trial and afterwards a final success.

These beautiful May days, how we enjoy them! A happy release from winter's ice-bound clasp, it is no wonder everything seems rejoicing. The frogs in the pond, the crickets, the birds, all join in with the spring chorus. How innumerable are the voices in it; yet, we scarcely hear them unless our attention is called to it, so accustomed have we grown to each. The cawing crow, the drumming partridge, the tapping of the woodpecker, are high in the scale, and call our attention; but the minor notes, so musical, but with their tones of sadness, are sometimes lost. The water rippling on the shore, the rustling leaves, the sighing pines,—is it any wonder the poetic nature is stirred to speak of what he "can ne'er express, yet cannot all conceal".

Listen to what Susy Larcom, an American woman, says about May:—

"When April steps aside for May,
Like diamonds all the rain-drops glisten;
Fresh violets open every day:
To some new bird each hour we listen."
Longfellow, another friend of ours, writes:—
"The robin, the forerunner of the spring,
The blue-bird with its joyous carolling,
The restless swallows building in the eaves,
The golden buttercups, the grass, the leaves,
The lilacs tossing in the winds of May,
All welcomed this majestic holiday."

Then, there is Tennyson's "May Queen," with which you are each familiar. Even Milton writes of

"The flowery May, who from her green lap throws
The yellow cowslip and the pale primrose.
Hail, bounteous May, that doth inspire
Mirth and youth and warm desire;
Woods and groves are of thy dressing,
Hill and dale doth boast thy blessing."

May is a good time for you, my nieces and nephews. Marbles are out again, and bats and balls; then there is paddling in the water, climbing the hills, fishing, boating and so many things to keep boys and girls busy. There, too, are your gardens. Already the seeds are starting, I hope. And have you decided how you are going to divide your garden: what you are going to have in each bed, and what about the produce of it when it has grown? Your object is to have all do well now, and we will have time throughout the summer to talk of the other.

I am much pleased to see a growing desire among my nieces and nephews for good reading, also a growing dislike to anything that is not pure and true. Stand firm in this—like rocks. Each of you may become such a rock if you stand firm when words your mother might not listen to are spoken; when actions of which your father disapproves are being done. So, my dear young folk, you may become rocks of shelter for weaker ones than yourselves by stopping the drift of wrong-doing and letting it go no further.

UNCLE TOM.



P. S.—This month I present another very exciting picture from which my nephews and nieces must make a good story, and a prize of \$2.00 will be given for the best. All stories must be in our office by the 15th of June. Some must have made a mistake about the date given for the last, as they were not called for until the 15th May and already a great many have arrived, but they will all be judged together and the best will appear next month. UNCLE TOM.

Physical Exercise.

Care should be taken not to discourage the young in their natural fondness for physical exercise. Many boys and girls have relinquished sports eminently fitted to invigorate and strengthen them, and which they thoroughly enjoyed, because of slighting remarks of their elders, and from fear of being thought childish. We cannot estimate the evil consequences that may follow when we persuade a young girl that good hard play is unladylike, or a boy that it is unmanly. On the contrary, such sports should receive our most thorough respect and most cordial sympathy. Not to shorten, but to prolong the time during which they may be suffered to promote health and happiness should be our aim; and when the taste for them declines, our effort should be to replace them by more congenial exercise.

Grandpa's Love.

"One and two, I love," said Daisy.
"Three, I love, I say."
Petal after petal falling,
Fluttered far away.

"Four, I love—all these are grandpa—
With my heart always.
Five, that's naughty, jealous Towser,
Five I cast away.

"Six, he loves—of course that's grandpa—
Seven's me, Daisy May.
Eight, they both love, really, truly—
More and more each day.

"Nine, he comes.—I'll run and meet him,
With my posies gay.
Ten, he carries, but he'll hurry
To his Daisy May.

"Eleven, he courts—what's that, I wonder?
Guess it's tennis-play.
Twelve, he marries,—I'd marry
Grandpa any day, yes!"

Natural Soaps.

Various saponaceous compounds have been patented for sale under the names of "soapina", "soapine", or similarly manufactured words, but they are usually made from some natural product which has the appearance and quality of soap. In the West Indies and South America

grows the soap tree, whose pulpy fruit is used by the natives instead of soap for washing. This substance, if used in excess or too frequently, injures the texture of the fabric, but it has such excellent cleaning qualities that it will clean as much linen as sixty times as much soap. This saponaceous quality belongs in a greater or less degree to a number of other species of the genus saphindera, all of which are tropical except one, which is found in the Southern States.

Then there is a tree in Peru, whose bark in infusion yields a soapy liquid, valued for washing woollens. This bark is extensively imported to Great Britain, and also to other countries for this purpose.

The juice of the soap wort, a weed well known in America, as well as Great Britain and Europe, forms a strong lather with water, and was much used by our grandmothers for scouring dresses. In California the roots of the Philanthium, which grows there abundantly, are much used for washing clothes. This plant has a strong odor of brown soap in its leaves and stem, as well as its roots.

The Egyptian soap wort and the Spanish soap root of the same genus have been employed for washing from time immemorial in Southern Europe and Egypt, and are to some extent exported for use in cleaning fine articles.

Some of the South Sea Islands produce a species of vine. The thick part of the stem cut in pieces and softened by cooking on hot stones produces a lather-like soap when put into water. In many of the islands of the tropics a berry is gathered which supplies all the qualities of soap.

Farmer Strawsack (to Dentist).—Say, doc; the tooth next to that one aches too. Dentist.—Yes; in sympathy. Farmer Strawsack.—Durn sech sympathy! Yank'er out!

No Mistake in Hers.

At noon a girl about 19 years old, and wearing a somewhat faded costume, came up to the delivery window of the post office, threw down a letter, and said to the clerk:—

"Is that air stamp all squee-gee?"

"Yes, it seems to be all right."

"An' is the address writ so's thar kin be no show of its gettin' off'n the trail an' monkeyin' all 'round the country afore it gits to whar it's addressed?"

"Oh, I guess so. The small boys can manage to—"

"I don't want no guess work about it, for that is a matter o' life and death. If that letter'll go straight, say so, and if it won't, just unlimber your tongue and give me square music."

"I'll guarantee that it will find the person to whom it is addressed," said the clerk, who had deciphered the hieroglyphics on the envelope.

"Then that's all right; but if it don't get thar' on time, I'll have you took up for murder. That letter's fur my feller back in Illinois, an' he writ that if I wouldn't marry him right off he'd kill hisself, an' I've writ back that he kin come on and double up jest as soon as he wants ter. If that letter don't git thar straight, Jim's jest fool enough to swaller a dose of pizen or, somethin' an' mind, young man, that you are liable to be pulled any minute for murder if he does. My name's Rhoda Lumly, an' anybody that knows the Lumly's 'll tell you that we're not to be fooled when human life is at stake."

And she shook a warning finger at the clerk and walked out.

Something for Brides.

A bride's superstition that "to be lucky," she must wear on her wedding day,

"Something old, something new,

Something borrowed, something blue,"

is a very old one; but if the following be true, the color of her wedding dress is also powerful for good or ill.

"Married in white, you have chosen aright;
Married in gray, you will go far away;
Married in black, you will wish yourself back;
Married in red, you will wish yourself dead;
Married in green, ashamed to be seen;
Married in blue, he will always be true;
Married in pearl, you will live in a whirl;
Married in yellow, ashamed of the fellow;
Married in brown, you'll live out of town;
Married in pink, your spirits will sink."

Blue and white seem really the only favorable colors conducive to prospects of future happiness, while red, black, and green seem very ominous, and never to be selected, even if taste did not decree otherwise.

It is impossible for "a bride who stirs her wedding cake, to have any good luck in her future life"—all shadows and no sunshine will be her portion. (Swedish proverb.)

Diet for Brain Workers.

Brown bread, cream, fresh butter, oatmeal, fresh cheese (if it agrees), eggs, fish, and a moderate amount of meat. Oysters may be used freely in their season, and fruits should not be omitted. There should be variety and change as the season and health requires. The diet should be varied in kind and form quite frequently, though not necessarily every day. Even in health the best viands, when continued from day to day become unpalatable, and even nauseous. An occasional change of diet, in short, is indispensable to a proper relish for food, and the maintenance of the appetite and good health.

Rest and Abstinence.

When you are not well or feel that you may be threatened with an attack of sickness from any cause, rest, lie down, if you possibly can, and take but little food for a day or two. No matter what ails or is threatening you, if you have been anything like an average eater and engaged in any employment, it will do you good, and prepare you for any other treatment you may need thereafter. And it may save you from a severe attack of congestion or inflammation of some vital organ. For what is commonly called a "cold" there is no remedy to equal rest and abstinence.

All Listened.

A young divinity student from Harvard who was passing a portion of his vacation in West Gouldsborough, Maine, occupied the pulpit of the quaint little chapel there on a recent Sabbath morning. Waxing eloquent with his theme, he sought to embellish his discourse with numerous flights of poetic fancy and allegorical illustrations. Pausing a moment after one of these supreme efforts, he continued, "And now, my friends, let us listen to the low, sweet prelude." At this juncture a cow beneath one of the windows launched forth into a series of such vigorous, discordant bellowing as would have made the trombone player of a German street band green with envy. The crimson flush of the young man's face rivaled the hue on the statue of the venerable John Harvard.

The Prince of Wails.

London *Tid-Bits* has just awarded a two-guinea prize for "the best definition of a baby." The following, by a young lady of Girsau, England, won the prize:—

"A tiny feather from the wing of love, dropped into the sacred lap of motherhood."

Some of the other answers sent seemed very much to the point, a few of which are given here:—

"A soft bundle of love, and trouble."

"The Prince of Wails."

"A wee little specimen of humanity, whose winsomesmile makes a good man think of angels."

"A little stranger with a free pass to the heart's best affections."

"The native of all countries, who speaks the language of none."

"The magic spell by which the gods transform a house into a home."

The Proper Way to Sit.

A proper sitting position requires that the spine shall be kept straight, and that the support needed for the upper part of the body shall be felt in the right place, says Caroline Le Row in *May Ladies' Home Journal*. Therefore, sit as far back as possible in the chair, so that the lower end of the spine shall be braced against the back of the seat. If this back is straight the shoulders will also rest against it; if not, they will have no point of support, and it will be found that they do not need it. This position makes no strain upon the ligaments of the spine. It allows a proper position of the shoulders, consequently of the chest, consequently of the lungs, stomach and every other organ of the body. Their work is carried on naturally and comfortably, as is also the circulation of the blood, which in a wrong sitting position is seriously interfered with. With the feet resting squarely upon the floor, the hands resting easily upon the lap, perfect equilibrium, and consequently perfect rest of the body, is secured. There is no strain upon any part of the body; no muscle or organ is required to do more than its legitimate amount of work. The arms should never be folded; for this position not only causes a strain upon the spine, and all the other evils already referred to, but, in addition, places the weight of the arms upon the stomach and the diaphragm, thereby increasing the labor of digestion and respiration. Placing the hands behind the back, or folding the arms behind the back, if possible, is a good attitude to take occasionally, giving, as it does, the fullest expansion to the whole upper part of the body.

Rhubarb and Bread and Butter Pudding.

Prepare the rhubarb as for a pie; cover the bottom of a pudding dish with slices of bread and butter; cover with a layer of rhubarb cut in short pieces; sprinkle thickly with sugar; put on another layer of bread and butter, and so on until the dish is full. Cover, and steam for half an hour; then remove the lid, and bake until nicely browned.—*Good Housekeeping*.

The word "honeymoon" comes from the old German custom of drinking, for thirty days after a wedding, a beverage made from honey.

Mispronounced Words.

In-stinct', not in'stinct.

Ve'he-ment, not ve he'ment.

Vase, vās or vāz.

Ag'gran-dize, not ag-gran'dize.

Asthma, ast'ma or az'ma. So asthmatic.

Bronchitis, bron-ki'tis, not bron-ke'tis.

DO NOT SAY.

Them—Do not say them things, but those things. Them is not properly used as an adjective.

Their—Do not say every one has their faults, but every one has his faults.

Splendid—This word is inaccurately used for beautiful, grand, and many other words.

Lady—Should not be used in the sense of wife, and in general is inferior to the word woman.

Begin, Commence—Begin is usually the better, as it is the simpler word.

Putting Away Furs.

Among other things to be looked over and repaired before putting away are furs. There may be a little rip in the lining of a cap, or in the lining of the fur coat; a button or two may be missing, or a loop pulled off. It is so much better to put such garments in order before putting away—and when it comes to the final disposition of them or of anything likely to be disturbed by moths, why, there are are many women of many minds. I have found it well to fold fur coats and fur-trimmed cloaks lengthwise; put bits of camphor gum and sprigs of fresh cedar between the folds, lay the garment on the floor on a sheet, carefully wrap the sheet around it, pinning firmly; tie the sheet securely at the top and suspend this effigy of winter clothing on a hook in the store closet. Muffs should have their box thoroughly dusted and shaken, a bit of camphor and a sprig of cedar put in the bottom, the muff replaced and another bit put on top, then the cover adjusted and tied in place; gloves, caps, etc., should be similarly treated. When articles are in their place in the store closet, branches of cedar may be hung from the hooks, and a package of camphor laid on the shelves. One of the principal things is to put the garments away before the moth-miller comes. I have never had the least trouble with moths or kindred pests, and have always put away furs in this manner.—*Good Housekeeping*.

Pleasant Paragraphs.

A dandy on shore is disgusting, but a swell at sea makes everyone sick.

The only creatures that cannot have too much cheek are pigs.

What is that which has eyes yet never sees? A potato.

A clever woman listens to compliments; a foolish woman accepts them.

There is always a hand of welcome ready to be offered to the strange umbrella.

When you need a friend never pick out the man whose dog never wants to follow him.

Electricity is a wonderful educator. Think what it has done to make men see things in a new light.

No one but a successful man can truly pose as a cynic. He alone knows of how little value what men desire is.

A four-year-old boy recently complained that his teeth had trod on his tongue.

A young woman, on being asked what party she preferred, replied, "A wedding party."

The three things most difficult are, to forget an injury, to keep a secret, and make good use of leisure.

The man who was born with a silver spoon in his mouth is now looking about for something to eat with the spoon.

"Ma," enquired Bobby, "hasn't pa a queer idea of heaven?" "Why, no, Bobby. Why do you say that?" "I heard him say that the week you spent at Brighton was like heaven to him."

Puzzles.

1—SQUARE WORD.

My first is "a fluid," as you know well.
My second is "more than" tongue can tell.
My third is "a sign," a password or scrawl.
My fourth is "an incident," will known to all.
My fifth and last are "fissures," I'm told.
Found 'mong the rocks where lieth the gold.
FAIR BROTHER.

2—DROP VOWEL PUZZLE.

H-p-f-r-th-b-st-pr-p-r-f-r-th-w-rst-nd-t-k-wh-t-G-d
s-nds. ADA ARMAND.

3—CHARADE.

While out one day, my second spied,
My first I saw him do;
To catch him was of no avail,
He seemed as though he flew.

My whole's a game oft played by boys,
It's amusing to the mind;
Now, cousin's, put you heads together,
And my riddle you will find. GEO. BLYTH.

4—CHARADE.

With Uncle Tobias as patron
We'd do very well I ween,
For in many of his writings
Much solid sense is seen.

But now, dear Cousin Eddie,
You ought to have a care,
And never tell such naughty tales
About a lady fair.

Perhaps this maiden is the one
You spoke about before,
Who euhred our handsome cousin
And thus makes him feel sore.

Now flirting, much like quarrelling,
Needs two to play the game,
And if the girls are flirts, why then
The boys must be the same.

I've tried to LAST your confidence,
So don't think me a sham,
When I tell you Lanark County
Is where they're "Packin' ham."

Now, as this puzzle's pretty long,
'Tis time to FIRST me out.
The TOTAL'S closed, I'll make my bow.
Then here goes, "Right about." ADA ARMAND.

5—CHARADE.

Sacred to the memory of "Henry Reeve" who
passed away (from "puzzledom") on New
Years day, 1892.

He sat at the head of our circle,
We elected him as Reeve;
He signed our monthly checks, but now,
His name I don't perceive.

We miss him; from our ranks he's fled;
His chair is empty still.
Oh! who is there can fill his place?
There's none to LAST his quill.

Our friend has gone, I know not where;
A shining light was he.
I fear that he has gone to join
The great majority.

As upward from the PRIMAL found
Of puzzledom's ladder steep,
Our friend did slip, forso, th, and fell
Into the — briny deep.

He's dead, alas! (His work I mean.)
His puzzling days are o'er;
He laid his quill upon the shelf,
We'll see his face no more.

For lack of time, dear friends, I'll not
COMPLETE his life to write.
I'll leave that for someone else to do
Who has a better right. FAIR BROTHER.

Answers to April Puzzles.

- 1. Patron. 3. Respect-ability. 2. S T A R
- 4. Governors, rulers and states- T A R E
- men should possess courage, wis- A R M S
- dom and integrity. 5. Hand-some. R E S T
- 6. Lanark County. 7. Uncle Tom, ADVOCATE.

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

Elsie Moore, Anna Gordon, Ada Armand, Edward A. Fairbrother, A. R. Borrowman, Addison Linder, Oliver Linder, Geo. W. Blythe, I. Irvine Devitt, Alex. Hartle, Lily J. Day, Jessie H. Anderson, Geo. Montgomery, T. H. Halle.

CHARITY IN JUDGMENT—Never let it be forgotten that there is scarcely a single moral action of a single human being of which other men have such a knowledge—its ultimate grounds, its surrounding incidents, and the real determining causes of its merits—as to warrant their pronouncing a conclusive judgment.

In youth grief is the tempest which makes you ill; in old age it is only a cold wind which adds a wrinkle to your face, and one more white lock to the others.

Entomology.

Injurious Insects—No. 4.

BY JAMES FLETCHER, DOMINION ENTOMOLOGIST, OTTAWA.

SPRAYING WITH PARIS GREEN.

Economic entomology, or the science which treats of insects injurious to crops and practical methods for preventing their ravages, has, during the past ten years, so much advanced that it may almost be said to be a new science. This remarkable advancement has been due chiefly to the discovery of new remedies and the invention of new apparatus for applying these. Amongst the former, spraying with Paris green and other arsenical poisons for all foliage-eating insects takes a prominent place, and of the latter the most important invention is a suitable nozzle for distributing liquid insecticides so that the material used may be thrown upon the foliage in a state of very fine division—in fact, as an actual spray, or mist. In this way not only is the material economised by being spread over the largest possible area, but the chance of injuring the foliage is much lessened. The invention by the U. S. Entomologist, Dr. Riley, of the cyclone nozzle marks an era in this work, and since then various other devices have been produced, the most important being the "Vermorel," which is merely an improvement of the Riley cyclone nozzle. What is required is a nozzle which will break up the liquid into a very fine mist. I have not seen any Canadian-made pumps and nozzles which are now in the market; but suitable pumps are to be obtained for a few dollars from many of our seedsmen. There are three kinds of pumps: (i.) Large pumps, requiring to be mounted upon a vehicle to be drawn by horses, as shown at p. 146 in your last number; (ii.) knapsack pumps, which contain about four gallons and can be carried on the back by a man, and (iii.) hand pumps, which are smaller, and can be placed in a pail and carried where required. For a few trees or a garden these last answer all purposes. Catalogues of pumps and spraying apparatus can be had on application from the following addresses:—Albinson & Co., 2026 Fourteenth street, Washington, D.C., U.S.; Field Force Pump Co., Lockport, N.Y., U.S.; Adam Weaver, Vineland, New Jersey, U.S.; Gould's Manufacturing Co., Seneca Falls, N.Y., U.S.; Nixon Nozzle and Machine Co., Dayton, Ohio, U.S.; J. H. Vanzaudt, Leamington, Ont.

As stated above, spraying foliage with Paris green will destroy all leaf-eating insects, and there is no doubt that it will pay any farmer to purchase a spraying outfit, not only for protecting his crops against insects, but a force pump will also be found a very useful instrument to have on hand for many purposes about a farmhouse, as washing windows and buggies or in case of fire.

Of insects for which a spraying pump will be found most useful are the following:—

THE CODLING MOTH (*Carpocapsa pomonella*, L.)—The "apple worm" is too well-known to consumers of apples as a pinkish caterpillar, about three-quarters of an inch in length, found inside apples. The egg from which this caterpillar originated was laid in the centre of the apple blossoms after they opened. In about a week after being laid the minute egg hatches, and the young caterpillar eats its way down into the core of the apple. It subsequently bores through the flesh of the fruit and leaves it to spin its cocoon in a crevice of the bark of some other suitable place. There are two broods of this insect in a season. The first of these is that mentioned above, and the eggs of which are laid in the spring, the moths appearing in July, and

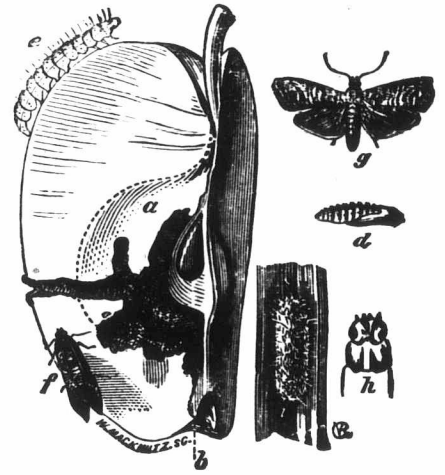


FIG. 1.

laying eggs on the forming fruit—generally the later varieties. These hatch soon after, and the young caterpillars eat their way in, frequently beginning between two apples where they touch each other.

Most of the caterpillars of this brood leave the fruit before winter sets in, and spin their cocoons in hollows of the bark; but some are harvested with the apples, and may be found in the barrels during the winter.

The perfect moth (Fig. 1, f. & g.), which emerges in spring and in July, is a beautiful little creature, but is very seldom seen by fruit growers, owing to the fact that it is nocturnal in its habits. It has deep brown wings streaked with gray, and at the end of each of the upper wings is a crescent of brown scales.

Remedy.—The best remedy for this insect is spraying the trees a day or two after the flowers have fallen with Paris green in the proportion of one pound of the poison to 200 gallons of water. In spraying the foliage the spray must be forcibly applied so as to reach every part, but should be shifted from place to place as soon as the liquid begins to drip from the leaves. Dr. Riley recommends two sprayings, the first after the falling of the blossoms, or when the apples are about the size of peas, and the second a week or ten days later. The second spraying is to destroy caterpillars hatching from eggs which may be laid after the first spraying, as the poison is gradually washed off by rains. One spraying, however, I have found to give very good results in fine weather, but when rains fall immediately after the first spraying a second application would certainly be advisable.

For further information on spraying and insecticides I would refer your readers to bulletin 11 of the Central Experimental Farm, Ottawa, which can be procured gratis by any farmer in Canada who applies for it. There is

NO DANGER OF POISONING.

To those who have not themselves sprayed apple trees with Paris green as recommended above, or to others who have not taken the trouble to think the matter out, it may at first sight appear that there might be some danger in deliberately distributing such a poisonous material as Paris green over fruit which was afterwards to be eaten. For the benefit of such, I will merely mention the following facts, and leave it to their common sense to decide that there is no possible danger; but, on the other hand, there is very great advantage, both to themselves and to the country at large, by increasing the revenue:—

1. Where alternate trees have been sprayed in an orchard, those sprayed gave good crops of sound apples, while of those untreated the fruit was mostly wormy.

2. Most careful chemical analysis has shown frequently that in apples sprayed twice with Paris green in June not the minutest trace of arsenic could be detected on the ripe fruit.

3. The amount of poison which falls upon the fruit when applied in the usual proportion (one pound in 200 gallons of water) is so infinitesimally small when distributed over a large number of trees—an ordinary tree requiring from one to two gallons—that there is no possibility of injuring the consumer of the fruit.

4. At the time it is recommended to apply Paris green to apple trees the forming fruit is

very small indeed, and being erect, is protected from the poison falling upon it by the lobes of the calyx. The minute and delicate caterpillar hatches inside this open calyx, where most of the spray which reaches the fruit must lodge, and therefore is killed in gnawing its way into the apple.

5. The fruit is so small at the time of spraying that even were it covered thickly on the outside with poison by the natural expansion of the fruit nearly, if not all, of the material would be pushed off as it attained its full size.

6. Paris green is not in the least of an adhesive or sticky nature, and Dr. Riley says (U. S. Farmer's Bulletin No. 7, p. 10):—"As a matter of fact," careful microscopic examinations have been made of the fruit and foliage of sprayed trees at various intervals after spraying, which indicate that after the water has evaporated the poison soon entirely disappears, either through being blown off by the wind or washed off by rains, so that after fifteen days hardly the minutest trace can be discovered."

7. Paris green is practically insoluble, so cannot be absorbed by vegetable tissues, and if it were rendered soluble and if it could be absorbed by fruits, its corrosive nature would destroy the tissues.

PLUM CURCULIO (*Conotrachelus nemophar*, Herbst.)—Fig. 2. Equally well known, from its work, with the Codling Moth of the apple, is the Curculio of the plum, which is shown in all its stages at Fig. 2. This insect passes the winter in the perfect state (Fig. 2 c.) As soon as new growth appears on the plum, cherry, peach, etc., trees, the beetles fly to them and feed on the new growth. When the fruit is about as big as large peas, the female (shown natural size on a cherry at d, and enlarged at c), having made with her

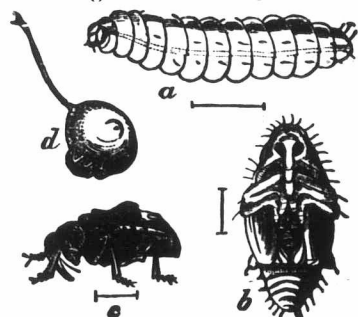


FIG. 2.

jaws a small hole in the side of the fruit, pushes in one egg, and then cuts a crescent-shaped slit in front of the hole. The grub which hatches from this egg is white (shown magnified at a, the natural size is shown by the hair-line beneath.) Plums which are attacked fall to the ground before the fruit ripens; but cherries frequently hang on the trees until ripe. There is only one brood in the year, the perfect form being attained in the autumn.

Remedy.—The best remedy for this insect also is spraying with Paris green, 1 lb. to 200 gallons of water, to which, however, lime-water has been added at the rate of 2 gallons to one hundred gallons of water. In making the lime-water, mix lime with water until it is of the thickness of milk; this must be strained through a coarse cloth and then mixed with the Paris green mixture when it will have the effect of preventing the injurious effect of the Paris green upon the delicate foliage of the plum.

Spraying should not be done until the plums are well set. The proper time is, once when the fruit is as big as peas, and again ten days later.

CANKER-WORMS (*Anisoplyx pomataria* and *A. renata*)—Of the leaf-eating insects which may be treated by spraying at the same time as the Codling Moth on the apple-tree are the



FIG. 3.

canker-worms, leaf-rollers and many others. The canker-worms are sometimes very injurious, and are of the shape shown at Fig. 3. They are called loopers from their way of walking, in which they loop up the body at each step, as shown above.

Dairy Education.

BY PROF. DEAN, O. A. C., GUELPH.

What is education? Does it consist simply in attending a school, a course of lectures, a college, or a university? Not at all. These are but the means to attain the end. The end is the drawing out, or leading out, of dormant powers already possessed. The means are frequently used without acquiring of the end. Not all who attend a college, or attend lectures, or read books, acquire an education, for the reason that they do not digest and assimilate the food placed before them.

When we feed a horse, a sheep, a pig, or a cow, we do so for a purpose. In the case of the first, that we may obtain work from him, and in the others to obtain respectively wool or mutton, pork, milk or beef. So in education there should be some purpose in view, and that purpose should be to improve and better the condition of mankind, thus making life more enjoyable.

In the particular line of which we are treating the object should be to produce more dairy goods of better quality at less cost than heretofore, and to demonstrate that there is pleasure and profit in a well conducted dairy. Will education do this? The answer may be found in the fact that in every calling the more intelligence that is applied the more successful it is likely to be, other things being equal. The most successful dairies at the present time are those which are conducted by thinking men and women—those who apply all the knowledge within their power to the practical part of their work. Not only in dairy education, but in all educational work, among those who must earn their daily bread, the demand is for something practical—something that will help to acquire the necessities, and possibly some of the luxuries of life. The chief end in acquiring dairy education should be to apply the principles of dairying to practical every-day work, and thereby make profit; and at the same time there will be a pleasure about it which cannot be attained otherwise.

THE NEED OF DAIRY EDUCATION.

While it is pleasant to think that we have so many intelligent dairy farmers in our Province, still there is room for improvement. To give an instance: samples of skim-milk were brought to the meetings during last summer, which contained one per cent. of fat. If this were an average sample it means that for every one hundred pounds of skim-milk there was left in it over one pound of butter. Suppose that a dairy herd consisted of ten cows, whose milk was treated similarly, and suppose further that these cows gave an average of 5,000 pounds of milk each in one year, that would be 50,000 pounds for the whole herd in one year. On the basis of eighty pounds of skim-milk for every one hundred pounds of whole milk, there would be 40,000 pounds of skim-milk in one year, which would contain about four hundred pounds of butter, worth at 20c. per pound, \$80.00. This loss could be largely avoided by the application of dairy knowledge, either by proper setting or, better still, by the use of a separator. Losses in skim and buttermilk occur each year, which might be greatly lessened, and it is such losses which help to make dairying unprofitable. To find out how much these losses are, and to find out what cows are profitable dairy cows, it will be necessary to weigh and test the milk. With a rapid, accurate, simple and inexpensive test, such as may be had in the Babcock, there is not much excuse for anyone not knowing what is lost by way of butter in the skim and buttermilk, or what cows are unprofitable.

HOW TO OBTAIN IT.

"All things are possible to a man with good digestion," who has in addition determination of purpose or stick-to-itiveness. With the means brought to our very doors, scarcely anyone need say, "I would, but cannot". The Dairy Associations, with their

quota of inspectors and instructors, the Dairy School at Tavistock for cheese-makers, the Travelling Dairy for butter-makers, and the Dairy Departments at the Ontario Agricultural College and Ottawa, all combined, furnish means for obtaining dairy knowledge such as few people outside of our Province are privileged to possess. No other branch of farming requires so much skill, and no other agricultural industry has received, or is receiving, more attention in Ontario than dairying, and it is well that it should, because no other part of the farm work has been more remunerative to the general class of farmers during recent years. We are, however, only in our infancy regarding this work. There are fields yet unexplored, heights yet unattained, knowledge yet to be grasped ere we reach the goal.

To acquire dairy knowledge, observe the following:—

1. Read all the good literature on the subject which could be reasonably obtained.
2. Attend as many meetings as possible where dairy matters are discussed.
3. If opportunity offers, go to some place where a course of practical and scientific lessons are given on the subject.

I might add that not only would producers of dairy goods be profited by the foregoing, but some of those who deal in dairy products might learn a few lessons that would help the trade. By cleaning up some of the places where butter is stored—places which I have seen with my own eyes and smelt with my own nose that were not fit to store butter in for one hour—it would confer a lasting benefit on one branch of dairying.

In conclusion, let everyone who has anything whatever to do with dairying seek to obtain all the light and knowledge possible, and thus place it on a higher basis than it has ever been heretofore.

Firefly.

Mr. Thomas Weld's celebrated stallion Firefly was put up at auction at Grand's Repository sale, but failed to reach the reserved bid. However he was afterwards sold to Messrs. Graham Bros., Claremont, and we must congratulate these gentlemen on this acquisition to their already splendid stud. Firefly was in grand form, and quite captivated the crowd in the sale ring and show ring alike. He is an easy winner against any horse that can be brought against him that is in Canada to-day, and we expect to hear of him giving such an account of himself at the next New York Show as will convince horsemen Canada is in the lead in Hackneys as well as Clydesdale and Coach horses.

NEW ADVERTISEMENTS.

- The Gowdy Mfg. Co.—Turnip Drill.
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- Eggs—C. W. Echardt, Ridgeville, Ont.
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- Shortorns—Heber Hawlings, Ravenswood, Ont.
- Eggs—Colborn Griffith, Ealing, Ont.
- Separator—Frank Wilson, Montreal, P. Q.
- Clydesdales—Prof. McCall, Glasgow, Scotland.
- Manitoba Lands—W. M. Moore & Co., London, Ont.
- Thoroughbred Stallion—Fred Row, Belmont, Ont.
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- Caustic Balsam—The Lawrence Williams Co., Cleveland, Ohio.

A THOROUGHBRED STALLION FOR SERVICE.

THE IMPORTED ENGLISH THOROUGHBRED STALLION "NORWEGIAN," 8 years old, a good bay, 16½ hands, and strong in every point; a first class race-horse, himself having won \$19,250.00 racing in the best company in the world, and is yet capable of winning, being pronounced sound by two first-class "vets." Commencing Monday, May 2nd, he will be at Nilesstown at noon, and at the Bernard House, London, for night and till Tuesday noon, when he will return to Belmont for night; Wednesday night at Avon; Thursday noon at Springfield, and Brown House, Aylmer, for night; Friday, New Sarum for noon, and Hutchinson House, St. Thomas, for night and Saturday till noon, when he will return home by way of Gleanworth. For tabulated pedigree or any further particulars, 317-a-o Address FRED. ROW, Belmont.

PUBLIC SALE OF
SHORTHORNS
 AT SHAWANOO HILL STOCK FARM
 on JUNE 15th, at one o'clock sharp,
 20 head, consisting of bulls, cows, heifers
 and heifer calves. Terms: Five months on ap-
 proved paper, payable at Standard Bank, Forest.
 Catalogues will be ready June 1st.
W. SPARLING, HEBER RAWLINGS,
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DISPERSION SALE OF
SHORTHORNS!

ON TUESDAY, MAY 10TH, 1892,
 At Lot 15, Concession 6, N. E. R., Township War-
 wick, Lambton Co., at 2 o'clock in the afternoon,
 at which time there will be offered for sale a choice
 lot of Shorthorn cows, heifers, bulls and bull calves;
 also a few grade cattle. Catalogues ready 1st of
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JOSEPH CRONE & SON,
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Jersey Cattle, Horses,
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BELMONT, SWEETSBURG, P. Q.
 By order of WILLIAM JOHNSON, Esq., who is
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The stock comprises 15 head of Jersey Cattle, the
 best in Canada; 5 Horses and Ponies, nearly
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 planted thereon. There are Fine Lawns and Flower
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 and Ornamental Trees. The House is built on the
 most approved Plan and almost new. Immediately
 after the Sale of the Property, we shall sell the
 whole of the Valuable Contents of the Residence,
 which comprises Handsome Drawing-Room, Lib-
 rary, Dining-Room and Bedroom Suites, in Walnut
 and other Woods, Beautifully Upholstered in Plush,
 Cretonne, &c., and the Fine Brussels and other
 Carpets, 7½ Octave Upright Piano by Bell, Hand-
 some 16-Stop Parlor Organ (by Bell) and numerous
 other effects, particulars of which will be found in
 catalogue.

This important sale will take place on the pre-
 mises on

WEDNESDAY, May 11
 at eleven o'clock prompt.

Conveyances meet all trains at Cowansville, C.P.
 R., and convey intending purchasers to place of
 sale free of charge.

ORDER OF SALE:—Implements, Carriages, &c.,
 11 o'clock sharp; Cattle and Horses, 11:30; Lunch-
 con, 12:30; Residence and Grounds, 1 o'clock;
 Household Furnitures, &c., 1:30.

KIMBALL & ASHMAN, Auctioneers
KIMBALL'S HORSE EXCHANGE,
 Catalogues mailed on application. MONTREAL.
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STANDARD-BRED TROTTERS

Headed by Mambrino Rattler, alias Crown Prince
 (2347), the best bred son of Mambrino Patchen in
 the Dominion. Write for his terms of service. Also
 standard Mares of choice breeding. A grand young
 Stallion for sale. **A. M. YARSLIE,**
 Jerseyville Stock Farm, Jerseyville, Ont. 305-y-OM

GOLDEN RULE POULTRY YARDS. Farmers
 only. To any farmer remitting us one dollar
 we will send one setting of either Brown Leghorns
 or Houdan eggs. Robert Trollope, Singhampton,
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EGGS! EGGS!

For hatching from prize stock.
 White Plymouth Rocks, Eng-
 lish Rouen Ducks, English im-
 ported Aylesbury Ducks,
 Mammoth Pekin Ducks.
 Warranted fresh and newly
 laid. Address—

H. H. WALLACE, 316-f-om Woodstock, Ont.

We offer in prizes as follows:—
 1st, \$30.00; 2nd, \$15.00; 4th, 1 Box
 C. P. S., value \$3.00; 4th, 1 Box
 C. W. C., value \$3.00, to parties
 sending most words made out of
 the word "Cottam's" and
 eleven capital letters in next column.

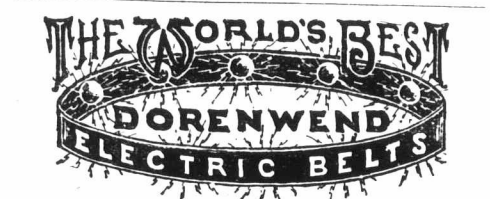
GOTTAM'S
 P. C. (Cottam's Patent Bird Bread.)
 B. B. W. B. (Cottam's Bird Seed.)
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Old and young, everybody can compete. Mail fee, for rules
 governing contest and we will send you a sample-box of C. P.
 B. B., worth 10c.
 316-f-om **BART. COTTAM, London, Can.**

A PROFITABLE BABY.

ORANGE RIDGE, Manitoba, March 31st, 1892.
FRANK WILSON,
 Agent "DeLaval" Cream Separators,
 33 St. Peter Street, Montreal.

DEAR SIR:—
 We have received the No. 2 "Baby" DeLaval
 Hand Cream Separator, and we have got it set up
 and running nearly two weeks. We can find no
 fault with it as it does more than you claim for it.
 We enclose you the money for it. We think the
 machine is just the thing for this country where we
 have such extremes of heat and cold. I believe we
 are getting nearly (50%) fifty per cent. more butter
 now than we ever got before from the milk, and
 the quality is greatly superior. The machine runs
 wonderfully easy; I could turn it all day myself.
 You can refer anyone wanting a machine in
 Manitoba to me. Yours truly,
 313-f-om **HENRY J. JONES.**



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DORENWEND
ELECTRIC BELTS
 CURES all nervous and chronic troubles—Indi-
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STALLIONS.
Fordham (287) 28, by Denmark (157); **Maxwell**
(314) 26, by Prince Alfred (325); and **Danesfort**
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Trotters—Electioneer, Almont, Happy
 Medium and Wilkes blood. Polled Aberdeen-Angus
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 Pigs. For catalogues address **M. H. COCHRANE,**
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35 PRIZES AND DIPLOMAS IN 1891 FOR OUR
NORMAN, PERCHERON, BRETON STALLIONS
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We have a
 large number of
 choice imported
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DALES for sale.
 Also breeders of
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 Chester White
 pigs, Shropshire
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 will be sold to
 meet the times

Address—
A. & J. BELL,
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ROBERT NESS, WOODSIDE FARM,

—IMPORTER AND BREEDER OF—
Yorkshire Coachers, French Coachers, Clydes-
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The stock has
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D. & O. SORBY, CUELPH, ONTARIO,

BREEDERS AND IMPORTERS OF
FASHIONABLY BRED CLYDESDALES

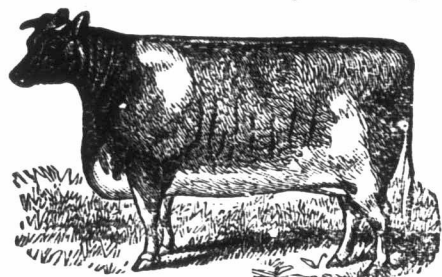
We always
 have on hand a
 large number of
 imported and
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 Clydesdales
 (male and fe-
 male) of good
 breeding and
 quality, which
 we will sell at
 honest prices.
 Our specialties
 are good and
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Shorthorns, York-
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 Some grand bulls and
 heifers, the get of Roan
 Prince (imp.) A number
 of Yorkshire fall pigs for
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 same age from imported
 stock. A few choice early
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 and out of show sows.
 None but select stock
 shipped. Box 230.
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A fine lot of Shorthorn bulls fit for service. Bred
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ARTHUR JOHNSTON,
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Has for sale, at MODERATE prices, an exceedingly good lot of young cows and heifers—all by imported sires and mostly from imported dams of the best strains to be had in Scotland.

A FEW YOUNG BULLS FIT FOR SERVICE also FOR SALE
New Catalogues for 1892 now ready. Send for one; they are mailed free.

My motto is "No business, no harm."

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Imported Prince Royal and cows bred by S. Campbell, Kinnellar, and James Bruce, of Burnside, together with their descendants by imp. bulls. Seventy head to choose from; also Cotswold sheep. Farm close to station. **J. & G. Taylor, Rockwood, Ont. 317yom**

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Improved Large Yorkshires

at prices to suit the times.

SEVERAL choice spring litters to select from; also a few sows fit for service.

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Milking Quality



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A number of **EXTRA YOUNG BULLS, COWS and HEIFERS**, for Sale at Reasonable prices.

PETER TOLES & SON,
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SHORTHORN BULLS AND HEIFERS
A CHOICE LOT FOR SALE.

H. & W. SMITH, Hay, Ont.
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FOR SALE!

Four Shorthorn Bulls and 8 Heifers, 30 Leicester and Southdown Ewes, and a number of Berkshire and Yorkshire Pigs. Good animals of good blood. Send for catalogue. 311-y-OM **E. JEFFS & SON, Bondhead, Ont.**

SHORTHORNS.



I have for sale several fine young bulls and heifers—red and rich roan low set, thick and stylish, and grandly bred, and at reasonable prices. Dams are either imported or daughters of imported cows.

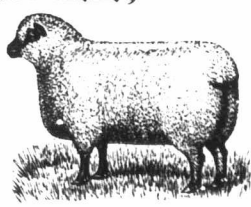
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SHORTHORNS, BERKSHIRES,
Plymouth Rocks, Bronze Turkeys. Write me for prices on the above. I have one of the finest show cows in Ontario for sale. Waterloo-Booth strain. H. Chisholm, Montrose Farm, Paris, Ont. 309-y-OM

SCOTCH-BRED : SHORTHORN : BULLS.
Scotch-Bred Heifers,
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in any number. All of very best quality, and at the lowest prices. We want 500 recorded rams for ranches. Correspondence solicited.

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Claremont Station, C. P. R., 22 miles east of Toronto. 306-y

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Shorthorns & Berkshires

My herd of Shorthorns are from select milking strains. Young animals at right prices. A few fine yearling bulls now ready. For particulars and pedigrees of stock address

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SCOTCH SHORTHORNS, IMP. YORKSHIRE AND BERKSHIRE PIGS. Herd of Yorkshires headed by Favorite (imp.) and Royal Duke, both prize winners; also registered Berkshires of Snell's stock. Pairs supplied not akin, and satisfaction guaranteed. Correspondence invited. Address, 310-y-OM **J. G. MAIR, Howick, P.Q.**

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6 Choice Young Bulls

And the Imported Cruickshank Bull

ABERDEEN HERO,

Their sire. Also some nice

Young Heifers

From one year old up.

Prices to suit the times.

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SHORTHORNS AND BERKSHIRES

The herd is headed by the noted Sir Christopher =3877=, and Mina Chief =13670=. The females consist of Mina and Strathallan families. Our Berkshires are prize-winners wherever shown. Choice young bulls and Berkshires for sale.

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JAMES QUIRIE, Delawon, Ont. 309-y-OM

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—NOTED FOR—

SHROPSHIRE'S

—AND—

Shorthorns.

Now ready for inspection—a choice lot of strong, fleshy young bulls, sired by the imp. Cruickshank bull Sussex (56625). Call or write for prices. Address

JOHN DRYDEN,
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BOW PARK HERD

—OF—

PURE-BRED SHORTHORNS.

Have always on hand and for Sale young Bulls and Females, which we offer at reasonable prices.

ADDRESS—

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

**Shorthorns, :::
Clydesdales
::: and Cotswolds.**



I have now on hand FOR SALE an extra good lot of **Truly-Bred Shorthorns, Clydesdales and Cotswolds.**

Among my Cows, Heifers and young Bulls are some fine show animals. The Clydesdales are of equal quality. My Prices are low and Terms liberal. Visitors welcome. Correspondence solicited.

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Telegraph and Post Office—GREENWOOD, ONT. 316-b.

Holstein-Friesians

OF THE CHOICEST MILKING STRAINS.

Extra individuals of both sexes for sale.

J. W. JOHNSON,
313-y-OM **SYLVAN P. O.**

HOLSTEIN-FRIESIANS

THE CHOICEST HERD IN CANADA.

Stock of highest excellence and most noted milk and butter families of the breed. Stock of all ages for sale. Prices right. Railway Station, Petersburg on G. T. R.; New Dundee P. O., Waterloo Co., Ont. Send for catalogue. 307-y-OM **A. C. HALLMAN & CO.**

Holstein-Friesians

My herd is composed of the choicest individuals obtainable, and belong to the best milking strains. Young stock at the lowest living prices. Communications promptly attended to. Watford R. R. Station. 306-y **S. D. BARNES, - Birnam P. O.**

HOLSTEINS AGAIN IN FRONT.

At Toronto show we showed eight head, and we brought away 1st, 2nd, 3rd and 4th on the herd. Stock for sale.

J. C. McNIVEN & Son,
307-y-OM **Lansdown Farm, WINONA, ONT.**
13 miles east of Hamilton on the G. W. Div. G.T.R.

REGISTERED HOLSTEIN BULLS AND HEIFERS.

John Pringle, Maple Lawn Farm, Ayr, Ont., offers for sale a few well-bred bulls and heifers of the above breed at reasonable figures. My bull, Ira's King, was bred by Dudley Miller, and my cows are all of choice breeding. 306-y-OM

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I have several very choice Bulls fit for service, which I will sell cheap, to make room for the young stock. Come and see them, and you will be pleased. Will allow Colanthus Abbecker, the Great Milk and Butter Bull, to be bred, to a few select Cows, at the low fee of \$12.00.

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R. S. STEVENSON,

Breeder of Holstein Cattle and Improved Yorkshire Pigs. Holsteins recorded in advanced registry. Yorkshires bred from imported stock. Young stock for sale at all times. 307-y-OM

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**SMITH BROS., Credit Valley Stock Farm,
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This is the place to get stock of best quality at reasonable prices. We have seventy-five head, including prize-takers; best strains, cows and heifers, with large milk and butter records; young bulls of superior quality. Send for catalogue. 316-y-OM

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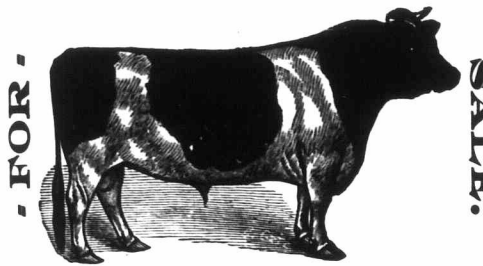
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Holstein Bull Calves

Calved since January 1st, 1892.

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A choice lot of thorough-bred Holsteins. We have on hand a large number of choice bull and heifer calves which we offer for sale at reasonable prices. They can be seen at Wyton, which is on the St. Mary's Branch of the Grand Trunk R. R. Before buying, give us a call. For further information apply to **W. B. SCATCHERD, Secretary,** Wyton, Ont. 312-y-OM

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My stock is selected from the leading herds. Choice young stock for sale. Before you buy elsewhere, write me for quotations.

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On main line G. T. R. 310-y-OM

Estate of Robert Hay,

Breeder and Importer of

choice Aberdeen-Angus

Polled Cattle, also

Shropshire Sheep from

the best blood of Eng-

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We have now much pleasure in telling our patrons that we have never been in better shape to meet their demands. We have not shown for three years, and all our stock have been on grass from May to December, and on swede turnips and rye hay from December to May. We can supply farmers with bulls to breed the best class of steers, besides settling once and for all the vexed dehorning question. Our strong point in the past has been the breeding and feeding of **Show Animals.** We are breeding them **NOW,** and can turn out herds fit to stand against the world at Chicago next year. Our prices will be found most reasonable, and we shall gladly welcome farmers and stockmen, whether on business or pleasure. Send postal card for private Sale List and give us a call before investing.

J. G. DAVIDSON,

Kinnone Park Stock Farm, MANAGER.
317-f-om New Lowell, Ont.

JERSEY COWS,

Heifers and Calves; registered; pure-bred unregis-tered, and high grades, bred from rich butter stock, whose pedigrees are written in butter.

COTSWOLD SHEEP

The gold medal flock; established in 1854. All bred straight from imported stock. Three imported Rams in use. Young stock for sale.

BERKSHIRES

Herd established in 1865. Imported and bred from imp. stock. Sows in farrow and young stock for sale at all times. We ship to order, guarantee satisfaction, and pay freight to all points in Ontario, & make best rates to more distant points. Come and see, or write. 315-y-OM

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BELVEDERE JERSEYS SERVICE BULLS ARE

Canada's Sir George, (Canada's John Bull, Allie of St. Lambert, 26¾ lbs. butter a week; 56 lbs. milk daily.

Pure St. Lambert. Hugo Chief of St. Ames, Pure St. Lambert.

Massena's Son, Massena, over 20 lbs. a week; 9,099 lbs. milk, estimated to have made 902 lbs. 2 oz. butter in 1 yr., 11 days.

Signal of Belvedere, Miss Satanella (Signal cow), 20 lbs. 6 oz. butter a week, on 2nd calf.

Believed to be the three greatest living bulls. Silver cup at the Kellogg Combination Sale; Silver Tea Set (Farmer's Advocate) for milk test; over 20 medals, gold, silver and bronze; over 300 prizes in money, also numerous diplomas, commendations and special prizes.

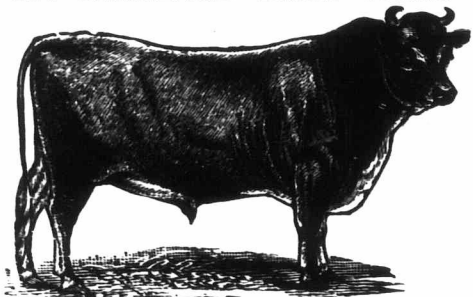
Special Offering Now.

3 Sons of Canada's Sir George, (pure St. Lamberts).

2 Sons of Massena's Son, from tested cows.

Registered and express paid to any reasonable distance.—MRS. E. M. JONES, Brockville, Ont., Canada. 313-y-OM

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My herd consists of choice animals. I breed for the best performers. Have now five bulls for sale of St. Lambert's blood. Quality and prices to suit the times. Address, **ELGIN ROW, Brockville, Ont.** 310-y-OM

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The prize-winning herd of the Eastern Townships, headed by Rene of St. Lambert (2043), winner of 1st prize and sweepstakes wherever shown.

I make a specialty of pure St. Lambert blood, and breed none but the best.

Choice young stock for sale.

Terms, prices and pedigrees on application.

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310-y-OM

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WM. ROLPH, Glen Rouge Farm, Markham, Ont., offers for sale Jerseys of all ages from his famous herd. The world-renowned St. Lambert blood a specialty. Also registered Clydesdale Horses. 309-y-OM

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Herd headed by Carlo of Glen Duart (1:037), the champion bull of 1891, and Pussy's John Bull (21200), a son of Canada John Bull.

STUD headed by Arklan (10331), a son of the world-renowned Guy Wilkes, 2:15¼.

I breed none but the best and keep no culls.

A. C. BURGESS, Arklan Farm,

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The Pioneer Herd of these famous American hogs has its headquarters in Essex County, Ont. Address, **PETER LAMARSH,** WHEATLY, ONT. 310-y-OM

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ROBT. REESOR, importer and breeder of A. J. C. C. Jerseys of the choicest breeding, with the St. Helier bull Otelle 17219 at the head of the herd. Stock of all ages on hand and for sale. 308-y-OM

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Choice Ayrshire Cattle for Sale.

We make a specialty of these grand dairy cattle, our stock consisting of very heavy milkers, and have some fine young stock for sale; also high grades. One mile from Ottawa. **E. REID & CO.,** 311-y-OM Hintonburg, Ont.

Ayrshire Cattle & Poland China Hogs,

MERINO SHEEP AND FANCY FOWL.

We have the largest herd of Poland Chinas in Ontario. At the last Industrial Fair we carried off 17 prizes out of 28, including both prizes for pens. We breed from none but the best, and our aim is to supply first-class stock at living prices. We mean business. Write, or come and see us.

W. M. & J. C. SMITH,

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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 well-come. Address

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DOMINION PRIZE HERD OF AYRSHIRES

This herd has taken all the first prizes wherever shown in Quebec and Ontario since 1887 to 1891. From imported stock. Young stock for sale at liberal prices.

JAMES DRUMMOND & SONS,

315-y-OM PETITE COTE, MONTREAL, P. Q.

PRIZE-WINNING AYRSHIRES

FOR SALE.

I have at present one of the largest & best herds in Ontario, which has been very successful in the prize ring. They are deep milkers and of a large size. Bulls, cows and heifers for sale always on hand.

JAS. McCORMICK & SON,

311-y-OM Rockton, Ont.

HEREFORD CATTLE & CHESTER WHITE HOGS.

The undersigned offers for sale three grand bulls and a few heifers of the above breed. Also pigs of both sexes. Prices dead right.—**JOS. CAIRNS,** CAMLACHIE, ONT., 14 miles from Sarnia. 313-y-OM



SHROPSHIRE.

Imported Ram Lambs, Shearling Rams, Imported Breeding and Shearling Ewes; Ewe Lambs imported or bred from imported sire and dam.

W. E. WRIGHT,

307-y-OM Glanworth.

THE GLEN STOCK FARM.

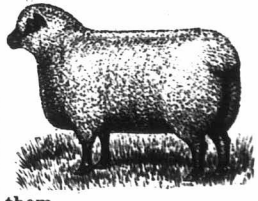
Clydesdales, Shropshires and Berkshires.—Choice young registered stock for sale. Telegraph office, Innerkip. Farm, ¾ miles from Innerkip Station on C.P.R. and 6 miles from Woodstock G. T. R. **WHITESIDE BROS.,**

Innerkip, Oxford Co., Ont. 316-y-om

SHORTHORNS and SHROPSHIRE.

I offer for sale at right prices, a very choice lot of imported ewes and rams; also Scotch Shorthorns from the very best strain in Scotland. Write or come and see them.

W. B. COCKBURN, ABERFOYLE, ONT., Corwhin, C. P. R., 7 miles east of Guelph. 310-j-om



SHROPSHIRE!

Having sold all my ram lambs, I can offer for sale my large flock of imported ewes, most of which are safe in lamb. Purchasers requiring real good sheep, not fattened for show purposes, will find flock as represented. My flock represents sheep from six different English breeders. Come and see me. Visitors welcomed.



W. S. HAWKSHAW, GLANWORTH, P. O. (7 miles south of London.) 315-tf-OM

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Messrs. A. Telfer & Sons, Springfield Farm, Paris, Ont., have been breeding Southdowns for thirty years. A fresh importation just arrived. Stock for sale. 309-v-OM

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MESSRS. ROBT. MARSH & SONS offer for sale choice Southdown Sheep of all ages, from their well-known flock, which has taken over 2,000 prizes since its establishment. Correspondence promptly attended to. 307-y-OM

Cotswold Sheep!

Wm. Thompson, Mt. Pleasant Farm, Uxbridge P. O., Ont., Importer and Breeder. Flock established 13 years. Imp. rams only used. Stock for sale reasonable. Visitors welcome and met at Uxbridge Station, Mid. Div. G. T. R. 315-y-OM

DORSET HORN SHEEP.

70 DORSET EWE & RAM LAMBS FOR SALE
The rams produce great results in crossing with other breeds, and are used extensively in Australia by the Merino. For particulars and price, apply

THOMAS W. HECTOR.
"The Cottage," Springfield-on-the-Credit, Ont. 315-c-OM

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CULVERWELL BROS., Durlough Farm, Bridgewater, Somerset, Eng. Breeders and Exporters of Improved Dorset Horn Sheep. Sheep and wool from this flock have won many first prizes at all the leading shows in England and Canada. Flock registered in English record. For price, etc., in Canada and U. S. A., apply to— 315-y-OM

JOHN TAZEWELL, Port Credit, Ont., G. T. R.

JOHN A. MCGILLIVRAY, O. C.,

Jerseydale Farm, Uxbridge, Ont., Midland Division G. T. R., importer and breeder of **DORSET HORN SHEEP.** 314-v-OM

A CHOICE LOT OF SHEARLING EWES,

TWO-SHEAR EWES AND A FEW THREE-SHEARS,

bred to Sheldon's Pride and Prince Royal (imp.), and a choice lot of **EWELAMBS** of our own breeding; also a few **YOUNG BOARS.**

PRICES LOW.

COME AND SEE THEM.

T. H. MEDCRAFT,

Sparta P. O., Ont., 309-y-OM Eight miles south-east of St. Thomas.



DORSET HORNED SHEEP.

T. W. HECTOR, IMPORTER AND BREEDER.

The oldest and largest flock of Dorset in Canada. First Prize Toronto and Montreal Exhibitions, 1891, for flock. Sheep of all ages for sale, ewes and rams not akin T. W. HECTOR. The Cottage, Springfield-on-the-Credit P. O., Ont. Stations, Springfield and Cookville on the C. F. R., Port Credit on G. T. R. 314-y-OM



ST. VINCENT 1st

EUROPEAN ADVERTISEMENTS.

SHROPSHIRE SHEEP

DAVID BUTTAR,

Corston, Couper-Angus, N.B., Scotland

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-v-OM



SHROPSHIRE -- SHEEP.

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.

F. BACH & SON,

Onisbury, Shropshire, ENGLAND. 289-v

SHROPSHIRE

We handle none but the best. We sell at living prices. We have one of the most successful flocks in the show yard in England. We import direct from our English to our American flocks. Write for prices. We can suit you.

THONGER & BLAKE BROS.,

Wolf's Head Farm, NESSCLIFF, Salop, Eng., 309-y-OM and GALESBURG, Mich., U. S. A.

BEAM : HOUSE : SHROPSHIRE.

WM. THOMAS offers for sale

RAMS AND EWES

from his famous flock, which has sent so many winners to the leading shows. Address—

WM. THOMAS,

Beam House Farm, Montford Bridge, Salop, 316-y-om England, 7 miles from Shrewsbury.

ALCESTER PARK SHROPSHIRE.

It will pay Canadian buyers to visit the above flock, which is founded on the best strains in England. Rams and Ewes always for sale. ALSO IMPROVED YORKSHIRE PIGS.

H. PARKER,

The Park Farm, Alcester, Warwickshire, Eng. 316-y-om

Astwood Hill Shropshires,

the most famous flock in England. We led in the show ring at the Royal and the Bath and West of England in 1891.

T. & S. BRADBURN,

Astwood Hill, Redditch, Eng. 316-y-om

ADVERTISE IN THE ADVOCATE.

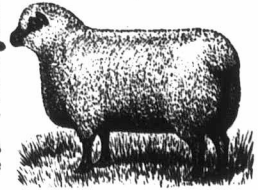


SHROPSHIRE, -- SHORTHORNS and Yorkshires.

My Shropshire flock is founded on the best blood in England. My Shorthorns are of the deepest milking strains. American and Canadian visitors always welcome.

Young Stock always for sale at reasonable figures.

GEO. THOMPSON, Wroxall, Warwick, England. Station and Telegraph:—Hatton. Trains met by appointment. 316-y-om



SHROPSHIRE SHEEP

The Lougherew flock has been very successful in England and Ireland wherever exhibited. It consists of 300 breeding ewes of the most fashionable appearance & blood. Ravens, Beach, Barrs, Coxon and Mansell. The Annual Sale first Wednesday in September.



EWES AND RAMS FOR SALE.

Apply to **J. DIXON,** Lougherew, Oldcastle, Co. Meath, Ireland. 307-y-OM

DORSET HORN SHEEP

MY SPECIALTY.

These sheep drop their lambs at all seasons of the year; are good mothers and most prolific. Devon Dairy Cattle, good milkers and grazers. Flock and Herd established nearly one hundred years. Also Shire Horses and Berkshire Pigs. Sheep, Horses and Pigs exported to America have given every satisfaction.

THOMAS CHICK,

Stratton, Dorchester, Dorset, England. 295-2y-OM

LINCOLN -- SHEEP

I always have for inspection and sale a large flock of pure Lincoln Longwool Sheep, including many prize-winners, having taken eighty prizes the last two years at the Royal and other shows, for both rams and ewes, also the first for the best collection of Lincoln fleeces of wool at the Royal Windsor show last year, which proves the character of this flock, which is most famous for their great size and 120 years' good breeding. Also breeder of

WHITE -- YORKSHIRE -- PIGS

Address—

HENRY DUDDING,

Riby Grove, Gt. Grimsby, 307-v-OM Lincolnshire, Eng.

HACKNEYS!

Duncan Jenkins, The Cross, Govan, Scotland, offers for sale Stallions and Fillies, the get of such sires as Damgelt, Anconeus, Sir Gibbie, etc.; all registered, and of the very choicest quality. All American and Canadian buyers should visit this stud. 317-y-om

W. G. BUTCHER,

The Chestnuts, Needingworth, Hunts, England

offers for sale a grand selection of **HACKNEY AND SHIRE-BRED COLTS AND FILLIES**

of the choicest breeding, and good individually. All registered. Visitors welcome. Station: St. Ives, Hunts. 317-y-om

THE HOME OF SPRINGHILL DARNLEY.

Clydesdale dealers when in Scotland should not fail to visit Messrs. R. & J. Findlay's Stud, Breeders and owners, amongst others, of the famous H. A. S. winner, Chrystal 5387. Address—Springhill, Ballieston, Glasgow. 317-y-om

CLYDESDALES AND AYRSHIRES.

Parties visiting Scotland to purchase the above should call on the undersigned, who always has a choice selection bred from the best strains of blood.

ROBT. WILSON, Manswrees, Bridge of Weir, Renfrewshire, Scotland. 317-y-om

THE HOME OF SIR EVERARD!

Wm. Taylor, Park Mains, Paisley, Scotland, calls the attention of American and Canadian buyers to the fact that his stud of Clydesdales and Hackneys is one of the best in Scotland. Inspection solicited. No trouble to show horses. 317-y-om

CLYDESDALES AND AYRSHIRES

Walter Park, Halton, Bishopton, Scotland, the breeder of the world-renowned "Lord Erskine," has always for sale a choice lot of Clydesdale Colts and Fillies; also pure-bred Ayrshires of the best milking strains. Visitors welcome. 317-y-om

BLAIRTUMINOCK'S CLYDESDALES.

Prof. McCall invites inspection of his Stud of Clydesdales, by American and Canadian buyers. Among the many good ones bred at Blairtuminock may be mentioned Col. Holloway's renowned Cedric, acknowledged the greatest breeding horse in America. Address—

PROF. MCCALL,
The Veterinary College,
GLASGOW, S. OTLAND.

317-y-om

NOTICES.

MONTHLY PRIZES FOR BOYS AND GIRLS.—The "Sunlight" Soap Co., Toronto, offer the following prizes every month till further notice, to boys and girls under 16, residing in the Province of Ontario, who send the greatest number of "Sunlight" wrappers: 1st, \$10; 2nd, \$6; 3rd, \$3; 4th, \$1; 5th to 14th, a Handsome Book; and a pretty picture to those who send not less than 12 wrappers. Send wrappers to "Sunlight" Soap Office, 43 Scott street, Toronto, not later than 29th of each month, and marked "Competition"; also give full name, address, age, and number of wrappers. Winners' names will be published in the Toronto Mail on first Saturday in each month.

STOCK GOSSIP.

Mr. Arthur Johnston, of Greenwood, Ont., who makes a change in his advertisement this month, writes us to say:—"My young bulls, four to eight months old, are by far the finest lot I have ever raised. There are now seventeen of these ages all of excellent color, besides a few good ones fit for immediate service. My cattle have never been healthier or done better, but they have often been in higher flesh. I have not had a sick or unhealthy beast during the whole winter, and I have only lost one calf in a year. I have one imported Cruickshank cow in her eighteenth year and she is six months gone to Indian Chief."

Under date of April 18th R. S. Stevenson, Ancaster, Ont., writes:—"I have recently sold to Mr. Samuel Flack, of Creedmore, the yearling Holstein bull Modest Girl's Aaggie Prince. This is a very fine animal, being from advanced registry stock on both sides. He took first prize at the Industrial at Toronto last fall in strong competition against bulls nearly a year older. He is of the dairy type, and was pronounced by the expert judges at Toronto as being an extra fine specimen of the breed. Mr. Flack is to be congratulated on getting such a good animal. He writes 'that he is well pleased with him, although he purchased him without ever seeing him' may add I am sold out of bulls entirely, except calves four months old and under. Advertising in the Advocate, I find brings any number of enquiries for stock."

Smith Bros., Churchville, Ont., in a recent letter say:—"Our sales have nicely begun. Mr. P. Allin, of Little Britain, Ont., gets Harmonia, who has a butter record of 163 lbs. in a week. She gave 51 lbs. of milk in a day as a two-year-old. Her calf, sired by our Mink's Mercedes Baron, also goes to Mr. Allin. Brena's Slepke Prince goes to A. A. Stewart, Peterborough. This youngster is strong in the Slepke blood. Slepke gave 13,021 lbs. of milk in a year. Slepke 3rd gave 16 lbs. of butter in a week. Slepke 4th gave 13 1/2 lbs. of butter in a week as a two-year-old. We received a few lines from Mr. H. A. Adams, of Newcastle, who bought a young bull from us. Calves from his Holstein bull are good ones. Mr. James Coulson, one of the largest and best butchers in that locality says of a four weeks old calf from Mr. Adams' bull: 'Sir, I bought a calf from Mr. H. A. Adams, bred from Henise's King, which weighed alive at four weeks old 197 lbs., the meat of which gave me entire satisfaction, being a good color and cut to good advantage; and I might add that I never had as good a calf in every particular of any other breed. Yours respectfully, Jas. Coulson.' This, we may add, is only a sample of what might be said as the report comes to us from all parts that the calves are wonderful growers and the heifers come in young and give excellent results in the pail and churn. Twelve of our cows and heifers averaged over 4 1/2 gallons of milk for March. We have some of the best young bulls that we have ever had. Two calves have been sired by our Tiranin 2nd Prince Castine. They are beauties—one from Cornelia Tensen and one from Hijke 2nd."

LIVE STOCK AUCTION SALES

Conducted in all parts of the country. Pedigree stock a specialty. Write for terms. References: J. C. Snell, Edmonton; Hon. M. H. Cochrane, Compton, P. Q., or this office.

317-y-o **JOHN SMITH, BRAMPTON.**

TO STOCKMEN AND BREEDERS.

LITTLE'S PATENT FLUID
NON-POISONOUS
SHEEP DIP AND CATTLE WASH.

For the destruction of Ticks, Lice, Mange, and all insects upon Sheep, Horses, Cattle, Pigs, Dogs, etc. Superior to Carbolic Acid for Ulcers, Wounds, Sores, etc. Removes Scurf, Roughness and Irritation of the Skin, making the coat soft, glossy and healthy. The following letter from the Hon. John Dryden, Minister of Agriculture, should be read and carefully noted by all persons interested in Live Stock:—

"MAPLE SHADE" HERDS AND FLOCKS.

BROOKLIN, ONT., Sept. 4th, 1890.
DEAR SIR,—I cannot afford to be without your "Little's Sheep Dip and Cattle Wash." It is not merely useful for Sheep, but it is invaluable as a wash for Cattle, etc. It has proved the surest destroyer of lice, with which so many of our stables are infested. I have ever tried; it is also an effectual remedy for foul in the feet of Cattle. I can heartily recommend it to all farmers and breeders.

JOHN DRYDEN.
Seventeen Gold, Silver and other Prize Medals have been awarded to "Little's Patent Fluid Dip" in all parts of the world. Sold in large tins at \$1.00. Special terms to Breeders, Ranchmen and others requiring large quantities. Ask your nearest druggist to obtain it for you; or write for it, with pamphlets, etc. to

ROBERT WICHTMAN, DRUGGIST, OWEN SOUND, ONT.
Sole Agent for the Dominion. 315-y-OM

THE MARKHAM HERD, Locust Hill, Ont.
(Farm one mile from Locust Hill St., C. P. R.) Registered Improved Large Yorkshire, Berkshire and Suffolk Pigs. Stock selected from the best herds in Canada. Am booking orders for Spring Pigs.—LEVI PIKE, Locust Hill, Ont. 308-y-OM

FOR SALE COTSWOLDS

—AND—
BERKSHIRES.
We have for sale forty head of yearling Cotswold Rams; thirty head of yearling Cotswold Ewes, and a number of young Berkshire Sows, in farrow to imported boars. We are now getting young pigs, which will be ready to ship in April and May. Write us for prices.

J. G. SNELL & BRO.,
EDMONTON, - - ONTARIO.

Brampton and Edmonton Stations. 316-y-OM

S. COXWORTH,
CLAREMONT, ONT.

Breeder of Pure-Bred Berkshire Pigs and Leg. Cotswolds of the choicest strains. A few choice sows, six months old, for sale. Now is the time to order young pigs to be shipped in April and May. Nothing but choice stock shipped, and satisfaction guaranteed. Write for prices, or if convenient come and see my stock.—C. P. R. Station, Claremont, Ont. 316-y-om

REGISTERED BERKSHIRES FOR SALE!
Young Boars and Sows from two to eight months old. Also booking orders for spring pigs. Satisfaction guaranteed. E. E. MARTIN, Nithside Farm, Paris Station, Canning P.O., Ont. 316-y-OM

Improved Large (White) Yorkshire Pigs and Scotch Shorthorns.

Sweepstakes herd of Yorkshire Pigs wherever shown in 1891. The largest herd in Canada. Breeding stock selected from the most noted English breeders. All stock registered. Shipped to order and guaranteed to be as described. **J. E. BRETHER, Burford, Brant Co., Ont.** 301-y-OM

CHOICE PURE-BRED BERKSHIRES—Two grand boars fit for service, also a few sows. Cheap. A. D. ROBERTS, Walmer Lodge, Ancaster, Ont. 315-y-OM

Improved Large White Yorkshires, Pedigreed.

We have lately added to our herd, which are from the strains of Sanders Spencer, Charnock, and F. Walker-Jones, England. Young stock on hand at all times for sale. Apply to

Wm. Goodger & Son,
306-y-OM WOODSTOCK, ONT.

IMPROVED LARGE YORKSHIRES

Sixty head of the best strains and quality. Write for prices.

SMITH BROS., Credit Valley Stock Farm,
CHURCHVILLE, - ONT. 314-y-OM

R. H. HARDING,
Mapleview Farm, - Thorndale, Ontario,
Importer and Breeder of Ohio Improved

CHESTER WHITE SWINE

—AND—
DORSET HORNED SHEEP.
Prices low. Satisfaction guaranteed. Write for particulars. 310-y-OM

H. GEORGE & SONS, CRAMPTON, ONT.,

Importers & Breeders of **OHIO IMP. CHESTER WHITE SWINE.**

Size and quality combined. Our herd of Chesters won the sweepstakes herd prize both at Montreal and Toronto fairs, 1891. Sixty choice spring pigs for sale. 316-b-OM

E. D. GEORGE

PUTNAM - - ONT.,
Importer and Breeder of **Ohio Improved Chester White Swine**

The largest and oldest established registered herd in Canada. I make this breed a specialty, and furnish a good pig at a fair price. Write for prices. 305-y

TAMWORTHS

—AND—
Improved Large Yorkshires.

Our stock is all imported from the very best herds in England, and every pig traces to the English Herd Book. We offer for sale at lowest figures Boars and Sows of the above breeds and of all ages. Write for prices, or give us a call and see our stock. Over forty head on hand.

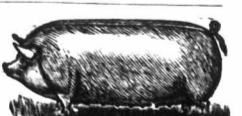
JAS. L. GRANT & CO.,
Ingersoll, Ont. 308-y-OM

PURE-BRED TAMWORTH HOGS AND CLYDESDALES

JOHN BELL,
Clydesdale Farm, L'Amaroux P.O., Ont.,

Offers for sale young Boars and Sows bred from registered stock, imported from the best herds in England. This famous breed of bacon pigs is recommended by the largest bacon curers in the world. Try them, it will pay you. Orders now booked for spring pigs. Some A1 Clydesdale Stallions kept for service. Imported and home-bred Colts and Fillies for sale. 317-y-om

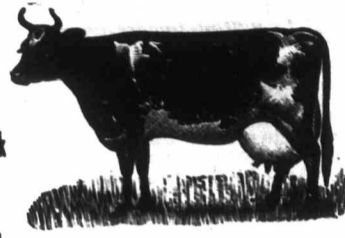
Registered Poland-Chinas—Canadian Black Bess Herd. Stock strictly of the Corwin, King, Butler and Black Bess blood. Choice stock of all ages for sale at reasonable prices. Imported Noninee at head of herd, assisted by Imported Boars ConJit, Luck and Moorish King. Farm two miles south of G. T. R., C. P. R. and E. & H. R. stations. Correspondence and inspection of herd solicited. Reduced rates on shipment by express.—**J. J. PAYNE,** Chatham, Ont. 314-y-OM





W. C. EDWARDS & CO

IMPORTERS AND BREEDERS.



Pine Grove Stock Farm
ROCKLAND, ONT.

**ELMHURST
STOCK & DAIRY FARM**
CLARENCE, ONT.

Laurentian Stock
AND
Dairy Farm.
North Nation
Mills, P. Q.

SCOTCH SHORTHORNS.

The imported Cruickshank bull **GRANDEUR** is at the head of this herd of imported and Home-bred Cows and Heifers of the most approved Scotch families.

ALEX. NORRIE, Manager.

Shorthorns, Shropshires and Berkshires

Our flock is from the choicest English flocks, headed by the ram sent out by Mr. Thos. Dyke, also milking Shorthorns with imported bull **PIONEER** at the head of the herd.

HENRY SMITH, Manager.

Ayrshires, Jerseys and Berkshires.

Imported **EMPEROR** at the head of a grand lot of imported and Canadian-bred Ayrshires; also St. Lambert Jerseys and imported Berkshires.

GEORGE CARSON, Manager. 316-y-OM

JERSEYS : AND : WELSH : PONIES.

A number of sons and daughters of Nell's John Bull, A.J.C.C. 2121, at prices to suit the times. All reg- or eligible to registry, in A. J. C. C. This herd is the home of such cows as Allie of St. L., 26 lbs. 12 oz. butter in one week; Miss Stoke Pogis, 21 lbs 5 oz.; Kit, 22 lbs. 11 oz.; Polley of St. L., 19 lbs. 7 oz.; Vic of St. L., 18 lbs. 5 1/2 oz., and Nettie of Grimsby, 16 lbs 7 oz. Nell's John Bull, the sire of this young stock, is sired by the famous prize-winner Canada's John Bull. He is also a grandson of Ida of St. L., the largest milking Jersey in the world—67 lbs. milk one day, 455 1/2 lbs. in one week and 1,883 lbs. in one month. Her sister, Allie of St. L., gave 62 3/4 lbs. milk one day, 455 1/2 lbs. in one week and 1,883 lbs. in one month. He won at Toronto Fair in 1890 first in his class and sweepstakes silver medal as best bull any age. At Hamilton, London first in his class and headed silver medal herd. We also have sixty head of Welsh Blood Ponies, all ages. These ponies are superior to any other breed for ladies or children. They are very handsome, free drivers and very gentle, and have taken first prize wherever shown. Prospective buyers would do well to inspect our herd and learn prices. Visitors will be met at station upon giving one day's notice.

315-d-C M

GEORGE SMITH & SON, GRIMSBY, ONTARIO.



— IMPORTED AND REGISTERED — CLYDESDALE AND HACKNEY STALLIONS AND MARES

CONSTANTLY ON HAND, AND FOR SALE AT REASONABLE PRICES

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. F. R. 314-y-OM CLAREMONT ONT.

IMPORTED · HACKNEYS · AND · CLYDESDALES!

OF THE MOST POPULAR STRAINS OF BREEDING,
TOGETHER WITH THE HIGHEST

PRIZE-WINNING · INDIVIDUALS!

IN THEIR RESPECTIVE CLASSES.

Stallions by the Most Noted Sires for Sale.

CATALOGUES FURNISHED ON APPLICATION
Bowmanville, Ont.



ROBERT BEITH & CO., 313-y

MESSRS. JAS. GARDHOUSE & SONS., ROSEDALE FARM, HIGHFIELD P. O., ONT.

Have on hand and for sale at low figures, Draught Cows and Fillees, both from imported and Canadian bred mares, and mostly sired by their sweepstakes horse "King of the Castle." These are all good ones, and will make very heavy mares and horses. Also Shorthorns and Leicester of the choicest strains of blood. Write for prices or come and see us. Station and Telegram: MALTON on G. T. R. 313-y-OM

MANITOBA HORSEMEN, LOOK HERE

I can sell you an imported Clydesdale Stallion for less money than any other dealer. I handle none but sound, first-class stock, and sell at a small profit. I number among my customers such well-known horsemen as Enright Bros., Winnipeg, Man., and Dundas, Ont. Also a few choice Shetland Ponies.

A. K. TEGART,
IMPORTER AND BREEDER,
TOTTENHAM, ONT.
313-y-OM

Registered Rough-Coated Scotch Collies.

Young dogs for sale from the imported sires Turk II., first prize Toronto, and Moonstone, value \$500, and out of the choicest prize-winning bitches money could buy in England. A. BURLAND, Sec. Ont. Collie Club, Grimsby, Ont. 307-y-OM

Standard-Bred Trotters and A. J. C. C. Jerseys for Sale.

Produce of such sires as Gen. Stanton (2545), 5 in 30 list this year; Almont Wilkes (11242), 2 20, trial 2 16; and Superior, sire of Canadian Girl. Brood Mares, daughters of Gen. Stanton, Almont Wilkes, Clear Grit, Brown Douglass and Winfield Scott, including dam and three full sisters of Fides Stanton 2,2874, last half in 1.12. Jerseys principally of St. Lambert strain, all young stock, sired by sweepstakes bull Toronto 1890.—J. CARPENTER, Ingledale, Winona, Ont. 307-y-OM

Standard - Bred Stallions

AT OTTER PARK, NORWICH, ONT.

Premier Stallion, Lexington Boy 2,33, by Egbert 1136, sire of eighthorse 2 12 1/2; Temple Bar 2, 4 1/2, and forty three others in thirty list. Other standard-bred Stallions in stud. For particulars send for announcement.

315-y-OM CORNWELL & COOKE, Proprietors.

J. F. QUIN, V. S., BRAMPTON, ONT.

Ridgling horses successfully operated upon; write for particulars. 275-y

ADVERTISE IN THE ADVOCATE

FARMERS, ATTENTION!

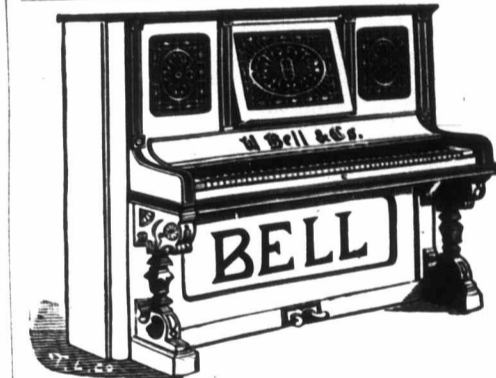
The Mutual Life Insurance Company of New York wants a responsible farmer in every township to act as Agent and introduce the following new plan of investment. This Company has recently placed on the market a 7% Consol. This Consol, issued only by the Mutual Life Insurance Company of New York, combines more advantages with fewer restrictions than any investment insurance contract offered by any other financial institution in the world. It consolidates investment, endowment and annual income. It is a revelation and only needs to be seen to be appreciated. This Consol is acknowledged by financiers to be the greatest achievement of modern financial science. The Mutual Life is the oldest Life Insurance Company on American soil, and the largest financial institution in the world. Its assets now amount to \$159,597,138.68, with a surplus over and above all liabilities of \$12,030,967.16. This Company also writes all other desirable forms of insurance, and is prepared to issue Policies on all the popular plans. For all information as to Agencies and Terms of Insurance call on our address, W. T. McNEILL, District Manager, Room A, Masonic Temple, London, Ont. 317-y-o

THE NEW FODDER PLANT

Lathyrus -:- Sylvestris.

When once planted will last without renewal 50 years. Yields eighteen tons per acre. Successfully grown in India, Africa, America, Russia, etc For further particulars address

F. E. CLOTEN,
316-y-om 58 High Holborn, London, Eng.



Pianos, Reed Organs & Church Pipe Organs

THE STANDARD INSTRUMENTS OF THE WORLD.
Send for Catalogue.

BELL ORGAN AND PIANO CO., Guelph, Ont.
316-y-o

KEEP YOUR EYE AND HAND ON THIS

"THE DOLLAR KNITTING MACHINE"

Ask your sewing machine agent for it, or send a 3c. stamp for particulars and price list. THIS IS GOOD FOR \$2. SEND TO CREELMAN BROS. M'f'rs., Georgetown, Ont.

314-f-cot-0

Brown Leghorns, Black Minorcas and Light Brahmars.

Choice stock a specialty Eggs, \$1.00 per dozen. Satisfaction guaranteed. W. L. BROWN, 316-c-o 176 Wharncliffe Road, London West, Ont

NOTICES.

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

Mr. Manson Campbell, the manufacturer of the famous Chatham Fanning Mill, has made a change in his advertisement this month. Read it.

It may be of interest, and also a very great advantage to some of the farmers in the east who are contemplating removing to Manitoba, to know that Messrs. Andrew Park & Son, of St. Lawrence Market, Toronto, have 800 acres of the finest land in Manitoba to sell on very easy terms, and at prices in keeping with the quality.

The record for February, 1892, of new business received by the Mutual Reserve Fund Life Association was \$4,412,850, an excess of \$796,750 over that of February, 1891. During January and February, 1892, the new business showed an excess of \$1,258,050 over the corresponding months of 1891. Mr. A. R. McNicol, of the McIntyre Block, Winnipeg, is the general manager of this Association for Manitoba and the Northwest.

THE SISSETON INDIAN RESERVATION in South Dakota will be opened to settlement on or about April 15th, 1892. This reservation comprises some of the choicest lands in Dakota for farming and sheep-raising purposes. For detailed information address W. E. Powell, General Immigrant Agent, Chicago, Milwaukee & St. Paul Railway, Chicago, Ill.; or A. J. Taylor, Canadian Passenger Agent, 4 Palmer House Block, Toronto, Ont.

Messrs. Waugh & Osbourn, real estate agents, Winnipeg, are making a specialty of farm lands in Manitoba, and vacant lots and house properties in the city of Winnipeg. The season has opened out exceedingly well with them. They are two young men of sterling integrity, and can at all times be depended on to properly conduct any business entrusted to them. Parties from the east contemplating going west will find it to their advantage to call upon them and get reliable information, and see their lists of farm lands and city property before making any investment in Manitoba.

HECH mon!—Hae ye no read the Epistles o' Airlie? Whaur hae ye been leevin' gin ye hae na heard tell o' Hugh Airlie? Ma conscience, but its a gran' bulk—no that large ye ken—for its no but 25 cents, but fu' o' hamely cracks an' pawky screeds about ane thing an' anither in guid braid Scotch. Mon, when I got thon bulk I jist laughed till I thocht a' wad dee. It fairly dings them a'. It tells a' about the adventures o' a chiel new to the ways o' the kintra an' mony a' ane wha has been in the varra same predicament will ken hoo tae sympathize wi the pair birkie. Dinna fail tae speer at yer bulk selier for the "Epistles o' Airlie," an' gin he has na got it sen' 25 cents tae the GRIP PRINTING & PUBLISHING CO., Toronto.

We have on our desk a copy of the life of the Rev. C. H. Spurgeon, by G. Holden Pike, published by Messrs. Funk & Wagnall's Company. This is a reprint of a work published several years ago, but a chapter is added bringing the account up to the close of this most wonderful career. The introduction is from the pen of Rev. W. C. Wilkinson, D. D., the recently appointed professor of English literature in Chicago University and a scholar and clergyman of continental reputation, and this in itself is sufficient testimony to the value and reliable character of the book. Mr. Pike having been an intimate friend and fellow laborer of Mr. Spurgeon, and having written the book under the great preacher's supervision, enjoyed exceptional opportunity of giving his readers a story in every way trustworthy. It is a picture from the life, and cannot fail to give large information and lasting profit. The binding is good and the letter-press clear. Excellent portraits of Mr. and Mrs. Spurgeon adorn the book.

The Mutual Life Insurance Co., of New York, has opened an office in Room "A", Masonic Temple, Richmond St., London, Ont., with Mr. W. T. McNeil as District Manager. The furnishings of the office are such as to command admiration, and so arranged as to provide for the staff every convenience for carrying on their work with efficiency and dispatch. We understand that this company has recently placed on the market a seven per cent. consol, and they claim for it fewer restrictions than any investment insurance contract offered by other financial institutions. The Mutual Life of New York is a very old insurance company. Its assets amount to one hundred and fifty-nine million five hundred and seven thousand one hundred and thirty-eight dollars and sixteen cents, with a surplus over and above all liabilities of twelve million thirty thousand nine hundred and sixty-seven dollars and sixty-eight cents. Farmers and farmers' sons may find it to their great advantage to write to Mr. McNeil and secure agencies for unrepresented districts. We understand the company offer most liberal terms.

HOW ARE YOUR HORSES?—This is a very important question just before summer work is coming on. If lame, they should be treated. If any unsightly blemishes, they should be removed. If any distemper or founder, your horses are not in a condition to work. Also the matter of sprains and strains is very important at this season of the year. There are many other complaints that are likely to occur during the spring and winter months. For all such we can heartily recommend the use of Gombault's Castile Balsam. It is an active and thorough remedy in France, where it is manufactured. It has been in extensive use for many years, as an incomparable remedy, and is considered superior to anything else yet discovered. The importers and proprietors for the United States and Canada, The Lawrence-Williams Company, of Toronto, Ont., publish a book giving full information regarding it and many other points of value regarding veterinary practice, which is sent free to anyone applying for same.

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TRUTH

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THE WHOLE

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We illustrate and give prices in this Catalogue, which is handsomer than ever. It tells

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Upon receipt of 8c. in stamps I will mail 10 different Pkgs. (my selection) of my choice Northern Grown Farm SEEDS

I am the largest grower of Farm Seeds in America—I make this my specialty. Cultivate Oats, Barley, Potatoes & Grasses. No more hard times if you plant them. Send 8c. for fine Seed Catalogue with four colored plates, or Catalogue and 10 Pkgs. Farm Seeds, 13c.

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PRICES AWAY DOWN!

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Partridge Cochins' EGGS, \$1.00 per thirteen, Satisfaction Guaranteed.

Strawberry Plants, MONARCH and WILSON, 50c. per hundred, \$2.00 per thousand.

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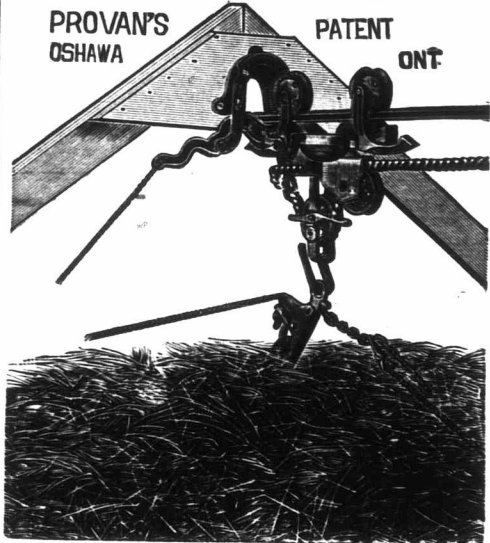
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HORSE FORK and SLING

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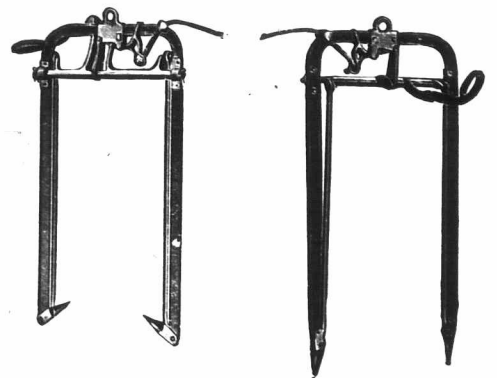
SIMPLE, STRONG, DURABLE

any farmers who had other kinds have taken them down and bought mine after seeing it work. My Machine Handles Sheaves as well as Hay and Peas—It is the Simplest and Best Stacker Manufactured.

It has been in successful competition with the best in the market during the past seven seasons. Its superiority to all others places it beyond doubt, as it is positively the only Double-Acting and Self-Reversing Machine on the Continent that has the following advantages:—A loaded fork or sling can pass the stop block. The pulleys can be instantly lowered or elevated to their position. This avoids all climbing or untying of the whiffletrees. The track as a strengthening brace, never warps, and is stronger and better adapted for unloading at the gable, as well as the centre, than any other. It is easily moved from one barn to another. The track used for this car is the best for the following reasons:—It is round; the car runs easily, and is not affected by a side pull. Any boy can change it with ease. Pulleys can be instantly raised or lowered at pleasure.

GUARANTEE.

We guarantee every Machine sold by us to do first-class work, and to unload one ton of hay in from three to five minutes, when properly handled and put up, and if it fails to do so, will be taken back and money refunded.



SENDING TO FARMERS ON TRIAL.

It has been for years a part of our business to send our machine on trial to fair-minded responsible farmers living at remote distances, such machine to be put up by them and used until their harvesting be half done, when they are required to decide whether they will keep the apparatus or return it; if the latter, we will pay return freight charges.

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OSHAWA, - ONT.,

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Our Perfection Spraying Outfit is just what you are Looking for.

Manufactured Specially for Spraying Poisonous Liquid on Fruit Trees.



Is Absolutely Necessary for every Fruit Grower.

The only effective means of destroying the Aphids, Cankerworm, Apple Curculio and other Insects that are so injurious to Orchards and Gardens. We manufacture the Most Complete line of PUMPS and WINDMILLS, both for pumping water and driving machinery, of any firm in Canada. It will pay you to send for large illustrated catalogue before purchasing elsewhere. ONTARIO PUMP CO., Ltd., Toronto, Ont. Mention this paper. 313-y om

The Travelling Dairy use and recommend Butter-Makers to use CARVER'S BUTTER MOULDS & PRINTS

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THAT tired, worn-out feeling, of which so many women complain after a day's washing, is done away with by those who use that great

Labor Saving Sunlight Soap

Which makes the Dirt drop out Without Hard Rubbing Without Boiling Without Washing Powders

Try the easy, clean and economical way—the way of washing, and you will not be disappointed.

SUNLIGHT SOAP having no equal for Purity, you may use it with comfort and delight for every household purpose.

WORKS: PT. SUNLIGHT NEAR BIRKENHEAD LEVER BROS., LIMITED TORONTO

MANITOBA, 160 ACRES MANITOBA.

Sec. 19, Township 6, Range 5, West. A splendid stream runs through this property. ALSO Sec. 15, Township Z, Range 5, East. Anyone wishing to settle in Manitoba will find it to their advantage to write for prices to ANDREW PARK & SON, 317-a-o St. Lawrence Market, Toronto.

FARMERS!

If you want the best value for your money. If you want an article that will never disappoint you. If you want thoroughly good and healthy Baking Powder, into which no injurious ingredient is ever permitted to enter.

BUY ONLY THE GENUINE



REMEMBER THAT McLAREN'S COOK'S FRIEND IS THE ONLY GENUINE. THE BEST GROCERS SELL IT. 315-v-om

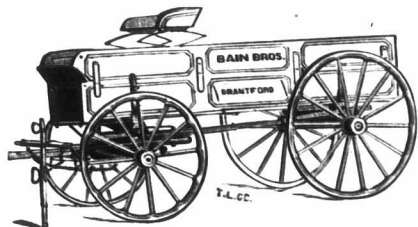
STOCKMEN! USE

LEAVITT'S DEMORNING CLIPPER.



It makes perfect mulies; cuts all around the horn; can be used by anyone and on any aged animal. It is positively the BEST! Endorsed by every V. S. and S. P. C. A. that have seen it. For circular giving testimonials, price, etc., address S. S. KIMBALL, Manger, for the Dominion, 577 Craig St., Montreal, P. Q. 317

THE CELEBRATED BAIN BROS.' WAGON



Farmers wanting an easy running & serviceable wagon should be sure and purchase the BAIN BROS. All timber and material used is carefully inspected by ourselves before it is put together.

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EGGS! For hatching from Dark and Light Brahmas, White and Brown Leghorns, Plymouth Rocks and Game, \$1.00 doz. COLBORN GRIFFITH, 315-b-o Ealing P. O.

STOCK GOSSIP.

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

Messrs. James Allin, James Burns, James Leask and Jo. hua Watson, of Greenbank, have clubbed together and purchased from Mr. John Davidson, of Ashburn, the thoroughbred imported Clydesdale stallion, Linkwood Lad (1818), foaled March 27th, 1889; bred by Wm. Robertson, Linkwood, Elgin, Scotland, and imported in August, 1881. He took first in the three-year-old class at the last Provincial Spring Stallion Show, Toronto. He weighs 2,055 lbs. He was purchased for the special use of the present owners.

H. Bollert, of Cassel, Ont., reports his Holsteins doing very finely. On March 26 Jennie E dropped a beautifully marked heifer. She now runs over 70 pounds of milk daily. Eustroha dropped a bull a week later, and is now crowding close up to 70 lbs.; her milk is exceedingly rich in butter fat. Sales have been very brisk lately. During the last few weeks I sold to Mr. J. F. Hindmarch, Cannington Manor, N. W. T., two heifers; Mr. A. C. Smith, Paris Station, a yearling bull; Mr. J. Hill, Paris, the two-year-old bull Lord Everett; Mr. S. A. Cox, Paris, my second prize cow Guilemette; she is beyond doubt one of the best Holstein cows in Canada; Mr. W. A. Gillis, Powels Corners, a fine yearling bull; Alex McGee, Fenelon Falls, a beautiful heifer calf from my prize cow Sykje. Several breeders from a distance have already secured the service of Colanthus Abbecker. To those who are not already acquainted with his rich breeding the following will prove of interest: His sire, two grand sires and one g. sire have to their credit, at the largest American shows, 24 first prizes, 3 sweepstakes, headed the first prize herds 18 times, and 10 times stood first for bull and his get. His two grandams and one g. dam have 10 firsts to their credit, and were always included in the prize herds. The butter records in his pedigree run from his dam 24 lbs. in seven days at three years old to 39 lbs. 10 1/2 oz. for his g. dam, and the milk records from 70 lbs. as three-year-olds to 114 lbs. in a day. Three of his nearest ancestors gave 100, 112 and 114 lbs. in a day respectively. Combining his great individuality with such backing makes Colanthus Abbecker one of the most desirable bulls in America to breed from. He certainly is without a peer in Canada, and I expect great results from his offspring.

On April 21st, 22nd and 23rd a horse show was held at Grand's Repository, Toronto, which from an educational point of view came nearer perfection than anything of the sort ever before held in Canada. It was conducted altogether as a private enterprise by Mr. Grand. If the farmers and horse breeders had turned out as they should have done the knowledge diffused would have been of untold benefit to the breeding interests generally. Those present were highly impressed by the quality and type of horses got together, which illustrates the great capabilities Canada has for the production of the animals that the trade at present demands. The high-stepping dog cart horses, the splendidly matched pairs, the grandly hosed fours-in-hand, and the nicely appointed tandems at once displayed a knowledge in selection and a nicety of judgement that every true horse lover had to appreciate. While the harness horses were deservedly admired, saddle horses were equally good. Among those that paraded as park hacks were numbers that would make splendid hunters over any country. If the entire collection could have been unloaded and placed in an English sale ring in the shape they were brought out in Toronto they would electrify horsemen there, and establish a trade for Canada in this class of horses. The ball opened by bringing into the ring six Hackney stallions, with Messrs. Hamlin & Spalding, Buffalo, and Dr. McLean, Meaford, to tie the ribbons. The grand horse Firefly was a clear outstanding winner. He had been placed in the hands of Mr. Arch. Wilson, Paris, a few days preparatory to the show, and the crowd could hardly believe he was the same horse that had been seen at the late Spring Stallion Show. He was in the most beautiful form imaginable, and showed each pace to perfection, and gave an exhibition that has not been equalled in a Canadian show ring. Messrs. Robert Beith, M. P., & Company exhibited Jubilee Chief, which came next on the list of prize-winners. He was not in the form in which he appeared when he won first place at the Toronto Industrial last fall. He was carrying too much flesh, which told against him in the heavy footing of tan bark in the ring. To Graham Bros.' Lavendar, rising three, was sent third ribbon. He is of decidedly good quality, and showed attractive action, but requires another year's time to develop, when he will yet make a grand show horse. Mr. George Hastings' Lord Bardolph was placed fourth. The two others were Messrs. Beith's Ottawa, by Lord Derwent 2nd, a promising colt rising two, and Holderness 2nd, owned by Bowles & Nesbitt, Peterborough. The latter is a large horse with many good points, but lacks training. The Thoroughbreds were forward. Six also showed up in this class. The beautiful horse Mikado, owned by Mr. Robert Davies, of Thorncliffe Stock Farm, Todmorden, again winning first. This popular son of King Earnest, described in a previous number, was easily 1st; Mr. Fuller's (Woodstock) Goodfellow, 2nd. He is a strong, useful horse, whose age rather tells against him in the show ring. He is sired by the celebrated race horse Longfellow. The third ribbon was sent to Jaubert, a very handsome son of Imp. King Tom, owned by Mr. Thompson, Ottawa, while to Mr. Fuller's new horse Wyndam, by Lorilla, also a handsome horse of racing type, was given 4th.

STOCK GOSSIP.

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

Mr. Wm. Cowan, V.S., Galt, writes:—"I have sold all my bulls that are old enough for service at fair prices, and have only a few left that are too young for this season's use. I have purchased for Hazel Ridge, got by the famous bull Thorndale Duke of Imp. Thorndale Rose 24th, by the Duke of Connaught (38694). He was bred by William Wright, Esq., Detroit, Mich."

The annual meeting of the American Southdown Association will be held in the Illinois National Bank, Springfield, Illinois, May 25, 1892, at 10 o'clock a. m. Matters relating to the exhibit of Southdowns at the World's Columbian Exposition and the importation of this breed, together with the usual business receiving attention at the annual meetings, and a full attendance is desirable. Communications sent the secretary by members who cannot be present will be laid before the Association.

T. M. Whiteside of Whiteside Brothers, wrote us April 26th:—"Our Shropshires are doing well. Our flock consists of thirty ewes, nearly all of which were selected from the importations of Messrs. John Millar & Sons, of Brougham, Ont. Our ram was imported last season by Mr. R. Millar, Jr., from the flock of R. Brown, Shropshire, England. He was the first choice of Mr. Brown's flock, which is one of the best in England. Our lambs are coming extra good and strong. We will be pleased to show them to parties who favor us with a call. The demand for choice Shropshires was never better than at present."

Parties contemplating the use of a Thoroughbred horse this season should note the advertisement concerning his imported English Thoroughbred stallion "Norwegian." This horse was imported by his present owner in Sept., '91; was selected from the famous stud of Mr. Angove Lealty, of Townshend, Hayle, Cornwall, Eng. He is probably as large, if not the largest, Thoroughbred horse in Canada today. "We note in the London Live Stock Journal of August, '91, in an account of the sale of this horse, it says: "He is a big, grand looking horse, and a game one on the turf. His veins are all full of the best blood in England, and his first crop of foals are very promising." This horse never served a mare until he was six years of age, racing continually until that age with success. Though this horse is thin in flesh the best horsemen in this city that have seen him predict for him a great future."

Mr. H. H. Spencer, of Brooklin, writes:—"In cattle, my Shorthorn cow Isabella 11th gave birth to a fine bull calf; Isabella 12, a nice red heifer calf; Isabella 13, a choice red heifer calf; Isabella 14, a bull calf. Sales made this spring: A grand red bull to P. Thomason, Pilot Mound, Man.; a choice red heifer, Isabella 15th, to M. Mothersell, Oshawa; a fine Clydesdale stallion, Prince of Dorset, to Messrs. Beeman & Martin, Napanee. The Prince is now three years old, and weighs 1,920 lbs. In sheep I sold eighteen ewes and wethers to Mr. James Elder, Virden, Man. My Horned Dorset very fast, one ram lamb weighing 90 lbs. Several of the others are of the best quality than this one. My sheep are doing very well; all ewes have weaned a few very choice pigs ready for sale. I think we have the best sow we ever owned. She is due to pig April 30th."

Mr. Heber Rawlings, proprietor of Shawanoo Stock Farm, Ravenswood, Ont., will sell by public auction, June 15th, 1892, twenty-six head of Short-horn of various ages and both sexes. The catalogue will be ready June 1st, a copy of which will be sent to all who apply. When sending the advertisement breeding condition; the heifers are got by Minister Eclipse 5601, which won 1st at Toronto when a yearling. He is a grand bull and a good getter. All the cows are in calf to him. The heifers to Garangaure = 15233 =, got by imported Barron Linton = 1222 =, dam Glandia (imp) = 11010 =. All the animals are of the short-legged, thick-fleshed sort, are good feeders, and have strong constitutions. I have lost but one animal in sixteen years, and she was a cow fourteen years old. This speaks volumes for the healthfulness of my herd. My entire herd will be sold at the advertised date, each animal going to the highest bidder.

S. Coxworth, Claremont, Ont., writes:—"My Berkshires have wintered well. They are not fat, but all in good, thrifty condition, the young pigs coming large and strong. The demand has been good, especially for boars fit for service. The following is a list of recent sales: To Dewey Forsyth, Glasgow, 1 boar and a sow; J. B. Ewing, Dartford, 1 boar; Wm. Kelly, Breckin, 1 sow; Jas. Chinnick, Chatham, 1 boar and 2 sows; Wm. Ellis, Balsam, 1 boar, Geo. Sparling, Stafford, 1 boar and a sow; John Sangster, Shepard P.O., Mich., U.S., 1 boar; J. L. Johnson, Vintry, 1 boar; Levi Pike, Locust Hill, 1 sow in farrow; Major Bros., Whitevale, 1 boar; John Leonhardt, Brodhagen, 1 sow; H. & G. Bennett, Athol, 1 boar; Dennis Hawkins, Woodville, 1 sow; Geo. Chalmers, Tilbury Centre, 1 boar; John Maylon, Saintfield, 1 sow; Samuel Sales, Stewart, 1 sow in farrow; Geo. Sparling, Stafford, 1 boar; N. S. Lister, Winnipeg, Man., 1 farrow. These do not include the orders for spring pigs. I have still for sale some fine sows, seven months old, just bred to my imported boar."

GLENHYRST.

50 acres, bordering on the City of Brantford.

JAMES MAXWELL, SUPT.

Shropshire Sheep.

Shetland Ponies.

Apples—(in quantity)—Plums.

Registered Stock, all ages, for sale.

JOSEPH STRATFORD, PROP.,

OAKWOOD FARM.

100 acres, bordering on the City of Brantford.

GEORGE WALTER, SUPT.

Have on the farm a modern wooden Silo. Capacity 250 tons.

Dorset-Horned Sheep. Jerseys.

A.J.C.C. Holsteins (Royal Aag-rie family). Advance Register.

Chester White Pigs.

Three grand modernized stock farms under one management.

[309-y-OM]

CEDARS FARM.

175 acres, eleven miles from City of Brantford.

ROBERT WALKER, SUPT.

Oxford-down Sheep.

Shorthorn Cattle.

Medium Yorkshire Pigs.

BRANTFORD P. O., CANADA.



The WARRIOR MOWER

The great many years it has been in successful use in the field has proved it to be superior in mechanical construction, lightness of draft, ease of management, durability and capacity to do good work under all circumstances. In claiming a superiority for the Warrior Mower over others, we would call special attention to the following points:—Our guards are nearer together than those of any other machine, being only 2 1/4 inches from centre to centre, which is a very desirable feature, for the following reasons:—

1st. It is almost impossible to stone the knives.
2nd. It renders the guards less liable to break.
3rd. It takes less power to do the work, because the grass is more evenly divided, is collected in smaller bunches, and consequently cut easier; and because narrow sections require less throw to the crank, which is shortened and the work brought nearer the power applied.

4th. The finger-bar has a wabbling or rolling motion in its length, allowing the points of the guards to rise or fall, and to rise out of the dead furrows or run over the cradle knolls with ease.
5th. The driving wheels are eight inches further apart than in most other machines, which allows them to run in the track made for them by the track clearer, and thus avoid running over the cut crop.
6th. The frame is iron, so arranged and balanced that it brings no weight on the horses necks, and entirely prevents all side drafts.
7th. The main brace that carries the finger-bar is so arranged that you can cut the full length of the knife without putting the horse in the grass.
8th. Every machine is run and thoroughly tested before leaving our factory, and guaranteed to be made of the very best material, and to do good work.

J. F. MILLAR & SON,
Morrisburg, Ont.

Here are three out of the many Hundred Testimonials we have received from Leading Farmers:—

J. F. MILLAR & SON, Morrisburg:

GENTLEMEN.—This is to certify that I am now using two of your Warrior Mowers on my farm, and as you cannot stone the knives. One of these Warrior Mowers I have been using fifteen years, and had no repairs except grinding knives. I believe it to be the simplest and lightest draft mower made, requiring less repairs than any other. I cut about 125 acres each year, and recommend any farmer wanting a mower to try the Warrior before buying.
Morrisburg, April 16, 1892.

JOHN DORAN.

J. F. MILLAR & SON, Morrisburg:

DEAR SIR,—I have used the "Warrior" Mower for 16 years, and it has only cost me \$1.00 outside of sections and guards, and that was for a brass box. I used it for ten years before it cost me one cent, and is in first-class order. I cannot speak too highly in recommending the "Warrior" Mower.
Millbrook, April 25th, 1892.

WILLIAM SHAW.

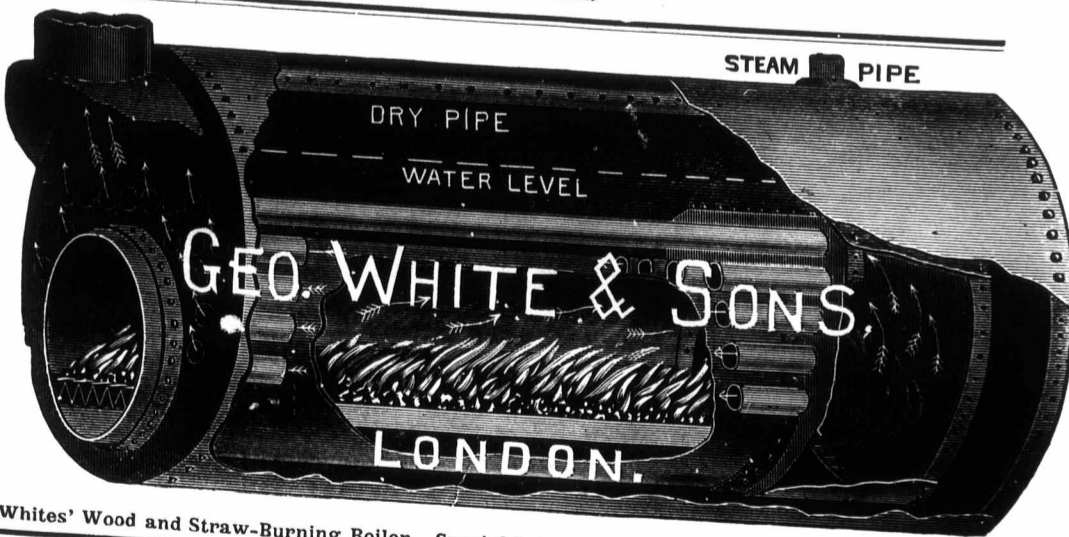
J. F. MILLAR & SON, Morrisburg, Ont.:

DEAR SIR,—In looking through the FARMER'S ADVOCATE of January, 1892, my eye caught a cut of the original "Warrior" Mower, something I have been looking for for some time. As I have one that we bought about 16 or 17 years ago, and which has cut from 75 to 100 tons of hay every year since and is all in good running condition, I intend getting another mower of the same kind if it can be had at all. I have seen a great many good mowers and worked a good many different kinds, and, in short, I would have no other mower if it can be had.
Domlnion City, Man., January 19th, 1892.

J. H. BASKERVILLE.

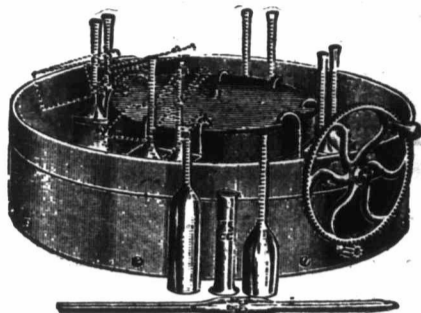
Since the above was written we have received an order from Mr. Baskerville for a "Warrior" Mower.

If no agent for these Mowers near you write direct to us for prices, as we are selling very low for cash.



Whites' Wood and Straw-Burning Boiler. Special Internal Arrangements for Burning Straw.

ADVERTISE IN THE ADVOCATE.



BABCOCK MILK TESTER.

Anyone interested in above should see our little treatise on the "B-A-B-C-O-C-K." SEND FOR ONE.

BABCOCK

MILK TESTERS.

ALEXANDRA

Separators (Hand and Power).

Butter Printers, - -
- Parchment Paper.

Nicest thing out for wrapping Butter.

Our Celebrated M.S.S. & Other Ensilage & Fodder Corns.

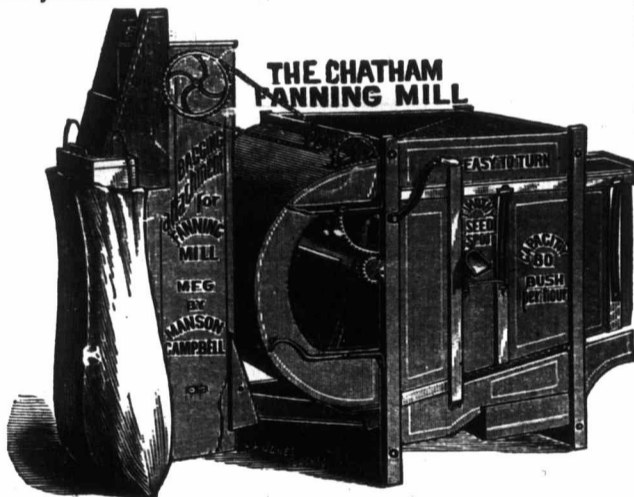
WRITE US FOR PRICES AND DIRECTIONS ON SOWING AND CULTIVATING.

CORRESPONDENCE INVITED.

JOHN S. PEARCE & CO.

317-y-om LONDON, - ONTARIO.

24,600 4,600 29,200 CHATHAM MILLS NOW IN USE!



2,000 MILLS SOLD IN 1886
2,300 MILLS SOLD IN 1887
2,500 MILLS SOLD IN 1888
3,600 MILLS SOLD IN 1889
4,000 MILLS SOLD IN 1890
4,600 MILLS SOLD IN 1891

Cleaning Alsike Clover and Black Eye and Marrowfat Peas a special feature.

IT STANDS AT THE HEAD!

Over 7,000 Bagging Attachments now in use.

Bagging Attachment is run with a chain belt that cannot slip. The elevator cups are also attached to endless chain belt that cannot slip nor clog.

The Mill is fitted with screens and riddles to clean and separate all kinds of grain and seed, and is sold with or without a bagger.

SATISFACTION GUARANTEED. Send for Circular.

MANSON CAMPBELL, 317-a-om CHATHAM, ONT.

SWEEPING REDUCTION IN PRICES!

C. P. R. Lands in the oldest settled parts of Manitoba and the Northwest Territory, previously priced at \$4.00 per acre and upwards, are now subject to

A REDUCTION IN PRICES AMOUNTING

To from 25 to 33 per cent.

C.P.R. LANDS WEST OF THE THIRD MERIDIAN.

The undisposed of lands in the Railway Belt west of the 3rd Meridian and the Saskatchewan, Red Deer and Battle River Valley will be placed on the Market on the 4th April, 1892, at

THE UNIFORM PRICE OF \$3.00 AN ACRE.

Only one-tenth of the purchase money required down; thus a payment of

\$48.00 WILL SECURE A FARM OF 160 ACRES;

The balance is payable in nine annual instalments; interest six per cent.

(Coal lands and sections in the immediate vicinity of Railway Stations are reserved.)

Edmonton Lands.

The lands in the Edmonton District will be sold by auction in Edmonton on the 3rd May. For maps, price lists and full particulars, write to

S. A. HAMILTON, Land Commissioner, Winnipeg.

316-c-om

STOCK GOSSIP.

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

The sale of the famous herd of Ayrshires, the property of the late Thomas Brown, was held in Montreal, April 20th. Six males sold for \$380, thirty-four females for \$4,835; average per head for the entire herd \$145.50. Ayrshires appear to be properly appreciated in Quebec.

Mr. William Walker, Iderton, brought to this office a sample of wool from an imported Lincoln ram, measuring 18 inches in length, weight of fleece from same ram 27 pounds unwashed wool. Mr. Walker states that he has the best lot of lambs this season that his flock has produced in many years, both as to breeding and quality.

The veteran Southdown breeder, Mr. John Jackson, of Abingdon, while attending the meeting of sheep breeders in London for the purpose of formulating rules to govern records for the various breeds of sheep, which has recently been started in Canada, reported that his flock of Southdowns have come through the winter in good shape. The crop of lambs, about an average in number, are quite above the average in quality. Owing to the increasing demand Mr. J. is again going to England this season, and will import a few of the plums to add to his flock.

David Buttar, Esq., Corston, Coupar Angus, Scotland, in a letter under date of March 30th, wrote: "My flock of Shropshire has come through the winter in splendid form. I have an excellent lot of shearing rams and ewes for sale this season—75 of each; I never had more good ones and less bad ones; they show a marked family likeness. Already I have had a great many enquiries from my old customers about them, which proves that my stock has given satisfaction in the past. I am at present busy with the lambing season, which so far has been very successful. Up to date 83 ewes have brought 154 lambs, which came strong and healthy." Canadians visiting Britain should inspect Mr. Buttar's flock. Those who cannot go should correspond with him if they desire to buy Shropshires.

THE SHROPSHIRE AT THE WORLD'S FAIR.

Mortimer Levering, of Indiana, Secretary of the American Shropshire Association, who was in the city for a few days, called at the agricultural department of the exposition. He says the exhibit of Shropshire sheep will be very large, and will include quite a number of the finest specimens from Great Britain. Mr. Levering is going to England shortly on his own account, and will increase the interest of the Shropshire breeders in their section of the agriculture department.—Chicago Daily Inter-Ocean.

Mr. Levering, who is now serving his eighth term as Secretary of the Shropshire Association, is eminently the right man in the right place, and has brought the Shropshires to the front as the foremost breed now raised throughout the world. The display of Shropshires to be made at the World's Fair promises to be a noteworthy one. The amount of premiums offered by the Association and its members will be triple the amount offered by the Columbian Exposition. We understand that the Association will have its own elegant building at the exposition grounds for headquarters.—Daily Courier, Lafayette, Ind.

A. C. Hallman & Co., New Dundee, Ont., writes: "We again take pleasure in reporting a few important sales. Leucenas Netherland we shipped to Hercule Dorion, Yamachiche, Que. This is a nice, stylish young bull, five months old; sire our prize-winner Royal Canadian Netherland, son of Neth. Prince, so well known to all breeders. We sold this bull on reputation, Mr. Dorion never having seen him before he bought him. He is much pleased and reports: 'The bull has arrived safely here and has stood the inspection of many critics, who all agree in saying he is a very fine youngster. In fact we have many one-year-old animals here that are no larger; but what is still more attractive is his good color and fine, square make. People admire him much, and I must say I am very proud of him and well satisfied.' The bull we referred to in your last issue we also sold on reputation. We shipped him, and the praise from Mr. Paldiament is high. He says: 'We like him splendidly. In fact he is beyond my expectations.' He is so well pleased that he has already ordered another one to be fitted up for next spring. We sold a very fine yearling heifer, Princess Lelda 4th, half sister to the one referred to in last issue, and got by our silver medal bull. This one goes to Mr. Wm. G. Ellis, Toronto, who is starting a fine stock farm at Bedford Park, four miles from the city. Mr. Ellis had no intention of buying when he came but was so well pleased with our young stock that he could not go home without one, and only for want of room would have bought more. Parties wanting stock should come and see what we have."

Mr. Wm. Thompson, Uxbridge, Ont., the justly popular breeder of Cotswold sheep, in a recent letter writes:—"My flock of Cotswolds, fifty in number, have wintered well. This year's crop of lambs is of unusually good quality. My five imported prize ewes have eight fine lambs, the best I ever had. They are sired by my imported prize-winning ram. My flock was exhibited at the Toronto Exhibition, winning 2nd and 3rd on shearing rams, 1st and 3rd on shearing ewes, 3rd on ram lambs, 3rd on ewe lambs, also 2nd on pen; also winning all the prizes offered at Peterborough Central and Lindsay Centra, including the sweepstakes for pen, over all breeds; also at Uxbridge winning a good share of the prizes, including 1st for best pen any breed. I have a few each good imported and home-bred rams and ewes of various ages for sale."

MANITOBA THE GREAT GRAIN AND CATTLE PROVINCE

HAS WITHIN ITS BORDERS

HOMES FOR ALL!

Manitoba is making rapid progress, as shown by the fact that in four years the area under crop has more than doubled.

In 1887 there was under crop 663,764 acres.
In 1891 there was under crop 1,349,781 acres.

Increase, - - - - 686,017 acres.

These figures are more eloquent than words, and indicate clearly the wonderful development taking place. NOT A BOOM, but certain and healthy growth

HORSES, CATTLE AND SHEEP

Thrive wonderfully on the nutritious grasses of the prairie, and MIXED FARMING is now engaged in all over the Province. There are still

FREE HOMESTEADS in some parts of Manitoba.

CHEAP RAILROAD LANDS—\$3.00 to \$10.00 per acre. Ten years to pay for them.

IMPROVED FARMS for sale or leasing, from private individuals and corporations, at low prices, and on easy terms.

NOW IS THE TIME to obtain a home in this wonderfully fertile Province. Population is moving in rapidly, and land is annually increasing in value. In all parts of Manitoba there are now

GOOD MARKETS, RAILROADS, CHURCHES AND SCHOOLS,
AND MOST OF THE COMFORTS OF AN OLD SETTLED COUNTRY.

Investment of Capital. There are very good openings in many parts for the investment of capital in manufactories and other commercial enterprises.

For the latest information, new books, maps, etc., (all free) write to

HON. THOS. GREENWAY,

Minister of Agriculture and Immigration,
WINNIPEG, MANITOBA.

Or to

THE MANITOBA IMMIGRATION AGENCY,
No. 30 York Street, TORONTO.

311-f-0

GRAND TRUNK RAILWAY!

Settlers' Train with Colonist Sleeper Attached

WILL RUN TO ALL POINTS IN THE

CANADIAN NORTHWEST

Leaving Toronto 9 p. m. every Friday

in March and April via North Bay.

NO CHARGE FOR BERTHS.

One-Way Personally Conducted Excursions

to all points on the

PACIFIC COAST

VIA THE

Great St. Clair Tunnel Route and Chicago,

leaving Toronto every

Wednesday, Thursday and Friday.

These parties are carried in Pullman Tourist Sleeping Cars, for which a small amount, in addition to regular passenger fares, is charged for sleeping and other accommodations. Second-class tickets accepted in such cars.

For further particulars apply to any of the Company's Agents. 315-c-0

FARMS FOR SALE

If you want to buy, sell or exchange any kind of farm lands, put yourself in the way of doing business by calling on

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Land Office 137 Dundas Street, London, Ont. 315-y-0

SPRAYING OUTFITS PERFECTION

Best, Latest Improved and Cheapest. Our Perfection and Empire Pumps stir the liquid automatically and will spray 100 Trees Per Hour. We make the Little Gem and Garfield Knapsack Sprayers and the Vermorel, the spray nozzle, most economical spray nozzle in the world. Also a Horse Power Sprayer at low price. We sell Sulphate of Copper, Paris Green and London Purple at wholesale prices. Catalogue free. Write address plainly, giving county. **FIELD FORCE PUMP CO. 127 Bristol Ave. LOCKPORT, N. Y.**



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IS NO EXPERIMENT. Is for sale by all leading dealers in the Dairy States, and for years has been used by hundreds of Silo owners and Dairy farmers, who will accept nothing else. Every lot is **Re-cleaned and Tested,** hence **SURE TO GROW.** You pay for no cobs or dirt, as is the case with many unknown varieties of so-called Ensilage. Ask your dealer for Descriptive Circular and Testimonials. If he cannot furnish them, write us, and we will give you the address of a party who can.

D. I. BUSHNELL & CO., St. Louis, Mo.

Manitoba Farm Lands for Sale

— BY —

W. M. MOORE & CO.,

437 RICHMOND STREET, LONDON.

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|---------|-----|-----|-----|---------|---------|-----|-----|----------|---------|
| w 1/2 | 13, | 8, | 21, | \$10 00 | All | 5, | 6, | 23, | \$10 00 |
| n 1/2 | 13, | 7, | 21, | 8 00 | n e 1/4 | 35, | 6, | 23, | 10 00 |
| s 1/2 | 24, | 7, | 21, | 8 00 | e 1/2 | 32, | 18, | 23, imp. | 5 00 |
| s e 1/4 | 19, | 13, | 21, | 4 00 | All | 19, | 5, | 24, | 10 00 |
| w 1/4 | 19, | 14, | 21, | 5 00 | w 1/2 | 21, | 5, | 24, | 10 00 |
| w 1/2 | 33, | 11, | 21, | 5 00 | n 1/2 | 3, | 9, | 26, | 6 00 |
| All | 3, | 7, | 22, | 10 00 | w 1/4 | 1, | 10, | 26, | 5 00 |
| n 1/4 | 13, | 6, | 22, | 10 00 | n 1/2 | 35, | 10, | 26, | 10 00 |
| n 1/2 | 23, | 6, | 22, | 10 00 | e 1/2 | 3, | 12, | 27, | 8 00 |
| e 1/2 | 33, | 6, | 22, | 10 00 | n e 1/4 | 36, | 18, | 27, | 5 00 |
| s e 1/4 | 17, | 6, | 23, | 15 00 | All | 12, | 17, | 12, | 6 00 |

We have a large list of Manitoba land beside the above. We also have a list of Ontario Farm and City property, either of which we will forward to any address. Parties wishing to exchange Manitoba lands for Ontario property should send us particulars. We have some choice property to exchange. Ranches in Calgary district wanted.

W. M. MOORE & CO.,

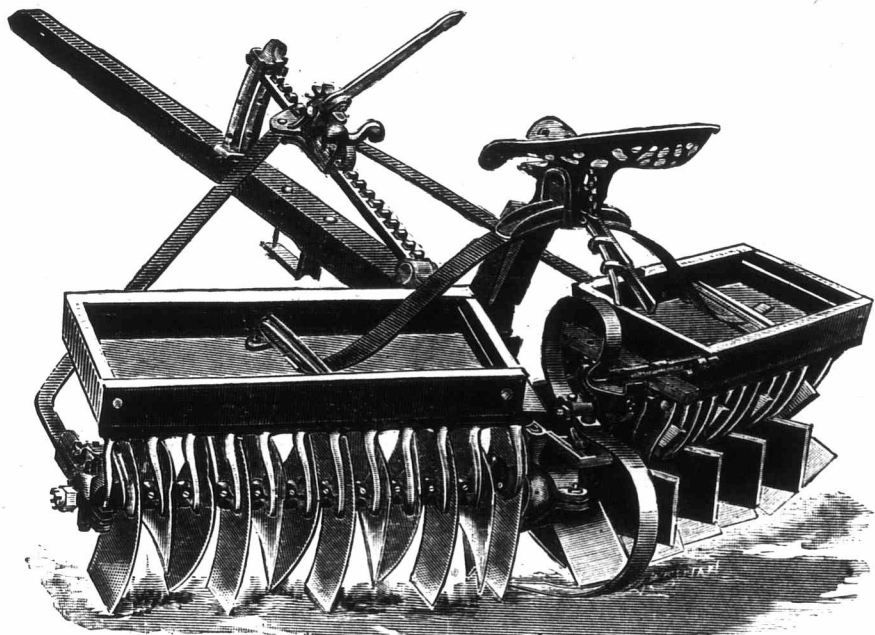
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 Wormy Fruit and Leaf Blight of Apples, Pears, Cherries, EXCELSIOR SPRAYING
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PERFECT FRUIT ALWAYS SELLS AT GOOD PRICES. Catalogue shows
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DRADER'S - PATENT - SPADE - HARROW!



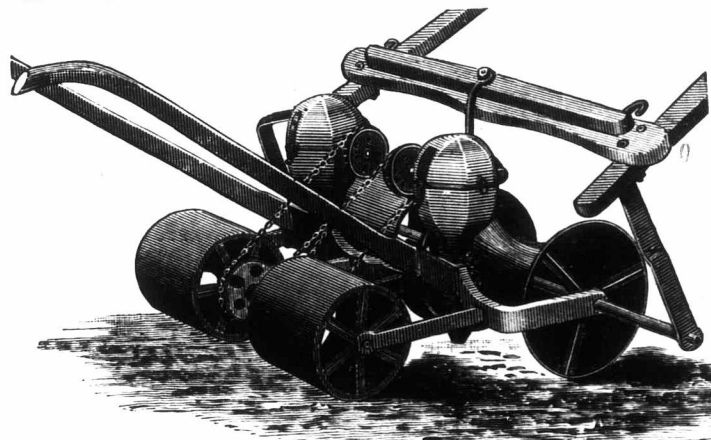
THE MOST WONDERFUL MACHINE EVER MADE

For making seed bed on fall ploughing; for pulverizing clay lumps; for cutting up and pulverizing sod; for making seed bed on corn and pea ground, and for light ploughing on stubble, or working summer fallow. It is composed of 52 steel spades, with 150 sharp-ground edges. It will work in any kind of land, and in mucky, clammy soil, where disc harrows and spring-tooth cultivators clog and become useless, this machine will do first-class work. It cuts the ground every two inches and distributes it evenly, leaving no ridges or furrows, and positively no cultivator or harrow ever made can compare with it. Reliable Agents wanted everywhere in the Dominion. For Circulars, Prices, etc., for Manitoba and the Northwest, write Wm. Johnston, Brandon, Man.; for Quebec, write R. J. Latimer, Montreal, Que., and for any other part of the Dominion address the manufacturers, the Wortman & Ward M'F'g Co., London, Ont. We also want Agents for Drader's Patent Solid Disc Harrow, Peck's Patent I X L Wind-mill, Hay Forks and Unloaders, Grain Slings, the "Daisy" Barrel Churn, and Pumps of all descriptions.

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TURNIP SEED DRILL.



Sows two rows at once, follows course of drills and drops seed always in the centre; sows also CARROT, BEET and MAN-GOLD-WURTZEL SEEDS.

We also manufacture

- DIAMOND HARROWS
- OF ALL SIZES,
- SINGLE & TWO-FURROW
- PLOWS,
- SCUFFLERS, MOWERS,
- PEA HARVESTERS, ETC.

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LAND FOR EVERYBODY.

FREE GRANTS OF GOVERNMENT LAND.

CHEAP RAILWAY LANDS FOR SALE ON EASY TERMS.

GOOD SOIL!

PURE WATER!

AMPLE FUEL!

The construction of the Calgary & Edmonton Railway, and the Qu'Appelle, Long Lake and Saskatchewan Ry, has opened up for settlement two new districts of magnificent farming land, viz., that between the North and South Saskatchewan Rivers, and that between Calgary and Red Deer. Full information concerning these districts, maps, pamphlets, etc., free. Apply to

OSLER, HAMMOND & NANTON,

LAND OFFICE, 381 Main Street, WINNIPEG.

Calgary and Edmonton Railway, Qu'Appelle, Long Lake and Saskatchewan Railway Company.

309-y-OM

NOTICE.

That well-known machine dealer, Mr. H. W. Petrie, 141, 145 Front St. west, Toronto, has just received from Buffalo, N. Y., a large order for iron tools. Very few implements have been bought by Americans in Canada heretofore. Mr. Petrie keeps a very large stock always on hand. When visiting Toronto, we advise agriculturists to call on him, or write him for his price list.

STOCK GOSSIP.

Mr. John Tazewell, late of the firm of Tazewell & Hector, Port Credit, Ont., has entered into partnership with Mr. John A. McGillivray. Mr. Tazewell has removed to Uxbridge, and will reside on Mr. McGillivray's 300-acre farm there. We wish the new firm every success. Horned Dorsets will be their specialty. They now have a large and good stock.

In a business letter under date of April 16th, Messrs. Blair Bros., Aurora, Ill., inform us that they have recently sold the imported Cleveland Bay stallion Favomus (831) to Mr. Samuel A. Young, Lanark Co., Ont. In this letter Messrs. Blair speak in the highest terms of this horse, and also enclosed his pedigree which is certainly gilt-edged. Favomus was foaled May, 1887, sired by Prince George (235), dam Zephyr by Fildus Dius (107). Prince George is sired by Prince Frederiek and has six additional recorded sires, while Favomus' dam has ten crosses, including the very cream of the Cleveland blood. His pedigree contains the names of many of the highest prize-winners.

At Grand's extensive auction sale, held 26th, 27th and 28th of April, in Toronto, most satisfactory prices were realized. Horses in the greatest demand were suitable to both harness and saddle. Of this class was Cedarhurst, a capital hunter and good harness horse, which sold for \$1,100, and others of like type which sold as follows:—Baccarat, who sold for \$400; Adonis, \$550; Parade, \$420; Orange Lily, \$530; Canadian Queen, \$1,175; Cadet, \$575. Coaching teams sold from \$975 to \$1,050 per pair. Nice cart pairs that were broken tandem and were suitable leaders for fours-in-hand brought \$800 and \$900. The above are only examples of the prices obtained. The whole collection abounded with specimens that are now in demand. No more profitable way of spending time can be found than that of attending this annual show and sale.

In a letter dated April 25th, Messrs. Blair Bros. announce another sale, this last being the Cleveland Bay stallion Scampton Sportsman (1489), which was sold to Mr. Thos. L. Armstrong, Kinburn, Lanark Co. Messrs. Blair writes us that this is also a grand type of the Coach horse and possesses the very finest proportions and form. They also add that they consider it quite a feather in their caps to be able to sell two such grand horses as Favomus and Scampton Sportsman to go to Canada, and at the same time congratulate the FARMER'S ADVOCATE for being the medium that has brought about the sale. It is now in order for the ADVOCATE to rejoice with the farmers and breeders of Lanark for these two valuable acquisitions. There is a greater demand than ever for coaching horses of good form, and we hope to see those of Lanark Co. to the front.

WORLD'S Columbian Exposition.

(ONTARIO SECTION)

OFFICE:—Corner of Queen and Yonge Sts.

Parties in Ontario desiring to Exhibit Articles and Stock at the World's Fair, to be held in 1894 at Chicago, will please communicate with the Ontario Commissioner at his office in Toronto. Entry forms and circulars of instruction will be sent on application to the Secretary of the Commission.

N. AWREY, M.P.P., HENRY WADE,
 Commissioner Secretary
 317-a-o for Ontario. to Commission, Toronto.

TREES! Now in stock, a fine line of all kinds of nursery stock, including Roses, Shrubs, Fruit and Ornamental Trees. Best possible grade, and true to name. Salesmen wanted at once. Write for terms, quick.—**THOS. W. BOWMAN,** Peterborough, Ont., "The Rochester Star Nurseries." 314-y-OM

TREE SPRAYERS! WAGONS, TRUCKS & DEMOCRATS

We offer an improved Fruit Tree Sprayer made of galvanized iron, with rubber pipe attachment; a strong, durable article for only \$1.50. It throws a continuous stream or spray, and will throw it with ease over any ordinary fruit tree. Every person who has fruit trees should also have a sprayer.

Our \$15 single harness is excellent value. It is admired wherever it is sent. The question always is, "How can we do it for the money?" Our quick sale, small margin, spot cash system, accounts for it all. This \$15 harness is the same as ordinary saddlers sell for \$25. Prove the accuracy of that statement by sending for a set. This harness is full nickel-plated, the bridle, rosettes, terrets and backband with its accompanying pad make one of the most handsome and most durable sets of single driving harness ever offered in Canada.

Our \$16 Road Carts sell like hot cakes. Why? Because they are at once the cheapest and the best road carts made in the Dominion to-day. Send us \$15 in a registered letter or send us a post-office order for that amount, and we will send you an easy riding, even balanced, curable road cart of good material. The axles and tires are warranted steel while the woodwork is second to none.

240-lb. Union Scales, properly stamped and inspected, price \$5 each; 1,000-lb. Platform Scales only \$12.90.

We want every thrasher in Canada to send his post-office address to us. We have good news for the threshers. Our American Amber Machine Oil, at 30c. per gallon in barrel lots, cannot be surpassed for agricultural machinery. Send us ten cents and we will mail you a sample of this amber oil.

We would like also to place our price list in every farmer's hands, and we will be only too pleased to mail one to any post-office address sent us. Ask for our 1892 free price list; it is interesting to all spot cash buyers. Think of a three-spring sweat collar for only 30c., or a pair of whiffletrees for farm use, all ironed off, for only \$1.00 per pair. Is that not interesting? Write for our free price list.

For \$1 we will mail the full working plans of a modern farm barn. Our terms are spot cash with all orders, and our prices are low in accordance with our terms.

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HAMILTON, 317-a-om ONT.

\$500 A YEAR
FOR 20 YEARS.

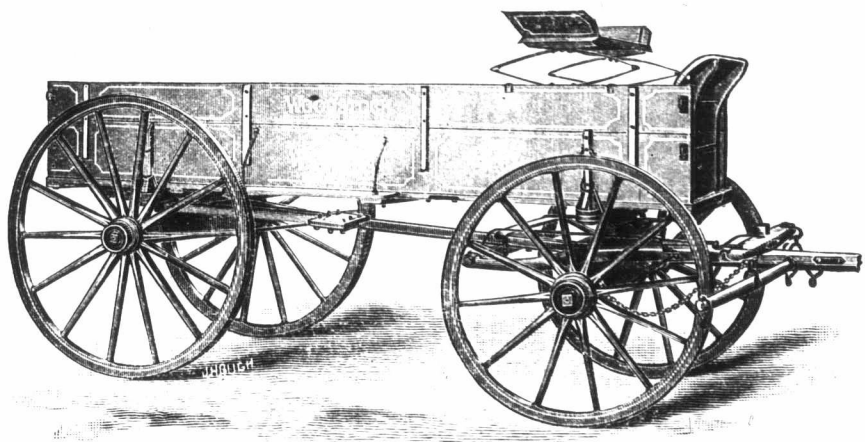
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The plans of insurance operated by the Manufacturers' Life are universally admitted to be not only the most popular but also the most liberal and comprehensive now offered to the public. For a premium not very much larger than is charged for a \$5,000 policy, where the entire insurance is to be paid in one sum down, this Company will give a policy of \$10,000, payable in twenty annual instalments of \$500 each. That's the instalment plan. By insuring on the ten-twenty plan a man may carry \$1,000 for the insignificant sum of twenty three cents a week!

No other company in the world can give cheaper insurance than this.

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Only the Best Materials Used in the Construction of Goods Made by Us.

We import the genuine STIDEBAKER TRUSS SKEIN, acknowledged to be the best in use. Not a breakage in the thousands we have used. Write for Catalogue and Price List, or see Agents.

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WOODSTOCK, ONTARIO

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USE
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It is Cheaper than Shingles.
Water Proof and Fire Proof.



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To Repair Leaky Roofs.
Shingle, Iron or Tin Roofs painted with it will last twice as long.

RAPIDLY TAKING THE PLACE OF SHINGLES.

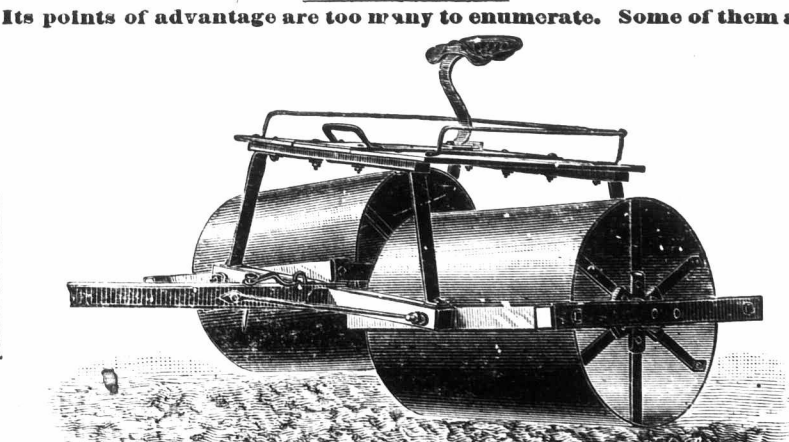
Is put up in rolls of 108 square feet each, 36 feet long by 3 feet wide, and costs 2 1/2c. per square foot, thus affording a light, durable and inexpensive roofing suitable for buildings of every description, and can be laid by ordinary workmen. One man will lay ten square in a day, which brings the cost of Mica Roofing about 75c. per square cheaper than shingles. Special terms to dealers who buy our Mica Roofing to sell again. Orders and correspondence answered promptly.

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THE DALE PIVOTED LAND ROLLER

(Patented.)
A STEEL ROLLER, THE DRUMS OF WHICH OSCILLATE ON PIVOTS AND ADAPT THEMSELVES TO THE UNEVENNESS OF THE GROUND.

The bearings are the only wearing parts and are guaranteed to last from ten to fifteen years, and can be replaced at a nominal cost.



It rolls all the ground, no matter how rough. There is no axle strain, no strain, and consequently no wear. It is easily rolled between the drums.

THE DEMAND IS STEADILY INCREASING. IT IS UNANIMOUSLY RECOMMENDED BY THOSE FARMERS WHO HAVE USED IT. Orders are now being booked for the fall trade. Description and price furnished on application to.

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