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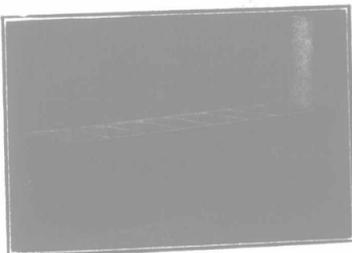
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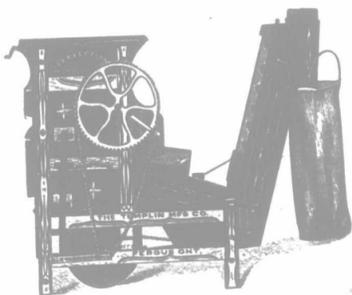
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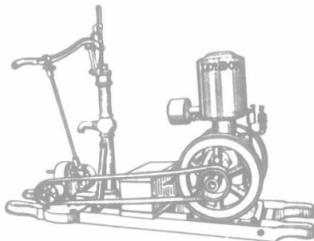
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LONDON, ONTARIO, DECEMBER 31, 1908.

No. 849.

EDITORIAL

Reading That Educates.

Many subscribers will be reading this page on New Year's Eve, and, while we do not propose to mar the Happy Season by suggesting a burdensome list of New Year's resolutions, there are a few thoughts which may be offered with special propriety at this time. Here is one which, if adhered to, would benefit every farmer from ocean to ocean. It is to farm better, to live better, to think broadly and deeply into the problems of one's occupation and the questions of the day. Clear thinking, wide knowledge, and thorough understanding, together, of course, with moral principles, are the secrets alike of successful agriculture and good citizenship. Knowledge, understanding and thought presuppose sources of information and a constant supply of thought-food, for the mind which has nothing to think about cannot think. Thought-food is most readily and abundantly obtained by most of us in the form of reading, combined with close observation. Travel is a great educator, but few of us can travel as much as we would like.

Hon. Geo. W. Ross remarked in a recent address that if our young people read more we would have less need of universities. It is, indeed, quite true, providing the reading be wholesome, thoughtful and good. But what shall we read—local gossip, fiction, sensation, trash? It would take a long time to educate one with such a pabulum. Not that we despise fiction, for it has a place, and a large place, in our libraries. Not that we would have people oblivious, either, to the events of their neighborhoods, nor that we would shut their eyes to the panorama of human activity as reflected in the newspaper press. But he who is satisfied with these things, without ever delving into deeper, systematic reading, will never count as much of a force in the world of action or the councils of men. Let us also read books which induct us into the economic and social problems of men, books which enable us to understand the science of our occupation, books which cultivate habits of clear and systematic thinking. Light reading may serve to lead us through the gate of literature, but let us not remain always at the gate. Let us reach out for heavier and more instructive reading that will satisfy our minds.

Confining ourselves for the present to two lines, economics and agriculture, may we suggest a very few standard works which every intelligent farmer should have. In economics, Henry George's two books, "Progress and Poverty" and "Protection and Free Trade"; Adam Smith's "Wealth of Nations"; the works of John Stuart Mill. In agriculture, "Feeds and Feeding," by Henry; "Feeding Farm Animals," by Shaw; "Live-stock Judging," by Craig; "The Horse Book," by Johnstone; "Physics of Agriculture" and "Ventilation," both by Prof. F. H. King; also several splendid works by Prof. Shaw, notably, "Clovers" and "Soiling Crops and the Silo." To these, many others might be added, but those enumerated will afford an excellent start. Let a man once get interested in this class of reading and his interests broaden, his understanding increases, his mind expands, and his soul rises above petty neighborhood gossip and chitchat. Let him supplement this by the reading of first-class periodicals—not only the best agricultural journals of general circulation, but leading magazines—and he will have laid the foundation for an efficient and satisfying education that will grow and develop as the years

silver his head. This, then, is our New Year's wish: More good systematic and periodical reading, better living, broader interests, nobler life.

Vanishing Timber Supply.

In the whole of Canada it will be difficult to find as much as 600 billion feet of saw material, although there are unmeasured quantities of pulpwood. If the present mill capacity only is to be supplied, this stock could supply them probably for more than a century, but a growing demand is to be anticipated. Our neighbors to the south are rapidly nearing the exhaustion of their timber supplies. When we are informed that their annual demand at present is for 40 billion feet of saw material, we may realize that our supplies are indeed scanty. We may double the estimates, and yet, with the increasing use of wood materials, we could not supply the needs of the United States for more than twenty or thirty years. This means that prices for timber are bound to continue to rise, and here, if on no other grounds, the farmer must take an interest in forestry.

So wrote Dr. Fernow in the Christmas Number of "The Farmer's Advocate," while a still sharper focus was concentrated on the Canadian farmer's interest in forestry by H. R. McMillan, of the Dominion Forestry Department, who, speaking at the Ontario Experimental Union, pointed out that there is no hardwood in Canada save in Ontario, Southern Quebec, and a little in New Brunswick and Nova Scotia. Already, hardwood is being brought in from Michigan.

These facts bring home to us with telling force the pregnant words of President Roosevelt in his last annual message to Congress, delivered on December 8th:

"If there is any one duty which more than another we owe it to our children and our children's children to perform at once, it is to save the forests of the country, for they constitute the first and most important element in the conservation of the natural resources of the country, especially the soil, the rivers and the forests. Any really civilized nation will so use all of these three great national assets that the nation will have the benefit in the future."

Exempt Farm Woodland from Taxation.

The outstanding facts brought out in the foregoing article spell two injunctions in bold letters: First, the supreme and urgent necessity of far-seeing, energetic and comprehensive public forest policy; secondly, the prudence of every farmer preserving at least a portion of his land, more especially that not well suited to cultivation, in what promises, ere many years, to be the best and most profitable crop of all—timber. That such land, preserved from injury, and well cared for, will prove profitable in its returns from timber alone, is a reasonable expectation, as Dr. Fernow shows by a conservative calculation. Besides this, we must not forget the beautification of the farm and countryside, the value of the woods as a wind-break, rendering the climate more agreeable, and protecting neighboring fields from evaporation, the preservation of the flow of springs, equalization of the flow of streams, and affording harboring places for our valuable friends, the birds.

Every consideration points to the advantage and wisdom of each farmer taking care of his wood-lot without special monetary inducement; but, in recognition of the fact that the preservation of a wood-lot is a general advantage to the community in which it is located, the Ontario

Legislature, in 1906, passed a law (amended in 1907 so as to give effect to the original intention), empowering township councils to pass by-laws exempting from taxation unpastured woodland up to one acre in ten of the farm area, but not to exceed twenty-five acres held under a single ownership. A few easy conditions are specified as to thickness of stand and character of growth thereon. We believe there is urgent need and ample justification for such a by-law in nearly every township in the settled parts of old Ontario, and in some of the other Eastern Provinces as well. Ontario readers should agitate the matter, and have the necessary exemption by-laws passed at once.

Farm Accounts.

New Year's Day is a good time to commence keeping accounts. While a complete system of bookkeeping is not easy to work out on a farm, it is at least practicable to keep a few elementary accounts. For instance, a cashbook would be of much service as showing just what the money is being spent for and whence the income flows. And it would often be of value for reference in proving the payment of a disputed account. In law, the odds are strongly with the party who can show a record in black and white.

Then, there is no reason why one should not have a household-expenses account, a poultry account, and approximate accounts for all the other stock on the farm, from cows to pigs. While it is, indeed, difficult to determine to a nicety the debits and credits of such, a record may be kept that is of great value in determining what branch of operations is paying best, and discovering what line or lines should be curtailed or amended. Again, everyone should have a precise memorandum of debts, notes, interest charges and other obligations owing to others or due to him. It would save many a reproach, inconvenience and impairment of credit as a result of tardy payment. Every farmer needs to keep a grip on his business, and some system of farm accounts is essential to that end.

To Popularize Apple-growing.

Throughout the farming sections of Ontario are apple orchards ranging in size from half an acre to ten acres or more that are not returning sufficient fruit each year to warrant the farmer in leaving that land planted to orchard trees. Occasionally a big yield is obtained, due to an extra favorable season. But even with the big yield small returns are derived, because the local market soon is glutted, and, buyers taking advantage of this condition, prices are low. Under such conditions, the unanimous verdict is that it does not pay to grow apples.

Contrast this with the enthusiasm that prevails among farmers in the vicinity of Forest, Simcoe, Chatham, Oshawa, and several other points, when apple-growing is the subject under consideration. There is little difference in the average areas planted to orchard; the varieties grown are no more suitable; the men in charge are not more capable. Everything considered, there is no sound reason why those of one district should be cheered by paying returns, while those of other districts are impelled to pronounce fruit-growing a failure.

Why is there this difference? Co-operation is the main force in making certain districts satisfied with their apple orchards. With perfect organization and a competent man whom all trust in charge, skilled cultural methods, judicious pruning and thorough spraying, insure a fair crop of high-grade fruit, which is disposed of to

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DOMINION.

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It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most practical, reliable and profitable information for farmers, dairymen, gardeners, stockmen and home-makers, of any publication in Canada.
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advantage. Co-operative associations are doing excellent work in many localities. There are yet many more in which certain branches of agriculture could be improved, and the district benefited by such organization.

Ontario farmers are gradually drifting from the ordinary cultivation of the soil and the growing of ordinary farm crops. Special attention to special branches has been found to be more remunerative. We would like to have the opinions of our readers as to what can best be done to popularize apple-growing in districts eminently suited to the production of this standard fruit. Such suggestions, along with the experiences of those who have been taught to consider the orchard with favor within the last few years, would make interesting and valuable reading.

Not Aeration, but Cooling.

Geo. H. Barr, Assistant Dairy Commissioner, Ottawa, at the recent Picton, Ont., dairy conference, declared that cool-curing had given Prince Edward County cheese a well-deserved pre-eminence, and the factories with the improved plant well deserved extra returns. It is evident that some cheese buyers, like bacon-hog buyers, want to hammer all down to the one dead and discouraging level. Mr. Barr also stated that some well-made lots of cheese were almost ruined through lying a couple of days in heated Montreal warehouses before shipment. A Government refrigerator warehouse at that port might solve this problem. A third and most important point brought out was that Mr. Barr's experiment in the care of cheese-factory milk last summer demonstrated that aeration of milk by dipping, stirring or pouring was a fallacy, and that the proper system was to cool it down promptly and thoroughly in the can with cold water or ice, and then exclude the air by putting on the lid. But the milk must be clean to start with. Moral: Make ready to have a good supply of cold water or ice near the milk stand for next summer.

Favors Constabulary Reform.

The much-needed change in the rural constabulary of Ontario was referred to editorially by The Free Press, of London, Ont., recently, and special mention made of the move for reform in this regard in Middlesex Co. The proposed change, it is claimed, should be the prelude of a general and radical change in the force throughout the Province. It was pointed out that the difficulty of getting constables to act under the fee system illustrated the need for such reformation, and the letter from J. J. Foran, of Wentworth Co., which appeared in "The Farmer's Advocate" of December 21st was used as a specific instance.

The comments were as follows:
"This style of administration might have done in the last fifties, but it is out of accord with present-day requirements. And it is time for a change.

"What Mr. Foran describes may be met with all over the Province. Some Middlesex magistrates have been most emphatic in regard to this matter. The average county constable has been a little too slow to move in search of a criminal at the risk of losing his time, or of being but poorly recompensed in the case of failure to make an arrest.

"The need all over the Province is for a force that can be depended upon in all emergencies, composed of men who are paid for what they do, and ready to give willing service."

Our Premiums.

The premiums sent out by the William Weld Co., are all, like "The Farmer's Advocate," rare value at the figures at which they are priced. Over a thousand dollars' worth a year are distributed among friends who have sent us new names, to say nothing of cash commissions paid, extensions of present subscriptions as premiums for new names, or the hundreds of new subscriptions that come to us yearly direct. Of all our premiums, the most popular one is "The Farmer's Advocate" knife, of which 1,260 have been sent out within the past four years. It is a remarkable fact that, with the rare exception of a damaged or imperfect article (which has always been cheerfully made good on the facts being represented to us), we have yet to receive the first expression of disappointment or dissatisfaction with any of our premiums, while thousands of delighted workers have volunteered their appreciation and surprise at the quality of the goods sent out in this way. The premium offer includes a wide variety of articles, from knives and microscopes, to agricultural books, dictionaries and Bibles. Make up your mind which one you want most, resolve to earn it, and get to work at once. Now, at the New Year, is the time to secure new subscriptions, and with the premium you will be well repaid.

How to Renew.

Send us two new names, accompanied by \$3 (\$1.50 from each), and we will advance your own subscription 12 months for helping to extend our circulation. In case you happen to live in a neighborhood where nearly everybody takes "The Farmer's Advocate," and, consequently, find it difficult to secure more than one new name, send us that one, accompanied by \$2.25 (\$1.50 for the new name, and 75 cents for the balance of your own renewal). Or, probably you have a friend residing at a distance, to whom you may make a present of a year's subscription. In this case, send us the two new names, accompanied by \$3.00 (\$1.50 from the neighbor and \$1.50 from yourself, for the friend to whom you are making the present), and your own renewal will be free. In other words, you will be making your friend a present of a year's subscription, including the 1908 Christmas Number, at an actual net cost to yourself of only 75 cents. This is a most liberal offer, and is made for the purpose of greatly increasing our circulation, which it is certainly doing. Thousands are taking advantage of it, and new subscriptions are rolling in at the rate of hundreds a week. Join the brigade of workers. Send in two new names, and get your own renewal free.

In the Light of Experience.

Man is prone to accept established institutions as a matter of course, relying upon them, and seldom pausing to express the appreciation so generally felt. It probably is so with the Questions and Answers Department of "The Farmer's Advocate and Home Magazine." The thousands of questions asked us every year, including many by those who have previously received help through this department, are ample evidence, if any were needed, of the value of the service thus rendered our readers. Yet, strange to say, while hundreds have casually mentioned their satisfaction with and interest in this department, it is comparatively seldom that anyone writes to describe in detail how he followed the suggestions offered, and how they panned out.

Such letters would be helpful in two ways: First, they would be of value to us editorially in offering future advice. While the answers given are always carefully considered, and in accordance with the best-known principles and knowledge, the science of agriculture and veterinary practice is not a hard-and-fast one. It is continually undergoing modification, and, in order that it may be the more thoroughly and readily adjusted, accurate knowledge of experience is helpful. Then, too, there are geographical and topographical variations which mean that a suggestion applicable in one locality may not be suitable in another near-by. For example, we are often asked to recommend varieties of corn for a certain district, probably a section we have never visited. The best we can do is to recommend one which, owing to its hardiness and season, is most likely to prove suitable; but, manifestly, it would be advantageous to us in determining the range of adaptability if we knew just how that variety succeeded.

Moreover, a tale of experience is always of great value to fellow subscribers. Let us hear the experience, therefore, of readers who have followed our advice in the treatment of animal diseases, in feeding, in soil cultivation, rotation, cropping, or any other subject upon which advice has been sought. Experience is the light whereby we all must walk. The more of it, the better.

HORSES.

Horse-breeders' Exhibition.

The Ontario Horse-breeders' Association have apparently acted wisely in the arranging for the holding of their next annual exhibition at the Union Stock-yards, West Toronto, the event to take place on January 13th, 14th and 15th. The prize list is a liberal one, and comprises classes for Clydesdales, Shires, Canadian-bred Clydes and Shires, Hackneys, Thoroughbreds, Standard-breds, and ponies, stallions and mares, and for heavy-drafts in harness, geldings and mares, upwards of \$3,000 being offered in prizes. Entries close on Saturday, January 2nd, with A. P. Westervelt, Secretary, Parliament Buildings, Toronto. The fact that all the horses exhibited will be stabled in the exhibition building, and open to inspection and comparison in their stalls, as well as in the judging-ring, renders the show a decided improvement in that respect over its predecessors. To parties having horses for sale, or those desirous of purchasing, the coming exhibition will afford a favorable meeting place for selling or selection. And the prospect is that the entries will be unusually numerous, and the type and quality of the exhibits of a high standard of excellence. Prospects are bright for an active demand for horses in the coming year, and for many years, and Canadian farmers stand to profit by the demand if they raise the classes of horses likely to be required by the market.

Best Yet.

Having seen your most liberal offer in "The Farmer's Advocate," I comply by sending you two new subscribers, expecting you to send them "The Farmer's Advocate" for one year, and also to advance my subscription for one year. Enclosed find three dollars for the same. I have been a subscriber for eight years now, and we look forward to its coming every week. I think the Christmas number of "The Farmer's Advocate" the best we have had. GEO. E. BAMSEY,
Durham Co., Ont.

Horses in the Making.

Editor "The Farmer's Advocate":

The question of breaking a colt is one of great importance to the Canadian farmer. My method of handling a draft colt, from the time it is foaled till it is fit to go to the field thoroughly broken to all harness, has proven satisfactory. In the first place, I start as soon as the colt is born, and keep steadily at it until I have him fully under my control. After the colt has got rightly on his feet, and is playing around the large, roomy box stall which it and its mother have, I begin operations. First, I fondle around the colt's head and neck, so as to get him to know I am not going to do him any harm, and it does not take many days for him to realize this. Next, I get a good strong halter and a fair length of a run strap. If he acts anyways ugly, do not abuse him, but watch a chance and get your arms around his neck. Any able-bodied man can hold a colt a week or two old till he can slip a halter on his head. If he still acts ugly, I advise not to attempt too much in one day, but go back at the task the next day, and you will have no trouble in catching your colt. I always leave the halter on him, with the run strap detached. The second day, when you have a firm hold of your colt, hold him until he finds out you are master, but do not make any demonstration that you have conquered him; just be quiet and gentle with him, and give him a lump of sugar or salt each time you work him. Now, when you have taught him to stand, you have accomplished one valuable point in breaking a colt.

Next, I put on the run strap, and try to get him to follow me around the stall. As a general rule, he goes backward, instead of forward, but just let him go around for a few times, and he will likely tire of it. If he doesn't show signs of tiring, try to turn him around several times. I have not had one case where I could not lead them in two hours' time. Now, when you have got him to lead, take him out every day and give him a lesson. Continue this until you have him thoroughly broken to run by your side or in front of you on the line, or any way you want him, but in doing so always have him to understand when you say "whoa," and "get up," or "come on," or some other familiar phrase that the colt has got used to, but be sure to use the same words each time, for it must be remembered that the colt is a young pupil, when we consider how much we have to accomplish with a colt of, say, two months old.

After leading and running, and such like, I tie him beside his mother to a good stout manger. Of course, he will pull and fly back, but, after struggling for a while he will most always give up. Then he may be untied, and left to roam around the stall till the next day, when he should be tied up again. I repeat this every day until I am confident that he will stand like an old horse, and I have never had any trouble with halter-breaking colts since I have adopted this method.

Starting with the second year, he should be handled the same as when a colt, except that the bridle and bit should be used, instead of the halter. I continue this treatment till he is two years old, when he should be made acquainted with the harness. Before harnessing him, I put on a back-band and crupper strap, and check him up and let him out into the yard to get his mouth hardened somewhat before I start to drive him. When he has had this treatment for a couple of months, I harness him alongside of a good steady-walking horse, and drive them around without hitching them to any vehicle for a day or two. If he goes well (and he nearly always does), you may hitch the team to a sleigh or wagon—I prefer a sleigh, as it is generally easier turned around, and you are not in much danger of being hurt if you are thrown out, in case of any mishap.

Now, you have your colt broken to drive nicely, but do not imagine he is fit to go to work, as he is just past two years old, and should not do more than easy work till he is three years. Even then he should be handled with care till his shoulders are hardened and his mouth in good shape. If this method is followed, your colt will be well enough broken for any person with "horse sense" to handle him in any kind of harness, and hitched to any implement or vehicle.

J. C. HALL.
Peel Co., Ont.

Plenses Whole Family.

I have taken your paper for the past year, and must say that all of our family are very much pleased with it, and often wonder how we ever did without it so long. I am enclosing the names of two new subscribers. Wishing you all the compliments of the season. Will you please send the new subscribers the Christmas number.

THOS. CHALMERS.
Lennox and Addington, Ont.

Harness Racing, 1908.

The Eel, a gray horse, owned by F. W. En-tricken, of Tavistock, Ont., and trained and driven by Dan McKwen, has proved himself the best Canadian light-harness racer and money-maker of the season, and his record has not been equalled in America, except by Minor Heir 1.59½. He commenced the season green, hence eligible to the slow classes, and finished with a pacing record of 2.02½. His breeding and early history, as well as his wonderful performances of the season of 1908, appeared in "The Farmer's Advocate" a few weeks ago. After making creditable wins on the ice as a green pacer last year, and winning at the early Canadian meetings, he was taken across the border, where he beat such good horses as George Gano, Hal Raven, Billy B., The Liar, Baron Gratton, Hedgewood Boy, Ecstatic, and, on several occasions, Minor Heir. Minor Heir, an American horse, and the Eel, were both green when the season commenced. Previous to this year, the world's record for a green pacer (i. e., one that commenced the season without a mark), was 2.03½, made by the little chestnut gelding, My Star, in 1906. This mark has been sent glimmering by the two wonderful horses under discussion, which have proved themselves superior to all other "maidens" ever known, and also superior to all other pacers of the season, including the free-for-allers. As these two have been rivals on the American track, a record of their battles may prove interesting.

Minor Heir is by Heir-at-Law 2.05½, out of Kitty Clover, by Redwald 2.23½. He is owned by P. C. Isaacs, of Stoyestown, Pa., trained and driven by Charles Dean. He won as follows:

Peoria, Ill., July 4th—Purse, \$600; heats, 1-1-1; time, 2.05½, 2.11½, 2.07½.
Peoria, Ill., July 11th—\$500; 1-1-1; 2.11½, 2.07½; 2.05½.
Terre Haute, Ind., July 17th—\$3,000; 1-1-2-3-1; 2.01½, 2.01, 2.05½, 2.08, 2.07.
Pekin, Ill., July 21st—\$500; 1-1-5-1; 2.08½, 2.12½; 2.08½; 2.08.
Detroit, Mich., July 28th—\$5,000; 8-1-1-1; 2.03, 2.04½, 2.05, 2.04½.
Kalamazoo, Mich., August 3rd—\$2,000; 1-1-1; 2.03, 2.06½; 2.02½.
Galesburg, Ill., August 14th—Exhibition to beat 2.01; time, 2.00½.
Davenport, Iowa, August 14th—Exhibition to beat 2.01; time, 2.02.
Dubuque, Iowa, August 26th—Exhibition to beat 2.03½; time, 2.02½.
Hamline, Minn., Sept. 4th—Exhibition to beat 2.00; time, 2.00½.
Milwaukee, Wis., Sept. 10th—Purse, \$2,500; to beat 2.00½; time, 1.59½.
Syracuse, N. Y., Sept. 14th—To beat 2.00½; time, 2.01½.
Peoria, Ill., Sept. 17th—Purse, \$2,000; to beat 2.00½; time, 2.00½.
Lexington, Ky., October 15th—To beat 1.59½; time, 2.00½.
Aurora, Ill., Oct. 21st (half-mile track)—To beat 2.06½; time, 2.05.
The Eel won as follows:
Buffalo, N. Y., August 14th—Stake, \$5,000; heats, 1-1-1; 2.06½, 2.06½, 2.09½.
Poughkeepsie, N. Y., August 18th—Purse, \$1,500; 1-1-1; 2.02½, 2.05, 2.06.
Readville, Mass., August 29th—Purse, \$3,000; 1-1-1; 2.04½, 2.05½, 2.05.
Hartford, Conn., Sept. 8th—Stake, \$5,000; 1-1-1; 2.05, 2.05½, 2.05.
Syracuse, N. Y., Sept. 16th—Stake, \$5,000; 1-1-1; 2.04½, 2.02½, 2.03½.
Columbus, Ohio, Sept. 21st—Stake, \$4,000; 1-1-1; 2.02½, 2.02½, 2.04½.
Lexington, Ky., October 12th—Stake, \$2,000; 1-1-1; 2.05, 2.05½, 2.04½.
Minor Heir, in races, paced 32 heats, of which he won 19, the average time being 2.05.48; his slowest, 2.12½. Against time, he paced 10 heats in the average time of 2.01.35. These include one over a half-mile track in 2.05. His average time in 9 exhibition heats, over mile tracks, was 2.00.85.

The Eel made 11 different appearances, all in races, of which he won 8, was second twice, and third once. In these races, he started in 43 heats, and won 31. His fastest winning heat was in 2.02½, and his slowest in 2.08. The average time of his 31 winning heats was 2.04.86, and his gross earnings in the neighborhood of \$20,000. In many of these races he competed with Minor Heir, and others of the best American pacers.

Our Western Provinces are not at all behind in the harness-racing game. The bay gelding, The Zoo, a trotter owned by A. E. Wilson, of Killarney, Man., has been successful in good company. His most noted performance, probably, was the winning of the 2.17 trotting event, with ten good horses behind him, in 2.09½, 2.10, 2.10, at the Columbus Grand Circuit meeting.

Anna V. Brino, 2.15½, by Millbrino, out of Veta Red, owned by Wm. Burnside, of Kincardine, Ont., was a brilliant success both last season and this.

Wildbrino, A. T. R., 10073, 2.19½, by Hambrino, out of Molly, by Wildwood, the sire of Anna V. Brino, is one of the greatest sires of speed owned in Canada.

Another good Canadian representative of the light-harness horse is Othello, by Prince Edward, which, driven by Fairbanks, won the 2.10 trot at Lansing, Mich., in 2.12½, 2.14½, 2.10½.

While speaking of new celebrities, we must not forget that wonderful little black mare, Darkey Hal, by Star Hal, out of Brownie. This little mare was owned, trained and raced during her 3 and 4 year-old form, with variable success, by Walter Herod, of Guelph. During these years, her opportunities for doing herself justice were not great. Mr. Swartz, of Wingham, thought he saw indications of great things in her, and he purchased her. In a few weeks his driver raced her to a mark close to two minutes on the Windsor track. She then went across the border and competed with the best American horses in the Grand Circuit, and continued to uphold Canada's reputation. She won some good races this season, but met with an accident which necessitated sending her home, but still she figures in the list of the large money-earners of the season just closed. No doubt she will be heard from again next year. Mr. Swartz also owns a four-year-old half-brother of hers, Hall Boy, by Hal B., out of Brownie, that is said to be very fast, but has not yet been started, as he has been used in the stud. When this fellow is ready to face the starter, we will be surprised if he does not retain the reputation of Hal B. as a sire and Brownie as a dam of extreme speed. "WHIP."

Making Money from Raising Colts.

Editor "The Farmer's Advocate":

In breeding draft colts to get them heavy enough to command higher prices, the dams must be 1,500 pounds and upwards, of large, drafty appearance, free from hereditary unsoundness, and good feeders. It is difficult to get mares with perfect conformation and action. I have used draft mares for breeders with slight irregularities, providing I can get the right kind of sires.

The sires must be large, and good walkers, bringing the feet up perfectly square and throwing them out in front of them boldly, showing the iron at every step. Feet must be large, wide at heels, and strong walls. The legs must be absolutely free from any natural blemishes, and of good flat, hard bone, not inclined to be round or gummy. The quantity of hair makes but little difference, if the bone is strong. The body should have a massive appearance, with neck set well up, short back and long quarters, and not less than seventeen hands high, and from 1,900 pounds upwards when in fair condition. Horses of this kind, mated with good drafty mares, are pretty sure to produce high-priced colts.

The colts should be liberally fed in winter, and be given plenty of exercise, being out every day except when it is raining. If the night quarters are cold, they are better than hot basement barns with poor ventilation. Turn them out early in spring, and be sure the pasture is not overstocked all summer. If the rough grass is long enough in the fall, they can run out till deep snow comes. Get them halter-broken and used to harness during winter, and they will be ready to hitch up with broken horses any time after two and a half years old, and do nearly any kind of farm work.

A great deal depends on manners and style of going in draft as well as harness colts, and if always driven properly, taught to be good walkers, and showing good action on the halter, that is all that is required. I have sold geldings handled like this to men who fit and show drafters at the age of three years and over, at \$250 to \$300.

In buying colts to fit and sell again, of any of the draft breeds, I prefer geldings to mares, as they are much easier sold for city work. A margin of \$50 to \$100 for feeding and handling can be derived. In feeding a draft gelding that has been worked hard, it takes time, rather than very heavy feeding, to make him up. Put him in a roomy box stall, with a plank out edgewise, about four feet from the floor, to prevent him rubbing his tail out. If you see any sign of itch in mane, tail or legs, brush out often, and keep stables clean, and it will soon disappear. All the exercise needed beside the box stall is a run on the halter, to make him go well. Clean thoroughly twice a day, and increase the exercise before offering for sale. If the horse has done well with the rest he has had, and has size and quality, no trouble will be found in disposing of him at a good profit.

In case of mud fever or very itchy skin, I have had best results with raw linseed oil and sulphur mixed together, well rubbed in as often as required.

In breeding light horses, you are apt to have more misfits than in draft, except you are very careful in selecting mares for breeders, and sires afterwards. It is absolutely useless to breed from blemished stock on either side. The odds

are too strong against you. Combination horses (harness and saddle) are the most profitable, but are harder to produce than the common livery or road horses. They must show quality and good breeding to catch the eye of the prospective purchaser. Good sound coach or trotting-bred mares, with inclination to bend the knees well, picking the hind legs up quickly, and going perfectly square, mated with Thoroughbred horses, or half or Thoroughbred mares mated with Hackneys, are the usual methods adopted in producing combination horses. If properly cared for, they bring high prices, either green or broken. We let the colts have the same care as the heavy ones till the spring they are three years old. Then they are tied in the stalls with the older horses, and driven every day to get them perfectly quiet in harness. Increase the feed as the colt becomes more broken, and give a daily lesson on the halter. He is then ready for the dealer or showman any time. There are plenty of buyers for this class from three to four years old, of good quality, and handled this way, prices ranging from \$175 to \$300.

In breaking road colts intended for long drives, they should be broken in the fall of the year, off the grass, when they can stand long trips right at first, as they will never be good all-day road horses if used much to short drives. If possible, take him where there are electric cars and automobiles in his first lessons, as he will pay less attention to them than when partly broken.

Following is the record of a half-bred mare (got by Kentucky, a Thoroughbred, and a trotting-bred dam), used three years for driving and seventeen years for breeding purposes. Result: Fifteen colts; one died from castration at one year old; two, the oldest and the youngest, are still on the farm, breeding. The remaining twelve were sold between three and four years old at an average price of \$187.75, with very little handling. The mare was worked only the two years she did not breed. Total amount of sales, \$2,253, which I think you will agree with me leaves a good profit for feed and trouble.

We generally keep four heavy and two light brood mares on the farm, some years more, and have always made good profits by breeding horses.

H. S. FALLOWS.

Middlesex Co., Ont.

LIVE STOCK.

Muslin Curtain Ventilation Experiments at O. A. C.

Editor "The Farmer's Advocate":

In compliance with your request for a synopsis of the results of our tests of the muslin-curtain system of ventilation, I would say that it was our original intention to have this investigation carried on by a member of the staff of the Department of Physics, but it was seen in advance to entail a vast amount of labor at a time when the Department was already taxed beyond its limit

with teaching duties, hence it was turned over to Messrs. H. Sirett and H. C. Duff for thesis work, under the close supervision of the Department of Physics.

It was intended to start on the first of January, 1908, but it was found that the Christmas holidays, although occupied largely in preparation, were not sufficiently long to have everything ready. Besides getting the curtains in readiness, these men made a careful study of gas analysis, both theoretically and practically, in so far as carbon dioxide is concerned, so that it was the end of January before actual observations were begun.

The cattle stable in the main barn was ventilated by a modification of the Massey system. The fresh air, caught by cows on the peak, was brought down through flues, a portion being discharged into the passage in front of each stall. The foul air was supposed to be drawn off at the ceiling through flues leading up to the body of the barn. In these outlets the air movement was always sluggish, so much so that part of the inlets were usually acting as outlets. This suggests that outlets should always be carried above the roof.

The dairy stable was, and still is, ventilated by the King system. The fresh air is taken through the wall at the floor and passes up through flues to the ceiling, where it is discharged into the stable. Being cold, and therefore heavy, it sinks, distributing to all parts as it does so. The outlets are so made that the foul air may be drawn from the ceiling in mild weather when the stable is likely to become too warm, and from the floor in severe weather. Since the ceiling air is always from 3 to 5 degrees warmer than that at the floor, this is a valuable control on the temperature of the stable.

The main stable had 12 windows on the south-east side, all of which were fitted with cheapest cotton (muslin curtain). It contained 45 head of cattle of all ages, with 1,550 cubic feet of space to each. The dairy stable had 14 windows, 10 of which were on the north-west, two on the south-east, and one on each of the other sides. Of these, seven were fitted with muslin curtain, four on the north-west, two on the south-east and one on the north-east. The stable held 38 head of cattle, all grown, with 1,024 cubic feet of space to each.

In each stable the readings were taken for twenty-five nights, beginning from 9 to 10 p.m., and concluding from 11 to 12, sometimes later. The regulation systems, King and Massey, were tested, then the muslin curtain, then the King and Massey, and then the muslin curtain, each test continuing approximately one week. Observations were begun the last of January, and were continued till the third week in March, a few days thus elapsing between the various tests. The regulation systems were not adjusted by the experimenters, but were tested as in use by the herdsmen at the different stables.

The first question arising was, of course, how to compare the air in the stables under the various systems. Since the purity or impurity of air vitiated by breathing is usually stated in terms of the carbon dioxide content, we decided to use that

as one point of comparison. Besides this, the following data were taken: Maximum and minimum temperatures for the night, both outside and in the stables; temperature at floor and ceiling at time of observation; humidity at floor and ceiling.

Table I shows the averages in the main stable where Mr. Sirett was in charge. Table II shows Mr. Duff's averages in the dairy stable. A study of these tables will reveal the following facts:

(1) In the King and Massey systems the carbon dioxide was invariably greater at the ceiling than at the floor.

(2) Out of four tests of the muslin-curtain system, two showed the same amounts of carbon dioxide at the floor and ceiling, one more at the floor than at the ceiling, and one vice versa.

(3) The average carbon dioxide content at the floor in the main stable by the Massey system was 9 parts by volume in 10,000 volumes of air, and by the muslin curtain, 12.4, an increase of 37.7%. The floor readings were taken at the average height of the cattle's nostrils, and so far as being a test of ventilation is concerned, they are more valuable than the ceiling readings. The latter are valuable largely from a scientific standpoint, as showing by comparison with the former the distribution of carbon dioxide in the stable under the various systems.

(4) The last test of the muslin-curtain system in the main stable showed less carbon dioxide than the first test of the Massey system. This would probably be explained if we knew the wind velocities for the first two tests. Our anemometer (wind measurer) was not installed till February 14th.

(5) In the dairy stable the muslin curtain showed in all cases more carbon dioxide at the floor than the King system did, the averages being 12.7 for the King and 18.5 for the muslin curtain, an increase of 43.4%.

(6) In the main stable the humidity (moisture) was considerably greater at the floor than at the ceiling, by both systems.

(7) In the dairy stable the King system showed a little more moisture at the ceiling, the muslin curtain about the same all over.

(8) The muslin curtain caused a considerable increase of moisture in the main stable and a slight increase in the dairy.

(9) The humidity in the main stable was very much higher than in the dairy stable.

(10) The carbon dioxide was less in the main stable than in the dairy stable.

In connection with (10), it is worth remembering that each animal in the main stable, both young and old, had 50% more space than those in the dairy, all of which were adult; hence, other things being equal, we might expect more carbon dioxide in the dairy than in the main stable. Applying the same reasoning, we would say that there would be less moisture in the dairy. But the opposite is the case, as per (9). This excess moisture must be accounted for by some unequal condition—and here we remember that the main stable is a stone basement, the dairy is a frame.

(11) From the average temperatures we can tell little, but the individual readings show a greater fluctuation with the muslin-curtain than

TABLE I.—MAIN STABLE.
Massey System vs. Muslin-curtain System.

SYSTEM.	Date, 1908.	Wind. Velocity Miles per Hour.	Temperature.						Humidity.		Carbon Dioxide.		Adjustments.			
			For Night.				At time of Reading.		Floor.	Ceiling.	Volumes in 10,000 Volumes of Air.		Massey. 4 at ceiling.	Muslin Curtain. 6 windows 44x26 inches on S. E.		
			Outside. Max.	Outside. Min.	Inside. Max.	Inside. Min.	Out- side.	Inside. Floor. Ceiling.			Floor.	Ceiling.			Floor.	Ceiling.
Massey (1)—Jan. 30 to Feb. 6.....			18.3	4.4			9.3	34.6	84.9		11.1	15.4	open	open		
Muslin Curtain (1)—Feb. 13 to Feb. 18...			24.6	20.4			24.4	45.7	88.8		15.8	18.2		open		
Massey (2)—Mar. 5 to Mar. 14.....		16	36.7	30.3	49.3	44.7		45.5	50.4	86.1	82.6	7.2	8.9	open	open	†
Muslin Curtain (2)—Mar. 16 to Mar. 23.....		9.3	32.3	26.5	51.3	47.0		48.8	52.4	89.4	84.6	10.7	10.7		12 windows all [on S. E.]	
Massey—Averages			36.7	30.3	49.3	44.7		45.5	50.4	86.1	82.6	9.0	11.9			
Muslin Curtain—Averages			32.3	26.5	51.3	47.0		48.8	52.4	89.4	84.6	12.4	13.2			

*In case of related readings the averages include only the observations when both readings of the pair were taken.

†Remarks—Half of inlets acting as outlets.

TABLE II.—DAIRY STABLE.
King System vs. Muslin-curtain System.

SYSTEM.	Date, 1908.	Wind. Velocity Miles per Hour.	Temperature.						Humidity.		Carbon Dioxide.		Adjustments.							
			For Night.				At time of Reading.		Floor.	Ceiling.	Volumes in 10,000 Volumes of Air.		King. Floor Ceil.	Inlets. Inlets.	Muslin Curtain. Curtailed win- dows in use.					
			Outside. Max.	Outside. Min.	Inside. Max.	Inside. Min.	Out- side.	Inside. Floor. Ceiling.			Floor.	Ceiling.				Floor.	Ceiling.	5.	ing 8.	ing 8.
King (1)—Feb. 3 to Feb. 8.....			17.3	—2	54.8	49.7		3.4	49.0	51.8	76.3	77.5	10.9	14.2	5 open	closed *				
Muslin Curtain (1)—Feb. 10 to Feb. 17.....			26.0	21.6	59.6	52.2		25.5	53.6	57.0	77.9	79.2	20.5	20.9						
King (2)—Mar. 3 to Mar. 7.....		19.5	32.3	28.5	58.8	54.3		28.3	57.8	62.0	73.3	75.1	15.5	18.9	5 open	1 open	†			
Muslin Curtain (2)—Mar. 9 to Mar. 14.....		8	36.2	28.4	60.9	53.8		29.6	56.2	60.8	72.4	71.3	17.7	12.2				4	1	2
King—Averages			24.8	10.7	56.5	51.6		15.1	52.4	55.7	74.8	76.3	12.7	15.9						
Muslin Curtain—Averages			30.6	24.7	60.2	52.9		27.4	54.8	58.7	75.4	75.6	18.5	14.7						

*One partially open.

†2½ open.

with the other systems. The individual readings for all factors observed, together with a description of the experiment in detail, can be found in the annual report of the C. A. C.

In summing up what can be gleaned from these averages and from the detailed readings from which the averages were computed, we cannot regard the muslin-curtain system as measuring up scientifically to the requirements of even a fairly effective system of ventilation. It is irregular and uncertain in action, and inferior to both against which it has been tested. The comparison is a fair one, for in each case the same stables were ventilated by the systems with which it is compared, all other conditions being equal. On the other hand, a comparison of the Massey and King systems from these data would not be fair, for they were tested in different stables, under different conditions of elevation, exposure and stable structure, with different amounts of stable room per head of stock, the one for a mixed herd of growing and fattening cattle, and the other for a herd of milch cows, for which a higher temperature is usually desired; and, lastly, under the control of and adjusted by different herdsmen.

In conclusion, I might say that several interesting questions, some of which have doubtless occurred to the reader, have been suggested by the work done, to answer which Messrs. Sirett and Duff hope to continue their work for a sufficient time during the present winter. WM. H. DAY.

Treatment for Worms in Sheep.

The danger of treating sheep with medicine was impressed by Dr. J. Hugo Reed, in discussing the cause, prevention and treatment of diseases in sheep, at the Provincial Winter Fair, at Guelph. This class of stock differed from others in their response to care and feeding, he said. Not more than half an ounce should be allowed to enter the throat until it was certain the sheep swallowed.

His experience was that sheep were bothered more by tapeworm than by other kinds of worm. Sheep pasturing on swampy or low ground, particularly on land on which hounds had been hunting the previous season, were frequently affected. This was due to the fact that segments of the same worm were dropped by the dogs, and remained over winter, and entered the sheep with grass in spring.

Administration of turpentine, gasoline or benzene were common doses. The animal should have nothing to eat for 12 to 18 hours previous to a 2 to 4 dram dose (depending on size of sheep) of turpentine in sweet milk, one of the former to seven or ten of the latter. Then keep food removed and the animals confined for a few hours. Another successful remedy was said to be pumpkin seed. Break the seed, boil in water, and allow to simmer for several hours. Each animal should get the product of from two to four ounces of pumpkin seed. It was wise always to repeat treatment after about 10 or 12 days.

Round worms or stomach worms could be treated much the same way. Symptoms were general unthriftiness. Treatment was the same as for tapeworms, excepting that pumpkin seed was not effective.

As to grub in the head, Dr. Reed thought a large percentage of loss was due to this ailment. It was caused by the gadfly depositing an egg in the nostril of the sheep. Respiration resulted in this being worked into sinuses in the mucous membrane of the head, and soon the larvæ developed into little grubs, and caused an irritation. Methods of treatment were not satisfactory. Some recommended fumigating by burning sulphur. The objection to this treatment was that all grubs, when dead, were not removed, and they continued to cause irritation. Dosing by syringe with 1 of turpentine to 15 or 16 of sweet milk, also was advocated. There was a danger of the mixture going to the lungs.

Prevention, by housing during heat of day in fly time, or by daubing the nostrils of the sheep and the salt boxes with tar, was, however, much better than cure.

As a cure for stomach worms, John Campbell, of Woodville, said he used to give seed of malefern, but now he made use of turpentine. Epsom salts was pronounced as the best sheep medicine he knew. Four ounces to a dose, with a little ginger, was an excellent medicine.

Professor Day said his experience showed little trouble with worms, if sheep were put on fresh grass every season.

In reply, Mr. Campbell said the old pasture along roadsides was the very best for sheep.

Professor Day cited an instance of where a flock had been troubled with tapeworms for years, and since the practice of keeping them on fresh seeding every season had been followed, there was absolutely no trouble.

Baby Beef Sells Well.

Editor "The Farmer's Advocate":

In reply to your inquiry concerning the 150 cattle which I shipped from Mitchell on the 8th of December, I may say they were bred and raised in the vicinity of Mitchell, in South Perth, Ont. The majority of them were Shorthorns and Shorthorn grades. I shipped quite a few yearlings weighing from 900 to 1,000 pounds each, which sold at good prices. That kind of cattle sells well, and is termed baby beef. The whole shipment averaged 1,150 pounds each. The cattle were all tied in stables, and fed with a ration of roots or silage, with cut feed (I prefer oat sheaves



Dunrobin Villager.

Pure-bred Shorthorn steer; born September 2nd, 1907. First in class under one year, and champion Shorthorn over all ages, at Ontario Provincial Winter Fair, Guelph, 1908. Bred and exhibited by Donald Gunn & Son, Beaverton, Ont.

to straw and hay), and from two to three gallons of meal daily, and a feed of hay, just what the animal may require. I may just mention here that farmers in this section are sowing mixed grain for feeding purposes—oats, barley, peas and goose wheat—and the results are very satisfactory, as the yield is about ten bushels to the acre more than from sowing each kind separate, and it is all ready mixed for grinding.

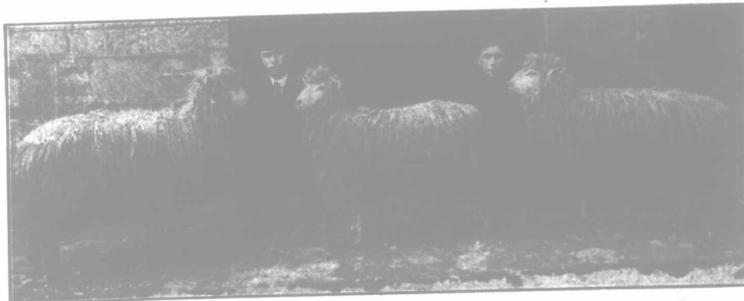
We shipped about the same number of cattle for the Christmas market as we did last year from Mitchell. And, as for number and price of cattle, for the coming year, I don't think there will be any material change from the present.

Perth Co., Ont. WM. PRIDHAM.

give you the results of my investigation for what it may be worth. I did not have an available source of water sufficient for an hydraulic ram. The pros and cons of the windmill were carefully considered. I decided a large tank would be necessary to insure a supply of water during a long calm, or some means would need to be devised of raising the wind when the supply ran low. I have not yet learned that scientists have been able to cope with the wind, or the contract would have been let at once for the wind to do the work.

The gasoline engine we find very useful on a farm for sawing wood, cutting fodder, running a spray pump, etc.

When it comes to pumping water, the hot-air engine seems to be just the right thing in the right place. It is simply constructed, perfectly safe—no explosion; always ready on short notice; can be started and operated by a child; not expensive to run, as it takes very little fuel. There are places where it could not be installed satisfactorily. It will, however, force or shove water up any reasonable height. Conditions vary. What is adapted for one place may not prove satisfactory at another. It is entirely satisfactory, and it is a source of pleasure to have a good supply of running water always on hand through the house to supply the kitchen, baths and toilets, as well as the barn.



Pure-bred Cotswold Ewe Lambs.

Winners of first prize, single, and for pen of three, at Ontario Provincial Winter Fair, Guelph, 1908. Exhibited by E. Brien & Sons, Ridgeway, Ont.

A Book for One New Name.

For one new name, accompanied by \$1.50, any present subscriber to "The Farmer's Advocate" may obtain a copy of Prof. F. H. King's most excellent new book on ventilation. The retail price of this work is 75 cents, and it is rare value at the price, but a specially favorable discount rate from the publisher enables us to offer it as a premium for one new name.

Unique Journalism.

I have received the Christmas number of "The Farmer's Advocate and Home Magazine." It is unique in the field of agricultural journalism. Wisconsin, U. S. A. F. A. STROSCHER.

THE FARM.

Water System for Farmers.

Not many years ago, the only way of getting a supply of water for stock, and use in the house, was by hand pumping. Modern progress along all lines demands that the old way has served its day and generation; hence, many farmers have been installing the various systems in use, and others have the matter under consideration. There is no reason why farmers cannot have a good supply of water always available, just as well as city people. The great advantage and convenience of having running water in the house and barn, permitting the installation of modern conveniences can hardly be over-estimated. We will consider just a few of the many devices that can be used for pumping water.

The hydraulic ram has been and is being used to good advantage, and is a cheap means of securing a supply of water at any desired place, where an ample source of running water is always assured, and favorably situated.

The windmill, too, has its host of admirers, as is evinced by the many to be seen all over the country.

The gasoline engine has its advantages and objections.

A year ago, when we wished to install a water system, I gave the matter careful consideration, and will

give you the results of my investigation for what it may be worth. I did not have an available source of water sufficient for an hydraulic ram. The pros and cons of the windmill were carefully considered. I decided a large tank would be necessary to insure a supply of water during a long calm, or some means would need to be devised of raising the wind when the supply ran low. I have not yet learned that scientists have been able to cope with the wind, or the contract would have been let at once for the wind to do the work.

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When it comes to pumping water, the hot-air engine seems to be just the right thing in the right place. It is simply constructed, perfectly safe—no explosion; always ready on short notice; can be started and operated by a child; not expensive to run, as it takes very little fuel. There are places where it could not be installed satisfactorily. It will, however, force or shove water up any reasonable height. Conditions vary. What is adapted for one place may not prove satisfactory at another. It is entirely satisfactory, and it is a source of pleasure to have a good supply of running water always on hand through the house to supply the kitchen, baths and toilets, as well as the barn.

We have the engine in the basement of the house adjoining the furnace, so that when the furnace is in use, it makes it convenient to fire up in the engine. The engine pumps the water from a well fifty feet away into a pneumatic, steel, air-tight tank, located, also, in the basement near the engine. This circular tank is three feet in diameter, ten feet long, and is placed horizontally, and holds five hundred gallons. The water enters the tank at the bottom, and, as the tank is being filled, the air having no means of escape, is being compressed, so that when it is half full of water the gauge on the tank would show a pressure of 15 pounds, or a pressure probably

equivalent to that from a tank elevated about thirty feet. The engine will pump it up to about sixty pounds pressure, when it will stop, which would be equivalent to the pressure exerted from a tank nearly one hundred and twenty feet high.

With an elevated tank, either outside or in the attic, there is always danger of freezing, as well as leakage, if in the attic—a matter worthy of serious consideration; if outside, you have the elements of the weather to contend with, frost in winter, and heat in summer. In the winter you have ice-cold water, when you prefer it warmer, especially for your stock; and in the summer the water is too warm. The tank in the basement gives tempered water in the winter, and cool water in the summer. The weight, also, at a height to make it serviceable for fire-protection, is no small matter to take into account. In case of fire, with the tank in the attic, you are soon cut off from the water supply.

From a sanitary point of view, the pneumatic, air-tight tank is to be preferred, as no impurities can possibly enter. In case the tank becomes water-logged, from the loss of air passing out through the water, by opening a small valve at the pump you can pump in air to replace any loss.

I think there is not a question of doubt that the basement tank is the one to be preferred, and the windmill or any other power can be used to do the pumping, with the tank or tanks sufficiently large to tide one over a calm. The tank can also be located anywhere outside under the ground, below the frost point, if there is no room in the basement, but I would prefer it inside, where one can conveniently get at it at any time. These pneumatic tanks must be well made, especially for the work intended. The least leakage of air will soon destroy the power-giving force, hence the necessity of having nothing but a No. 1 tank specially made for the purpose. I do not think that these tanks will cost any more than a sheet-lead-lined tank (which are really the only ones that could be relied upon) of equal capacity, while the steel tanks would outlast the others, with far less probability of giving any trouble.

Having now a source of water supply at your command, it can readily be piped to all desired points. See that you have it convenient in kitchen, baths, the toilets, etc. I have frequently heard country people say that if they had sewerage connection they would instal modern conveniences, as they do not care to venture using the cesspool system. With the introduction of the septic-tank system for disposing of the sewage, farmers have equally as good a means of disposing the sewage as the best that any city can boast of. It is scientific, simple, and inexpensive, and can be constructed by any farmer of ordinary mechanical ingenuity. Space would hardly permit me here to give detailed instructions of how to build such a tank. Any plumber can give one all the information required. Suffice it to say that the principle upon which it is based is, briefly, as follows: The sewage passes into a water-tight receptacle—can be made of brick or concrete, and plastered well with cement inside. It is placed adjoining the house, provision being made for circulation of air through the upper portion of the tank, utilizing the soil pipes and stack, while the other vent pipe also finds an outlet above the roof. This circulation of air is necessary in order to propagate the millions of bacteria or microbes which thrive therein and reduce all the solids. The liquid sewage finds an outlet through tile which can be carried away or connected to the system of field tiling. The cover of the tank is made tight, so that no gas or odor escapes. Ground can be used and sodded over so that it is unnoticed.

I have tried to briefly outline the system we have in operation; others may have something better. I trust many readers of "The Farmer's Advocate" who have not yet installed any system will investigate and devise some means, thus adding much to the comforts of home. Cheap plumbing devices are often dear in the end. Aim to get the best, which is none too good for the farmer, his wife and family.

Lincoln Co., Ont. W. B. RITTENHOUSE.

Manure Spreader—Split-log Drag.

Editor "The Farmer's Advocate":

I am strongly in favor of the manure spreader, which I believe saves both time and hard work, and makes better use of the manure. I spread my manure on root and corn land at the rate of about 15 loads or tons to the acre, and on wheat land about 9 tons, and we get good catches of clover where the manure goes beside the best wheat. I don't think there are many farms where 9 or 10 tons of manure to the acre will spoil the grain by lodging it, as one gentleman wrote of a few weeks ago.

Keep drumming up the split-log drag. It is the greatest road machine we have for its size, cost and simplicity, and every two miles of road could have one at the cost of only one day's work, and it will last for five or six years where there are not too many stones. Eight times over the road in a season will keep it in fine condition.

That with three horses, at 40c. an hour, doing a mile an hour, is only \$3.20 a season for each mile. Brant Co., Ont. F. L.

Wheel for Dog Power.

A subscriber from Bruce Co., Ont., wishes directions for building a dog-power wheel for pumping water from a shallow well. For his benefit, as well as for the benefit of others who may wish to use dog-power, we reproduce from our issue of May 23rd, 1907, the ideas of S. J. Pym, of Huron County, with illustrations that will be found helpful.

Mr. Pym outlines the construction and the attachment to the pump as follows:

The wheel consists of, first, the hub (a), which is of hard wood, oak preferred, twelve inches in diameter, two inches thick. To this hub is fastened the spokes (d); the first pair cross at right angles, thus making four spokes; the others are fitted into the angles; fasten securely with screw nails to the hub. The spokes are 1 x 4-

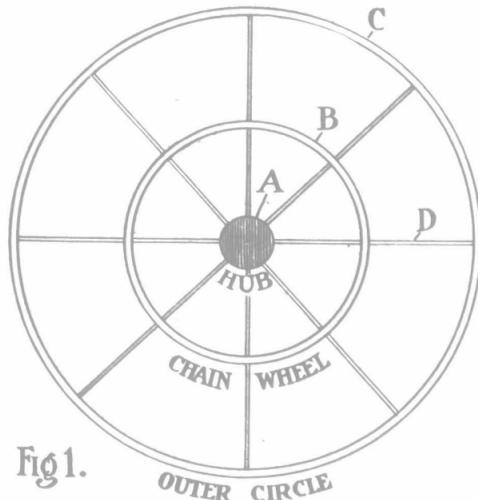


Fig 1.

inch pine or basswood. The outer circle (c), also 1 x 4 inch, is fastened to the spokes. Having done this, you have one of the two wheels required. Bore the holes in the hub of each wheel and put a shaft through them, and set up in the position you wish to have it run. Place those wheels 20 inches apart on the shaft. Now, with narrow boards 20 inches long, cover them all the way around. The boards on this sheeting and between the spokes on either side, working in the wheel now complete. The wheel can be made 8, 9 or 10 feet high, according to the height of the ceiling where it is set up.

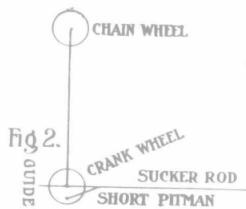


Fig 2.

The chain wheel (b) consists of two circles, 1 x 3 inches, nailed together, with a groove in the center for the chain. This circle is four or five feet in diameter, and is bolted to the spokes. The wheel is supported by an upright on either side, 2 x 8 or 3 x 8, through which the shaft runs. Some have the shaft tight in the uprights, and the wheel turning on the shaft. I have the shaft tight in the wheel, and slip box-bearings in the uprights to run on, which makes it run easier. One advantage of having the shaft stationary is that a stick can be fastened to it to tie the dog to while learning.

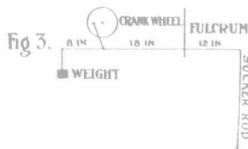


Fig 3.

The material for these wheels can be bought for \$5.00 at the planing mill, all ready to put together, so you see the cost is very small.

Having completed the wheel, a line shaft, long or short, is required, according to the distance to the pump. On one end of the shaft is a pulley, 12 inches in diameter, to connect with the wheel by a chain; at the other end is a crank to connect with the sucker rod in the pump. This connection is made by having a short pitman, say 12 inches long, one end fastened to the crank, the other to the sucker rod. This takes the swing, and allows the sucker rod to move straight up

and down. The rod should extend above the crank, if possible, and a guide placed on it to steady it. A six-inch stroke is quite sufficient.

If the pump is not too hard, this will generally work satisfactorily. I had to resort to another plan on account of having too large a bucket in the pump and the water low in the well. For an ordinary wood pump, a 3 1/2 or 4 inch bore is large enough. I have the line shaft fastened to the joist overhead. Instead of connecting the crank immediately to the sucker rod, I have what we call a jig-stick, as shown in Fig. 3. This stick is fastened to the crank wheel by means of a short pitman, 12 inches long. The other end is fastened to the sucker rod. A fulcrum is fastened to the joist overhead; to this is attached the jig-stick, not in the center, but 12 inches from the sucker rod and 18 inches from the crank wheel, thus giving more power to lift the water. The stick extends past the crank-wheel connection about 8 inches, and to this end is a weight, to steady the jerk of the sucker, and it also helps to lift the water.

This plan works quite satisfactorily with me. The power is inexpensive, compared with a windmill or gasoline engine, for doing 1-1/2 work. I have an extra chain wheel on mine, also two chains. The pulper is run from one side, and the pump the other, and in all (the shafts, pulleys, etc., included), the cost was less than \$10.

To Catch Sparrows with Net.

Editor "The Farmer's Advocate":

I am an old Englishman, and if I live till April shall be 80 years old. Have one son and two daughters living on Manitoulin Island. I read "The Farmer's Advocate," and was quite interested in the piece about the English sparrow, in the November 19th issue. Now, although I am a real Englishman, born in London (Eng.), I do really think there are too many sparrows in many places on this Island; and, when I was at my daughter's, in Barrie, a year ago last summer, I was amused to see the little fellows fight on the streets, and so persistent were they that horses would nearly step on them. You say they drive bluebirds and others birds from the garden and orchard; I have seen the like done at our place, and have no doubt but that it is done at many others. I do believe that a pair of sparrows would drive a pair of robins from a chosen tree in the orchard, near the house, if the sparrows wanted the place the robins had chosen. And, although the sparrow does eat many worms and grubs, I think he likes nice clean grain in the barn quite as well, and it is easier to get. So, I think the natural birds are the best to have around our homes.

It is suggested that the school children be encouraged to collect all the sparrows' eggs and nests possible to keep them in check. Now, I think I know a much safer and quicker way. When I was a boy, and wild pigeons were plentiful, my brother used to catch them with a net. I do not remember how many he could catch at a haul. I think we could catch sparrows the same way in winter on the barn floor, and the children would not need to climb to the danger of breaking their limbs or necks.

It would require a net of smaller mesh than one uses to catch herring. If I can get a suitable net, I should like to try to catch the sparrows in the barn, and if I get along well, I might have many of them before the snow is gone.

Manitoulin Island, Ont. EBENEZER TRACY.

A Sparrow Trap.

Editor "The Farmer's Advocate":

I fully approve of "The Farmer's Advocate's" position re the sparrow nuisance. When a farmer sees from one-half to a full acre of wheat destroyed every year by this feathered nuisance, he is very apt to disregard foolish appeals to sentiment. Even from a sentimental standpoint, the sparrow is an outlaw. Many a time I have watched them trying to dispossess the barn-swallow of her mud-built walls. At times I have found the barn-swallow's eggs cold and rotting beneath the super-imposed floor built by the sparrow. The wren is another sufferer in the same way; in fact, wrens have become very scarce in this district, almost disappearing as the sparrow has become more numerous.

As to ways and means of doing away with the sparrow: Destroying nests and eggs is very good, but the birds will seek another place, build another nest, and lay another clutch of eggs. Destroying the birds themselves is the most effective means. Winter time is the best time for the job. Catching with a lantern at night in the straw-stack and barn is very effective. Throwing grain on the ground, so as to gather the birds in a bunch, and then shooting into the flock, often wipes out a handful of the robbers. In fact, never lose a chance to kill a sparrow, and you will do your share to keep them in check. Organized sportsmen, by the losing side to pay for the sports, is a new method, and a good plan, as it

enlists the aid of people who otherwise would not hunt the birds. A friend of mine has a very effective sparrow-trap that I will try to explain. A square tube, like an elevator leg, about 10 inches square, and 15 inches or more in length, is built of cull lumber. It is nailed to the end of the barn, the upper end being against a swallow hole, which is cut about 8 inches square. A hole in the tube is cut opposite the swallow hole, and a pane of glass inserted. The sparrows fly through the swallow hole and strike the pane of glass, falling down to bottom of tube, where they may be taken out through a door. A piece of tin nailed to one side of tube, and slanting down to within two inches of opposite side, helps to keep sparrows from fluttering up. When one enters the barn the sparrows all rush for the swallow hole, and, passing through, strike the pane of glass in the tube, and fall to the bottom partially stunned. As many as forty have been taken from this trap at once.

Grain soaked in a strychnine solution is effective, but great care must be exercised to keep it away from poultry and animals.

Middlesex Co., Ont. W. E. WILLIAMS.

Plea for Better Plowing.

The principle upon which the modern plow is made is not different from that of the plow of fifty or one hundred years ago. There have been improvements, no doubt, all tending to make the plow a more efficient implement. It has been modified to meet modern ideas, as regards soil cultivation, but, generally speaking, the change has been more towards speed in turning over the soil than in a better method of doing this. As people's ideas as to how the soil should be turned over have varied, so the plow has varied in construction to meet these ideas, though the essential points remain unchanged. The important question, then, is whether or not modern methods of plowing are an improvement over those in vogue twenty or twenty-five years ago. May it not be that speed in plowing has been gained at the expense of efficiency in work done?

Whether the modern plow is a better implement than its predecessor for the work it is intended to do, or not, good plowing depends more upon the skill of the man handling the plow than any other part of soil cultivation. Good harrowing depends more upon the harrow than upon the person in charge of it. Not so with good plowing. A plow may be ever so well suited for the soil in which it is to be used, but the work it will do may be poorly done through the plowman not being competent. Good plowing, therefore, is not so much a question of good plows as of good plowmen. Are there as good plowmen in the country to-day as there were twenty or twenty-five years ago? The writer is inclined to answer this question in the negative. Has there not been of late years too much dependence put upon the plow itself to do effective work, rather than upon the man between the handles?

The question is, how can improvement in plowing be brought about? If, as has been shown, the principle of the plow is the same as it was a hundred years ago, and the improvements in recent years have not tended to relieve the plowmen of any responsibility, then, improvement can only come by training the plowman to do better work. Is this training needed? If all plowing is as well done as it should be, then the answer is negative. But no one who knows what good soil cultivation is, and what it means in improved crops and in clean fields, will venture to say that the plowing of to-day is as well done as it should be. There are many good plowmen in the country, but we are well within the mark in saying that the percentage of good plowmen is no larger than it was a generation ago. Judging by the number of dirty farms, the modern Canadian farmer is not making much progress in plowing and in soil cultivation generally. Good plowing is at the basis of all soil cultivation. If it is not well done, and not suited to the needs of the soil, no after-working will make the cultivation of that soil and its preparation for the seed perfect.

Education of the individual is the best force in improving soil cultivation. But how best educate him? There was a time, in Ontario, when the annual plowing-match was an event of importance in many localities. Interest in these competitions seems to have died out. While they may not have been all that one could wish from an educational standpoint, they were an incentive to good plowing, with proper management, and prizes awarded by men who know what good plowing means, and the kinds of plowing suited to different soils, the plowing-match should be a valuable agency in training plowmen. There are plowing-matches held to-day in some parts of this country that are doing very effective work in this direction. Their number could be increased with advantage.

A plowing-match need not necessarily be confined to contest in plowing alone. Its scope could be widened to include other contests in soil cultivation. It might be made the occasion for testing the value of different implements for culti-

vating the soil. Where soil conditions permit, prizes might be given for the best-prepared seed-bed. In many ways, the annual plowing-match could be made an important factor in bringing about better methods in soil cultivation. They could be made the occasion for an address or two on soils and soil cultivation by competent persons. In short, they could be made a field for demonstration work in plowing and soil cultivation generally.

To get the best return from the plowing-match, it should be placed under an organization that would make it effective. Why could it not be taken up by Farmers' Institutes? The superintendent is ever on the alert for some new features. Properly regulated, the plowing-match, widened in scope, as has been suggested, affords an opportunity for increasing the interest of the farmer in his local Institute. Many Institutes have a surplus in the treasury, some of which might be utilized in instituting a series of plowing-matches and demonstration work in soil cultivation at central points in the Institute district. Live stock judging schools are valuable, and we are pleased to know that these will be taken up more in future by Institutes. The plowing-match furnishes an opportunity for doing effective work in another line.

The effective organization now controlling agricultural societies might also be utilized towards resurrecting the plowing-match and making it a potential force in securing better farm crops. The successful field-crop competitions conducted by the superintendent of agricultural societies the past couple of years, could well be backed up by competition in plowing and in preparing the soil for crop production. The two might be handled by the Fairs Department. It is to be hoped that in the near future some branch of the public service interested in better agriculture will take over the plowing-match and see what can be done with it.

"CHRONICLE."

Fertilizers on Muck Soils.

Increased yields from the use of muriate of potash, Thomas' phosphate and lime on muck soils were the results of tests made by F. H. Reed, B.S.A., Agricultural Teacher in the Collegiate Institute, Lindsay, Ont., last summer. The experiments were conducted on the farm of Walter Arksey, Victoria County, on small plots comprising two square rods. Coboconk lime was used. This grade of lime is practically pure calcium oxide, and the freedom from magnesia makes it more desirable as a fertilizer than that from limestone of many sections, because of greater power to neutralize acidity in the muck, and because there is not the tendency to produce wet and sticky soil. It cost 22c. per bushel of 70 lbs. The fertilizers were received from the Ontario Agricultural College. Four plots were treated as follows:

Plot No. 1—No fertilizer. No. 2—Lime, 30 lbs. No. 3—Lime, 30 lbs.; muriate of potash, 2½ lbs. No. 4—Lime, 30 lbs.; muriate of potash, 2½ lbs.; Thomas' phosphate, 5 lbs.

The cost of each fertilizer per acre was: Lime, 2,400 lbs. per acre, at 31.5c. per cwt., \$7.56; muriate of potash, 200 lbs. per acre, at \$2.50 per cwt., \$5.00; Thomas' phosphate, 400 lbs. per acre, at \$1.00 per cwt., \$4.00; total cost per acre where all were applied, \$16.56.

Following are the yields of straw and oats: Plot No. 1—No fertilizer; total yield, 13 lbs. per 1/80 of an acre, or .52 ton per acre. Grain yield, 4.5 bushels per acre.

Plot No. 2—Lime; straw, 4 ft. long, slightly rusted. Total yield, 34 pounds per 1/80 of an acre, or 1.36 tons per acre. Grain yield, 23.5 bushels per acre.

Plot No. 3—Lime and muriate of potash. Straw, 4 ft. 3 in., and very little rust. Total yield, 36 pounds per 1/80 acre, or 1.44 tons per acre. Grain yield, 27 bushels per acre.

Plot No. 4—Potash and phosphate; brightest straw. Total yield, 38 pounds per 1/80 acre, or 1.52 tons per acre. Grain yield, 29.4 bushels per acre.

On the fertilized plots the heads were very much longer and the grain of much better sample than on the unfertilized plots.

Similar experiments were conducted on Mr. Arksey's farm with fertilizer received from the Potash Syndicate. In these experiments the plots were ¼ of an acre in size.

Fertilizers used and yields were: Plot No. 1—Unfertilized; total yield, .52 tons per acre; grain yield, 4.5 bushels per acre; straw short; heads very short; crop badly rusted; average length, 15 inches.

Plot No. 2—Muriate of Potash, 200 lbs., costing \$5.00 per acre; total yield, 1.44 tons per acre; grain yield, 30.5 bushels per acre; straw well matured, fairly strong, but before ripening the whole crop was badly lodged by heavy rains; heads long and well filled; average length, 4 ft. 3 in.

Plot No. 3—Thomas' phosphate, 400 lbs., costing \$4.00 per acre; total yield, .6 tons per acre; grain yield, 7.06 bushels per acre; straw short,

weak and rusted; lodged early and did not fill well; average length, 4 ft. 5 in.

Plot No. 4—Muriate of potash, 200 lbs., and Thomas' phosphate, 400 lbs., costing \$9.00 per acre; total yield, 1.92 tons per acre; grain yield, 40 bushels per acre; straw bright and strong; grain well matured; crop stood up fairly well; heads long and well filled; average length, 4 ft. 5 in.

Comparative cost of fertilizers and value of increased yield of grain follows, with the increased yield of straw neglected:

Fertilizers from O. A. C.—

Plot.	Fertilizer.	Value of Crop. Oats 35c.	Cost of Fertilizer.	Value Increased.
1.	No Fertilizer	\$ 1.57½		
2.	Lime	8.22½	\$ 7.56	\$ 6.65
3.	Lime and Potash	9.45	12.53	7.87½
4.	Lime, Potash and Phosphate	10.29	16.56	8.71½

Fertilizers from Potash Syndicate—

1.	No Fertilizer	\$ 1.57½		
2.	Potash	10.67½	\$ 5.00	\$ 9.10
3.	Phosphate	2.47	4.00	.89½
4.	Potash and Phosphate	14.00	9.00	12.42½

While the profits from the use of the various fertilizers is not large, and in some cases a minus quantity, some allowance should be made for the residual effect, which may reasonably be expected to benefit subsequent crops. Finally, readers are cautioned not to place undue reliance on the above results, which are from a single year's experience on one farm. Other seasons and other soils would doubtless give wide diversity of returns. It would have been satisfactory, also, had one plot been treated with ordinary barnyard manure, as the bacteria thus introduced seem to have a very beneficial effect in the liberation of inert fertility in many of these muck soils. Nevertheless, the above figures are interesting, and in a degree instructive as far as they go.

THE DAIRY.

Problems of the Dairy.

By Laura Rose.

CONDITIONS THAT REGULATE THE CHURNING TEMPERATURE.

The percentage of butter made on the farm is constantly diminishing, and that is as it should be.

There are exceptional cases, but usually it is much better to patronize the creamery or cheese factory, if one is available, than to handle the milk on the farm. Many from choice or local conditions are yet making butter, and making it more especially in the winter, when it is harder to produce a first-class product.

Very often a serious trouble is to get the butter to come in a reasonable time. The different seasons of the year bring about changes which have to be studied and considered. To churn an hour or longer one time is excusable, but to keep on doing so churning after churning is wasting both time and patience. Search for the cause, then apply the remedy.

In preparing the cream for the churn, stir it well, and by the use of a thermometer take the temperature. It is likely to be too cold. Many people bring the cream to the heat the night before, so it will be warm by morning; or they set the crock by the stove. These are not good methods. The best way to heat the cream is to stand the can in a vessel of warm water. Stir constantly, and watch the thermometer. When it shows two or three degrees below what is required, lift out the can, and usually the heat in it will bring up the cream to the desired temperature.

The question so often asked is: "At what temperature should you churn?" No wise person states a definite temperature. Conditions have much to do with it.

1st.—The quality of the cream. The poorer the cream in butter-fat the higher the temperature; the richer the cream, the lower the temperature. Cream containing from twenty-three to twenty-six per cent. butter-fat is the most satisfactory for farm churning. This is equal to about three pounds of butter to the gallon.

2nd.—The amount in the churn. The more cream, the higher the temperature; the less cream the lower the temperature. A churn is best to be only one-third full, and never over a half full. Room must be left for the cream to swell and have a good drop.

3rd.—The length of time the cows are milking. The longer in milk, the higher the temperature; the fresher in milk the lower the temperature. The composition and size of the fat globules change as the cow advances in the period of lactation, making it necessary to have the cream warmer. It is a good plan to have a fresh milk cow introduced into the herd occasionally. She not only helps the churnability of the cream, but improves the quality of the butter.

4th.—The feed of the cow. The drier the feed the higher the temperature; the more succulent the feed the lower the temperature. Feed changes the composition of the butter-fat. When no roots or corn silage is fed the butter-fat becomes harder and requires more heat to bring it into churning condition. It is wisdom, not only from the point of having easier churning cream and nicer butter, but from the increased flow of milk, to provide some kind of succulent food for the cows in winter.

5th.—The temperature of the room, the individuality of the cows, etc., are factors that must be considered in regulating the churning temperature.

Get conditions as nearly right as possible, then by taking careful note of the temperature and time watch the churning.

If the butter comes in ten minutes or sooner it

shows that the temperature has been too high. This invariably means soft butter—milky butter, and an excessive loss of butter in the buttermilk.

If the cream takes forty minutes or longer the temperature has been too low. If in the first case you had the cream at 64°, reduce it to 59° or 60° the next time you churn. If in the second case it was 56° or 58°, increase the temperature three or four degrees. This implies, of course, that the amount and kind of cream, etc., is the same from churning to churning.

By watching the time, find out that temperature which brings butter in from twenty to thirty minutes.

Endeavor to make conditions such as will enable you to churn at a reasonably low temperature—54° to 58° in summer, 56° to 62° in winter—and yet get butter within the half hour. You get more and better butter by having things under proper control.

The two chief conditions which cause long churning are: 1st, too poor cream; 2nd, too much in the churn; and these are conditions under our own control. Turn in the screw of your separator; don't let so much skim milk get in with the cream, and then you have less bulk of cream, but of richer quality.

If the cream is persistently hard to churn, pasteurize it while sweet. I know of nothing which helps so much in stubborn cases. To pasteurize, set the can in a vessel of hot water; stir the cream frequently until the cream is 160° or 170°; then set the can in cold water and reduce the temperature to 60°. If you wish to ripen the cream, add about ten per cent. of good flavored sour cream or milk. If kept at between 55° and 60° the cream should be in condition for churning the next day.

Winter Fair Discussion on Pasteurized Whey.

No feature of the meetings held at the recent Winter Fair, at Guelph, was followed with greater interest than the question of pasteurizing whey. The work done in that connection, and methods adopted, were outlined by Frank Hens, Chief Dairy Instructor for Western Ontario, and the discussion, which dealt largely with the economic side from the farmer's standpoint, was led by W. C. Shearer, of Bright.

The address given by Mr. Hens was, in part, as follows:

"The question of heating or pasteurizing whey returned from cheese factories has been given some attention in an irregular way for many years. It was tried, more or less successfully, by factory managers at different times. There is no claim made by those who have lately taken up the matter that the idea is new, or that they have made any discovery. Bacteriologists advised this system of dealing with whey long ago, particularly where bitter flavors developed in the curds. What is claimed, however, is that two years' close attention and experiment with fifty-eight cheese factories has warranted the assertion, and goes far to prove that proper and systematic pasteurization of whey before it is returned to the patron is a step towards securing a better milk supply at cheese factories, and a means, when properly done, of increasing the feeding value of the whey, and doing away, to some extent, at least, with the evils of unclean, ill-smelling whey tanks, and bitter and yeasty flavors. It is no doubt true that it would be much better for the cheese industry if no whey were returned in the cans, and this system has been repeatedly advocated by dairy authorities and others who know the evils of returning whey in cans, but, unfortunately, patrons do not always follow good advice. We find, therefore, that conditions bring us face to face with the fact that in Western Ontario at least the majority of factories return the whey, and so far there has not been offered any more practical method of returning this whey than in the cans in which the milk is delivered.

"For many years, the whey and whey-tank questions have been problems difficult to deal with. Admitted by nearly every one in the trade that returning whey in cans from the ordinary whey tanks, and under conditions that have prevailed for twenty years or longer, was a distinct means of injuring the flavor and quality of the cheese, yet no real practical solution of the difficulty has been offered, other than appeals to the maker and patrons for more sanitary conditions, which have had a marked effect. During the past four or five years, a great improvement has been brought about through dairy instruction and public opinion in the condition of whey tanks, yet we are still a long way from perfection, and many tanks are still sadly neglected and kept in bad condition. In fact, there are still a few tanks that are not cleaned during the season, in defence of which neglect the very doubtful argument is put forth that the more filthy the whey tanks become, the more likely are the patrons to pay particular attention to cleaning the cans. I think factory managers sometimes underestimate the influence of clean whey tanks in the attitude patrons take in caring for milk.

"We have been looking forward to the time, and I hope and trust it will come, when human nature will be changed to such an extent that up-to-date methods will be followed, and no careless cheesemaker or patron will be known. Then will the evils of bacteria-laden whey, unclean whey tanks and improperly-cared-for milk disappear; then, no doubt, pasteurization of factory by-products will be unnecessary. But in the meantime, what? Depend on the slow process of education and perhaps compulsion to remedy the evil of unclean whey tanks, when, for a small cost to each patron, a partial remedy, at least, may be provided, and conditions improved, so far as the whey is concerned, right now, not ten years from now? In dealing with this matter, present straight to the men who produce the milk,

the women on the farm who usually have to wash the cans, who, to my mind, are in the best position to know the exact condition in which the whey has been coming home from the factories for many years past. I sent out 1,500 letters to patrons of 23 factories where the whey was being pasteurized for the first time, dealing with the claimed improvements of the whey, asking some twenty questions relative to these improvements; and out of the several hundred answers received, the opinion was almost unanimous that pasteurization of the whey was a distinct improvement, and expressing their willingness to pay their share of the cost to continue this system at their respective factories. I do not think the opinion of these patrons should be ignored, and I believe they know what they are talking about. The makers say the milk comes in better condition, and some of the cheese-buyers claim the quality of the cheese is improved, particularly as to flavor.

REASONS FOR PASTEURIZING.

"Let us look at a few reasons for continuing and extending this system. The fact is well known that the germ-life which produce certain putrefactive flavors develops very readily in ordinary sour whey, and that these germs are readily conveyed through the medium of the whey in the patrons' cans. This germ-life finds a breeding-ground in the crevices of the can, and are very difficult to dislodge. They rapidly develop in the milk when brought in contact, and produce yeasty, bitter, and other putrefactive flavors. It is not practical to pasteurize the milk for cheesemaking; consequently, to prevent as much as possible the contamination of the cans, we resort to pasteurization of the whey. A whey tank may be cleaned every day, but unless the tank is sterilized with live steam, it is not clean from a bacteriological standpoint. The wood being porous, allows the sour whey to penetrate, and, no doubt, many injurious bacteria. Steel whey tanks are very much to be preferred on this account. Whey, unpasteurized, from ordinary whey tanks goes into the cans with an acidity of from 1 to 1.7 per cent., depending on the cleanliness of the tank, or an average acidity of about 1.15 per cent. This means very sour whey, the sugar of which is nearly all changed to lactic acid, which readily affects the tin of the can. I have failed to meet the patron who would rather feed or have in his can old, sour, ill-smelling whey in preference to sweet whey. The average acidity of the whey going into the patron's can, where properly pasteurized, was .4 per cent., about three times as sweet as when not pasteurized. Some factories were able to return the whey with an acidity not greater than .25 per cent.

"There is a small mechanical loss of fat in the whey in the process of cheesemaking, even under the best conditions—less when the milk is in good condition, more when not. By all means, let us endeavor to have the milk sent in such condition that this loss will be the least possible. The average loss in the whey for the factories of Western Ontario this year was .23 per cent. I am not prepared to say what this fat is worth for feeding purposes, but if it is worth anything, let us see how much of this fat the patron really gets under ordinary conditions. The average per cent. of fat in the whey going into the patrons' cans where not pasteurized, this year was .09 per cent., less than one-tenth per cent.; as low in some cases as .03 per cent. Where does the remainder of it go? It floats on the top of the whey in the tank, and when the tanks are not cleaned regularly becomes a mass of decomposing floating material which is a nuisance to the cheesemaker; in fact, is given as an excuse by him, after it has accumulated, for not cleaning the tank. He says he doesn't know what to do with it, and it is certainly almost a total loss to the patron, except when the whey gets short some morning and his can gets a deluge of this stuff, which I defy anyone to cleanse out of the can properly with the ordinary facilities at hand at

the average farmhouse. It seems somewhat inconsistent to ask patrons to improve the methods of caring for milk, and then persist in putting into their cans this old, sour, foul-smelling, gravity-skimmed whey, and leave them to believe that this system of handling whey is the best that can be devised until more up-to-date methods are adopted by them in the care of the milk. On the other hand, we find that where a proper system of pasteurization has been introduced, the average per cent. of fat in the whey as it is returned is .22 per cent., or practically the same as when it came off the curd. This fat is evenly distributed through the whey, is liquid, is easily passed from the can with the whey, and does not interfere with easy and proper washing. If this fat is worth anything for feeding, you will notice there is two and one-half times as much fat returned in pasteurized whey as in unpasteurized; in the latter the fat is left in the whey tanks in most cases. When flavors develop in cheese, does it not look reasonable to suppose that such flavor may be induced by returning unclean whey in the cans. In fact, this is one of the strong arguments put forth for many years by those who are opposed to returning whey, that such a system gave the cheese a whey flavor. We may rest assured that human nature will always creep in, and some patrons will fail occasionally to get rid of the injurious bacteria from the cans. It is, therefore, reasonable to suggest that all patrons be put on the same footing, so far as the whey question is concerned, and send them home sweet, germ-free whey, and then look after the careless ones and see that they take proper care of the milk and cans.

"The question of tuberculosis might also be mentioned in this connection, since it is claimed that it is quite possible for bovine tuberculosis to be carried through the medium of the whey, and infection of the hogs or other animals to which it may be fed, take place. If this is true, then it becomes another strong reason for proper pasteurization of all by-products from the cheese factory and creamery.

PREVENTS SPREAD OF GERMS.

"Yeasty or bitter flavor may be developed in the milk of one or more patrons from unsanitary conditions at the farm, but heating the whey will prevent the infection of other patrons' cans, and the bacteria from being seeded at each farm. Consequently, the patron who is guilty of sending yeast-infected milk may easily be detected by the curd test, and dealt with accordingly. The cans are very much easier to wash where the whey is pasteurized. It is absolutely necessary that the cans be sterilized or scalded with boiling water, whether the whey is pasteurized or not. This should leave the cans sweet and clean, without that disagreeable old sour whey flavor so hard to remove from cans which contain whey from tanks where it is not heated or kept clean. The saving in cans alone should be considerable, since less tin is removed, because of less acidity. The chances of overripe milk during hot weather are lessened.

TIME TO PASTEURIZE.

"Pasteurization should begin as soon as possible after the whey reaches the tank, to prevent the development of acid, and to take advantage of the temperature of 98 degrees before it begins to cool. Care must be taken that the temperature does not rise above 160 degrees. A higher temperature will precipitate the albumen and cause the whey to be flocculent and slimy. A temperature less than 150 degrees is too low, as the growth of bacteria is not inhibited to a sufficient extent.

"Small or large quantities of whey should not be left in the tank from day to day, as this whey eventually becomes sour and acts as a culture in the new whey, rapidly raising the acidity, and nullifying to a great extent the work of pasteurization. The boiler must be large enough to furnish economically the steam required. Economical results cannot be obtained otherwise. The

tanks should be as close to the boiler as possible, and the pipes insulated, to prevent condensation and waste of steam before it reaches the whey. If live steam is used, pressure as high as practical should be carried, and the steam not given too much vent into the tanks, or the boiler will be rapidly emptied of water. Heat under steam pressure by keeping the live steam going gradually into the whey as fast as it is generated by the fuel. Beginning with good steam pressure, less water will pass over into the whey. It is not wise to attempt to pasteurize unless it can be done properly. It will be a waste of steam, with the results disappointing. Pasteurization of whey is for the purpose of getting rid of the evils of unclean, sour whey, and not a panacea for the evils of improperly-cared-for milk.

COST OF PASTEURIZING.

"The cost will be according to the condition under which the work has to be done, such as size of boiler, location of tanks, whether the exhaust steam from the engine can be utilized, the system followed, and experience. It will range from 50c. to \$1.00 per ton of cheese. Several tests made this year with live steam direct from the boiler, under good conditions, allowing \$4.00 per ton for coal, place the cost at 64c. per ton of cheese. The patrons get practically all the benefits from pasteurization, and, therefore, each should pay his share of the cost.

SYSTEMS OF HEATING.

"The whey has to be raised from a temperature of 98 degrees to 150 or 155 degrees, or about 52 to 57 degrees. Various systems are satisfactory.

"First.—Turn the live steam from the boiler, under 60 to 80 pounds' pressure, directly into the whey, distributing through a simple system of three-quarter-inch pipes to get an even temperature and most economical use of the steam. This is the most effective system, and does the work satisfactorily, but is, no doubt, the most expensive.

"Second.—Turn the exhaust steam from the engine into the tanks, and add sufficient live steam to raise the whey to the required temperature. This system is less expensive where practical, but perhaps not quite so effective, as it may take longer to heat.

"Third.—Turn the exhaust steam from the engine into the pipe leading from the pump or ejector to the upper tank, placing the connection several feet above the pump, turning a small pipe inside the large pump pipe, a foot or so long, in the direction which the whey is travelling. Add sufficient live steam to get the required temperature. This is still cheaper, but some difficulty may be found in regulating the temperature at first.

"Fourth.—Raise the whey from the lower tank to the upper with an ejector; add sufficient live steam in the upper tank to finish the heating. The ejector, if large enough, will increase the temperature about 20 degrees while the whey is passing through.

"Fifth.—Heat the whey in the lower tank with the exhaust steam from the engine to a temperature of 135 degrees, then raise with an ejector to the upper tanks, when it will be found at about 155 degrees, the ejector having supplied the extra 20 degrees. Whey left in the lower tank should also be heated, at all times.

"Sixth.—Use a special heater, a device consisting of a pipe two feet long, six inches in diameter, capped at both ends, the cap drilled and threaded to allow pump, exhaust steam and overflow connections. Set heater upright. Connect whey exhaust steam at the bottom. Connect whey pipe at the top; also overflow pipe. Whey is heated before it passes out through overflow pipe. If exhaust steam is not sufficient, add some live steam. It may be necessary to disconnect and clean occasionally. This equipment costs about \$6.00, and has been found very economical for pasteurizing skim milk. It should work equally well for whey."

VALUE OF PASTEURIZED WHEY.

The interest taken in this new work was evidenced by the discussion that followed.

"As to the feeding value of pasteurized whey," said W. C. Shearer, of Bright, "I know many men who have had experience with sour whey, and with that which had been pasteurized, and every one of them pronounces in favor of the latter. Little pigs do almost as well as on skim milk, if some chop and a little oil cake are used. Many raise their calves on it, and I have known some to win prizes at the fair with calves fed on whey, whole oats and a little bran. This cannot be done with sour whey."

Pasteurizing was said to have overcome a great difficulty in cheese districts. Some had experienced trouble in distributing the whey. The owner of cows was inclined to take too much, while, if the hired man did the hauling, he was satisfied with less than his share. In his factory, satisfaction had been found in paying a man 50 cents a day to attend to the whey distribution. Each man might not get his desserts each day, but the average for the season was 10c.

astray. This tank also cleaned the tank every day. The entire time taken was from about 7 o'clock until 10 each forenoon. Another satisfactory plan for keeping the whey tank clean was to give a man a certain quantity of whey, or all that might happen to remain in excess of that quantity each day for emptying the tank, and seeing that it was thoroughly cleaned at least four times a week.

Many dairymen estimated that whey was worth \$5 to \$10 per cow to them. Others were sure that pasteurizing increased the value by \$3 to \$5 per cow. For best returns, the by-product should be fed to hogs. For small pigs, he recommended 15 to 20 pounds of crushed grain to 100 pounds of whey. For half-grown hogs, the grain could be increased to 25 or 30 pounds, and for larger ones to 35 or even 50 pounds. Oil cake was an excellent food to mix with the grains. His mixture was two of barley, one of oats, one of wheat middlings, and one of oil cake. "I have cleared \$10 per cow from hog-raising, in conjunction with dairying," said Mr. Shearer. "The ground feed is mixed dry, and then wet with whey before feeding. During the past season, increased prices for grains reduced my profit to about \$8.00 per cow. My returns were lowered by one bad sale of hogs."

Q. If you were feeding skim milk, would you use oil cake?

A. Yes, but in smaller quantities?

Q. If using peas and middlings, would you use oil cake?

A. Yes, it would make a strong food, but not injurious.

Splendid Dairy Meeting at Picton.

A special dairy meeting under the auspices of the Cheese Board was held in the Opera House, Picton, Ont., on Wednesday afternoon, December 16th. T. G. Wright, President of the Board, in taking the chair, announced the receipt of a telegram from J. A. Ruddick, Dairy Commissioner, expressing his regret at having to return home owing to illness. T. E. Whattam, District Instructor, gave a brief address, summarizing his work for the season. In addition to the factories under his charge in Prince Edward County, he has 13 in Northumberland and 2 in Hastings, making 36 in all to be visited. Only 5 cases of adulterated milk were found in over 3,500 tests. Mr. Whattam considers the fines are not heavy enough. He urged patrons to take immediate measures for increasing the production of milk per cow, stating that 24,000 cows in his district had given an average yield of only 2,900 lbs. milk in six months. Provision should be made for a dry season by the use of soiling crops. The quality of the cheese made was satisfactory, but in many cases the quality of the milk was not what it might be. One patron's carelessness may easily bring a serious loss to all in the factory. Some factories still have poor whey vats, and the pasteurization of the whey was strongly recommended.

STIRRING ADDRESS ON COW-TESTING.

C. F. Whitley, of the Dairy Division, was next called upon, and made a strong plea for the extension of the work of cow-testing associations. The idea did not originate in Canada; for 10 or

12 years similar testing associations had been in existence in the northern countries of Europe. The experience of one man in Sweden was quoted, who, by systematic weeding out through the use of the scales and Babcock, had now a magnificent herd of 70 cows, with an average of 12,000 lbs. milk each. Farmers in Prince Edward County have just as good brains as the average Swede, and should not be content to lag behind in this movement. The "average" cow is not good enough for the business dairyman to-day. He has no time or feed to waste with only the medium animal. Cow-testing associations have proved themselves excellent time-saving and labor-saving institutions. If one cow can do the work and make as much net profit as two or three poor cows, why not keep the good one? Mr. Whitley made a force-



Bessie Bates 155373.

Jersey cow, which completed a yearly authenticated test in October last. Record: Milk, 13,888.5 lbs.; butter, 801 lbs. Record for 5 years, commencing when two years old: milk, 46,439 lbs., average 9,285 lbs.; butter, 2,558 lbs., average 511 lbs. per year. Bred and owned by the University of Missouri.

Q. Do you keep your hogs inside?

A. My pigs always are let out for a run each day in summer, on grass in the early season, and on rape later. I also throw ashes at the rate of a handful to a half dozen hogs each day.

Q. What would be the cost of raising pigs to six weeks old?

A. This is a difficult question. It averages about \$1.00 to \$1.10. That raises the point of weaning. They should not be weaned at six weeks. I prefer to let them run with the sow until eight or ten weeks old, if they wish. By that time the youngsters usually become ashamed of themselves. In starting young pigs, I always use a larger proportion of middlings. It is also important that no rash changes in food be made. During the winter months, I find ashes, salt and sulphur to be an excellent mixture for pigs.

Prompt Results.

Editor "The Farmer's Advocate":

We wish to compliment you on the splendid Christmas Number of "The Farmer's Advocate," which we have perused with much pleasure and interest.

As a result of our advertisement, which appeared in half-page space, we have had more inquiries from farmers in Ontario than we ever received in the same time before; we even received inquiries before our copy of the Christmas Number reached us. As most of our correspondents mentioned "The Farmer's Advocate," we easily traced the inquiries to their source.

With best wishes for the coming festive season and for your continued prosperity during the New Year.

DOMINION OFFICES OF THE POTASH SYNDICATE.

ful appeal to farmers to take up this sure method of detecting the unprofitable cows in the herd. He stated that an extra \$150,000 could easily be secured in the county from the same number of cows if they were just a trifle better in their average yield. Better care of cows means extra cash. Cows out on pasture (?) in the middle of December, as seen from the car windows, are not likely to be producing much milk. There is infinitely more satisfaction in handling the superior cow, and she can be discovered most quickly by this co-operative work of weighing and testing. Only pure-bred sires of good dairy family should be used, and the logical outcome of this weighing would be the formation of co-operative breeding associations to ensure the use of the best sires. It was shown that members are put to only a trifling expense of two or three dollars for scales and sample bottles, while the time employed is only about ten minutes per cow per month. This is quickly repaid in the increased value of the herd, and in the definite knowledge obtained as to the individuality of each cow. Mr. Whitley stated that this work saves men from the mortification of ignorantly disposing of their best cows, instancing the case of a man actually giving away for nothing a cow that now has a record of over 13,000 lbs. milk. Two charts were exhibited, one showing that on many farms are some cows that give five times as much profit as other cows in the same herd; while the other chart showed the enormous difference that exists in total production of milk in different sections of Ontario. For instance, where 37 cows at one factory gave a total yield of only 162,000 lbs. milk in six months, at another factory the same number of cows actually gave an extra flow of 60,000 lbs. milk more. Mr. Whitley emphasized the point that this work often meant as much as \$300 extra income to a farmer inside three years.

The Department is anxious to help men commence the system, and will assist in organization.

A. E. Calnan, being called upon, stated that he had been induced to take up his work through hearing Mr. Whitley urge it before, and was weighing each cow's milk daily, finding it a source of great pleasure and definite information. Some cows he thought pretty good were not by any means his best, and he knew now which he would like to sell. He heartily recommended the scheme.

COOL-CURING PAYS.

G. H. Barr, of the Dairy Division, Ottawa, spoke of the question of cool-curing of cheese. He stated that the County of Prince Edward is leading Ontario, having more cool-curing rooms, and good ones, too, than any other county. The quality of the cheese is advanced, and an increased price is readily obtained for the cool-cured article. Buyers with open orders name the factories with cool-curing rooms, so that if any preference is going, they get it every time. One salesman had informed the speaker that they had saved \$1,000 in two years through their cool-room. Hot weather is liable to spoil good cheese; despite all the care and best energy of a first-rate maker, the quality of originally good cheese is often ruined in poor curing rooms. To sustain our reputation, all cheese in Canada will have to be cool-cured; it must be, to face the competition from other countries.

COOLING, NOT AERATION, IMPORTANT.

Turning to the care of milk at the farm, Mr. Barr stated that arrangements had been made this summer with two patrons at Smith's Falls, whereby officials from the Department took charge of the evening's milk from eighteen cows at each farm. The patrons were not asked to do any extra work in caring for cows or milking. Both farms had fairly good conditions, though much was known as "drowned" land from the Rideau canal. At both places the cows were milked in the stable, at one place by the owner and his five sons, at the other by the owner and two hired men. A curd test was made of each can of milk delivered, and the cheese were cured in an ordinary room only. Two lines of experiments were undertaken: First, cooling only, with no aeration of the milk; and second, aeration, either by means of an aerator or by simple dipping. By means of excellent lantern slides, Mr. Barr showed the milk stands, curd tests, and actual curds from the vats. On one stand, with fine surroundings, better than hundreds, where milk was aerated without cooling, 38 per cent. of the curds were gassy. On the other stand, even with a clean sweep of apparently good pure air, 68 per cent were gassy from aerated milk. But when milk was cooled, with no stirring, no dipping and no aeration, and kept covered, away from the air, only 6 per cent. of the curd tests showed gas. A very simple method of cooling was shown on canvas—by cutting a barrel in two and placing the half barrel on the milk stand, and setting the factory can right in the barrel. The milk from nine cows was cooled with 200 pounds water, and left at night at a temperature of 77 degrees just five minutes after milking. To obviate carrying water, another photo was shown where, when water was pumped for the cows into a trough in the corner of the barnyard, the water was made to flow through the half barrel first. No extra labor was thus involved, no water wasted. At this farm, the milk thus cooled and covered up showed only 6½ per cent. gassy curds, while the other can, on the same stand, right alongside, but aerated and dipped, had 71 per cent gassy curds and bad flavors. This was during the heat of July and August. One need not spend five minutes taking care of milk; keep it away from the air, but cool it down. Poorly-kept milk sometimes takes 18 pounds to make one pound of cheese.

The slides shown elicited a rapid fire of questions from the large audience.

During the afternoon, the county council adjourned its session to attend in a body. The meeting was declared to be one of the most valuable and instructive ever held in Picton.

At night a splendid banquet was held, some excellent speeches being delivered, interspersed with choice music.

Whey Worth More Money.

At Blanchard Butter and Cheese Factory we have pasteurized the whey for one year. The whey is more desirable as to sweetness, flavor and feeding value. I estimate that it is worth 25 per cent. more. The cans are easier to wash, and much less grease adheres to them. In addition, the milk reaches the factory in better condition, and, consequently, cheese of higher quality can be made. I consider it pays, and wish to see the practice continued next season.

Perth Co., Ont.

GEO. SPEARIN.

One of the strongest arguments in favor of pasteurizing whey is the fact that the by-product is kept sweet, and in that condition is of much greater value for feeding purposes.—Prof. H. H. Dean.

Buttermaking on the Farm.

At the meeting of the Bruce Farmers' Institute Club, held on December 8th, the question of winter dairying was taken up by J. T. Lamb, who has had considerable experience in dairy work. It was pointed out that the first thing for consideration was the cow. Everyone favors a certain breed, and, perhaps, if dairying were the only object, the Holstein breed would fill the bill. But exclusive dairying was out of the question with most of farmers. They must also go into breeding beef cattle. To combine dairying and beef, it becomes necessary to raise stock suitable for both, and experience indicated that the Ayrshire was the nearest approach to the dual-purpose cow. A steer was easily fattened, and could be brought to 1,200 pounds at two years; while, at the same time, the dairy product of this breed came well up to the standard. Then, too, the method of feeding, feed and care were as important as breed. Cows that were fed a little grain throughout the summer did not drop off in their supply of milk when put in stable as others that were not fed. It was also well known that if cows are in good condition when winter sets in, they are easily kept so, but when in poor condition it is hard to put flesh on to them. For feed, bran was considered about the best. Bran mixed with other feeds, such as ground oil cake or corn meal, was also good. Cut clover hay, when steeped, was said to be almost as good as bran. Steeping or steaming any feed improved its value. Timothy hay should never be used, as it was not much better than straw.

The subject of keeping up the stock, also, was said to be an important one. The idea that the spring is the proper and best time for the cow to calve was fast losing ground. Calves are generally kept in the stable a few months after they are dropped, so why not use the winter months for that purpose, when you have more time to attend to them? In the spring, they would be in good shape to put on pasture. You will have a good supply of dairy product when it is most profitable, and the cow will be dry when the pasture is scarce. In the selection of calves, the first calf always is worth keeping.

MAKING HIGH-CLASS BUTTER.

In the science of converting cream into butter in the most up-to-date and scientific process, cleanliness from start to finish was mentioned as being of greatest importance, and butter made in this way would bring from 3 to 8 cents a pound more than ordinary butter, if sold through the proper channels. This approved process was summed up as follows: Cleanliness from the very start to the finish is the great essential in the art of making good butter. Remove the milk from the stable to the separator building as soon as milked. When the milking is all finished, run the cream through the separator, and cool the cream in cold water to about 50 degrees. Have the old and new cream of the same temperature before mixing. Have the cream sweet until 24 hours before churning, then add a culture or starter, which may consist of about a quart of good-flavored buttermilk. Heat the cream to between 65 and 70 degrees, according to weather, and it is usually ready to churn the next morning. Have the cream of the quality that makes 2½ pounds of butter to a gallon of cream, or just as thick as you can churn it without concussion ceasing. Churn at a temperature of from 60 to 65 degrees, and the butter should come in about half an hour.

Scald the churn with boiling water, and then cool with cold water. Strain the cream into the churn through a dipper having a perforated bottom, and add just sufficient butter-color to give

it a natural June tint. When the butter breaks, add a dipperful of water two or three degrees colder than the cream; it helps to separate the butter from the milk, and leaves less buttermilk in the buttermilk. When the butter is the size of wheat grains, it is sufficiently gathered. Then draw off the buttermilk, and put as much water into the churn as there was cream, having it two or three degrees colder than the cream was, and revolve the churn ten times very quickly, so as to wash the butter without massing it. Draw off the water, and while it is draining, prepare the butter-worker. Use a V-shaped lever butter-worker and brick-shaped print. With a hair or fibre brush, a dipper of boiling water, and a little salt, give the butter-worker and print a good scouring, and cool well with cold water. Take the butter from the churn and spread over the worker; sift the salt on evenly, allowing ¼ oz. of salt per pound of butter. Fold the salt under and begin working. Work by means of pressure only; avoid a sliding motion, as it spoils the grain of the butter. Work sufficiently to expel moisture and thoroughly distribute the salt. Finish the butter smoothly and press the print down into the butter until the mould is well filled; cut with the ladle the surplus butter from the bottom. Wrap the print neatly in good parchment paper which has been previously wet in clear, cold water. The butter, when wrapped in the paper, should weigh 16½ ounces. Keep the butter in a cool, clean place, and get it to the consumer as soon as possible. When shipping butter to city, boxes are preferred to baskets.

When you have finished with the butter, proceed to clean up the churn and the worker. The churn should be rinsed out with hot water and thoroughly scalded with boiling water. Wipe the outside, but never touch the inside with a cloth. Leave the lid off until the churn is dry, and the plug out till next churning day. Scour with hot water the worker, ladle and butter print; rinse with boiling water, and allow them to dry.

The cream can, milk pails and separator should be washed in warm water and scalded in dancing boiling water, and inverted in pure air and sunshine, if possible, to dry. Never wipe with a cloth. The heat of the utensil that is properly scalded will readily dry it. Never use soap on milk utensils; use sal soda, but do not feed the wash water with sal soda in it to the hogs, as Prof. Day says it is not good for them. Cleanliness is the prime factor in securing good butter.

Never keep the cream more than four days, if you want the best-flavored butter, and stir well each time you add fresh cream. The thicker the cream, the lower the temperature at which it can be churned. The lower the temperature, the more exhaustive the churning—that is, less butter-fat left in the buttermilk.

The authorities on buttermaking never advise using buttermilk for a culture or starter. They say, use a culture which you know has a clean, pleasant, sharp acid flavor and smell, which may consist of a pint or two of sour cream from your previous churning, or the same amount of good-flavored skim milk.

It was claimed that if the above method was followed the product would be an article second to none, and one that would command a price that well pays for the little trouble expended in following the instructions. A. E. WAHN.

Bruce Co.

[Note.—The culture advised by Mr. Lamb should give satisfactory results, but care is required in the use of buttermilk from a previous churning as culture. There would be a danger of having too high percentage of acid, especially if churnings were infrequent. A mild acid flavor, pleasant to taste and smell, and containing .7 per cent. acidity when used, is recommended by



Milk Wagons Unloading at Blanchard Cheese Factory, Perth Co., Ont.

experts. In washing dairy utensils, too, authorities advise rinsing with cold water prior to using hot water.—Editor.]

Fewer Cows and More Feed.

Editor "The Farmer's Advocate":

The Central Smith Cow-testing Association had twenty members to start with in 1907, and it is running about the same this year. One of the advantages I have been most interested in is the record my cow Blacky has made. Her record for last year for eleven months was close up to fourteen thousand, and this year her record now in seven months and a week is eleven thousand. I have other cows giving between seven and eight thousand pounds in the same time.

The movement seems popular with those who have tried it, and as far as I am concerned I would like to see it continued. I cannot say it has stimulated interest in the cow question very much. I do not think that it has had the desired effect of inducing the farmer to sell inferior cows as yet. This is just the second year, and a very dry one in this district. Some cows do better one year than another.

My theory for getting more milk is to try to persuade the farmer to keep half the number, or feed what he has better. Half of the cows through the country just get enough to keep them alive, without producing milk. J. GORDON MANN, Peterboro Co., Ont.

For cleaning milk or whey cans, nothing can beat quicksand. Simply dip a wet rag in the sand and rub the can well. I always rinse with cold water as soon as possible after the cans come home, and leave them standing mouth down on the grass until time can be found to wash thoroughly.—W. C. Shearer, Oxford Co.

GARDEN & ORCHARD.

Fruit-growers at Middleton.

President R. W. Starr opened the annual meeting of the Nova Scotia Fruit-growers' Association with a few general expressions of greeting, explaining that lack of time had made it impossible to prepare a finished address, but promised to have it ready for the printed report.

We were glad to again have Horticulturist Macoun with us, with one of his instructive addresses. He dealt largely with the experiments in cross-breeding carried on at the Experimental Farm for the purpose of obtaining apples combining more of the required good qualities than at present could be found in any one variety. The results were satisfactory, inasmuch as at least 25 per cent. of those under experiment were turning out promising varieties. They were making observations, also, on the factors affecting crop production. This he considered one of the most important objects of the fruit-growers. The selection of stocks for top-working had something to do with the increase of crops. It had been noticed that scions placed in some stocks produce better than those in others. Also, that it is well to select scions from trees producing good crops.

There is also a fear that cultivation may be carried on too long or late in the summer, especially in moist seasons. It is a well-known principle that if we get great growth of wood in the tree, it is generally at the expense of production. Following this principle, it is well to stop cultivation early in the summer to check this growth and allow the fruit buds to form for the next year. It had been noticed that an exceptionally dry summer was followed by a large crop of fruit. It had also been noticed that anything checking the downward flow of sap in a limb or top of a tree increased the bearing. This may be done by the checking of the sap at the union of the graft with a tree, or a partial girdling or break in the limb. He strongly advocated the keeping of bees in the orchard, since the search for honey was sure to result in a distribution of pollen and increased fertilization.

Prof. Percy Shaw gave an interesting account of the model orchards that had been and were being planted in the different counties of Nova Scotia, outside of the fruit belt. The first orchards have been planted about eight years, and some have begun bearing, those bearing earliest being Stark, Ontario, and Fallawater.

These model orchards, so-called, were planted with the object of determining whether or not orcharding could be successfully carried on in other parts of the Province, aside from the Annapolis Valley. The terms of planting were that the Government furnished the trees, spray outfit, and helped plant them, the farmer on whose land the orchard was planted agreeing to take care of it for ten years, under the supervision of the Government, and also carrying out the instructions given. After ten years, the orchard was the property of the farmer.

The question was raised of the desirability of

a longer supervision by the Government, since ten years only brought the trees to bearing age, and it was deemed advisable to ask the Government to extend the period and furnish an annual report of what these orchards are doing after becoming of full bearing age.

CULTURE, PICKING AND PACKING, AND STORAGE.

R. J. Graham, of Belleville, Ont., gave a very instructive address on the needs of the apple trade. He said we wanted:

1. Good apples; and to get these we must spray, cultivate, thin.
2. Good picking. Do not pick apples too green; let them mature and color. By doing so, they gain in appearance, flavor and value. Pick carefully, and give the minimum amount of time and handling between orchard and storage.
3. Proper packing. Nova Scotia can grow good apples, but her men can pack them much better than they are now packed. Too many No. 2's in No. 1 barrels, and too many No. 3's in No. 2 barrels. The Province, in his opinion, was losing \$140,000 on a crop of 600,000 barrels because of the want of uniformity in the size of the barrel in Canada. If Nova Scotia would use the 112-quart barrel of Ontario, they would get a larger price, and pay less freight, since the larger barrel would go for the same freight as the smaller barrel, and save in number of barrels to be made, etc. This brought out a very spirited discussion, which left the feeling that the smaller barrel of 96 quarts, as defined by the Federal statute, was the better size to use.
4. Proper storage. Apples should be placed in cold storage as soon as possible after being picked.

VALUE OF THINNING.

R. S. Eaton, in a very forceful address, summed up the advantages of thinning fruit during the summer, in July, as conserving the vitality of the tree, saving time in picking and packing, giving fewer No. 2's, and bringing better prices. Prof. H. W. Smith, in a talk on fungicides, very logically and clearly evolved the history of Bordeaux.

TRANSPORTATION.

The question of transportation, dealt with by F. C. Whitman, of Annapolis, brought out some decidedly and unorthodox new views. He had found that as long as apples in a car or on a train were kept moving that they would stand cold almost to zero without freezing; that the motion seemed to ward off frost. Also, in hot weather, he had found it very beneficial in reducing temperature and keeping apples in good shape to throw water over them in a hot car or hold of steamer. He also advanced the idea that the rise in temperature in a vessel's hold, after she had been on the voyage four or five days, was due to the friction of the barrels against one another, from the rolling and pitching of the steamer.

FOREIGN MARKETS.

Howard Bligh, in dealing with foreign markets, prophesied that in a few years it would be almost useless to send apples to Liverpool and London, since the strong combination of buyers and brokers placed shippers practically at the mercy of these men. They controlled prices to such an extent that in many cases it was his opinion that cargoes of apples were sold practically before the steamer arrived. He regretted that the present heavy tax practically kept apples out of Germany, and assured the audience that it only needed the consent of our Government to remove this tax, since Germany had intimated willingness to re-establish the old trade relations.

OFFICERS AND RESOLUTIONS.

The evening meeting of the 15th was a joyous season of Provincial inter-congratulation. After the various speakers had finished, it would be difficult to decide whether we lived in Nova Scotia or Paradise.

The session of Wednesday morning, the 16th, was opened with an address by Prof. Macoun on the judging of plate apples at exhibitions. The gentleman would place the awards according to score-cards, giving so many points for each of the elements of uniformity, color, size, typical shape, and freedom from blemishes.

An address by J. N. Chute, of Berwick, on Co-operation, showed how successfully the co-operative society at Berwick was being carried on.

The meeting closed with a demonstration on apple-packing in boxes.

The officers for the ensuing year were: President, F. M. Chapman; Vice-President, E. E. Archibald; Secretary, S. C. Parker. Executive—A. C. Starr, R. J. Messenger, G. C. Miller, P. Innis.

The following resolutions were passed: Resolved,—That the Government be asked to continue their supervision of the model orchards for a longer period than ten years;

That an expression of sorrow and sympathy for the family of the late Dr. Fletcher be sent to

his friends, and be placed on the records of the Association;

That the Federal Government be again urged to pass such legislation as will lead to the adoption, all over Canada, of the 96-quart barrel;

That pressure be brought to bear leading to better trade relations with Germany.

R. J. MESSENGER.

Apple Trade with England.

Writing to the Trade and Commerce Department, J. B. Jackson, Trade Commissioner at Leeds, Eng., in discussing Canada's growing trade with England, says that the fruit trade, in particular, has made rapid strides. Numerous salesmen, who previously dealt almost exclusively in American fruit (under which name Canadian apples were invariably bought and sold when they did perchance obtain them) have been induced to open up correspondence with Canadian shippers and growers, and are now disposing of regular shipments of fruit week after week during the season.

Some idea of the progress made in this direction can be gathered from the business done by one importing firm alone, who, so far this season, has sold upwards of 43,000 barrels of Canadian-grown apples received by them direct from Canada. Other instances could also be cited where trade has greatly advanced, but sufficient illustration of this is shown by the fact that there are, at least, three firms dealing in this district in Canadian apples to-day where there was only one before the Trade Commissioner's office was established for the promotion of trade in Dominion products. A few local merchants, too, have been induced to visit the chief fruit-growing districts in Canada, where arrangements were successfully made for future shipments.

Mr. Jackson further says: "Very large direct shipments of Canadian apples are arriving in this district every week, and I am pleased to say that the importers here are unanimous in their opinion that the shipments surpass in quality any Canadian apples ever seen in this district. The packing is also all that could be desired. The early shipments were rather wormy and somewhat inferior, but this defect has disappeared, and Canadian apples, both from Ontario and Nova Scotia, now stand without a rival in the estimation of the consuming public here. The market in Leeds has been exceedingly strong, and excellent prices are being obtained; in Sheffield, owing to the extreme depression in the iron and steel trades, and the scarcity of money amongst the large operative population, the market has been rather weak, and much smaller prices have been realized than in either Leeds or Hull."

Commissioner Ray, of Birmingham, Eng., writes under date of Nov. 27: "For the guidance of apple exporters, I may say that the Birmingham market is well stocked at the present time, consequently rather low prices are ruling. It would be judicious if Canadian apple-exporters would retain their stocks until after the Christmas holidays. The market is always glutted at Christmas time, and apparently this year will be no exception."

"I went through Smithfield market yesterday and inspected barrel after barrel of apples from British Columbia and Nova Scotia. The fruit from both Provinces was exceedingly fine, but much that came from Ontario was not up to the anticipated standard. Barrows' stores devoted a large window to a display of British Columbian apples, which were the delight of crowds of spectators. The apples were a magnificent color, large in size, and solid in flesh, and Birmingham, I feel sure, will look forward to these British Columbian shipments year by year, if the quality is maintained."

"Pears are commanding a capital price, as doctors are now recommending them to invalids, instead of grapes. The retail price in Birmingham for good varieties is 6d. (12 cents) per pound."

Work of Art.

Enclosed find a postal note for fifty cents, and would like you to send a copy of the Christmas Numbers to the following addresses: ————. I would like to express my hearty appreciation of "The Farmer's Advocate." Its pages are just packed to the brim with information for the farmer, the farmer's wife, and all who peruse its contents. The Christmas Number certainly is a work of art. FRED HYDE.

Toronto.

The summer meeting of the Pomological and Fruit-growing Society of Quebec will be held at La Trappe, Oka, on August 24th and 25th, 1909.

POULTRY.

Mating and Rearing Guinea Fowl.

Kindly let me know how to mate and raise Guinea fowl. Are they mated in pairs, or the same as ordinary fowl, one cock bird to so many hens?

A. G.

Ans.—I have much pleasure in giving such information as I have gathered from my own experience with this variety of fowl.

Re Mating.—Guinea fowl seem to be inclined to mate in pairs, like pigeons; and yet, where there are, say, three to five hens in a flock, and only one cock, there is very rarely an infertile egg. Still, he will have his preference, and one of the bunch will be his constant companion and favorite.

I have no difficulty whatever in raising them, if I can only find their nest and watch for the clutch coming off, when they ought to be cooped for the first four weeks, or the parents will trail them too far afield through the wet grass and lose them. Last season one of my Guinea hens stole away, and was lost to us for a few days, when we noticed the cock frequenting a certain spot, and every time any person went near he would walk away, making an awful row. That gave us the clue, and we soon found the hen sitting on nine eggs, which we left her to hatch. She brought out eight chicks. We cooped her up for a week, when she got out, and wandered off into a field of timothy hay; when she returned she had only one chick left. We have best success from setting under ordinary fowl and cooping hen for about four weeks, allowing chicks to run at large. They will not stray far from the coop, and will take kindly to their foster-mother. The time occupied in incubation is four weeks.

For the first four weeks they should be fed millet and other small seeds, of which they are very fond, after which mixed grain should be fed, with plenty of pure drinking water, and they will mature quickly. They are good layers, laying almost every day from the time they commence until they desire to hatch their young. During the time the hen is laying, or sitting on the nest, the cock will constantly stand guard over her and protect her from intrusion. If you approach the place where the nest is, he will scream most awfully. Look carefully around, and you will soon find the hen sitting close down on the nest of eggs. When she has five or six eggs in the nest, then we commence robbing her of one egg each day until she commences to sit to hatch, then we steal the balance of eggs and put them under an ordinary fowl to hatch. She will wander around a few days, and then commence laying again, but you must be careful not to let her see you meddling with her nest, or even noticing it, or very likely she will forsake it and start a new nest elsewhere, as she is exceedingly shy.

Parry Sound, Ont.

W. H. HALL.

Make the Chickens Scratch.

Busy hens are layers, providing, of course, that they are well fed. Dumpy birds that mope around on the roosts all day long, except when a little feed is thrown in to them, are not, as a rule, in any hurry about laying. Exercise is as necessary for the health and vigor of a hen as of a horse or man. Chickens are intended to scratch for their living, and a fowl which does not have to do it is like a lazy man who lounges about the house, with only such exercise as he obtains in sitting down to the table, eating, and getting up again. Who would expect such a person to be healthy, vigorous or efficient? The idea that hens or cows derive sufficient exercise from the digestion of their food is absurd. Make the poultry scratch for their living, not amid filth and accumulated droppings, but in clean, fresh, dry chaff, leaves or other litter, renewed two or three times a week. When throwing the grain into the pen, scatter it well, and rake or kick the chaff, leaves or dust over it, so as to make the birds use their legs. It may seem like a waste of energy, but it is not. Exercise and eggs are two words that begin with the same letter, and the relation between the facts is not less close than that between the words.

Every farmer in Canada needs "The Farmer's Advocate."

THE FARM BULLETIN.

To Our Club-raisers.

There are thousands of farmers who do not know what they are losing every year through not being subscribers to "The Farmer's Advocate and Home Magazine." Therefore, we want all readers of "The Farmer's Advocate" to act as club-raisers this year, and send us large lists of NEW SUBSCRIBERS.

If you send us two new names and \$3.00 to cover same (each new subscriber paying \$1.50), we will mark date on your paper forward one year as remuneration to you; or, for each single NEW NAME, accompanied by \$1.50, we will advance the date of your address label six months. Cash commissions or premiums, as preferred, for larger lists of new names.

In clubs of FOUR RENEWALS OR OVER, we will accept \$1.25 each.

Premiums not included in club offers.

Start raising your club immediately. Get "The Farmer's Advocate and Home Magazine" into every household in your locality.



Two-year-old Bronze Turkey Male.

First prize at Ontario Winter Fair, Guelph, Dec., 1908, and sweepstakes for best male, any age. Weight, 40 pounds. Sire of 1st and 2nd cockerels, 1907; also 1st and 2nd yearling cocks and 1st and 2nd cockerels, 1908. Bred and owned by W. J. Bell, Angus, Ont.

Hon. Sydney Fisher's Address.

Following is a translation from the French of an address by Hon. Sydney Fisher, Dominion Minister of Agriculture, and one of the representatives for Canada at the International Institute of Agriculture, which has been in session in Rome, Italy. The address was at the conclusion of the session, and was received with great applause:

Mr. President,—It has been permitted to me, in the name of the foreign members of this Institute, to thank you for the hearty welcome which has been given to us throughout Italy.

It is permitted me, also, to express our gratitude towards His Majesty the King, to whose initiative we owe the creation of this Institute, which has found such a cordial approval all over the world, and which has its headquarters in the Eternal City. Rome, throughout the ages, has been the center of great movements; to-day she sees within her walls a reunion of all nations, who will work together in the interests of agriculture, the first necessity for the life and nourishment of people. This Institute is the first inter-

national organization in which all Governments have joined, and which shall accomplish much for the realization of the ends in view. We hope that it will serve as a model for the creation of many international co-operative associations, destined to ameliorate the lot of mankind.

Personally, it is permitted to me, as representative of a country of the New World, a colony, occupied as it is in developing its greatest natural resources, unknown until the last few years, and which we are pushing with all our energies for the benefit of the whole world; it is permitted to me, I say, as representing a nation, young as we are, to declare that we will give our most active and hearty assistance to the great work of this Institute.

Permit me, Mr. President, to ask you to tell His Majesty the King of Italy how much we appreciate his initiative in this great work, and the munificence he has shown towards it.

The work of the General Assembly has made such great progress that I am able to assure His Majesty of the permanent success of the Institute on a basis most useful and practical. I am confident that I express the feelings of all the delegates, in assuring you, Mr. President—and His Majesty, through you—that our most earnest wish is to place on a permanent foundation of success the great work in which we have been occupied.

Press Notices of the Christmas Number.

Intending subscribers to "The Farmer's Advocate," the best farm journal published in Canada, should bear in mind that, by putting their intention into effect now they will be entitled to the Christmas Number, which is easily worth the subscription price.—[The World, Toronto, Ont.]

The publishers and editors at London are to be congratulated upon the enterprise that made the issue possible, and upon their devotion to one of the greatest works in journalism, that of elevating and aiding the farming population.—[St. Thomas Times.]

The Christmas Number of "The Farmer's Advocate" is to hand, and is fully up to any of its predecessors as to both artistic and literary contents. Farmers should be well pleased to have such a fine periodical devoted exclusively to their interests.—[Mt. Forest Confederate.]

The Number throughout is highly interesting.—[The Conservator, Brampton.]

There is no better and no more progressive, up-to-date publication in the interests of the farmers on this continent than "The Farmer's Advocate and Home Magazine," issued by the William Weld Co., of London. For the past ten years they have issued each year a magnificent Christmas Number, which is given free to all their subscribers, and it is safe to say that the information it contains, and the many fine illustrations, make it a welcome visitor into the homes of thousands. This year's issue is, we think, the finest yet. It would be impossible for us to enumerate the many special features. If you subscribe now for next year you will get one as a premium. If you simply want the Christmas number, it will cost you 50 cents, and it is worth it.—[The Express, Aylmer, Ont.]

Farm-to-farm Inspection.

The outbreak of foot-and-mouth disease on Grand Island, in the Niagara River, two or three weeks ago, whether it is supposed to have been carried by sectionmen working in the East Buffalo stock-yards, brought the disease close to the Canadian boundary; while in Michigan it was discovered near the Canadian line on a farm maintained for scientific-commercial purposes. The very strictest precautions have, therefore, been observed by the Canadian authorities, including the prohibition of automobile traffic crossing the Niagara and Detroit Rivers, and, for a time at least, the compelling of pedestrians to have their boots disinfected when crossing the international bridges. Meanwhile, a large staff of veterinary inspectors have been at work in the border counties adjacent to the Niagara and Detroit frontiers, and following the line of railway from Detroit to Buffalo, along the route over which diseased cattle are believed to have been shipped. A careful farm-to-farm inspection is being made, though, up to date of this going to press, no trace of the disease has been found in Canada, so far as we have heard. If foot-and-mouth disease finds its way into Canada, it will be in spite of the utmost vigilance of the authorities at Ottawa.

Fair Dates Fixed.

January 13th to 15th.—Ontario Horse-breeders' Exhibition, West Toronto Stock yards.
January 18th to 22nd.—Eastern Ontario Live-stock and Poultry Show, at Ottawa.

Either Thieves or Hogs.

One of the worst features of a protective tariff is that the beneficiaries thereof have a strong impulse to work for retention or increase of the duties imposed, and, being compact and organized, can exert decided pressure to secure their specific ends; whereas the great masses of unorganized consumers, though they may feel the burden heavy in the aggregate, are neither aroused nor effectively organized to resist the aggression of the various special interests. As an editorial in a recent issue of The Outlook puts it: "You can hardly have an association of shoe-wearers, or of flour-eaters, or of shingle-buyers, or of watch-owners. But the country (United States) can and does have compact organizations of the manufacturers of these articles, and we are very much afraid that they are to some extent influenced by the motives to which Mr. Charles Francis Adams, of Boston, alludes in a recently-published letter to Representative McCall, of Massachusetts. Mr. Adams, in a characteristically frank fashion, says in this letter of the men who are directly and pecuniarily interested in a protective tariff, that they naturally divide into two classes:

"Speaking after the fashion of men, they are either thieves or hogs. I myself belong to the former class. I am a tariff thief, and I have a license to steal. It bears the broad seal of the United States, and is what is known as the 'Dingley Tariff.' I stole under it yesterday; I am stealing under it to-day; I propose to steal under it to-morrow. The Government has forced me into this position, and I both do and shall take full advantage of it. I am, therefore, a tariff thief, with a license to steal. And—what are you going to do about it? The other class come under the hog category; that is, they rush, squealing and struggling, to the great Washington protection trough, and with all four feet in it they proceed to gobble the swill. . . . To this class I do not belong. I am simply a tariff thief. . . . But, on the other hand, I am also a tariff reformer. I would like to see every protective schedule swept out of existence, my own included. Meanwhile, what inducement have I to go to Washington on a public mission of this sort? A mere citizen, I represent no one. . . . Meanwhile, have it well understood that my position is exactly the position of tens of thousands of others scattered throughout the country; to ask us to put aside our business affairs, and at our own expense to go to Washington on a desperate mission, is asking a little too much."

Better all the Time.

I have much pleasure in renewing my subscription to "The Farmer's Advocate." It is a very welcome visitor to our home. I consider it the best agricultural paper published; it gets better all the time. F. S. CALDWELL.
Carleton Co., Ont.

The total traffic of the Soo canals for the season just closed is 41,418,895 tons, compared with 58,217,214 net tons during 1907. The total net tons for December was 1,041,089. During December, 51,918,515 bushels of wheat passed the Soo, while iron ore fell off to but 96,669 tons, compared with 3,577,281 during November. The report for the entire year will show the total iron ore traffic for the year to be about 24,627,598 net tons. Last year it was 39,549,944 net tons. The total wheat traffic for the season ended is about 106,121,873 bushels; last season it was 98,135,775 bushels.

Eastern Ontario Farmers' Show.

Many new and highly practical features will distinguish the Eastern Ontario Live-stock and Poultry Show, scheduled for January 19th, 20th, 21st and 22nd, 1909.

The idea back of the show is not merely to make an exhibition of fancy stock, but to show the visible results of breeding and feeding for practical use and profitable sale. To this end, the number and value of the prize awards in every class has been largely increased, the cash prizes aggregating over \$7,000; besides some 200 special prizes in cups, medals, goods and cash offered in the poultry division alone. As if this increase in itself were not enough to assure a show far above the general run of such affairs, the management has removed many of the restrictions that formerly obtained, has thrown all the live-stock competition open to the world, and, for the first time in the history of the Ottawa Show, will include a horse show in the programme.

But these material attractions are not alone relied upon to win the interest of the farmer and the attendance of himself and his family. When he grasps the purpose of the show, and the way that purpose is to be carried out, he will appreciate the real value, to his everyday work, of what he can learn here next month.

For example, one of the features of the daily programme will be a careful explanation and exposition of the reasons which governed the making of awards by the judges.

Lecturers explain the reasons for their awards. Point by point they will demonstrate the things that make one cow or steer more valuable than another, one sow more certain than another to breed profitable pigs, and one horse a better sire for the farmer's stock than the one in the next stall, though, to the uninitiated, each may look identical with the other.

When an intelligent man starts for home after the Ottawa Show, he will be better able than he ever was before to buy stock right and to breed it profitably. This idea of a judging-school for farmers is bound to work the greatest good to the whole farming community.

So, too, is the series of lectures—couched in plain, everyday English, not crowded with long words and puzzling technical talk—upon the right and wrong way to feed live-stock and poultry. These instructive discourses will be of the most practical kind, full of proved lessons that every farmer and breeder can easily apply, and thereby reap both increased profits and effect material savings. If one happens to see at this show a particularly fine-looking hog, or a handsome beef carcass, or a hen that looks like—and is—a 200-egg-a-year layer, it will be made easy for you to learn exactly how that particular hog or beef or fowl was fed or bred to bring it to its perfected standard. Every detail about the show has been wrought out on just such practical lines, and with an eye single to helping the farmer to make more money, and make it more easily.

Inasmuch as all the railways will offer specially low rates of fare to the show's visitors, and the Capital City will be at the height of its season when the show begins—Parliament opening January 20th—this event ought to be a record-breaker in point of attendance, as it will be in instructive value for farmers and poultrymen, big and little.

D. T. Elderkin, Secretary of the Eastern Ontario Live-stock and Poultry Show, is the man to write to for premium lists, entry blanks, and any other details about the show. He is located at 21 Sparks Street, Ottawa.

Protection by its Fruits.

Editor "The Farmer's Advocate":

In your issue of December 17th I notice a contribution on "Higher Protection," by a Simcoe County reader. This, I must say, is contrary to my views on the subject. My reason is this: The farmer (who is the chief consumer here) has to pay enough for goods which he buys, whereas, if we protect the manufacturers, they may charge what they like for their products, up to the level the tariff permits, and we have to pay for them.

It is stated that Great Britain acquired her wealth under high protective tariff. Now, sir, Great Britain is a manufacturing country, whereas Canada is an agricultural nation. Ninety per cent. of Britain's laborers depend on her manufacturing establishments for their daily bread, and, therefore, it was all right for her to protect her mainstay for a time, till that industry was placed on a rock-bottom foundation; but in Canada, farming is our mainstay.

Your correspondent refers to the national policy, and says that, had it been in force, our population would be 12,000,000. How does he figure that out? By official records, we find that in 1879, the first year that said policy was in force, we had 4,068 homestead entries, and 18 years later, when it went out of force, there were only 1,857 entries. Is that increasing our population fast?

He also says that our wealth would be double what it is to-day. Again, by records, I find, during the 18 years his favored policy was in force, our national debt increased by \$118,000,000. Did our wealth increase? Well, yes—backwards.

A CONSTANT READER.
Wellington Co., Ont.

Horse-breeders' Annual Meetings.

The following annual meetings will be held in Room "G," King Edward Hotel, Toronto, during the time of the Ontario Horse-breeders' Exhibition, at West Toronto, Jan. 13th to 15th, 1909.

The Canadian Pony Society.—Tuesday, Jan. 12th, at 8 p. m.

The Canadian Shire Horse Association.—Wednesday, January 13th, at 10 a. m.

The Canadian Hackney Horse Society.—Thursday, January 14th, at 9.30 a. m.

The Canadian Clydesdale Association.—Thursday, January 14th, at 7.30 p. m.

The Ontario Horse-breeders' Association.—Friday, January 15th, at 9.30 a. m.

Time to Change Dates on Labels.

Do not be surprised if the date on your address-label is not changed for two or three weeks after your subscription is sent in. At this season the rush of business taxes the resources of our subscription staff, and a little extra time is required to revise, print and check over the mailing sheets.

New Stud for Northumberland Co.

Mrs. Livingstone, proprietor of Rancoes Stock Farm, New Jersey, has bought the Fowler farm, Northumberland Co., Ont., owned by Jas. Wellwood, and consisting of over 400 acres, with the intention of establishing a farm for breeding Thoroughbred horses in Canada, and we are informed that she will at once ship her large and valuable stud to its new home.

QUESTIONS AND ANSWERS.

1st.—Questions asked by bona-fide subscribers to "The Farmer's Advocate" are answered in this department free.

2nd.—Questions should be clearly stated and plainly written, on one side of the paper only, and must be accompanied by the full name and address of the writer.

3rd.—In Veterinary questions the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.

4th.—When a reply by mail is required to urgent veterinary or legal enquiries, \$1.00 must be enclosed.

Miscellaneous.

BUCKWHEAT FOR COWS.

How does buckwheat (ground) compare with other grains; shorts and bran, for milch cows? I am sending my milk to Toronto.

Ans.—Buckwheat grain has a considerably lower feeding value than wheat, which it resembles in respect of nutritive ratio. The floury portions of the grain are valuable, but the coarse, woody hulls contain little nutriment. Buckwheat middlings make an excellent feed for dairy cows. The following table of analysis will give an idea of how buck-

wheat, buckwheat bran, buckwheat shorts and buckwheat middlings compare with wheat and its mill by-products:

	Carbohy- Protein.	drates.	Ether extract.
Buckwheat (whole grain)	7.7	49.2	1.8
Buckwheat bran... ..	7.4	30.4	1.9
Buckwheat shorts. . . .	21.1	33.5	5.5
Buckwheat mid'l's 22 . . .	22	33.4	5.4
Wheat	10.2	69.2	1.7
Wheat bran	12.2	39.2	2.7
Wheat shorts.....	12.2	50.	3.8
Wheat middlings... .	12.8	53	3.4

From the above, it will be seen that buckwheat shorts and middlings carry a large percentage of protein, which explains their value as a milk-producing feed.

CREAM WILL NOT CHURN.

The last twice we have churned we can get no butter, although taking care of our cream the same as usual. We have a separator, and churn at 66 degrees. Am feeding my cows corn at night, hay in the morning, and oat straw at noon. A little buckwheat straw is given after I water them in the morning, but taken

from them at noon after they have eaten the chaff out of it. Salt once a week.

O. C.

Ans.—The fact that your cows get chiefly dry feed may have much to do with the difficulty in getting butter from the churning. For milch cows, succulent diet is desirable. In winter, roots, (preferably mangels or sugar beets), and corn silage, form one of the best milk-making materials. Again, the difficulty may lie in the fact that the cows have been milking for a long time, in which case the mixing of milk from a newly-calved cow would help. Change the ration; feed roots, if possible, and churn at slightly higher temperature. If roots are not available, buy some bran and oil-cake meal, and feed from one to two pounds daily of a mixture of these two feeds.

FEEDING HEIFER.

1. I have a Jersey heifer twenty-six months old, dropped first calf December 9th. Please tell me how to feed her with the feed I have, namely: Mixed hay, bran, wheat mouillee, a few potatoes, oil cake.

2. Would 25 lbs. of milk per day be considered pretty fair milking for this heifer?

R. A. S.

Ans.—1. Give hay two or three times a day, as convenient, following regularly whichever routine is adopted. Vary this with an occasional feed of clean straw or corn fodder, if any is to be had. With this, give twice a day a mixture of bran mouillee and oil cake in the proportions of 2:2:1, the proportion of oil cake to be gradually increased to the same proportion as the bran as the heifer passes the first week or two of lactation. Of the mixture named, start with a couple of pounds twice a day, and gradually increase both quantity fed and proportion of oil cake according to the response. The potatoes may be fed raw or boiled, and given with meal sprinkled over them.

2. Yes; 25 pounds a day of Jersey milk would be a reasonably good flow for a two-year-old heifer.

DOMINION EXHIBITION, 1909.

Is the time and place arranged for the 1909 Dominion Exposition yet?

H. N. D.

Ans.—The Accountant of the National Live-stock Records, Ottawa, informs us that they have made inquiries from the Department of Agriculture, and are informed that nothing has yet been settled.

Incorporated 1885.
THE
TRADERS BANK
OF CANADA

Capital and Surplus,
\$6,350,000.

Total Assets,
\$34,000,000.

Now is the time to open a Savings Account. Make a good beginning, add to it as the proceeds of the year's work come in, and you will have a comfortable reserve, ready for likely-looking investments or unexpected expenses. \$1 opens an account.

THE BANK
FOR THE
PEOPLE.

One of the 80 branches of this Bank is convenient to you. Your account is invited.

MARKETS.

Toronto.

LIVE STOCK.

Generally speaking, the quality of cattle last week was only medium. Owing to light deliveries, trade was fairly good, the demand being equal to the supply.

Exporters.—Few export steers were on sale; prices ranged from \$4.90 to \$5.25; export bulls sold from \$3.25 to \$4.50 per cwt. It is expected that more export space on the boats will be available this coming week.

Butchers.—Prime picked cattle sold at \$4.75 to \$5; loads of good, \$4.40 to \$4.60; medium, \$4 to \$4.30; common, \$3.50 to \$3.90; cows, \$2.50 to \$4; canners, \$1.50 to \$2.25.

Feeders and Stockers.—Few feeders or stockers were on sale, and prices were reported nominal. Feeders, \$3.25 to \$4; stockers, \$2 to \$3 per cwt.

Milkers and Springers.—Only a limited number of milkers and springers were offered. Prices ranged from \$30 to \$50 each.

Veal Calves.—Not many veal calves on sale, prices unchanged, at \$3 to \$6.75 per cwt.

Sheep and Lambs.—Receipts light, and prices higher for lambs. Export ewes, \$3.25 to \$3.40; lambs, \$5 to \$5.85 per cwt.

Hogs.—Selects, fed and watered at the market, \$6, and \$5.75 to drovers at country points, f. o. b. cars.

Horses.—About 50 horses changed hands at the Union Horse Exchange last week, showing that the demand still continues to be light, and trade slow. J. Herbert Smith reports prices about the same as last quotations, and expects business to pick up after the New Year.

BREADSTUFFS.

Wheat.—White winter No. 2, 95c. bid; No. 2 red, 95c. bid; No. 2 mixed, 95c. bid. Manitoba—No. 1 northern, \$1.08 to \$1.08½c.; No. 2 northern, \$1.03 to \$1.03½c. at lake ports. Rye—No. 2, 76c. Peas—No. 2, 85½c. bid. Oats—No. 2 white, 37½c. bid; No. 2 mixed, 41½c. bid. on track at Toronto. Barley—No. 2, 57c.; No. 3X, 55c.; No. 3, buyers, at 54c. Corn—Old, 69c., Toronto freights.

Buckwheat—No. 2, 56½c. bid at outside points. Flour—Ontario 90 per cent. patent, \$3.50 bid for export; Manitoba patent, special brands, \$6; second patents, \$5.40; strong bakers', \$5.30. Bran—Car lots, bulk, outside, \$22. Shorts—Car lots, in bulk, outside, \$25.

COUNTRY PRODUCE.

Butter.—Receipts equal to demand; market inclined to be easy, at unchanged quotations: Creamery pound rolls, 28c. to 30c.; separator dairy, 25c. to 26c.; store lots, 22c. to 24c.

Eggs.—New-laid, 40c.; cold storage, 25c.

Cheese.—Receipts equal to demand, with prices steady. Large, 13½c.; twins, 14c. Honey.—Market unchanged. Extracted, 10½c. to 11c.; combs, \$2.25 to \$2.75 per dozen sections.

Potatoes.—Market easy, at about 60c. per bag, for car lots, on track at Toronto. Farmers' loads at the City market sold at the same price.

Poultry.—The Christmas demand for poultry was so great, especially for turkeys, that prices advanced as follows: Turkeys, 20c. to 21c. per lb.; geese, 12c. to 14c. per lb.; ducks, 13c. to 15c.; chickens, 14c. to 16c.; fowl, 8c. to 10c. per lb.

Beans.—Market easy. Primes, \$1.70 to \$1.75; hand-picked, \$1.80 to \$1.85.

Hay.—Baled, car lots, on track at Toronto, \$10.50 to \$11.50 for timothy.

Straw.—Baled, car lots, on track at Toronto, \$7 to \$8.

HIDES AND WOOL.

E. T. Carter & Co., 85 Front street East, Toronto, have been paying for No. 1 inspected steers, 60 lbs. and up, 10c.; No. 2 inspected steers, 60 lbs. and up, 8c.; No. 1 inspected cows, 9c.; No. 2 inspected cows, 8c.; country hides, cured, 8½c. to 8c.; calf skins, city, 12c.; calf skins, country, 10c. to 12c.; horse hides, No. 1, \$3; horse hair, per lb., 29c. to 30c.; tallow, 5½c. to 6½c.; lamb skins, 70c. to 80c.; raw furs, prices on application.

SEED MARKET.

The seed market was about the same as last quotations. Enquiries from abroad have caused prices to firm up for the better grades. Alsike, fancy, \$7.25 to \$7.60; alsike, No. 1 quality, \$6.90 to \$7.20; alsike, No. 2 quality, \$6 to \$6.50; red clover, bushel, \$4.50 to \$5.75; timothy seed, bushel, \$1.30 to \$1.60. These are the prices paid to farmers, and not what the seedsmen sell at after re-cleaning.

Montreal.

Live Stock.—The requirements of the local market were more than anticipated last week. There were practically no choice cattle to be had, best quality offering at 4½c. to 5c. per lb., good being 4½c. to 4c. per lb., medium 3½c. to 4c., and common 2½c. to 3c., inferior being as low as 1½c. per lb. Sheep were rather stronger in tone, and prices were a fraction higher, being 4½c. to 4c. per lb. for choice lots, and 3½c. to 4c. for ordinary. Supplies were light. Lambs, too, were firm, being 5½c. to 6c. per lb. for choice lots. Good lambs were selling as low as 5½c., and purchases were made at 5½c. per lb. Some choice calves were traded in, at 5c. to 5½c. per lb., this being for milk-fed, while grass-fed were available at 3½c. to 4c. The tone of the market for hogs was firm, and prices were steady, at 6½c. to 6c. per lb. for select lots, weighed off cars.

Horses.—On the whole, the month of December was a good one in the horse business—very much better, in fact, than dealers were anticipating. Heavy draft, 1,500 to 1,700 lbs., \$225 to \$300 each; light draft, 1,400 to 1,500 lbs., \$185 to \$240 each; good blocks, 1,300 to 1,400 lbs., \$175 to \$200; small or inferior animals, 1,000 to 1,100 lbs., \$100 to \$150; broken-down animals, \$50 to \$75 each, and choice saddle or carriage animals, \$300 to \$500.

Dressed Hogs.—Dressed hogs were firm and about steady, fresh-killed, abattoir-dressed stock being available at 9c. to 9½c. per lb., country-dressed selling at 8c. to 8½c. per lb. Pure lard, 12½c. to 13c. per lb., and compound, 8½c. to 9½c.

Poultry.—Demand for turkeys, however, has been good, fancy stock bringing 17c. per lb. in a wholesale way. Choice chickens last week ranged from 13c. to 14c., ordinary stock selling around 12c., and fowl being as low as 8c. to 10c. per

lb. Chickens were in fair demand. Geese were not being sought after. They were quoted at 9c. to 11c. per lb. A few ducks sold at 11c. to 12c. per lb., and perhaps a fraction more for choicest.

Potatoes.—Fair demand; prices held about steady, 75c. to 77½c. per 90 lbs., carloads, on track, for Quebec whites, and 80c. to 82½c. for Green Mountains. This stock is about 3c. more when hauled away from cars, in a jobbing way, and perhaps 20c. more when sold in single bags and delivered into store.

Eggs.—Demand has been active. No. 1 candled cold-store stock sold at 22c. to 23c. per dozen, selects being about 26c., and boilers about 35c. Prices 1c. to 2c. higher on Monday, December 28th.

Butter.—Strange enough, the demand for butter does not appear to have been very active. One dealer reports that he has had very little more inquiry than ordinarily. However, it is thought the aggregate trade has been fair. Very little increase in business is looked for until after the middle of next month. Prices were steady, at 27½c. to 28c., in a jobbing way, for October creamery, and more for smaller lots, November stock being about a cent below the prices mentioned. Manitoba dairy has lately been sold here at 21c. to 22c. per lb.

Cheese.—Market was dead last week.

Grain.—No. 2 white Manitoba oats, 46½c. per bushel, carloads, store; No. 3, at 46c.; extra No. 1 feed being 45½c., and ordinary No. 1 feed about 45c. per bushel.

Flour.—Market has had a steady spell of many months' duration, and prices were still \$6 per bbl., in bags, for Manitoba spring wheat patents, and \$5.50 for seconds. Ontario winter wheat patents, \$5 to \$5.25 per bbl., straight rollers being \$4.60 to \$4.70. Demand continues fair.

Feed.—Demand for all kinds of feed was fair, shorts being the dullest. Bran active, at \$21 to \$21.50 per ton, in bags, shorts being \$24.50 to \$25 per ton. Cottonseed was quoted at around \$33 per ton, and oil cake at \$32.

Hay.—Prices were well maintained, and demand steady. No. 1 timothy, \$12.50 to \$13 per ton; No. 2 extra, \$11.50; No. 2, \$10 to \$10.50; clover mixed, \$3 to \$8.50, and clover \$7 to \$7.50, car lots.

Hides.—Market steady, dealers paying 8½c., 9½c. and 10½c. respectively, for Nos. 3, 2 and 1 beef hides, and selling to tanners at ½c. advance; calf skins, 11c. per lb. for No. 2, and 13c. for No. 1. Sheepskins were up to 60c. each, horse hides being \$1.50 each for No. 2 and \$2 for No. 1. Tallow, 1½c. to 4c. per lb. for rough, and 4c. to 6c. for rendered.

Chicago.

Cattle.—Beeves, \$3.50 to \$7.60; Texans, \$3.50 to \$4.30; western, \$3.50 to \$5.50, stockers and feeders, \$2.60 to \$4.70; cows and heifers, \$1.50 to \$4.90; calves, \$6.25 to \$9.

Hogs.—Light, \$1.95 to \$5.75; mixed, \$5.35 to \$6; roughs, \$5.35 to \$5.60; good to choice, heavy, \$5.60 to \$6; pigs, \$3.75 to \$4.90; bulk of sales, \$5.50 to \$5.85.

Sheep and Lambs.—Native, \$2.60 to \$4.90; western, \$2.60 to \$4.90; yearlings, \$5 to \$6.25; native lambs, \$4.50 to \$7.70; western, \$4.50 to \$7.70.

Buffalo.

Veals.—\$7 to \$9.25.

Hogs.—Heavy, \$6.10 to \$6.15; mixed, \$6 to \$6.10; Yorkers, \$5.30 to \$6; pigs, \$4 to \$5.25; roughs, \$5.25 to \$5.50; stags, \$4 to \$4.75; dairies, \$5.50 to \$5.90.

Sheep and Lambs.—Lambs, \$5 to \$8.15; yearlings, \$5.50 to \$6; wethers, \$4.50 to \$4.75; ewes, \$4 to \$4.25; sheep, mixed, \$2 to \$4.50; Canada lambs, \$7.60 to \$7.80.

British Cattle Market.

London cables cattle at 13c. to 14½c. per lb., dressed weight; refrigerator beef, 10½c. to 10½c. per lb.

CONSTANT REMINDER.

Stubb—Back from the country, eh? Any souvenirs?

Penn—I should say so. One embalmed mosquito. I am going to wear it on a stick pin this winter.

Drainage, Tillage, and Manure.

"The British farmer relies in increasing degree upon manures to make his land productive, and their system of experimentation encourages the belief that manuring is the first point in good farming. A moment's consideration of the question, however, will show this to be a wrong interpretation of the correct order of things. Not the manuring of the land, but its cultivation, is the foundation influence," says a writer in The Times. "The benefits derivable, not necessarily from deep tillage, but from the reduction of the rooting area to a fine tilth, are many and important. In the first place, the germination of the seed and the development and spreading of the roots are accelerated in inverse proportion to the resistance they meet with in the soil, and if no other advantage were conferred, this in itself would be sufficient to justify the contention that the cultivation of the soil is the pre-eminent factor in arable farming. But the influences of a well-prepared tilth extend much further. The nutritive ingredients latent in the soil are set free to be acted upon by the natural fertilizing agencies in the form of bacteria, or even chemical processes, and rendered available as plant food, and thus the fertility of the land, as well as its physical condition, is improved. Moreover, whatever farmyard and artificial manures are applied are more readily assimilated by the well-prepared than by the indifferently-tilled soil, and the net results are increased production and a saving in expensive manures. As indicating that the advantages of good cultivation are appreciated by at least some British farmers, one who has had varied experience in the management of heavy soils recently gave it as his opinion that efficient tillage was the key to successful arable farming. He uses both farmyard manure and artificials in liberal quantities—of the former, in fact, as much as he can—but he has found that expenditure in manures is a doubtful investment unless the physical condition of the land is carefully looked after. His experience is consistent with sound reasoning, and it would be well for farmers in general if they more adequately recognized the truth of these remarks."

While not specified by the above writer, drainage is doubtless another factor which, with tillage, was included in the stipulation concerning physical condition of the soil. Millions of dollars' worth of plant food are wasted in the world for lack of underdrainage. The trinity of good soil practice is drainage, tillage and manure. With this, of course, should be combined a good system of cropping, including the extensive growing of legumes.

Old Aunt Hepsy Garside never had seen a moving-picture show before. She gazed in speechless wonder at the magic contrivance by which messenger boys were made to move with breakneck speed, barbers to shave their customers in less than a minute, and heavy policemen to dash along the street at a rate never attained by a living specimen, either on or off duty. It was all real to her. She could not doubt the evidence of her senses. All those things were taking place exactly as depicted. Presently an automobile came in sight in the far background, moving directly toward the audience at the rate of at least a mile a minute. Just as a catastrophe seemed inevitable it swerved aside, passed on and disappeared. Aunt Hepsy could stand it no longer. Hastily grasping the hand of her little niece, she rose and started swiftly for the door.

"Come along, Mynervy," she said. "It ain't safe to stay here any longer! That thing didn't miss me more than two feet."

In one of his burlesque sketches on English history, Bill Nye spoke of Julius Caesar's jumping into the water as he approached the English coast, wading ashore, running up to London, and walking through Regent street.

"An acquaintance of mine reported to me," said Mr. Nye, "that he had asked an Englishman how he liked the story. 'Not at all, not at all' was the reply. 'That 600,000 Nye doesn't know what he's about.' There was't any Regent street then, you know."



Life, Literature and Education.

Another Arts and Letters Club has been organized in Toronto for the purpose of promoting the arts in Canada. What are the rural districts going to do by way of aiding such a movement, or are the rural districts going to stand still in all that makes especially for refinement, devoting themselves solely to the mere making of money?

The beneficence of Government operation of railways through capable, non-political management by commission, seems to have been again illustrated in Victoria, Australia. The railways of Victoria are owned by the State, and, until five years ago, were managed as a branch of Government. The results were, apparently, not unlike those on Canada's Federal railway, the Intercolonial. Deficits were constant. It was finally decided to hand over the management to a commission. A practical Canadian railroad man, Mr. Thomas Tait, who had received his training with the C. P. R., was appointed Chief Commissioner. Business methods have been applied, deficits disappeared, and the railroad is not only serving the people efficiently and economically, but paying its way. The deduction drawn from this experience is the absolute necessity for business management of public-owned ventures, and freedom from the pernicious and disastrous influences of patronage and political influence. On any other than a business basis, the leaks from a system of publicly-operated utilities may be expected to outweigh the benefits; on the other hand, when run with an eye single to the public good, the benefits are great. There are no shareholders in the Victorian railroads. The capital expenditures are represented by bond issues, at fixed rates. There can be no temptation, therefore, to increase private profits at the expense of the public service. The bond-holders reap an assured return of 3.82 per cent. The profits are applied to the improvement of ways and rolling stock, to the betterment of the passenger and freight service, and finally to the remission of rates and charges of the more important sort. In short, the railroads are administered in the interests of the people, rather than the capitalist. The report of the Victorian railway recalls an interview which the writer had a year or so ago with a New Zealander, who explained the working of Government-owned railways in that State, where increased earnings had been repeatedly applied to the reduction of rates and improvement of service. From his point of view, monopolistic ownership of the highways of commerce was unthinkable. So it may be some day in Canada, when people have learned to devote themselves as faithfully to public as to private service. Meanwhile, as a step in the right direction, the suggestion that the Intercolonial Railway be placed under an independent, capable, non-political commission, gains steadily in public favor.

The opening of the Montreal Technical Institute is another link in the chain which shows the strength with which the idea of technical education has taken hold of our country. The idea underlying the movement is a good one; people should be taught the things by which they must earn their living. At the same time, in the methods adopted for its promotion, there is the danger, as in most new ideas, of overleaping the mark, as seems to have been done already in many of our public schools, if one may judge by the amount of time spent on construction work, apparently with the sole result of making an attractive show. It is not very important that a child shall make a fine pasteboard box or whisk-bolder, tediously adorned with an indifferent design in water-color; it is, however, important that, in making these, he has learned something of deftness of finger, accuracy of measurement, and of the art of expression in conversation and composition; and these cannot be taught if too much time is feverishly spent in making a collection of articles for admiring relations to pronounce upon.

Again, the grand old subjects, reading, writing, arithmetic, geography, with an understanding of current events in various parts of the world, are too important to be pushed into the background. Nor can a word for the more purely pleasure-giving literature be left out. A love for good literature is one of the best gifts that can be given to any child, a gift which shall brighten many an otherwise gloomy hour through life, and prove a real solace in old age. But one life is to be lived, and anything that can add to its happiness is worth while.

Let us have technical training, but let that training be really educative, not a mere farce, misleadingly disguised under the name "technical." Above all things, let a judicious balance—not only of the subjects on the curriculum of our schools, but of the time allotted to those subjects—be maintained.

No better object-lesson could be given in regard to the importance of the disaster which bacteria of certain kinds may work if left to themselves, than the precautions taken of late at the boundaries of Canada to keep out foot-and-mouth disease. Automobiles, etc., crossing at Niagara have been detained and thoroughly disinfected before being permitted to go on their way. The pantry of a private car belonging to a party of rich Americans, en route to Cobalt, has been divested of everything in the way of dressed meat which it contained—ducks, turkeys, game, a side of beef—all being consigned to the fireplace of a Grand Trunk engine, while the trucks on which the viands were carried, the men who handled them, and even the platform across which the trucks were rolled, were thoroughly disinfected. It is only within the last few decades that the tremendous power of bacteria—all the more tremendous because exercised silently and invisibly—has been fully recognized, even by those in closest touch with the advances of science. Even yet, an adequate understanding of that pow-

er has failed to penetrate a great majority of the homes of the land. Until it does so, there is little hope for a general stamping out of disease, either of men or animals, or even of economic loss through the spoiling of provisions.

Among the death notices in a recent newspaper appeared a suggestive line, "Please do not bring flowers." The bereaved parents—people high in the social scale, by the way—perhaps knew little of the effect such an example may have. It is a beautiful custom for the nearest relatives of the deceased to put a few flowers on the coffin, but no one who knows the pleasure which these "silent messengers" can give to a sick person, can fail to regret that they are so often held back until the time for pleasing is past. A little bouquet of sweet peas or violets, a single rose, sent to an invalid is a missionary, sweet and unobtrusive; the expensive pillow or wreath laid on the coffin seldom fails to carry with it, along with what may be sincere sympathy, a savour of ostentation. The pity of it—that vulgar parade cannot be kept from invading even the death-chamber! . . . Send flowers for the coffin if you will, but let your best gifts go to the invalid.

Some of the American newspapers and magazines find a subject for "copy" in President Roosevelt's "oceans of words" and the "miles of manuscript" in which he conveys his suggestions to Congress. The retiring President may be prolix, but since the body of his addresses is usually made up of reiterations of the principles which he has laid down since the beginning of his presidency, it is evident that he believes, with Pestalozzi, that "repetition is the secret of all true education." In his last annual message to Congress, he again sets forth his convictions: Railroads should be placed completely under the control of an Interstate Commerce Commission. Rebates and special privileges should not be given. Combinations should not be entirely done away with, but such as are in the interests of the public should be permitted, subject to the control and supervision of some agency of the National Government, publicity being given to all affairs connected therewith which affect the public. All the agencies of interstate commerce should be under control of the National Government. A condition should be brought about by which those who produce shall own a greater share than at present of the wealth they create. There should be diminution of woman and child labor in factories, and a general shortening of working hours. Stock-watering should be prohibited, stock-gambling discouraged, and a progressive inheritance tax levied on large fortunes. Finally, he appeals for a stronger effort toward systematic preservation of the forests; for an increased appropriation for the Bureau of Education; an appropriation for building four battleships; and the establishment of a parcel post on rural routes. . . . In striking contrast to the humane spirit underlying the above, comes an account of

the subjects engrossing the attention of the current Duma. A violent discussion has there taken place over a Government bill to grant a credit of \$500,000 for the benefit of the employees of the prisons' administration who were victims of outrages while on duty, or of their families, when the employees were killed. Socialists and Laborites denounced the administration and the torturing methods applied to political prisoners, Deputy Rosanoff asserting that, as a result of prison conditions, 60 per cent. of these prisoners are dying of tuberculosis. . . . In the British House of Lords, Lord Morley, Secretary of State for India, speaking recently on the situation centering in Bengal, expressed little fear for the future. He is strongly of the opinion that the Indians must be admitted to a much larger share in the Government, but expressed the opinion that much wisdom and moral strength are necessary in guiding and controlling the people of that turbulent land.

People, Books and Doings.

A meeting of the British Society for the advancement of Science will be held in Winnipeg next summer.

Wireless telephony has been coming within sight of perfection in Europe. During the past autumn, a man in Paris spoke into a receiver connected with wires running up the Eiffel Tower, and his words were distinctly heard by another, on Cap Raz de Sein, near Brest, considerably over one hundred miles away. Camille Tissot, physical-science teacher, of Brest, is the inventor of the apparatus used. He has long devoted himself to wireless experiments, and simultaneously with Marconi, although knowing nothing of what the latter was doing, invented a wireless telegraph which worked perfectly over sixty miles. At present, the Metropolitan Life Tower, of New York, is being fitted with a wireless-telephony apparatus, and attempts will be made to communicate with the Eiffel Tower.

The title of the world's biggest land-owner may be claimed by Mr. Sidney Kidman, the Australian cattle king. He owns more of the British Empire than any one other man. At 14 he was earning 10s. a week, and now he has 49,210 square miles of land standing in his name. He began life as a teamster, and gradually worked his way up until he was the largest horse-dealer and cattle-owner in Australia. He owns 100,000 cattle and 10,000 horses, yet he is not quite satisfied with his business methods. According to the Argonaut, he is going to Canada to try and get a job on a ranch as a cowboy, so that he can find out the inside of the American methods.—[Otago (N. Z.) Witness.

Major Edgar A. Mearns, surgeon in the United States Army, author, and authority on zoology and botany; Mr. Edmund Heller, zoologist, formerly with the Field Columbian Museum in Chicago; and Mr. J. Alden Loring, of Oswego, N. Y., an authority on the smaller mammals, and an expert collector, will accompany President Roosevelt on his hunting trip in Central Africa.

An English Church pageant, of which Mr. Frank Lascelles, who conducted the Tercentenary pageant at Quebec, will be the master, is to be held in the grounds of Fulham Palace, London, Eng., in June. The pageant, which will be a representation of the history of the Church, from its founders until the acquittal of the seven Bishops, will be produced on six successive days, and will require three thousand performers.

We are still without a really good biography of Thackeray. That there is none is at least in part due to his dislike of biographies that were mere eulogies of their subject. Once, after reading a book of this type, he struck the volume impatiently with his hand, exclaiming, "None of this nonsense about me after my death." His daughters acted on the injunction, and no official life was written. Mr. Whibley's book in Messrs. Blackwood's "Modern English Writers," is one of the best.—[T. P.'s Weekly.

A series of lectures in the art of speaking is in progress at London (Eng.) University, the object being to "kill Cockney," which is said to have infected the speech of all classes at the Capital.

Everyone has heard of antitoxins, yet very few really understand the nature of these modern benefactors of mankind. Writing of them recently, Dr. Starr, of Columbia University, has presented the subject in a manner calculated to render it comprehensible to the popular mind. He says: "We know that every flower in our garden has its own blossom, and gives off its own peculiar perfume. We can dissolve the flower in alcohol, and thus obtain the perfume in an extract. In the same way, each organism of disease gives off a substance which we call a toxin, which is dissolved in the blood, just as the perfume is dissolved in alcohol. . . . By some mysterious activity in the body . . . there is produced in the blood a substance which exactly counteracts the toxin. It is as if we killed the perfume of one extract by mixing it with another. And when enough of this substance, which is called an antitoxin, has been produced by nature in the blood, the effects of the original toxin subside and health returns. But if the body is too weak to produce sufficient antitoxin the person dies."

On the discovery of this principle, the next question was how to isolate the organism? How to secure the toxin, and how to prepare an antitoxin which might be used in counteracting disease.

After exhaustive study and experiment, Behring finally discovered the diphtheria antitoxin, and since then the work has gone on apace, antitoxins being now known for typhoid fever, cholera, lockjaw, and many other diseases, and, more recently, through the investigations of Doctors Wassermann, of Berlin, and Flexner, of the Rockefeller Institute, New York, for cerebro-spinal meningitis. When it is considered that, since the discovery of the diphtheria antitoxin, the mortality from that disease alone has been reduced the world over from 35 per cent. to 9 per cent., the possibilities of such investigation, once the methods of applications have been perfected and understood by the medical profession at large, may appear.

By judicial award, two and one-half million acres of land in Virginia and Kentucky have been restored to Mrs. Florence Maybrick and her mother, Baroness Roque. The property, it is stated, was transferred by the women to their counsel, a man named Armstrong, when Mrs. Maybrick was about to be sentenced for poisoning her husband, and when both women were in a state of collapse.

"Yes, grandma, when I graduate, I intend following a literary career—write for money, you know." "Why, Willie, my dear, you haven't done anything else since you've been at college."—[Exchange.

The Quiet Hour.

Basting Threads.

Prepare thy work without, and make it fit for thyself in the field; and afterwards build thine house.—Prov. xxiv., 27.

"A New Year? Well, we will call it so.
But each new shower is the same old rain;
And the New Year, some of us happen to know,
Is only the old one over again."

You will think I have chosen a queer title for our New Year's chat, but really it seemed to choose itself. My young niece was facing a dress skirt the other day, and she showed me with great satisfaction three neat rows of basting-threads which she had put in as a preparation to the permanent stitching. Three rows of sewing which all had to be pulled out again! That seems like wasted work, doesn't it? and yet she expected—and re-

she is at the close of another year and there is apparently nothing gained by all her tiring work. She is just where she was last year, just where she will probably be next New Year's Day. The "new shower is the same old rain; and the New Year . . . is only the old one over again." That sounds dreary and hopeless, doesn't it? Does God make even one human soul, with its infinite capacity for joy and power and glorious usefulness, simply to condemn it to a weary treadmill existence with no particular result? That would indeed be to hitch a wagon to a star. But we must learn to look for invisible results; for the things which are seen are temporal, while the things that cannot be seen by our outward eyes are eternal—and those are the results God prizes. St. Peter easily saw how incongruous it was that the Master should stoop to do a slave's duty and wash the feet of His servants, but he did not so quickly realize the mighty, far-reaching results of that lowly act of service which has been an inspiration to the world ever since.

Let us treat our basting-threads with respect and set them with cheerful

months—"God must love you very dearly to allow you to suffer so much, and He must be doing some great work through you in your fellowship in the sufferings of our dear Lord." Isn't that an inspiring thought which may well fill us with joy when God holds us back awhile even from the delight of actively serving Him? He is trying to fit us for nobler work in the future, and will not allow us to spoil it by shirking any of the necessary training. Pain of heart or body—and we all are called to share in Christ's fellowship of suffering—is never an end in itself, but only the means to an end. It is a tool in the hand of the Master-builder with which He shapes His precious stones here on earth, so that they may be perfectly fitted for the place He has prepared for them in His glorious Temple—that House not made with hands, eternal in the heavens. It is being made as silently as Solomon's Temple, which "was built of stone made ready before it was brought thither: so that there was neither hammer nor axe nor any tool of iron heard in the house, while it was in building." And our business is not only to accept with glad willingness God's thorough way of preparing us for the position He intends us to fill, but we must set ourselves to copy His methods and work with thoroughness. As Briggs says:

"If you have to earn a living and begin at the bottom, make the bottom stronger because you are there. Then trust to time. So few workers in proportion to the whole number give themselves intelligently, loyally and unreservedly to their immediate duty that if you thus give yourself you cannot but succeed. Thousands of people in small positions whine because their talents are thrown away—because their ability has no elbow-room. It is not elbow-room that they need; it is 'elbow-grease'; it is energy and strength. Their very whining shows that they are too small for the places they are in now. When the right kind of person has too small a place, he does his work so well as to make the place bigger; people see in it more than they ever saw before. He who laments that an unappreciative world has slighted his talents is a more wicked and slothful servant than he who hides his one talent in the earth. Do your work and you will succeed."

My father used to be fond of quoting, in praise of thoroughness, the following jingle:

"If I am a cobbler I'll make it my pride
The best of all cobblers to be:
If I am a tinker, no tinker beside
Shall clout an old kettle with me."

HOPE.

Christmas.

And well our Christmas sires of old
Lov'd when the year its course had
roll'd,
And brought blythe Christmas back
again,

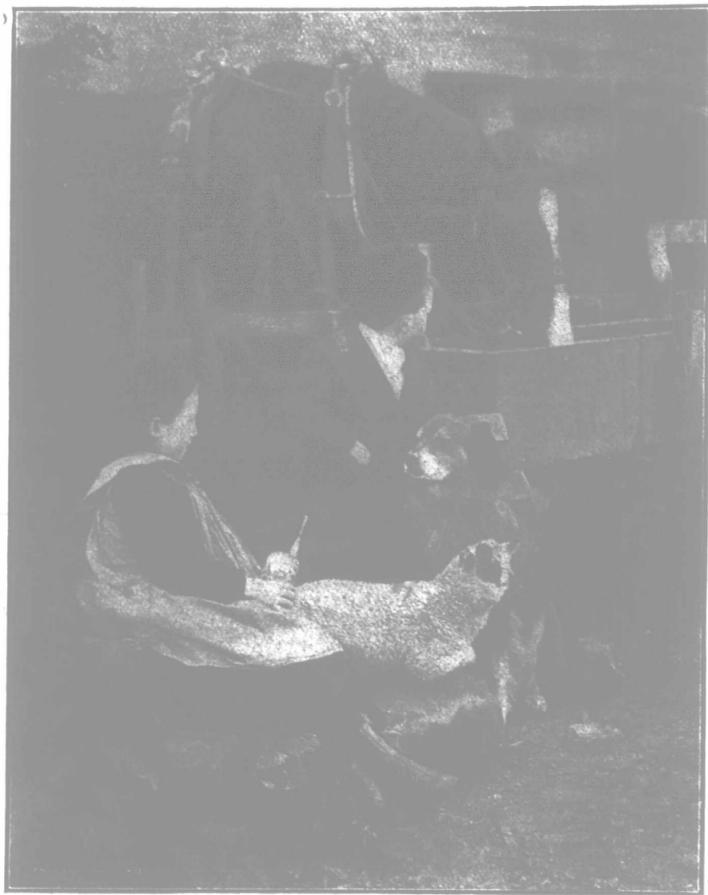
With all its hospitable train.
Domestic and religious rite
Gave honor to the holy night.
On Christmas-eve the bells were rung,
On Christmas-eve the mass was sung;
That only night in all the year
Saw the stoled priest the chalice rear;
The damsel donned her kirtle sheen;
The hall was dress'd with holly green;
Then opened wide the Baron's hall,
To vassal, tenant, serf and all;
Power laid his rod of rule aside,
And ceremony doff'd his pride,
All hail'd, with uncontroll'd delight,
And general voice, the happy night,
That to the cottage, as the crown,
Brought tidings of salvation down.

—Sir Walter Scott.

Our Gifts.

"They gave to thee
Myrrh, frankincense, and gold;
But, Lord, with what shall we
Present ourselves before thy Majesty,
Whom thou redeemest when we were sold?
We've nothing but ourselves, and scarce
that neither,
Vile dirt and clay;
Yet it is soft, and may
Impression take.
Accept it, Lord; and say, this thou
hadst rather;
Stamp it, and on this sordid metal make
Thy holy image, and it shall outshine
The beauty of the golden mine."

—Jeremy Taylor.



The Young Foster Mother.

ceived—approval for her thoroughness. I used to despise basting-threads, before sad experience taught me their use and great value; the attempt to finish things in a great hurry, without careful preparation, often resulted in waste of time—as the work had to be done over again—and usually failed to secure satisfactory results at all.

I think there is a valuable lesson to be learned from these stitches so carefully placed in position, only to be pulled out when their work is done. They preach the importance of thoroughness and proper preparation. They preach of the tedious schooling required before the work of a man begins. Too great impatience to start, causing the runner in life's race to enter the lists without training, spells failure. God works with infinite patience, holding us back—often very much against our will—until we are prepared for our work. And what a lot of that preparation seems like basting-threads! Here is a woman who feels that she is accomplishing nothing permanent, because her days are spent in a monotonous round of cooking, washing, sweeping, and other household tasks which will all have to be done over again next week. Here

thoroughness, remembering that no one can ever accomplish good work without a great deal of what is often called "drudgery." Indeed, the saying is probably true:

"Of all work that produces results, nine-tenths must be drudgery. There is no work, from the highest to the lowest, which can be well done by any man who is unwilling to make that sacrifice."

God expects beautifully finished results when He takes the trouble to put a great many basting-threads into His work—the great work of making character. While you fancy nothing permanent is being done, while you cheerily and thoroughly do the chores, which will have to be done all over again to-morrow, God is closely watching the slow growth of Patience, Trust, Fortitude, Tenderness, and other beautiful permanent graces in your soul. If He can see the value of a lifetime of monotonous duty, surely we can learn to rejoice in it too, and then beauty of soul will spring up more swiftly under His hand—the hand of a Master workman who never makes mistakes.

A friend wrote to me a few weeks ago—referring to a lame knee which has stopped my settlement work for six



Prize Beaver Drawing.

The Beaver Circle.

Dear Beavers,—Out of nearly two hundred compositions on "The Beaver," that of H. M. Colbeck has been chosen as most worthy of the first prize. Others were, perhaps, as good—or better in some respects—but they were not as original, because they followed too closely the text of the books from which information was obtained. For instance, nearly one hundred reproduced almost word for word, that "lesson" about the beaver in the Third Reader. Of course, we are not really blaming you for this; the fault was pretty much ours in giving you a subject dealt with in one of your readers. It stands to reason that you should have every word of that old lesson at your tongue's end, and that, therefore, sentence after sentence would come to your pen's end in spite of you. However, we just gave you that subject because it touched upon our new department heading; in future we shall be more careful.

We must tell you, too, that several of you forgot to tell your age, so that we did not know where to place you. . . . Several others, again, wrote on both sides of the paper. This makes it very awkward for the printers, so please do not make such a mistake the next time.

Do you know, we felt ever so sorry about having to discard so many letters, especially as all were so neatly written—in fact the tidiest and best set of letters that has come in yet. But then everyone could not get prizes, and there is one consolation for those who did not—that they have "lots" of company.

The Drawing Competition.—About fifty drawings were received, the prize going to Albert Berry. The next best were drawn by Roberta Hayes and Luella Killough; then came beavers of all grades, shapes and sizes, from one resembling a great big black bear down to one like the one (we suppose) which wasn't sent at all, because, as the little girl said, it "looked more like a pig than a beaver." Upon the whole, however, our drawing competition was a great success, so we will have another before long.

THE PRIZE LIST AND ESSAYS.

Composition—H. M. Colbeck, Colbeck, Ont.

Drawing Competition—Albert Berry, Berryland, Ont.

Prize for the Younger "Beavers."—Myra Harding, Thorndale.

Honor Roll—Lucy Routledge, Phyllis Warner, Elizabeth Wilson, Norma Gilbert, Glen Holterman, "Blue Eyes," Myrtle Thomson, Arthur Milne, Stuart Tuckey, Jennie Malcolm, Gladys Kells, Mary Elliott, Mary Andrews, Eva Scott, Lavinia Erb, Harold Rose, Hester Fisher, Ethel Alves, Katherine Finlayson, Muriel Perkins, Ruby Laughlin, Minnie Scoular, Annie Armitt, Eldon Hunsberger, Leo Holland, Mary Armitt, Cora Stenabaugh, Willie Hemstreet, Edna Sutton, Hilda Baldwin, Bertie Rankin, Charles Platt, Winnie Gavin, Ethel Harwood, Lorna Schmidt, Helen Teepell, Luella Killough, Lila Nicholson, Phoebe Hyland, Norman McKinney, James Robertson.

The Little Beavers—Leslie Ashton, Bertha Scott, Elsie Banting, Hannah Long, Mollie Hassard, Edna Lawrence, Margaret Dawson, Roberta Hayes, Isabel Smith, Grace Williamson, Annie Silverson, Merle Arrand, Isabelle Thompson, Carl Simpson, Alvaretta Killough.

Prize Composition.

North America is the principal country where the beaver is found, but it is also common on the Euphrates, and along some of the larger European rivers, as the Rhone and Danube. The houses of the beaver are built of mud, stones and sticks. They are placed in a stream, and their entrances are always below the surface. As a severe frost would freeze

up their doors, they are obliged to make the sides deep enough to prevent the frost from reaching the entrances. This object is attained by building a dam across the river to prevent the water until it is so shallow that the beaver's purpose in the dam is made of branches which the beaver cuts down with its strong, sharp teeth, and mud and stones worked in among the branches. The beavers throw these branches into the water, and sink them to the bottom by means of stones, and by continually throwing in fresh supplies a strong embankment is soon made. As many beavers live together in one society, the formation of a dam does not take very long. By their united efforts they rapidly fell even larger trees, by gnawing them around the trunk, and they always take care to make them fall towards the water, so that they can transport the logs easily. The mud and stones used in their embankments are not carried on their tails, as some say, nor do the beavers use their tails as trowels for laying on the mud, the fact being that the stones and mud are carried between their chin and fore paws. The mistake respecting the tail is evidently caused by the slap that beavers give with that member when they dive. In order that their pond may not be too deep they always leave an opening in the dam to let the water escape when it rises above a certain height.

During the severe winter their mud-built houses freeze quite hard and prevent the wolverine, their greatest enemy, except man, from breaking through and devouring the inmates. Every year the beavers lay a fresh coating of mud upon their house, so that after the lapse of a few years the walls of the house are several feet in thickness. Many of the houses are built close together, but no two families can communicate with each other, except by diving below the walls and rising inside their neighbors' houses.

When in captivity the beaver soon becomes tame, and will industriously build dams across the corner of a room with brushes, boots fire-irons, books, or anything it can find. When its edifice is finished, it sits in the center apparently satisfied that it has made a beautiful structure to dam up the river—a proof that the ingenuity of the beaver is not caused by reason, but by instinct.

The fur of the beaver, like that of many other animals, consists of a fine wool, intermixed with long and stiff hairs. The hairs are useless, but the peculiar construction of the fur causes it to penetrate and fix itself into the felt, which forms the body of a hat. In making the hat, the only method required to fasten the fur into the felt is to knead the fur and felt together. The hair is toothed on its surfaces, and makes its way into the felt, just as an awn of barley will travel all over the body if placed up the sleeve. The length of the beaver is about three feet and a half.

H. M. COLBECK.

Colbeck P. O., Ont.

Selections from the Compositions.

"The beaver is valuable for its fur, and for a peculiar substance called 'castoreum' which it yields. . . . The incisors, or cutting teeth of the beaver, are very strong. The front of the tooth is of hard, orange-colored enamel. The back of the tooth is formed of a softer substance, which wears down very easily. The teeth of the beaver are continually growing."

E. WILSON.

"Trappers say . . . that when swimming, beavers use their tail as a rudder, or oar, it being turned under the body at a right angle, and swung rapidly from side to side."—Lucy Routledge.

"Right here I shall quote Longfellow on the beaver, in 'Hiawatha':

"But he reappeared triumphant,
And upon his shining shoulders
Brought the beaver, dead and dripping,
Brought the king of all the beavers."

Perhaps many of our Circleites have not had the privilege of seeing their work. On our farm we have what is called the Beaver Meadow, while some fifty feet further, on my uncle's farm, are their dams, built on each side of what used to be a small island, called Duck Island, extending to the high ground on either side, the one dam being seventy-five feet in length and the other one hundred and fifty."

PHYLLIS WARNER.

"The beaver is the best emblem Canada could have. This poem shows us how we should try to be industrious like the beaver:

"So honor be to the beaver's name,
And praise to the beaver's skill,
And in the labors that make far fame
May we all be beavers still!"

GLADYS KELLS.

The Next Competition.

Our next competition will be on "How I Spent Christmas Day." Please send your letters in time to have them reach this office on or before January 20th. Address, "The Beaver Circle," "The Farmer's Advocate," London, Ont.

Beaver Club Notes.

Leila Cass, L'Orignal, Ont., and Phoebe Hyland, Kars, Ont., would like some of the members to correspond with them.

The Ingle Nook.

Women's Institute Convention at Guelph.

(Continued.)

Mr. C. C. James is a much esteemed speaker at Women's Institute Conventions. The spirit of his address this year, "Problems of the People," was that we are paying too much attention to the material things of life, to the sacrifice of higher things. "How can we help the farmer to make more money?" we have been asking, and we have often forgotten the things that tend to the truest development. There are at present \$600,000,000 in the Banks of Canada, but there are 6,000,000 people. We have been thinking chiefly of the things that go to maintain that \$600,000,000. We have been making grand problems of the questions of transportation, immigration, the development of cheap power, of Government, of Imperialism. These are important problems, but they concern more particularly the men—what are the problems for the women?

Forty years ago people were startled by the founding of a women's club in New York. Women's organizations are no longer a novelty, and with them has come the question, "Shall Women Vote?" . . . If the questions enumerated above—of transportation, immigration, etc.—are to be settled by women, then women should vote. But should women be concerned more with the \$600,000,000, or with the 6,000,000 people? Are not problems connected with humankind of more importance than questions of money, and are there not many interests of this kind with which women may well concern themselves? . . . Among these are problems (1) of the home—the greatest, furthest-reaching of any problem that presents itself to any nation to-day. (2) Of the school—should not these be on the programmes of the Women's Institute? The school comes next to the home. (3) Of health—how to prevent deterioration of the national stock. . . . Mr. James here quoted excerpts from an address by President Roosevelt, calling attention to the fact that preventable death, preventable sickness, preventable low grades of mind, preventable ignorance, are among the most pressing questions of the day. During the last ten years \$46,000,000 had been spent by the Department of Agriculture of the United States in combating diseases of plants, etc.; not one cent had been spent for the prevention of pneumonia. Thousands upon thousands had been spent upon checking disease in elm trees, yet nothing had been done by the Federal Government towards saving human life, and yet the white plague is one of the greatest drains of the nation.

Mr. James closed his address by a strong appeal to the women to take up the subject of the health of the people, "our greatest national asset"; and urged upon them the value of an organized effort in preaching the doctrine and inculcating the principles of pure air, pure water, pure milk—the sanitation of homes, schools and churches.

ADDRESS BY MISS VAN RENSSSELAER.

Miss Van Rensselaer, of Cornell University, N. Y., attractive in personality, and practical in thought, was closely followed throughout her talk on "The Value of Farm Life." She took up first the question of woman as an important factor in the home and farm. Of necessity, women are the spenders of the money which the men earn, and one of the bright signs of the times is the educational movement which is sweeping over the land to teach them how to spend wisely. Women should understand how to handle raw material in the most scientific way; balanced rations for the family are quite as important as balanced rations for the cattle.

Farmers' wives must depend largely upon their own resources to meet all emergencies, hence they should be the most highly educated of women. Some spoke of the isolation of the country, but books and magazines, rural telephones, trolley-lines, etc., had largely done away with that possibility. Meetings like those of the Women's Institutes should be encouraged. They put women in touch with others and keep them up with the times.

The problems brought up by the Women's Institute, she thought, might be broader than anyone can tell. They involved scientific study. Women to-day are asking the "whys" of things. They want to know the scientific reasons, and as soon as they begin to know them, improvement in methods is very marked. "If you only knew what is back of such movements," she said, "you would not be discouraged over programmes."

THE SECOND DAY'S PROGRAMME.

During the first hour of Thursday morning (Dec. 10), a demonstration on "How to Conduct an Institute Meeting," by Miss S. Campbell, Brampton, led to some lively discussion. During the course of the demonstration a little lack of business methods on the part of some of the ladies was evident. Although an Institute may pull through without the regulation procedure of the ordinary business meeting, much is gained by adopting it, were it only the added expedition in disposing of business; and the ladies unfamiliar as yet with parliamentary procedure, or, at least, with as much of it as has been found advisable for public meetings, might do well to read carefully the handbook especially prepared by the Department for the conducting of Women's Institute meetings.

HOUSEHOLD CONVENIENCES.

A second address by Miss Van Rensselaer on "Household Conveniences," proved not less interesting than the first. The speaker believed in saving women's time and strength. This might be done, first, by simplifying. Superfluous ruffles might be dispensed with; less fussing might be made over guests with no diminution of hospitality; one cake might be made do instead of three, although women shall keep on making pies "as long as there are any men in the world."

Passing to household machinery, she observed that housekeeping is the most backward industry in the world. In other institutions there is no waste, either of time or material. The factory manager does not want to pay for labor that is not needed; machinery is employed and financial interests conserved. In the "house" a similar wisdom is not exercised. Woman's work is not counted among statistics, but it should be, unless the woman simply has "a steady job and her board and clothes." Woman IS an economic factor, and housework SHOULD BE regarded from a business standpoint. Time, and strength, and hired help, might all be saved by a little attention to household conveniences.

Among these she mentioned: (1) The small kitchen arranged to allow a minimum of steps; (2) The mangle, one kind of which needs no heating; (3) The use of farm power for running the laundry, etc.; (4) A drying-room to obviate the necessity of hanging clothes outside in cold weather; (5) The bread and cake mixer; (6) The potato parer; (7) Denatured alcohol as a fuel for heating irons in summer, or for specially constructed lamps which require no cleaning; (8) Co-operative laundries.

An interesting discussion in which the possibility of having a co-operative laundry in connection with the cheese-factories was brought up, followed Miss Van

Rensselaer's address. Some of the members thought the wagons used for conveying the milk to the factories might be made to do double duty in carrying the "clothes."

THE QUESTION DRAWER.

The Question Drawer always proves an interesting feature of the convention, providing, as it does, an opportunity for the shy members to make their wants known. This year the Drawer was in charge of Miss Watson, of the Macdonald Institute, who answered the questions with her usual ability—notwithstanding the fact that the queries covered the whole gamut, from "How can a wart be removed?" to "Why is it that we have twenty-seven lawyers and only seven farmers in Parliament?" One question was, "Are any of the Women's Institute branches agitating to have women on the school boards?"—a query which brought out an emphatic "I hope so," from Mr. Putnam.

HOUSE PLANTS.

A matter for considerable regret was the necessary shortening, by reason of an overlong discussion preceding it, of a demonstration on house-plants, by Mr. Wm. Hunt, of the O. A. C. Mr. Hunt advised the frequent examination of gardeners to prevent the collecting of seepage, and the frequent sponging and spraying of window-plants to counteract the ordinary dry atmosphere of the average home. Most insects, he said, attack the under side of the foliage, and a hand-spray should be used for routing them. Smooth-leaved plants need the most spraying; hairy-leaved ones much less; while rex begonias cannot be sprayed at all. Thick, glossy-leaved plants are, as a rule, the best to resist the dry air or injuries of gas of the house.

Commercial fertilizers he regarded as the best for pot plants, but he would not apply more than 50 per cent. of the amount advised on the packages at first. The plants should be habituated to them.

Most plants need a period of rest, given by placing them in a lower temperature and giving less moisture at the roots. No alarm need be felt if the leaves all fall off during this period; that is but a natural consequence. Afterwards the plants should be potted back, and occasionally divided to keep them from growing unwieldy.

Many questions testified to the interest in Mr. Hunt's subject, and it is to be hoped that he may have the opportunity at some future time to tell some more of the interesting and useful things he knows about plants.

The session closed by a discussion on "The Milk Problem," the report of which, however, must be left over for next issue.

Cookery for Invalids.

Dear Dame Durden,—Like many of the others who write you, I come for some help, which I am sure, with your usual ability, you will be able to render. I will make my errand known before going further, and will then mention a few things that interest me. I belong to our "Institute" and am asked to give a paper on "Tempting Dishes for Invalids."

Can you publish recipes or suggestions along that line? I have searched old "Advocates" and journals, but have found very little on the subject. But I have found a great many other things which I have cut out and keep in a book for reference. Little helpful stories, anecdotes, witty sayings, jokes, etc. I will send you one of our "Institute" programmes if you would care to have it, in order to see the scope of subjects dealt with during the year.

I noticed in "The Farmer's Advocate" recently, some one asks for a remedy for trouble among his poultry. I am a "henwife" and have had the same experience. I would advise him to procure a tin of Zenoleum, use according to directions, and it will do more good than most other things. I was amused at your account of nerves, and recognized your feeling exactly. I am not a nervous individual by any means, but hearing a person making noises while eating "sets me on edge" quicker than anything else. I think the Ingle Nook has taken on a different tone, and is more interesting during the last two years.

TRIXIE.

The following recipes are a few which

I jotted down while hearing a trained nurse lecture a year or so ago. Probably you will find them useful.

Beef Tea.—Put 1 lb. beef through a meat-chopper. Place in a sealer and add 1 pint cold water. Set the sealer in a pot of water and let come to a boil, then simmer for 2 hours. Beef tea is good as a stimulant, but must not be depended upon for food; chicken prepared in the same way (the lean meat only being used) is more nutritious.

Raw Beef Sandwiches.—Scrape lean beef with a knife and put the scraped beef between thin slices of bread and butter, seasoning well. These are appetizing and nutritious, also very easily digested.

Beef Balls.—Make scraped beef lightly into balls, seasoning well. Have an iron pan hot with a little salt on it. Put the balls on it and shake about over the stove to keep them from burning until lightly cooked. These also are very easily digested.

Cracker Gruel.—Roll a cracker, put a cup of warm milk over it, and let all come to a scald in a double boiler—very nourishing.

Eggnog.—Beat an egg—the white only, if the patient cannot bear the yolk—pour a little milk over and season as preferred. Patients as a rule do not like sweet things, therefore a little salt may be sufficient.

Good fresh buttermilk from the milk of healthy cows, is usually one of the best foods that can be given to sick folk, and is often relished when everything else is refused. Of course, the doctor should be consulted before giving this or any other food.

Food for an invalid should be served as daintily as possible. Take it in on a tray covered with a napkin, snowy white, and ironed to a satin finish. If possible, put a little bouquet of flowers—or even a single flower—on the tray, fresh ones each time, and the prettiest china you own. A bit of green parsley and a slice of lemon placed on the dish with meat of any kind, or poached egg, will also add to the attractiveness of the meal. If cornstarch pudding or custard is allowed, do not put it on a white dish—so much dead white is rather repellant. Put it on a pink dish instead, and see how much prettier it will look. Do not neglect these little things; they often entice a patient to eat who would otherwise turn away in disgust.

And above all things, do not leave food about the sick-room. Every meal should be a surprise to the patient. Do not worry him about the food he is to have; get it ready and bring it in, then as soon as he has finished, take the dishes, tray and all, right out of the room as quickly as possible. The same care should be exercised to keep medicine bottles out of the sight of the patient. These things may not mean much to well folk, but they make all the difference in the world to those who have their nerves unstrung by weakness and suffering.

I am sure Trixie would be very glad if others would send recipes for making things that have been proven good for invalids.

We shall be pleased to see your Institute programme—and, oh, yes, won't you please write us about the things you have learned while caring for poultry? I have been looking for a really enthusiastic "henwife" for a long time.

Yes, I remember the lady you mention in the private part of your letter very well. I was quite fond of her. Remember me to her when you see her again, will you, please?

A Few More Sweets, etc., for the Holiday Season.

Turkish Delight.—Soak 1 oz. sheet gelatine in $\frac{1}{2}$ cup water for two hours. Boil 2 cups granulated sugar in $\frac{1}{2}$ cup water. When boiling add the soaked gelatine and boil 20 minutes. Flavor with rind or juice of an orange and lemon. Pour the mixture into a pan, and set in cold water. When cold, cut in squares and roll in fruit or icing sugar.

Plain Vanilla Parfait.—Beat whites of 3 eggs to a froth. Put half a cup sugar and half a cup water on the fire and stir until the sugar dissolves, then let it cook until it threads. Pour very slowly over the egg-whites, beating all the time. Flavor with vanilla, and, when cold, fold in a pint of cream whipped stiff. Put into a mould and bury in snow four or five hours.

Figs Stuffed.—Buy moist, plump,

"pulled" figs and wash them clean. Remove part of the inside of the fruit and press the whole or half of an English walnut meat into it, being careful to press the fig together again. Preserved ginger may be used instead of the walnut to make a variety.

Cranberry Jelly.—Cook 1 quart cranberries and 1 cup water in a covered dish five or six minutes, then press through a colander or potato-ricer. Stir in two cups sugar, and without reheating turn the mixture into a mould.

Lemon Jelly.—Soak 1 box gelatine in 1 pint cold water for 1 hour, then add 1 quart boiling water and 2 cups sugar. Stir until dissolved, and when lukewarm add the juice of 4 lemons. Strain into a mould and set in a cold place 24 hours. Nice to serve with meat or fowl.

"Divinity."—A new confection, the recipe for which has been contributed by a member of the "F. A." staff: Take two saucepans; in one put 3 cups sugar, 1 cup thick syrup and $\frac{1}{2}$ cup water; in the other put 1 cup sugar and $\frac{1}{2}$ cup water. Let both cook until the syrup threads. When ready turn syrup in first pan slowly over beaten whites of 3 eggs, beating continually. Add to the mixture in second pan 1 cup nut meats. Turn this over first, put in a buttered tin, and when cool enough mark into blocks.

"THE FARMER'S ADVOCATE" FASHIONS.



6163 Circular Skirt with Gored Front and Habit Back, 22 to 32 waist.

6169—Whatever tends to give an effect of height and slenderness to the figure is in demand at the moment, and this skirt can be trusted to bring about the desired result, while it is graceful and attractive and by no means exaggerated in style.

The quantity of material required for the medium size is 7 yards 24 or 27, 4½ yards 44 or 52 inches wide.



6183 House Gown, 32 to 42 bust.

6183—The one-piece, or semi-princesse, house gown is one that active women are sure to require. The waist and skirt being joined by means of a belt, there is no possibility of annoying separation, and the gown can quite easily be slipped on and off, so that it is a genuine boon. In the illustration the material is one of the heavier cotton fabrics, and a great many women prefer gowns that can be laundered at all seasons of the year, but light weight wool materials also are much used, especially in a roomed day.

ite and is absolutely durable as well as attractive.

The quantity of material required for the medium size is 8½ yards 24, 7½ yards 32 or 6 yards 44 inches wide when material has figure or nap; 8 yards 24, 6½ yards 32 or 4½ yards 44 inches wide when material has neither figure nor nap.

* *

The above patterns will be sent to any subscriber at the very low price of ten cents per pattern. Be careful to give Correct Number and Size of Patterns Wanted. When the Pattern is Bust Measure, you need only mark 32, 34, 36, or whatever it may be. When Waist Measure, 22, 24, 26, or whatever it may be. When Misses' or Child's pattern, write only the figure representing the age. Allow from one to two weeks in which to fill order, and where two numbers appear, as for waist and skirt, enclose ten cents for each number. If only one number appears, ten cents will be sufficient.

Address: "Fashion Department," "The Farmer's Advocate," London, Ont.

Wee Joukydaidles.

By Jas. Smith, Edinburgh.

Wee Joukydaidles,
Toddlin' oot an' in:
Oh, but she's a cuttie,
Makin' sic a din!
Aye sae fou o' mischief,
An' minds na what I say:
My very heart gangs loup, loup,
Fifty times a day!

Wee Joukydaidles—
Where's the stumple noo?
She's tumblin' i' the cruivie,
An' lauchin' to the soo!
Noo she sees my angry ee,
An' aff she's like a hare!
Lassie, when I get ye,
I'll scud ye till I'm sair!

Wee Joukydaidles—
Oh, my heart it's broke!
She's torn my brow new wincey,
To mak' a dolly's frock.
There's the goblet owre the fire!
The jaud! she weel may rin!
No a tattie ready yet,
An' father comin' in!

Wee Joukydaidles—
Wha's sae tired as me!
See! the kettle's down at last!
Wae's me for my tea!
Oh, it's angersome, atweel,
An' sune'll mak' me gray:
My very heart gangs loup, loup,
Fifty times a day!

Wee Joukydaidles—
Where's the smoukie noo?
She's hidin' i' the coal-hole,
Cryin' "Keekyboo!"
Noo she's at the fireside,
Pu'in' pussy's tail—
Noo she's at the broun bowl,
Suppin' a' the kail!

Wee Joukydaidles—
Paidlin' i' the shower—
There she's at the wundy!
Haud her, or she's owre!
Noo she's slippit frae my sight:
Where's the wean at last?
In the byre among the kye,
Sleepin' soun' an' fast!

[Note.—"Loup" means leap; "cruivie," sty; "lauchin'," laughing; "soo," sow; "kye," cows.—For those unversed in the Scottish dialect.]

TRADE TOPIC.

THE LETTERS OF QUEEN VICTORIA.—By arrangement with the publisher, we are prepared to supply any reader of "The Farmer's Advocate" with a set of the much-talked-of "Queen's Letters," at the low price of \$1.50 for the set, which comes in three cloth-bound volumes. These "Letters," which are published by order of the King, embrace a great part of Queen Victoria's correspondence, both private and public, and throw many interesting side-lights on the customs and political issues of the time.

"'Tis, what is a political leader?"
"A man who is able to see which way the crowd is going, and follows with loud applause in that direction."

DECEMBER 31, 1907

THE FARMER'S ADVOCATE.

The Golden Dog

(Le Chien D'Or.)

A Canadian Historical Romance.

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CHAPTER III.—Continued.

She remembered vividly Pierre Philibert, the friend and fellow-student of her brother; he spent so many of his holidays at the old Manor House of Tilly, when she, a still younger girl, shared their sports, wove chaplets of flowers for them, or on her shaggy pony rode with them on many a scamper through the wild woods of the Seigneurie. Those summer and winter vacations of the old Seminary of Quebec used to be looked forward to by the young, lively girl as the brightest spots in the whole year, and she grew hardly to distinguish the affection she bore her brother from the regard in which she held Pierre Philibert.

A startling incident happened one day, that filled the inmates of the Manor House with terror, followed by a great joy, and which raised Pierre Philibert to the rank of an unparalleled hero in the imagination of the young girl.

Her brother was gambolling carelessly in a canoe, while she and Pierre sat on the bank watching him. The light craft suddenly upset. Le Gardeur struggled for a few moments, and sank under the blue waves that look so beautiful and are so cruel.

Amelie shrieked in the wildest terror, and in helpless agony, while Philibert rushed without hesitation into the water, swam out to the spot, and dived with the agility of a beaver. He presently reappeared, bearing the inanimate body of her brother to the shore. Help was soon obtained, and, after long efforts to restore Le Gardeur to consciousness—efforts which seemed to last an age to the despairing girl—they at last succeeded, and Le Gardeur was restored to the arms of his family. Amelie, in a delirium of joy and gratitude, threw her arms around him and kissed him again and again, pledging her eternal gratitude to the preserver of her brother, and vowing that she would pray for him to her life's end.

Soon after that memorable event in her young life, Pierre Philibert was sent to the great military schools in France to study the art of war, with a view to entering the King's service, while Amelie was placed in the Convent of the Ursulines, to be perfected in all the knowledge and accomplishments of a lady of highest rank in the Colony.

Despite the cold shade of a cloister, where the idea of a lover is forbidden to enter, the image of Pierre Philibert did intrude, and became inseparable from the recollection of her brother in the mind of Amelie. He mingled as the fairy prince in the day-dreams and bright imaginings of the young, poetic girl. She had vowed to pray for him to her life's end, and in pursuance of her vow added a golden bead to her chaplet to remind her of her duty in praying for the safety and happiness of Pierre Philibert.

But in the quiet life of the cloister, Amelie heard little of the storms of war upon the frontier and down in the far valleys of Acadia. She had the far valleys of Acadia. She had not followed the career of Pierre from the military school to the camp and the battle-field, nor knew of his rapid promotion, as one of the ablest officers in the King's service, to a high command in his native Colony.

Her surprise, therefore, was extreme when she learned that the boy-companion of her brother and herself was no other than the renowned Colonel Philibert, Aide-de-Camp of His Excellency the Governor-General. There was no cause for shame in

it; but her heart was suddenly illuminated by a flash of introspection. She became painfully conscious how much Pierre Philibert had occupied her thoughts for years, and now all at once she knew he was a man, and a great and noble one. She was thoroughly perplexed and half angry. She questioned herself sharply, as if running thorns into her flesh, to inquire whether she had failed in the least point of maidenly modesty and reserve in thinking so much of him; and the more she questioned herself, the more agitated she grew under her self-accusation; her temples throbbed violently; she hardly dared lift her eyes from the ground lest some one, even a stranger, she thought, might see her confusion and read its cause. "Sancta Maria," she murmured, pressing her bosom with both hands, "calm my soul with thy divine peace, for I know not what to do!"

So she sat alone in the embrasure, living a life of emotion in a few minutes; nor did she find any calm for her agitated spirits until the thought flashed upon her that she was distressing herself needlessly. It was most improbable that Colonel Philibert, after years of absence and active life in the world's great affairs, could retain any recollection of the schoolgirl of the Manor House of Tilly. She might meet him, nay, was certain to do so in the society in which both moved; but it would surely be as a stranger on his part, and she must make it so on her own.

With this empty piece of casuistry, Amelie, like others of her sex, placed a hand of steel, encased in a silken glove, upon her heart, and tyrannically suppressed its yearnings. She was a victim, with the outward show of conquest over her feelings. In the consciousness of Philibert's imagined indifference and utter forgetfulness, she could meet him now, she thought, with equanimity—nay, rather wished to do so, to make sure that she had not been guilty of weakness in regard to him. She looked up, but was glad to see her aunt still engaged in conversation with the Bishop on a topic which Amelie knew was dear to them both—the care of the souls and bodies of the poor, in particular those for whom the Lady de Tilly felt herself responsible to God and the King.

While Amelie sat thinking over the strange chances of the morning, a sudden whirl of wheels drew her attention. A gay caleche, drawn by two spirited horses en fleche, dashed through the gateway of St. John, and wheeling swiftly towards Amelie, suddenly halted. A young lady attired in the gayest fashion of the period, sprang out of the caleche with the ease and elasticity of an antelope. She ran up the rampart to Amelie with a glad cry of recognition, repeating her name in a clear, musical voice, which Amelie at once knew belonged to no other than the gay, beautiful Angelique des Meloises. The newcomer embraced Amelie and kissed her, with warmest expressions of joy at meeting her thus unexpectedly in the city. She had learned that Lady de Tilly had returned to Quebec, she said, and she had, therefore, taken the earliest opportunity to find out her dear friend and school-fellow to tell her all the doings in the city.

"It is kind of you, Angelique," replied Amelie, returning her caress warmly, but without effusion. "We have simply come with our people to assist in the King's corvee; when that is done, we shall return to Tilly. I felt sure I should meet you, and thought I should know you again easily, which I hardly do. How you are changed—for the better, I should say, since you left off conventional cap and costume!" Amelie could not but look admiringly on the beauty of the radiant girl. "How handsome you have grown! but you were always that. We both took the crown of honor together, but you would alone take the crown of beauty, Angelique." Amelie stood off a pace or two, and looked at her

friend from head to foot with honest admiration. "And would deserve to wear it, too," added she.

"I like to hear you say that, Amelie; I should prefer the crown of beauty to all other crowns! You half smile at that, but I must tell the truth, if you do. But you were always a truth-teller, you know, in the convent, and I was not so! Let us cease flatteries."

Angelique felt highly flattered by the praise of Amelie, whom she had sometimes condescended to envy for her graceful figure and lovely, expressive features.

"Gentlemen often speak as you do, Amelie," continued she, "but, pshaw! they cannot judge as girls do, you know. But do you really think me beautiful? and how beautiful? Compare me to some one we know."

"I can only compare you to yourself, Angelique. You are more beautiful than anyone I know," Amelie burst out in frank enthusiasm.

"But, really and truly, do you think me beautiful, not only in your eyes, but in the judgment of the world?"

Angelique brushed back her glorious hair and stared fixedly in the face of her friend, as if seeking confirmation of something in her own thoughts.

"What a strange question, Angelique! Why do you ask me in that way?"

"Because," replied she with bitterness, "I begin to doubt it. I have been praised for my good looks until I grow weary of the iteration; but I believed the lying flattery once—as what woman would not, when it is repeated every day of her life?"

Amelie looked sufficiently puzzled. "What has come over you, Angelique? Why should you doubt your own charms? or really, have you found at last a case in which they fail you?"

Very unlikely, a man would say at first, second or third sight of Angelique des Meloises. She was indeed a fair girl to look upon—tall, and fashioned in nature's most voluptuous mould, perfect in the symmetry of every part, with an ease and beauty of movement not suggestive of spiritual graces, like Amelie's, but of terrestrial witcheries, like those great women of old who drew down the very Gods from Olympus, and who in all ages have incited men to the noblest deeds, or tempted them to the greatest crimes.

She was beautiful of that rare type of beauty which is only reproduced once or twice in a century to realize the dreams of a Titian or a Giorgione. Her complexion was clear and radiant, as of a descendant of the Sun God. Her bright hair, if its golden ripples were shaken out, would reach to her knees. Her face was worthy of immortality by the pencil of a Titian. Her dark eyes drew with a magnetism which attracted men, in spite of themselves, whithersoever she would lead them. They were never so dangerous as when, in apparent repose, they sheathed their fascination for a moment, and suddenly shot a backward glance, like a Parthian arrow, from under their long eyelashes, that left a wound to be sighed over for many a day.

The spoiled and petted child of the brave, careless Renaud d'Avesne des Meloises, of an ancient family in the Nivernois, Angelique grew up a motherless girl, clever above most of her companions, conscious of superior charms, always admired and flattered, and, since she left the Convent, worshipped as the idol of the gay gallants of the city, and the despair and envy of her own sex. She was a born sovereign of men, and she felt it. It was her divine right to be preferred. She trod the earth with dainty feet, and a step aspiring as that of the fair Louise de La Valliere when she danced in the royal ballet in the forest of Fontainebleau and stole a king's heart by the flashes of her pretty feet. Angelique had been indulged by her father in every caprice, and in the gay world inhaled the incense of adulation until

she regarded it as her right, and resented passionately when it was withheld.

She was not by nature bad, although vain, selfish, and aspiring. Her footstool was the hearts of men, and upon it she set hard her beautiful feet, indifferent to the anguish caused by her capricious tyranny. She was cold and calculating under the warm passions of a voluptuous nature. Although many might believe they had won the favor, none felt sure they had gained the love of this fair, capricious girl.

CHAPTER IV.

Confidences.

Angelique took the arm of Amelie in her old, familiar schoolgirl way, and led her to the sunny corner of a bastion where lay a dismantled cannon.

The girls sat down upon the old gun. Angelique held Amelie by both hands, as if hesitating how to express something she wished to say. Still, when Angelique did speak, it was plain to Amelie that she had other things on her mind than what her tongue gave loose to.

"Now we are quite alone, Amelie," said she, "we can talk as we used to do in our schooldays. You have not been in the city during the whole summer, and have missed all its gaieties?"

"I was well content. How beautiful the country looks from here!" replied Amelie. "How much pleasanter to be in it, revelling among the flowers and under the trees! I like to touch the country, as well as to look at it from a distance, as you do in Quebec."

"Well, I never care for the country if I can get enough of the city. Quebec was never so gay as it has been this year. The Royal Roussillon, and the freshly-arrived regiments of Bearn and Ponthieu, have turned the heads of all Quebec—of the girls, that is. Gallants have been plenty as bilberries in August. And you may be sure I got my share, Amelie." Angelique laughed aloud at some secret reminiscences of her summer campaign.

"It is well that I did not come to the city, Angelique, to get my head turned like the rest; but now that I am here, suppose I should mercifully try to heal some of the hearts you have broken!"

"I hope you won't try. Those bright eyes of yours would heal too effectually the wounds made by mine, and that is not what I desire," replied Angelique, laughing. "No! then your heart is more cruel than your eyes. But, tell me, who have been your victims this year, Angelique?"

"Well, to be frank, Amelie, I have tried my fascinations upon the King's officers very impartially, and with fair success. There have been three duels, two deaths, and one captain of the Royal Roussillon turned cordelier for my sake. Is that not a fair return for my labor?"

"You are as shocking as ever, Angelique! I do not believe you feel proud of such triumphs," exclaimed Amelie.

"Proud, no! I am not proud of conquering men. That is easy! My triumphs are over the women! And the way to triumph over them is to subdue the men. You know my old rival at school, the haughty Françoise de Lantagnac: I owed her a grudge, and she has put on the black veil for life, instead of the white one and orange-blossoms for a day! I only meant to frighten her, however, when I stole her lover, but she took it to heart and went into the Convent. It was dangerous for her to challenge Angelique des Meloises to test the fidelity of her affianced, Julien de St. Croix."

Amelie rose up in honest indignation, her cheek burning like a coal of fire. "I know your wild talk of old, Angelique, but I will not believe you are so wicked as to make deadly sport of our holiest affections."

"Ah, if you knew men as I do,

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will prove to all sufferers that it is superior to any other made. We know it is; results have proved it to be. If you have tried many cures without results, we have thousands of others that our treatment cured. Consultation free at office or by mail.

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Moles, Warts, etc., successfully treated and permanently removed without a scar by our reliable method of **Electrolysis**, which is anti-septic and practically painless. Satisfaction assured. Send stamp for booklet "F."

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Established 1892.

3

A Woman's Sympathy

Are you discouraged? Is your doctor's bill a heavy financial load? Is your pain a heavy physical burden? I know what these mean to delicate women—I have been discouraged, too; but learned how to cure myself. I want to relieve your burdens. Why not end the pain and stop the doctor's bill? I can do this for you and will if you will assist me.

All you need do is to write for a free box of the remedy which has been placed in my hands to be given away. Perhaps this one box will cure you—it has done so for others. If so, I shall be happy and you will be cured for 2c (the cost of a postage stamp). Your letters held confidentially. Write to-day for my free treatment. MRS. F. E. CURRAH, Windsor, Ont.

De Roxton (in 1915)—Looking for an aeronaut? Why, I thought that chap you had was a star?

Wadburn—I guess he thought so, too; from what I've heard, he was visible nightly entertaining his friends in my aeroplanes.

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Windsor, Ont.

Amelie, you would think it no sin to punish them for their perjuries."

"No, I don't know men," replied Amelie, "but I think a noble man is, after God, the worthiest object of a woman's devotion. We were better dead than finding amusement in the pain of those who love us; pray what became of Julien de St. Croix after you broke up his intended marriage with poor Françoise?"

"Oh! I threw him to the fishes! What did I care for him. It was mainly to punish Françoise's presumption that I showed my power and made him fight that desperate duel with Captain Le Franc."

"O, Angélique, how could you be so unutterably wicked?"

"Wicked? It was not my fault, you know, that he was killed. He was my champion, and ought to have come off victor. I wore a black ribbon for him a full half year, and had the credit of being devoted to his memory; I had my triumph in that, if in nothing else."

"Your triumph! for shame, Angélique! I will not listen to you; you profane the very name of love by uttering such sentiments. The gift of so much beauty was for blessing, not for pain. St. Mary pray for you, Angélique; you need

"Yes, I met with a double defeat last night," continued Angélique.

"Indeed! pray, from whom?" Amelie's curiosity, though not usually a troublesome quality, was by this time fairly roused.

Angélique saw her drift, and played with her anxiety for a few moments.

"My first rebuff was from that gentlemanly philosopher from Sweden, a great friend of the Governor, you know. But, alas, I might as well have tried to fascinate an iceberg! I do not believe that he knew, after a half-hour's conversation with me, whether I was man or woman. That was defeat number one."

"And what was number two?" Amelie was now thoroughly interested in Angélique's gossip.

"I left the dry, unappreciative philosopher, and devoted myself to charm the handsome Colonel Philibert. He was all wit and courtesy, but my failure was even more signal with him than with the cold Swede."

Amelie's eyes gave a sparkle of joy which did not escape Angélique, but she pretended not to see it. "How was that? Tell me, pray, how you failed with Colonel Philibert?"

"My cause of failure would not be a lesson for you, Amelie. Listen! I got a speedy introduction to Colonel

Philibert, with proper respect, ask about a lady."

"And what did you say?"

"Oh, not half enough to content him. I confess I felt piqued that he only looked on me as a sort of pythoness to solve enigmas about you. I had a grim satisfaction in leaving his curiosity irritated, but not satisfied. I praised your beauty, goodness and cleverness up to the skies, however. I was not untrue to old friendship, Amelie!" Angélique kissed her friend on the cheek, who silently allowed what, in her indignation a few moments ago, she would have refused.

"But what said Colonel Philibert of himself? Never mind about me."

"Oh, impatient that you are! He said nothing of himself. He was so absorbed in my stories concerning you. I told him as pretty a fable as La Fontaine related of the Avare qui avait perdu son trésor! I said you were a beautiful chatelaine, besieged by an army of lovers, but the knight-errant Fortunatus had alone won your favor, and would receive your hand! The brave Colonel! I could see he winced at this. His steel cuirass was not invulnerable. I drew blood, which is more than you would have dared to do, Amelie! But I discovered the truth hidden in his heart. He is in love with you, Amelie de Repentigny!"

"Mad girl! How could you? How dare you speak so of me? What must Colonel Philibert think?"

"Think? He thinks you must be the most perfect of your sex! Why, his mind was made up about you, Amelie, before he said a word to me. Indeed, he only just wanted to enjoy the supernal pleasure of hearing me sing the praises of Amelie de Repentigny to the tune composed by himself."

"Which you seem to have done, Angélique!"

"As musically as Mere St. Borgia when singing vespers in the Ursulines," was Angélique's flippant reply.

Amelie knew how useless it was to expostulate. She swallowed her mingled pleasure and vexation salt with tears she could not help. She changed the subject by a violent wrench, and asked Angélique when she had last seen Le Gardeur.

"At the Intendant's levee the other day. How like you he is, too, only less amiable!"

Angélique did not respond readily to her friend's questioning about her brother.

"Less amiable? That is not like my brother. Why do you think him less amiable than me?"

"Because he got angry with me at the ball given in honor of the arrival of the Intendant, and I have not been able to restore him to perfect good humor with me since."

"Oh, then, Le Gardeur completes the trio of those who are proof against your fascinations?" Amelie was secretly glad to hear of the displeasure of Le Gardeur with Angélique.

"Not at all, I hope, Amelie. I don't place Le Gardeur in the same category with my other admirers. But he got offended because I seemed to neglect him a little to cultivate this gay new Intendant. Do you know him?"

"No; nor wish to! I have heard much said to his disadvantage. The Chevalier La Corne St. Luc has openly expressed his dislike of the Intendant for something that happened in Acadia."

"Oh, the Chevalier La Corne is always so decided in his likes and dislikes; one must either be very good or very bad to satisfy him!" replied Angélique with a scornful pout of her lips.

"Don't speak ill of my godfather, Angélique; better be profane on any other topic; you know my ideal of manly virtues is the Chevalier La Corne," replied Amelie.

"Well, I won't pull down your idol, then. I respect the brave old soldier, but could wish him with the army in Flanders!"

"The army of a trouble people



Angélique and Amelie.

her prayers!" Amelie rose up suddenly.

"Nay, do not get angry and go off that way, Amelie," ejaculated Angélique. "I will do penance for my triumphs by relating my defeats, and my special failure of all, which I know you will rejoice to hear."

"I, Angélique? What have your triumphs or failures to do with me? No, I care not to hear." Angélique held her half forcibly by the scarf.

"But you will care when I tell you that I met an old and valued friend of yours last night at the Castle—the new Aide-de-Camp of the Governor, Colonel Philibert. I think I have heard you speak of Pierre Philibert in the Convent, Amelie?"

Amelie felt the net thrown over her by the skillful retainer. She stood stock-still in mute surprise, with averted eye and deeply-blushing cheek, fighting desperately with the confusion she feared to let Angélique detect. But that keen-sighted girl saw too clearly—she had caught her fast as a bird is caught by the fowler.

Philibert, who, I confess, is one of the handsomest men I ever saw. I was bent on attracting him."

"For shame, Angélique! How could you confess to aught so unwomanly!" There was a warmth in Amelie's tone than was less noticed by herself than by her companion.

"Well, it is my way of conquering the King's army. I shot my whole quiver of arrows at Colonel Philibert, but, to my chagrin, hit not a vital part! He parried every one, and returned them broken at my feet. His persistent questioning about yourself, as soon as he discovered we had been school companions at the Convent, quite foiled me. He was full of interest about you, and all that concerned you, but cared not a fig about me!"

"What could Colonel Philibert have to ask you about me?" Amelie unconsciously drew closer to her companion, and even clasped her arm by an involuntary movement which did not escape her friend.

"Why, he asked every one a gen-

augur ill from the news of the Intendant Bigot in New France, besides the Chevalier La Roche. Amelie said, after a pause, "She disliked censuring even the Intendant."

"Yes," replied Angelique, "the Honnetes Gens do, who think themselves bound to oppose the Intendant because he uses the royal authority in a regal way, and makes every one, high and low, do their devoir to Church and State."

"While he does his devoir to none! But I am no politician, Angelique. But when so many good people call the Intendant a bad man, it behooves one to be circumspect in 'cultivating him,' as you call it."

"Well, he is rich enough to pay for all the broken pots; they say he amassed untold wealth in Acadia, Amelie!"

"And lost the Province for the King," retorted Amelie, with all the asperity her gentle but patriotic spirit was capable of. "Some say he sold the country."

"I don't care!" replied the reckless beauty, "he is like Joseph in Egypt, next to Pharaoh in authority. He can shoe his horses with gold! I wish he would shoe me with golden slippers—I would wear them, Amelie!"

Angelique stamped her dainty foot upon the ground, as if in fancy she already had them on.

"It is shocking if you mean it!" remarked Amelie, pityingly, for she felt Angelique was speaking her genuine thoughts. "But is it true that the Intendant is really as disolute as rumor says?"

"I don't care if it be true; he is noble, gallant, polite, rich, and all-powerful at Court. He is reported to be prime favorite of the Marquise de Pompadour. What more do I want?" replied Anglique, warmly.

Amelie knew enough by report of the French Court to cause her to shrink instinctively, as from a repulsive insect, at the name of the mistress of Louis XV. She trembled at the thought of Angelique's infatuation, or perversity, in suffering herself to be attracted by the glitter of the vices of the Royal Intendant.

"Angelique!" exclaimed she, "I have heard things of the Intendant that would make me tremble for you, were you in earnest."

"But I am in earnest! I mean to win and wear the Intendant of New France, to show my superiority over the whole bevy of beauties competing for his hand. There is not a girl in Quebec but would run away with him to-morrow."

"Fie, Angelique! such a libel upon our sex! You know better. But you cannot love him?"

"Love him? No!" Angelique repeated the denial scornfully. "Love him! I never thought of love and him together! He is not handsome, like your brother Le Gardeur, who is my beau-ideal of a man I could love; nor has the intellect and nobility of Colonel Philibert, who is my model of a heroic man. I could love such men as them. But my ambition would not be content with less than a governor or royal intendant in New France. In Old France, I would not put up with less than the King himself!"

Angelique laughed at her own extravagance, but she believed in it all the same. Amelie, though shocked at her wildness, could not help smiling at her folly.

"Have you done raving?" said she; "I have no right to question your selection of a lover or doubt your power, Angelique. But are you sure there exists no insurmountable obstacle to oppose these high aspirations? It is whispered that the Intendant has a wife, whom he keeps in the seclusion of Beaumanoir. Is that true?"

The words burnt like fire. Angelique's eyes flashed out daggers. She clenched her delicate hands until her nails drew blood from her velvet palms. Her frame quivered with suppressed passion. She grasped her companion fiercely by the arm, exclaiming, "You have hit the secret now, Amelie! It was to speak of that I sought you out this morning,

for I know you are wise, discreet, and a good deal better than I. It is all true what I have said, and more, too, Amelie! I said! The Intendant has made love to me, with pointed gallantry that could have no other meaning but that he honorably sought my hand. He has made me talked of and hated by my own sex, who envied his preference of me. I was living in the most gorgeous of fool's paradises, when a bird brought to my ear the astounding news that a woman, beautiful as Diana, had been found in the forest of Beaumanoir by some Hurons of Lorette, who were out hunting with the Intendant. She was accompanied by a few Indians of a strange tribe, the Abenquais of Acadia. The woman was utterly exhausted by fatigue, and lay asleep on a couch of dry leaves under a tree, when the astonished Hurons led the Intendant to the spot where she lay.

"Don't interrupt me, Amelie; I see you are amazed, but let me go on!" She held the hands of her companion firmly in her lap as she proceeded:

"The Intendant was startled out of all composure at the apparition of the sleeping lady. He spoke eagerly to the Abenquais in their own tongue, which was unintelligible to the Hurons. When he had listened to a few words of their explanation, he ran hastily to the lady, kissed her, called her by name, 'Caroline!' She woke up suddenly, and recognizing the Intendant, embraced him, crying, 'Francois! Francois!' and fainted in his arms.

"The Chevalier was profoundly agitated, blessing and banning, in the same breath, the fortune that had led her to him. He gave her wine, restored her to consciousness, talked with her long, and sometimes angrily; but to no avail, for the woman, in accents of despair, exclaimed in French, which the Hurons understood, that the Intendant might kill and bury her there, but she would never, never return home any more."

Angelique scarcely took breath as she continued her eager recital.

"The Intendant, overpowered either by love of her or fear of her, ceased his remonstrances. He gave some pieces of gold to the Abenquais, and dismissed them. The strange Indians kissed her on both hands as they would a queen, and with many adieus vanished into the forest. The lady, attended by Bigot, remained seated under the tree till nightfall, when he conducted her secretly to the Chateau, where she still remains in perfect seclusion in a secret chamber, they say, and has been seen by none save one or two of the Intendant's most intimate companions."

"Heavens! what a tale of romance! How learned you all this, Angelique?" exclaimed Amelie, who had listened with breathless attention to the narrative.

"Oh, partly from a hint from a Huron girl, and the rest from the Intendant's Secretary. Men cannot keep secrets that women are interested in knowing! I could make De Pean talk the head off the Intendant's shoulders if I had him an hour in my confessional. But all my ingenuity could not extract from him what he did not know—who that mysterious lady is, her name and family."

"Could the Huron hunters give no guess?" asked Amelie, thoroughly interested in Angelique's story.

"No. They learned by signs, however, from the Abenquais, that she was a lady of a noble family in Acadia which had mingled its patrician blood with that of the native chiefs and possessors of the soil. The Abenquais were chary of their information, however; they would only say she was a great white lady, and as good as any saint in the calendar."

"I would give five years of my life to know who and what that woman is," Anglique added, as she leaned over the parapet, gazing intently at the great forest that lay

beyond Charlebourg, in which was concealed the Chateau of Beaumanoir."

(To be continued.)

The Spooners.

Together we sat in a tete-a-tete,
The prettiest girl and I;
The light was out and the hour was late,
For time, you know will fly! By Jove,
How rapidly time will fly!

Together we sat in the welcome gloom,
Alone, unheard, unseen,
Though her mother was in the other room
With a thin portiere between.

I knew that the mother in ambush lay—
As mothers do, it seems—
To carry the prettiest girl away,
Away to the land of dreams. By Jove!
To the wonderful land of dreams.

But the cherry-like lips of the pretty miss,
Alas, were a tempting sight,
And I ventured to beg for a tiny kiss—
Just one, before "Good night."

But the prettiest girl resented that
In a way I'd never dreamed,
For she fairly sprang from where we sat
And, what do you think? She screamed!
By Jove!

She certainly did—she screamed!
I caught the coquette in my arms—Alack,
For such is the way of men!
And gruffly demanded of her a smack,
And then—and then—and then—

Her mother came cruelly in with a light
And—what do you think she said?
"Oh, come little lady, kiss daddy good-night."

And carried her off to bed, by Jove!
And carried the babe to bed!
—The Bohemian Magazine.

To the North-east Wind.

Welcome, wild North-easter!
Shame it is to see
Odes to every zephyr;
Ne'er a verse to thee.
Welcome, black North-easter!
O'er the German foam;
O'er the Danish moorlands,
From thy frozen home.

Tired we are of summer,
Tired, of gaudy glare,
Showers soft and streaming,
Hot and breathless air.
Tired of listless dreaming,
Through the lazy day;
Jovial wind of winter
Turn us out to play.
—Chas. Kingsley.

GOSSIP.

ONTARIO HORSE-BREEDERS' EXHIBITION.

Great interest is being taken in the Ontario Horse-breeders' Exhibition, to be held at the Union Stock-yards, West Toronto, January 13th to 15th, 1909. This is clearly shown by the large number of inquiries which are being received for prize lists, entry forms, programmes, and other information regarding the Exhibition. The prize list, with the exception of one class, is confined entirely to breeding horses, the principal breeds used in Ontario being given classes in the premium list. This takes in the Clydesdales, Shires, Hackneys, Standard-breds, Thoroughbreds, and Ponies.

Visitors attending the Exhibition will be able to inspect the horses with a great deal of satisfaction, the horses being stabled in buildings adjacent to the show arena. One admission each day (25c.) will admit visitors to all parts of the show. It will not be necessary to point out the great advantages to be derived to both exhibitors, buyers, and other visitors, by having accommodation so that horses may be seen both in the ring and in the stalls at any time during the Exhibition. The stabling will accommodate about 250 horses. The ring will be 160 feet long by 45 feet wide, and seating accommodation will be provided for one thousand people.

Single-fare passenger rates have been arranged to Toronto during the Exhibition, so that the expense of coming to Toronto to see the show will be comparatively small. Visitors will have a good time, and will also have exceptional opportunity to compare the best class of both light and heavy stallions and mares now located in the Province of Ontario.



Condensed advertisements will be inserted under this heading at two cents per word each insertion. Each initial counts for one word, and figures for two words. Names and addresses are counted. Cash must always accompany the order for any advertisement under this heading. Parties having good pure-bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisement inserted for less than 30 cents.

BRONZE Turkeys—(Bell's strain). Toms \$3, hens \$2.50; B. Rock cockerels \$1; Barred Rock hens 50c. S. L. Anderson, Crossland, Ont.

CHOICE exhibition trio Bronze turkeys, \$11. Yearling tom 40 lbs., yearling hen 20 lbs., 2-year hen 20 lbs. Frank Bainard, Glanworth, Ont.

MAMMOTH Bronze turkeys. Show birds. Bred from prizewinning heavyweight stock. Young toms 22 to 27 lbs. Pairs not akin. R. G. Rose, Glanworth, Ont.

MAMMOTH Bronze and White Holland turkeys. Embden geese, Pekin ducks, Buff, Brown and White Leghorns, White Wyandottes. Walter Wright, Cobourg, Ont.

OVER 400 Bronze turkeys have been shown at Guelph Winter Fair the past nine years by 25 exhibitors. I was awarded 30 first prizes, leaving only 24 firsts for the other 24 exhibitors. I have furnished first-prize winners at Dominion Exhibition (Calgary), Manitoba Poultry Show (Neepawa), and Winnipeg Poultry Show the past year, besides winners at Madison Square Garden, N. Y., and largest shows in Indiana. Choice stock for sale—all ages—at moderate prices, considering quality. W. J. Bell, Angus, Ont.

WHITE Orpington bargain.—Cockerel (winner two firsts), four pullets (two winners), two unrelated hens. Pen, eight dollars. A. J. George, 52 Clarence St., London, Ont.

A choice lot of young **MAMMOTH BRONZE TURKEYS** Bred from the heavyweight M. B. tom, first-prize winner at Toronto and London shows last fall, and also a prizewinner at the Ontario Poultry Show, at Guelph, Ont. I have also a choice lot of English Red Caps for sale. **W. E. Wright, Glanworth, Ont.**



Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted, and Pet Stock.

TERMS—Three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order. No advertisement inserted for less than 50 cents.

FOR SALE—The following on very easy terms: A fruit farm near Niagara; good house, barn, fences, soil and water. Also 200 acres, dairy, grain or fruit; extra buildings, good soil, fences, water, large orchard, valuable timber. One hundred and sixty acres near Hamilton; good buildings, soil, water, timber, and the very best sections in Alberta; good buildings; 180 broken; five miles of fencing; fine crops; fall wheat averaged over 40 bushels per acre. Apply 125 Main, W. Hamilton.

TELEGRAPHY and Railroad Work quickly and thoroughly taught on railroad main-line wires. Railroad co-operation and thorough office training insures positions. Do not be deceived by flashy catalogues. Write F. E. Osborn, Molson's Bank Building, London, before closing with any school.

WANTED AT THE DELHI TANNERY Hides, Skins and Furs to tan for Robes, Coats and Gaiters. Let Mitts, etc. Tanned soft and pliable. Never get hard. **B. F. BELL, DELHI, ONTARIO**

The absentmindedness of great thinkers is a well-known phenomenon. When Morse had completed his wonderful telegraphic system he confessed to a difficulty which appeared to him almost insurmountable. "As long as poles can be used," he said to a friend one day, "it is easy. But what must be done when we come to a bridge? We cannot use poles there, and the wire would break of its own weight without some support." "Well," replied the friend, "why not fix the wires to the bridge?" Morse looked at him thoughtfully for a moment, and then exclaimed, "I never thought of that. It's the very thing." This instance of mental concentration on one leading idea to the exclusion of all others is almost as remarkable as that told of Sir Isaac Newton, who cut a hole in his study door to allow his favorite cat to come and go freely, and then cut a smaller one for the use of her kitten.

Black Watch
Black Plug
The Chewing Tobacco
of Quality.

The Annual Sale of Breeding Stock

(BEEF BREEDS),

CONDUCTED BY THE GUELPH FAT-STOCK CLUB,

Under the auspices of the Dominion Live-stock Associations, will be held in the

Winter Fair Building, Guelph, Wednesday, March 3, 1909.

Entries close 20th January, 1909. For further particulars apply to the Secretary.

W. R. ELLIOTT, President.

J. M. DUFF, Secretary.

The Guelph Fat-stock Club claims Wednesday, 3rd March, 1909, for their annual sale of breeding stock

Ontario Horse Breeders' EXHIBITION

Union Stock Yards, West Toronto

JANUARY 13, 14, 15, 1909

Over \$3,000 in Prizes. Entries Close January 2nd.

All horses exhibited will be stabled in the Exhibition Buildings.

For prize lists, entry forms and all information, address:

WM. SMITH,
President.A. P. WESTERVELT, Secretary,
Parliament Buildings,
TORONTO, ONT.

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Two hundred and fifty million sheep were,
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The same famous house are the sole manufacturers
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Which is the scientific realization of a perfect

Cattle, Sheep and Hog Dip

WM. COOPER & NEPHEWS,

Dept. C., Manning Chambers, Toronto, Ont.

The Griffin Carbo Magnetic Razor

We have on hand another consignment of the celebrated Griffin Carbo Magnetic Razors, received direct from the manufacturers, with "Farmer's Advocate" etched on every blade. The manufacturers will not allow this grade of razor to be sold for less than \$2.00.

With proper care this razor
will not require honing
for years.We will send one by registered mail to
anyone sending us Two New Subscribers
and \$3.00, or will sell the razor for \$2.00.

QUESTIONS AND ANSWERS. Veterinary.

INCONTINENCE OF URINE.

Some time ago I wrote you about my colt, but you must have misunderstood the case, so I state it again. Shortly after birth I noticed my colt leaking urine from the womb. It seldom has a natural passage. Its tail and legs are always wet. I got my veterinarian to treat. It is a little better now, but still leaks. J. C.

Ans.—I remember your question. You said the colt leaked urine from the womb and seldom had a natural passage, hence I thought the urine was escaping through the navel opening. Of course, the urine does not leak from the womb, but from the bladder, and this is due to a paralysis of the neck of the bladder. No doubt your veterinarian advised proper treatment. In most cases treatment does not show results promptly. The cases usually recover very slowly. Treatment consists in feeding on easily-digested food of first-class quality, giving 10 grains nuxvomica three times daily, and injecting cold water into the vagina twice daily. V.

Miscellaneous.

FOOT-AND-MOUTH DISEASE INSPECTORS.

Are the Inspectors appointed to inspect the cattle for foot-and-mouth disease in Essex County paid by the County or by the Government? J. G.

Essex Co.

Ans.—We understand that they are employed and paid by the Department of Agriculture at Ottawa. They have been working in other counties as well as Essex.

SOW BLEEDING AFTER SERVICE.

I have a sow that, while being served by the boar, started to bleed, and would not stand to finish service. Do you think it would be any use in breeding her again if she came in heat, or can there be anything done for her? T. W.

Ans.—It is doubtful whether she will breed, probably not; but the conditions may have been accidental, and we would advise giving her another trial or two.

REGISTERING A HACKNEY.

I bought a pure-bred Hackney mare for breeding purposes and got her pedigree, but did not get it transferred to me. Would I have any trouble getting a colt out of her registered without getting her pedigree transferred to me? She is registered in the American and Canadian Studbooks, and I got certificate of both of them. SUBSCRIBER.

Ans.—Before you may record the progeny of your Hackney mare you will require to have her transferred to your ownership on the books of the Canadian Hackney Horse Society, Canadian National Records, Ottawa. Transfer is required from the last-mentioned owner, on the certificate through each succeeding owner, to yourself. Send the Canadian certificate of registration with application for transfer to the Accountant, National Live-stock Records, Ottawa. The fee for each transfer is \$1.

GOSSIP.

SALE DATES CLAIMED.

Jan. 13th.—At Union Stock-yards, West Toronto, Wm. Laking; imported Shire stallions and mares in foal.

Jan. 14th.—C. D. Wagar, Enterprise, Ont.; Shorthorns.

Feb. 3rd.—At West Toronto, W. G. Pettit & Sons, Freeman, and J. A. Watt, Salem, Ont.; Shorthorns.

Feb. 4th.—At West Toronto, W. C. Edwards & Co., Rockland, Ont.; the Millers, Arthur Johnston and John Davidson; Shorthorns.

The Council of the Clydesdale Horse Society of Great Britain and Ireland have issued, in a separate volume, a complete index to the pedigrees of all the stallions registered in the first thirty volumes of the Studbook, thus supplying a want much felt by those who have occasion to search for pedigrees in the

Clydesdale Studbook. Two very interesting essays on the early history of the Clydesdale, or Scottish breed of draft horses, written by Thomas Dykes, first Secretary of the Clydesdale Horse Society, are also included in the volume, making it a valuable publication.

HACKNEYS AT THE INTERNATIONAL.

Hackneys carried off the honors in harness classes at the International Horse Show, in Chicago, even more conspicuously than in the recent National Horse Show in New York. The number of Hackneys entered in open harness classes at Chicago was eighty-one, as against one hundred and eighty-eight for representatives of other breeds, yet the Hackneys won the majority of the ribbons, their total having been forty-one to forty for all other breeds combined. In the number of blue ribbons, or first prizes won, the triumph of the Hackney was still more conspicuous, and in the champion classes for heavy-harness horses it was complete. Though outnumbered nearly two and one-half to one, the Hackneys won sixteen firsts to five for horses of other breeds, while in the two champion classes the only horses placed were Hackneys, Radiant having won, with Lady Seaton reserve, in the class for horses over 15.1 hands, and Hildred having won, with Phoebe Watton reserve, in the class for horses under 15.1 hands. The percentage of winning Hackneys was thus about 20 per cent., as compared with about 2 per cent. for other breeds.—Rider and Driver.

THE SMITHFIELD SHOW.

The Smithfield Club Fat-stock Show of 1908, held December 8th to 12th, in London, England, as usual, is reported as being one of the best in its history as regards the quality and character of the exhibits. In the cattle classes it was largely a Scottish triumph, the supreme awards and trophies going to North-country exhibits. The grand championship for the best beast in the show went to the pure-bred two-year-old Aberdeen-Angus heifer, Her Majesty V. of Cullen, exhibited by the Countess Dowager of Seafield, the reserve being the cross-bred Aberdeen-Angus-Shorthorn two-year-old heifer, Danesfield Fortune, shown by R. W. Hudson. The champion prize for the best Shorthorn went to James McWilliam, Fochabers, for the roan two-year-old heifer Daisy 5th, the reserve being the King's white two-year-old steer. The breed championship in Galloways went to Thos. Biggar & Sons' first-prize two-year-old steer, Scotch Mist, with J. Cunningham's two-year-old heifer, Louisa VI. of Tarbroch, as reserve. Herefords had for their champion Sir R. P. Cooper's two-year-old steer, Favorite. The champion cross-bred beast was the Angus-Shorthorn two-year-old heifer, Danesfield Fortune, with the two-year-old blue-gray steer Jack, bred by Mr. Ross, as reserve.

In sheep, the cup for the best pen of three short-wools went to Jas. Flower's Hampshire Down yearling wethers, the reserve being H. E. Smith's Suffolk champion yearling wethers. The Prince of Wales' prize for the best pen of sheep in the show went to the Hampshires, and the reserve to the Lincolns shown by S. E. Dean & Sons.

The Leicester champion cup went to E. Jordan, Driffield, and the Lincoln championship to Messrs. Dean. Sir R. P. Cooper got the Shropshire championship with his first-prize pen of yearling wethers and reserve for his lambs.

In the swine classes Prince Christian's champion plate for the best pen of pigs was awarded to H. R. H. the Prince of Wales, for his pen of two Berkshires, 11 months 2 weeks old, the pair weighing 962 lbs. The reserve was a cross-bred pen, 11 months 3 weeks 4 days old, got by a Middle White boar, from a Berkshire sow, their weight being 957 lbs.

The championship for Large Whites went to W. H. and E. Wherry for an 11-months-old pen of two, whose weight is not given in the report, the reserve being Lord Ellesmere's first-prize pen of two, 8 months old. In the carcass competition for one pig not over 12 months old, and not over 300 lbs. live weight, a Berkshire was first and champion.

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ORDER A COPY TO-DAY.

The Scottish Farmer Album

With which is incorporated THE FARMING WORLD YEARBOOK FOR 1909.

This popular farmers' annual is everywhere recognized as a standard work of reference to the agricultural affairs of the year. The illustrations, reproduced from photographs, include all the principal prizewinning stock of the past season. The literary part of the yearbook is replete with instructive articles, written by experts, and of interest to agriculturists in all parts of the world.

Prices, including postage: In paper covers, 20 cents. In stiff boards, 34 cents. Send a money order to-day (do not send stamps or coins) to:

The Publisher,
"The Scottish Farmer,"

93 Hope Street, Glasgow, Scotland.

THE SCOTTISH FARMER, published weekly, is the leading agricultural journal of Scotland. It is the recognized organ of the Clydesdale, Shorthorn, Ayrshire and other pure-bred stock, and circulates throughout Canada and the States. Annual subscription, \$3.06, payable in advance.

An Englishman, witnessing his first baseball game, was struck by a hot one off the bat. On coming to, he asked, faintly:

"What was it?"
"A foul," they told him, only a foul!"
My word!" he exclaimed, "I thought it was a mule."

ATTENDED BY FIVE DOCTORS

But Got No Relief Until He Used Dodd's Kidney Pills.

Wonderful Cure of A. F. Richard, Who was Tortured by Rheumatism and Kindred Pains, Sets Kent County Talking.

St. Ignace, Kent Co., N. B., Dec. 28.—(Special).—After being tortured for four years with Backache, Rheumatism, Stiffness of the Joints and Pains in the Loins, and getting no relief from five doctors whom he called in, Mr. Antoine F. Richard, a well-known farmer living near here, is spreading the good news that he is once more a well man, and that he owes his cure to Dodd's Kidney Pills. Speaking of his wonderful cure Mr. Richard says:

"I was a helpless man in July, 1907. For four years I had endured the greatest torture from Backache, Rheumatism, Stiffness of the Joints and Pains in the Loins. I had dark circles under my eyes, my head ached and I was often dizzy. I was attended by five doctors, but not one of them could help me. Then I began to use Dodd's Kidney Pills, and after the first few doses I began to improve. I used four boxes in all, and now I am working every day on the farm, a well man. I owe my wonderful cure to Dodd's Kidney Pills and nothing else."

There is no case or kind of Kidney Disease that Dodd's Kidney Pills will not cure.

Orange River Colony Farming.

Editor The Farmer's Advocate:

Although I only see out of the leading agricultural countries in the world, it is not likely that many of its farmers know much about the methods and systems of agriculture in other countries. South African methods are interesting. But South Africa, like Canada, is a large country, and it would be difficult to deal with it successfully as a whole, so it will be best to take part of it, namely, The Orange River Colony.

Here, as everywhere, it is necessary to possess "capital," but by the time this article has been read through, none will gainsay the fact that, generally speaking, a larger capital is needed there than here.

The South African farmer has far more to contend against, in the way of drouth, hail, locusts, and numerous other pests, both in the crops and amongst the stock, than is to be found in any other country. All the plagues of Egypt seem to have gone south.

There are, however, more chances to be found outside of farming, necessarily arising from her great mineral wealth, which Canada does not possess to such an extent. The veld in South Africa is much the same as the Canadian prairie. The soil is not so rich, but could be made possible to cultivate with the addition of a cheap fertilizer.

One of the greatest disadvantages is the lack of water, most of which has to be obtained from wells, which are bored at great expense, great depths often having been reached before it is obtainable. There is practically no vegetation, and in some districts, as far as the eye can see, it is bare rolling veld. This is the land that needs the cheap fertilizer. Many farmers in the district started planting trees and orchards, which at first proved a failure. Since, however, with care and hard work, the difficulty has been to a certain extent overcome, although it is a very uphill task. Stock farming is also doing well, and in a year or two ought to be a very paying occupation. Some farmers have gone to the expense of importing pure-bred bulls and cows from the Old Country with comparative success.

The Canadian farmer will be more able to grasp the full extent to which farming operations are carried on in the Orange River Colony by reading the following account of a farm belonging to B. T. Bourke, of Pretoria. His efforts show what can be done by the judicious expenditure of money and the introduction of up-to-date methods in agriculture and stock-raising. Karookom is an extensive farm of about 14,000 acres, situated some eight miles from Vierfontein railway station, on the new line from Klerksdorp.

In speaking of the transformation which has come over Karookom within the last few years, one is forcibly reminded of the old saw referring to the honor which attaches to the man who makes two blades of grass grow where but one appeared before. In 1904, when Mr. Bourke tackled the question of developing this great estate, the thousands of "morgers" of rolling veld were unmarked save for a few hundred acres of more or less roughly-tilled land, two or three small patches of orchard, and an insignificant erection which could scarcely be dignified by the name of "homestead." Now the whole farm is fenced with some thirty miles of fencing; some eight hundred acres are under crops, the planting of 40,000 to 50,000 saplings has created several extensive belts of trees, hundreds of cattle graze in the many paddocks into which the farm has been divided, and there are substantial blocks of buildings erected on the lines of those with which one is so familiar in England. It can well be imagined, therefore, that the results achieved within such a comparatively brief period have been only from the most strenuous labor. It has been amply proved, however, what may be secured by the combination of capital and industry, even in this much maligned country of agricultural drawbacks, and of pests and diseases.

STAPLE GRAIN CROPS.

The cultivation throughout is "dry," and the staple grain crops are mealies and Kafir corn (American corn). With a large herd of cattle to be fed, it stands to reason that considerable attention has to be devoted to the production of feed-

ing stuffs. There were about 150 acres of mealies for ensilage, and two acres of other fodder crops, while after many experiments it has been found that millet and roots, together with cow peas, an American fodder, are valuable adjuncts for feeding purposes.

Tree-planting has not been confined to wind-breaks and such like, but the 20 acres of orchards include a good portion planted with the best varieties of grafted fruit trees, principally apples, which seem to do remarkably well on the farm. Up-to-date methods of cultivation are indulged in, Mr. Bourke being no believer in any mere scratching of the soil which is so common in this country. Double-furrow plows and powerful cultivators are used, and all the crops are drilled, this having been proved to be by far the best means of ensuring good after-cultivation. Then, again, planting is followed by the thorough employment of scufflers, weeders, etc.

SUPERPHOSPHATES SATISFACTORY.

Experiments with several fertilizers had been made, the outcome being that superphosphates are found to answer most satisfactorily. The high price of fertilizers mitigate against their use on any very extensive scale; but the results of the methods outlined above have been that the crops raised on Karookom are far superior to any grown in that district of the Orange River Colony.

The owner of Karookom has been discouraged, in common with so many of his agrarian brethren, by the damage sustained during the past two years by the locust invasion, but there has been courageous perseverance, and in spite of a bad drouth, it is believed that this season's crops will show a good return for the outlay.

BUILDINGS AND WATER SUPPLY.

For the adequate housing of the cattle, extensive and well-constructed stone and brick buildings have been erected. These comprise a large shed capable of storing 6,000 bags of grain; fifty animals can be accommodated in the stall-fitted cow sheds, with ample room for calves, with commodious loose boxes arranged in a square. There are also roomy loose boxes for stabling the valuable bulls; there is ample store accommodation, seed rooms, blacksmith's shop, manager's residence, and a detached, well-built dairy, in which a good deal of butter is produced.

Water for the supply of the stock, and for other purposes, is drawn by a large windmill from a well 160 feet deep, the quantity of water available being ample. Two other wells on the property are also brought into use, and there are a couple of fairly extensive dams which help to conserve the natural rainfall. The main feature of interest is undoubtedly the herd of pure-bred cattle. The farm is heavily grassed, practically on all sand veld, and is particularly suitable for the use to which it is put. Mr. Bourke in 1904, after considerable investigations in the Old Country for a breed of cattle that would prove hardy, vigorous and of good, all-round qualities, decided that the South Devons promised to suit his requirements more nearly than any other class of cattle. As is generally known, the South Devon cattle have a reputation for being excellent milkers and fine beef producers, to say nothing of their capacity for doing good service with the yoke. Mr. Bourke made a purchase of a foundation herd in Natal, selecting 100 cows and heifers, together with an imported South Devon bull, from a Mooi River breeder. This bull, however, died during the journey to Karookom, and Mr. Bourke imported some young animals from the best breeders of South Devons in the Old Country. Four bulls and one cow were purchased. One of the bulls subsequently succumbed to redwater, but the remainder are still on Karookom, and in the best condition. The result has been that a magnificent herd of young stock has been produced, the inspection of which will well repay anyone who is interested in successful stock-breeding in South Africa. There are now over 300 head of pure-bred stock running on the farm. In addition, there are a number of working oxen of the usual South African variety. These Afrikaner yoke cattle are, however, in the coming season to be replaced by young South Devons, which are expected to prove themselves even better workers.

HAD GIVEN UP ALL HOPE OF LIVING.

Heart Trouble Cured by MILBURN'S HEART AND NERVE PILLS

Mrs. Andrew Savoy, Grattan's, N.B., writes: In the year of 1905 I was taken sick and did not think I could live any length of time. My trouble was with my heart and people told me that nothing could be done for a case like mine. I consulted the very best doctors but they could do me no good. For seven weeks I could hardly cross the floor. I had no pain, but was so weak nobody in the world can believe how I felt. I had given up all hopes of living and had given my little girl to my sister-in-law. One day a friend came to see me, and calling me by name, said, 'Lizzie, if I were you I would try a dose of Milburn's Heart and Nerve Pills as they are good for heart trouble.' My husband got me a box, but for two days I was not feeling any better, but on the fourth day my husband said, 'I believe those pills are doing you good.' I believe those pills are doing you good. I was able to say 'Yes, I feel a good deal better this morning.' He said, 'Well, I will get you another box right away.' I took got you another box right away. I took one, and I was perfectly well and have not been sick since then. I will never be without them in my home for God knows if it had not been for Milburn's Heart and Nerve Pills, I would not have been alive now.

Price 50 cents per box, 3 boxes for \$1.25.
The T. Milburn Co., Limited, Toronto, Ont.

Bone Spavin

No matter how old the blemish, how lame the horse, or how many doctors have tried and failed, use Fleming's Spavin and Ringbone Paste. Use it under our guarantee—your money refunded if it doesn't make the horse go sound. Most cases cured by a single application—occasionally two required. Cures Bone Spavin, Ringbone and Oldsores, new and old cases alike. Write for detailed information and a free copy of Fleming's Vent-Pocket Veterinary Adviser. Ninety-six pages, durably bound, indexed and illustrated. Covers over one hundred veterinary subjects. Read this book before you treat any kind of lameness in horses. FLEMING BROS., Chemists, 75 Church Street, Toronto, Ontario.

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Guaranteed Silver Nickel Men's Watch, stem wind and stem set. For selling only \$5 worth of the greatest picture post cards ever seen—value of \$25.00 all over the world. Six cards for only \$1.00. They are very fine. Best of your name and address printed there. Write today to The Picture Post Card Co., 100 West 23rd St., New York, N. Y.



Shetland, Welsh and Iceland Ponies

I have on hand a number of single ponies and matched pairs; all ages; thoroughly broken to harness and reliable in every way.

E. DYMENT, Copetown P.O. and Sta.

Clydesdales, Shorthorns, At Kinellar Lodge we have for sale two 3-yr.-Cotswolds & Berkshires old Clydesdale fillies, both reg.; a big, good pair. Several choice Shorthorn heifers. Nine shearing Cotswold ewes and nine shearing rams. This year's lambs, both sexes. And young Berkshire sows. John I. Salsden, Markham, Ont., P. O. and station.

3 VERY CHOICE YOUNG IMPORTED Clydesdale Stallions

For sale. Sound and grand stock-getters.

Wm. Meharey, Russell, Ont.

Well DRILLING & PROSPECTING MACHINES.

Fastest drillers known. Great money earners. LONIS MACHINE CO., TIFFIN, ONT.

RHEUMATISM.

The Best and Safest Cure for GOUT, RHEUMATISM, SCIATICA, LUMBAGO, is BLAIR'S GOUT & RHEUMATIC PILLS. All Druggists, at 40c. and \$1 per box.



THE UNION STOCK-YARDS Horse Exchange

WEST TORONTO, CANADA.

Auction sales of Horses, Carriages and Harness every Monday and Wednesday.
Private sales every day.
Come and see this new Horse Exchange. It will interest you. Also the quarter-mile track for showing and exercising.

HERBERT SMITH, Manager.
(Late Grand's Repository.)

Clydesdale Stallions and Mares!



A fresh lot has just arrived, including many prizewinners. Some extra big ones. Prices right. Inspection invited.

DALGETY BROS., LONDON, ONTARIO.
Stables Fraser House. Address correspondence to Dalgety Bros., Glencoe, Ont.

Shires, Shorthorns and Lincolns

At present we are offering a very choice consignment of imported stallions, mares and fillies received from the great Shire stud of R. Moore & Sons, Beeston Fields, Nottingham, England. They are a grand lot, and will be sold at right prices.

In Shorthorns we have a number of choice young bulls, three of them show animals; also an excellent lot of females—all ages.

JOHN GARDHOUSE & SONS, Highfield, Ontario.
Toronto, 14 miles; Weston, 3 1/2 miles.



Long-distance phone.

CLYDESDALES AND SHORTHORNS.—Both Imported and Canadian-bred, at Columbus, Ont., the Home of the Winners.

Our last importation landed in August. They include the pick of Scotland, from such renowned sires as Baron's Pride, Everlasting, Baron o' Bucklyvie, Hiawatha, Marsells, Sir Everest, and Prince Thomas. We have on hand over 90 head to choose from, from the above noted sires, from 1 to 6 years old, and including stallions and mares. Correspondence solicited. Call and see them at our barns, Columbus, Ont., before purchasing elsewhere. Our prices are right. Long-distance phone in houses. Phone office, Myrtle station. Myrtle station, C.P.R.; Brooklin station, G.T.R.; Oshawa station, G.T.R. **Smith & Richardson & Sons, Columbus, Ont.**



NEW CLYDESDALE IMPORTATION.



My new importation of 24 Clydesdale stallions is now in my stables. I invite inspection and comparison. I think I have the best lot for size, style, character, quality and action ever imported. 27 Clyde stallions and 8 Hackney stallions to select from. Prices right, and terms to suit.

T. H. HASSARD, MARKHAM, ONT.
POST OFFICE, PHONE AND STATION.

Clyde Park Imp. Clydesdales I have on hand for sale several imported Clydesdale stallions and fillies, also 3 foals. Parties wanting something extra well bred and of the big-quality kind should write me. They will be sold at a right price, and on terms to suit.

ALEX. F. McNIVEN, ST. THOMAS, ONTARIO.



IMPORTED CLYDESDALES, SHORTHORNS AND SHROPSHIRE! I have on hand several Clydesdale stallions, as choice a lot as ever crossed the ocean. Missie, Stamford, Claret and Gem of Balcchin Shorthorns; up-to-date in type and quality. 50 imported Shropshires, 30 ewe and 30 ram lambs from imported stock. Look me up at Toronto Exhibition horse barns. **THOS. L. MERCER, MARKDALE, ONT., P. O. AND STA.**



IMPORTED CLYDESDALES

My new importation for 1908 has now arrived—stallions and fillies—personally selected. Richest in breeding; highest in quality; with abundance of size and character. Sold on terms to suit. **GEO. G. STEWART, HOWICK, QUE.**



IMPORTED CLYDESDALES

My new importation of Clydesdale stallions and fillies, landed a short time ago, are an exceptionally choice lot, full of flashy quality, style and character, and right royally bred. I will sell them at very close prices, and on terms to suit. **C. W. BARBER, Gatineau Point, Quebec.** "Close to Ottawa."



Clydesdales Imported and Canadian-bred. Our mares all are bred to Acme (imp.), the 8th best breeding horse in Scotland in 1907. Four male foals and one filly, all from high-class (imp.) mares, for sale right.

R. M. HOLTBY, Sta. & P.O. Manchester, Ont., G.T.R.; Myrtle, Ont., C.P.R.

Clydesdales and Hackneys

We have for sale a few choice Clydesdale mares, imported and Hackney stallions and mares for sale always. **HODGKINSON & TISDALE, BEAVERTON, ONTARIO.** G. T. R. and C. N. R. Long-distance phone.



Imported Clydesdales I have still on hand 1 stallion, black, rising 4 yrs., by Carthusian, a Toronto winner; 1 rising 2 yrs., by Baron's Pride, 1 rising 2 yrs., by Danure Castle; 4 fillies, a Toronto first and second prizewinner among them. Every one of these is an extra good animal, and the price and terms are right.

T. D. ELLIOTT, Bolton, Ont.

Oak Park Stock Farm Co., Ltd.,

have at present for sale a choice selection of young **HACKNEYS** broken to harness, well worth the attention of the best buyers. A grand selection of pedigree **BERKSHIRE BOARS** and **SOWS** at moderate prices. Also 70 choice **SHROPSHIRE RAM** and **EWES LAMBS**, all bred from imported ewes, and sired by the best imported rams. Will be sold at times prices. **JAS. J. BROWN, Manager, BRANTFORD**

IMPORTED SHIRES

At their St. Thomas stables, the John Chambers & Sons Co., of England have for sale stallions and fillies from their noted Shire stud, high-class representatives of the breed. Correspondence solicited. Address: **DR. C. K. GEARY, St. Thomas, Ont.**

IMP. CLYDESDALE STALLIONS AND FILLIES.—Our new importation of stallions and fillies are the best we could select in Scotland, particularly well bred, with the size, smoothness and quality that Canadians admire. Show-ring stuff. Come and see them. Will sell on terms to suit. **JOHN A. BOAG & SON, Queensville P. O. Ont.; Newmarket Sta., G. T. R.** Telegraph and telephone one-half mile from farm. Metropolitan Street Ry. from Toronto crosses the farm.



All the pure-bred cattle have been raised under the ordinary conditions which obtain on any stock farm in this country.

All graze for the greater part of the year on the veld, night and day, with no other feed, but care is taken that the progress of the young cattle is not retarded, as is so often the case out here on account of the bad seasons, the supply of fodder grass on the farm being ample to counteract the deficiencies of nature in that respect. Special attention is, as a matter of fact, devoted to the early development of young stock in order to ensure their growing out into robust animals of good size.

The South Devons have proved themselves exceptionally hardy under the conditions which prevail in the northern part of the Orange River Colony, all the characteristics of the breed being well maintained, and the youngsters all being true to type. A special point is made that no "coddling" in any shape or form shall enter into the care of either the imported bulls or dams, which, although nearly always on the veld, have proved themselves practically immune against the many diseases which are the bane of the stock-breeder in the sub-continent. The herd presents a fine picture with its deep red coloring. There are a number of exceptionally fine young bulls bred from specially-selected cows, which give promise of rivaling the grand imported animals.

J. K. Evans, the general manager of the Pilgrims Mining and Estate Co., who has charge of Mr. Bourke's extensive landed interests in the Orange River Colony, is also a great believer in the utility of the South Devons, and he is grading up his large herd of mixed stock by using pure-bred South Devon bulls with very satisfactory results.

SHEEP AND HORSES.

While so much attention has been devoted to the cattle, sheep have not been neglected. Mr. Bourke at present possesses a flock of 700 Merinos, of which a good number are imported Australian ewes, the sires during the last three years being imported rams of the best class. One ram in particular, which has been in use for the past two seasons, has won a high place in the show-yards of the Antipodes on account of his superior qualities in wool and size. The flock at Karookom certainly gives the idea that great things may be expected from it.

Horses, too, come in for a share of attention. A few specially-selected mares are running on the farm, the well-known Natal Thoroughbred stallion, Conservator, reared by Sir T. K. Murray, being used as sire. Several of the foals look likely to maintain the reputation of the Orange River Colony as the horse-breeding colony of South Africa.

BERNARD BOURKE.

[Note.—The foregoing interesting description of agriculture in the Orange River Colony has been especially prepared for "The Farmer's Advocate" by a gentleman who is at present a student at the Ontario Agricultural College, Guelph, and who appears to be thoroughly familiar with the conditions of which he writes.—Editor.]

GOSSIP.

CANADA AND CANADIAN FRUIT IN BRITAIN.

The many thousands of excursionists who went up to London from all parts of England, have been practically unanimous on their return in stating that the Canadian Pavilion was the best at the Franco-British Exhibition, and this is the verdict that one hears re-echoed on every hand and from all sources, writes W. A. McKinnon, Canadian Trade Commissioner, in Bristol.

It is satisfactory to remark, he adds, that at the Royal Horticultural Society's exhibition of colonial fruit, the Provinces of Nova Scotia, Ontario and British Columbia were well represented, and obtained awards of gold medals. One notes with regret the absence of a display from Quebec, for Quebec has certain varieties of fruit which cannot be surpassed, if they can be equalled by any from the sister provinces. Individual exporters or co-operative associations might, with great advantage, provide exhibits of export fruit in commercial packages, such as they are prepared to furnish in quarters direct to buyers.

Formalin as a Disinfectant.

There is much popular misconception as to the value and limitations of the various disinfectants which are sold in this country, says U. S. Farmers' Bulletin 345, entitled Some Common Disinfectants. For this reason the following very brief description of some of the more common of them has been prepared. Full and complete descriptions of these substances may be found in the very excellent treatises of Rosenau, Rideal, and others.

Formaldehyde in Various Forms.—Formaldehyde (formic aldehyde) is available on the market as paraform (a sort of condensed formaldehyde, which is sold as a white powder or in the form of pastils), and also in aqueous solution generally known under the name of formalin. The solution is supposed to contain 40 per cent. of formaldehyde, though in reality the amount of formaldehyde present rarely exceeds 37 to 38 per cent. Formaldehyde may be used for disinfection in either a liquid or gaseous form.

Liquid Formaldehyde.—Solutions of formaldehyde are best prepared by making a 5 per cent. solution of formalin in water. This is applied directly to substances that require disinfection, and in the case of refuse, excreta and similar substances should be thoroughly mixed with them. A 5-per-cent. solution of formalin is generally regarded as superior to carbolic acid of the same strength as a general disinfectant.

Gaseous Formaldehyde.—In disinfecting with formaldehyde gas it is essential that the compartments to be disinfected be tightly closed so that a sufficient concentration of the gas may be held in contact with the infected substances a sufficient length of time. The temperature of the air is an important factor in securing efficient action, the formaldehyde being much more energetic in a warm atmosphere than in a cold. The best authorities state that gaseous formaldehyde disinfection should not be attempted if the temperature of the air is below 50 degrees F. The gas is most conveniently secured by liberating it from the concentrated aqueous 40-per-cent. solution or from the solid paraform. A number of methods for accomplishing this in practice have been devised.

The advantages and disadvantages of formaldehyde are summarized as follows:

- (1) It is one of the most powerful germicides known.
- (2) Its action is not interfered with by albuminous substances.
- (3) It is not poisonous and may therefore be used for disinfecting hay and grain without destroying these for food purposes.
- (4) It is not injurious to delicate fabrics, paint, or metals. (Formalin solutions will attack iron, but not other metals.)

The disadvantages are, briefly, as below:

- (1) The gas has a strong tendency to condense in cold weather and is not reliable as a disinfectant when the air temperature is below 50 degrees F.
- (2) It is necessary to seal tightly all compartments which are to be disinfected with the gas in order that penetration may be secured and that the required concentration may be maintained for a sufficient length of time.

A hearty laugh had gone almost around over the story of the fisherman who, to locate the place on the lake where he had had good luck, cut a nick in the side of his boat.

"Almost around," for the Englishman sat solemn and silent. About five minutes later, however, he awoke with a roar of laughter, and when asked the trouble, replied, "Well, wouldn't it be a corking good joke if that fisherman got a different boat the next time he went out!"

"Ah," exclaimed Gritty George as he spruced up his mustache, "de chap that got up this summer booklet must have seen us camp here."

"Why so, pard?" asked Sandy Pikes.

"Why, on de very first page he says 'Here are many beautiful tramps hereabouts.'"

The New Minister "Do you know who I am, my little man?"

John "Bliss—" "Certainly. Don't you know who you are?"

Warranted to Give Results

Gombault's Caustic Balsam



Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeney, Capped Hock,
Strained Tendons, Founder, Wind
Puffs, and all lamenesses from Spavin,
Ringbone and other bony tumors.
Cures all skin diseases or Parasites,
Thrush, Diphtheria. Removes all
Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism,
Sprains, Sore Throat, etc., it is invaluable.
Every bottle of Caustic Balsam sold is
warranted to give satisfaction. Price \$1.50
per bottle. Sold by druggists, or sent by ex-
press, charges paid, with full directions for
its use. Send for descriptive circulars,
testimonials, etc. Address
The Lawrence-Williams Co., Toronto, Ont.

Radiol

RADIOL TREATMENT
prolongs the life of a horse's
legs. Completely removes by
radiation all soft swellings that
disturb and lame a horse, as
Sprained Tendons, Windgalls,
Bog Spavins, Capped Elbow,
Big Leg, Enlarged Glands, etc.

**No Blister! No Laying Up;
No Hair Removed.**

RADIOL TREATMENT fixes down
a worn horse's legs, and is a
certain cure for puffy joints and
sprains, prevents Filled Legs.

An intelligent use of the "RADIOL
LEG WASH" counteracts that daily
wear and tear of the legs unavoi-
dable with the horse in constant work, whether
training, racing or on the road.

**One flask of "Radiol" will make a
gallon of valuable leg wash.**

Carlowitz, Uddington, Eng. July 26, 1906.
Sir,—Kindly forward on receipt of P. O. en-
closed another bottle of "RADIOL." I have
been using it with great success on a Hackney
mare with a very bad windgall that the vet.
had given up. Yours truly, Thos. Prentice.

WRITE FOR ILLUSTRATED BOOKLET AND USE OF
"RADIOL." Ask your chemist for "RADIOL."
Price \$2 a large flask, or post free from
Canadian Agent:
Thos. Reid, 9 St. Nicholas St., Montreal.
Manufactured by The Radiol Co.,
113 Westminster Bridge Road, London, England.
U. S. Agents: Messrs. Will I. Smith & Co.,
2635 Michigan Avenue, Chicago.

**MY NEW IMPORTATION OF
30 Clydesdale Stallions**

Will arrive at Guelph about the middle of De-
cember. I cordially invite all intending pur-
chasers to come and see them.

O. SORBY, GUELPH, ONT.

SALE OF IMPORTED SHIRE HORSES.
Two stallions, 4 mares in foal, will be offered for sale
by public auction at the Union Stock Yards, Tor-
onto, Jan. 13, 1920, subject to ownership being re-
tained by me for exhibition purposes during the 13th,
14th and 15th of Jan. Intending purchasers can
have catalogue giving description and pedigree,
sent to their address by writing to **Union Stock
Yards Co., Toronto, or Wm. Laking, care of
Wm. Laking Lumber Co., 100 King St., West,
Toronto.**

Mr. A. I. HICKMAN,
Court Lodge, Egerton, Kent, Eng.

Exporter of pedigreed stock of every descrip-
tion to all parts of the world. During the
winter months the export of cattle of the beef
and dairy breed will be a specialty. Write for
prices, terms, and references.

**For Sale! Percheron and French Draft
Stallions, mares and colts.**
Duroc Jersey Swine, both sexes.
JACOB STEINMAN, NEW HAMBURG, ONT.
Only a stone's throw from G. T. R. depot.
Dr. Bell's Veterinary Medical Wonder
cures inflammation of lungs, bowels
and kidneys. The 20th-century wonder. Agents
wanted in every county. Write for terms.
DR. BELL, V. S. Kingston, Ont.

When Writing, Mention This Paper.

GOSSETT.
The following tables showing the yields
of milk in Lord Rothchild's herd of
Shorthorn, Jerseys and Friesians, at
Tring Farm, Herts, have been published,
giving records for the year ending Sep-
tember 28, 1908. It appears that 54
Shorthorn cows that have been in the
herd during the year gave a total of
359,534 lbs. of milk, or, on an average,
6,658 lbs. per annum. The cow Darlington
Cranford gave 12,370 lbs.; Red Rose,
11,651 lbs.; and Barrington Duchess
XXXI, 10,047 lbs. Darlington Cranford
has been in the herd eight years, and has
produced a total of 80,030 lbs., an aver-
age of 10,003 lbs. per annum. Several
others have given averages of 7,000 lbs.
to 9,448 lbs. of milk for several years.
Sixteen Shorthorn cows and heifers that
came into the herd during the year gave
an average estimate equal to 7,656 lbs.
per annum, and 20 cows and heifers that
have gone out of the herd during the
year are estimated to have yielded 3,508
lbs. Nine Jerseys in the herd the whole
year gave 53,946 lbs., or an average of
5,944 lbs. per annum, the highest having
been My Brunette, with 8,791 lbs.

Thirty-eight Jersey cows and heifers
that have come into the herd during the
year yielded 246,978 lbs., an average of
6,174 lbs. per annum; the best being 13-
577 lbs., from the cow Clarissa, which
has been in the herd three years, and has
given 33,760 lbs., an average of 12,233
lbs. per annum. Six Red Polled cows
and heifers that have come into the herd
during the year averaged equal to 8,584
lbs., and twenty-four cows that have gone
out of the herd during the year averaged
equal to 3,634 lbs.

Onion Industry in Barbadoes.
The chief agricultural industry of the
Barbadoes Islands is the cultivation of
onions, lily bulbs and early vegetables,
writes E. H. S. Flood, Canadian Trade
Commissioner in those islands. These
are exported principally to the New York
market. The export of early kitchen gar-
den produce, such as lettuce, peas, beans,
celery, etc., finds a market in New York
at a time when no other such produce
can be obtained. The potato crop for
1907 was one of the largest the island
has raised; the quantity exported amount-
ed to £29,864, an increase of £13,583
over the previous year. The onion crop
export amounted to £63,189, being an
increase of £18,413 over 1906. The crop
of lily bulbs was also larger than usual,
the export amounting to £9,612, an in-
crease over the previous year. A fur-
ther increase was noted in the export of
arrowroot and green vegetables other than
the onion. The value of green vegeta-
bles, other than potatoes or onions, ex-
ported in 1906 amounted to £6,079, and
last year it was £11,057.

**Bermuda Onion Loses the New York
Market.**—The annual onion crop averages
in value about £60,000, the principal
market, as before mentioned, being the
United States. In the hope of obtaining
the market in New York over the Ber-
muda onion, the Texas onion was last
year largely cultivated. Protected by a
customs tariff of 40c. per bushel against
outside competition, it succeeded in captur-
ing the market and destroying the monopoly
which for some years past had been held
by its Bermuda rival. But at the same
time, a combination of dealers in New
York succeeded in holding prices down.

From these two causes, about one-
quarter of the Bermuda onion crop re-
mained unsold at the end of the season,
and the three-eighths of the crop which
had been sold paid practically only the
charges. The result was a complete fail-
ure of the onion industry of Bermuda this
year, and the crop for 1909 will be a very
short one, probably not one-half the
average owing to the absence of a mar-
ket, though normal prices will probably
be maintained.

**Canada the Probable Market for Ber-
muda Onions.**—A meeting of the Shippers'
and Growers' Association, which recently
met in Bermuda, discussed the desirability
of obtaining a market for their onion in
Canada, and an attempt will be made to
have representatives in the principal cities
to solicit for this trade. The fact that
the crop is marketed in March and April,
will allow the Bermuda onion into the
Canadian market, and will not interfere
with the Canadian crop.

Reciprocity Movement Being Discussed.—
The progress of the reciprocity movement
with the West Indies and Canada is be-
ing watched with interest in Bermuda.
It has been discussed in commercial cir-
cles, as to whether or not it would be
possible to give Canada a preferential
treatment in their customs tariff, and to
obtain in return a market for their early
vegetables and onions. Additional im-
petus has been given to the movement in
this direction since the Texas onion has
displaced the Bermuda in the New York
market.

QUESTIONS AND ANSWERS.
Veterinary.

SCAB.
Cow has a hard, dry scab on her back.
I have used Zenoleum and iodine without
results.
R. N.

Ans.—Dress three times daily with 1
part carbolic acid to 25 parts sweet oil.
Remove the scab as soon as it is soft
enough, and continue to dress the raw
surface until healed.
V.

SHOE BOIL.
Why is a tumor on the point of a
horse's elbow called a shoe boil?
W. J. H.

Ans.—These abscesses, or tumors, are
caused by the point of the elbow coming
in contact with the heels of the shoe
when a horse is lying down, hence the
name. The proper name is capped elbow.
It is possible the condition might be
caused from bruising in other ways, but
the above is the usual cause.
V.

INDIGESTION.
Pregnant mare gets sick about twice
weekly. She bloats, paws, and is gen-
erally uneasy. She gets better in about
an hour.
L. D. A.

Ans.—This is indigestion. Give her a
laxative of 1½ pints raw linseed oil. Fol-
low up with 1 dram each of ginger, gen-
tian and nux vomica, three times daily.
Feed on small quantities of good hay,
rolled oats and bran, and a carrot, tur-
nip or mangel, daily. Give regular ex-
ercise. In case she shows violent symp-
toms at any time give 1 oz. fluid ex-
tract of belladonna, 2 ozs. oil of turpen-
tine and a pint of raw linseed oil.
V.

GROWTH ON HEEL.
Horse cut his heel last spring. A
lump formed and healed, but the hair did
not grow. I blistered it and this re-
moved the skin. It will not heal now,
and the flesh remains reddish. I have
been applying butter of antimony, but
the lump grows faster than it is burned
off. How can I heal it, and get the hair
to grow?
W. B. DeC.

Ans.—The hair roots are destroyed and
cannot be reproduced. The tumor is of
a somewhat malignant nature and should
be carefully dissected off, and the raw
surface dressed three times daily with a
5 per cent. solution of carbolic acid until
healed.
V.

Miscellaneous.

SWEDES VS. SUGAR BEETS.

What is the value of Swede turnips as
compared with sugar beets, in growing
and fattening hogs?
R. H. R.

Ans.—A reliable authority places the
digestible nutrients in 100 lbs. as fol-
lows: Swedes—Protein, 1.0 lbs.;
carbohydrates, 8.1 lbs.; ether extract, .2
lbs. Sugar beets—Protein, 1.1 lbs.; car-
bohydrates, 10.2 lbs.; ether extract,
.1 lb. The total dry matter per 100
pounds is given: Swedes 11.4 lbs., and
sugar beets 13.5 lbs. Sugar beets are
much more desirable than Swedes for any
class of hogs, and particularly for brood
sows.

Commander Peary, the famous Arctic
explorer, never starts on one of his ex-
ploring expeditions without receiving all
sorts of packages from cranks—cowhide
underwear, tea tablets, medicated boots
and what not. A few days before the
start of his last trip, a club acquaint-
ance wired him to expect an important
package by express. The package came.
It was labelled: "To be opened at the
farthest point north." Peary opened it
at once, however. It was a small bag,
inscribed: Axle grease for the pole.

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Any person, however inexperienced,
can readily cure either disease with
Fleming's
Fistula and Poll Evil Cure
—even bad old cases that skilled doctors
have abandoned. Easy and simple; no
cutting; just a little attention every fifth
day—and your money refunded if it ever
fails. Cures most cases within thirty days,
leaving the horse sound and smooth. All
particulars given in
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Write us for a free copy. Ninety-six
pages, covering more than a hundred vet-
erinary subjects. Durably bound, in-
dented and illustrated.
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Dr. Page's English Spavin Cure

For the cure of Spavins, Ringbone, Curbs,
Splints, Windgalls, Capped Hock, Strains or
Bruises, Thick Neck from Distemper, Ring-
worm on Cattle and to re-
move all un-
natural en-
largements.
This prepa-
ration (unlike
others) acts
by absorbing
rather than
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the world
guaranteed to kill a Ringbone or any Spavin or
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SAVE THE HORSE'S SPAVIN CURE




UNITED STATES POSTOFFICE.
Frederichtown, O., Sept. 22, 1908. I have been using your
splendid preparation and with the best of results. I have
used 9 bottles all told on different horses and found it splen-
did. I have a four-year-old that I have taken wind pulls off
and have driven her hundreds of miles on my trip; she
has been offered \$250 for her, as she is a well-bred one. I pur-
chased "Save-the-Horse's" of druggist, F. F. Rosch.
P. W. FLUHMEN.
General Teaming, 127 North Third Street, Philadel-
phia, Pa.—I can give it the best recommendation, used it on
thoroughpin and bone spavin with great success. Both
horses are used every day at the hardest kind of work, which
is a great thing among horsemen. As the saying goes, "See-
ing is believing."
HARRY H. BOBB.
\$5.00 a bottle, with legal written guarantee or contract. Send
for copy, booklet and letters from business men and
trainees on every kind of case. Permanently cures Spavin,
Thoroughpin, Ringbone (except low), Curb, Splint, Capped
Hock, Windgall, Bone Tick, Injured Tendons and all lamenesses. No
scar or loss of hair. Horse works as usual. Dealers or Express
Paid. Troy Chemical Co., Birmingham, N. Y., and
145 Van Horn St., Toronto, Ontario.

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F. R. C. V. S., D. V. S., ETC.,
Ormsby Grange, Ormstown, P. Q.,
Importer and breeder of high-class pure-bred
GLYDESDALES
STALLIONS RECENTLY IMPORTED.

Personally selected from the extensive stud of
Messrs. A. & W. Montgomery, **Baron Barlee**
13972 2-year-old; **Baron Barlee**
Macgregor, g.-dam by **Cedric Selborne** 14363, 2-
year-old; sire **Pride of Blacou, dam Sybil Grey**
(dam of Acme). **Decker Jim** 14094, 2-year-old;
sire **Pride of Blacou, dam by Prince Macgregor.**

CORRESPONDENCE INVITED.

One of the fillies is the celebrated four-year-old,
prize, cup and championship winner, **Hilda** (now
Linthgow Lass), by Everlasting, purchased from
Wm. N. Ison, of Haining Valley, Linthgow;
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A BOG SPAVIN, PUFF or
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will clean them off permanently, and
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LYMAN, BOBBS & CO., Montreal, Canadian Agents.

**Shannonbank Clydesdales, Ayrshires-
Yorkshires.** One stallion rising three years,
by imp. Hopewell. Two young bulls ten months,
and some heifers from six months to two years.
Yorkshires of both sexes. **W. H. TRAN, Cedar
Grove, Ont., Locust Hill Sta., C. P. R.**



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Scottish and Canadian winners, stallions, mares and fillies. The Clydes represent the blood of such noted sires as Baron's Pride, Up-to-Time, Royal Favorite, Ethiopia and Acme. They combine size, quality and action. The French Coachers are a big, flashy, high-stepping lot and are winners in both France and Canada. Our prices are right, and our horses as good as the best. Long-distance telephone.

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INCREASES EGG PRODUCTION.
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1½ lbs., 25c. By Mail, 35c.
MADE IN CANADA



Louse Killer

KILLS LICE ON POULTRY AND STOCK.

SATISFACTION GUARANTEED

1-lb. Can, 25c. By Mail, 35c.

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THE "MAPLES" HEREFORDS



Canada's Greatest Show Herd.

For Sale: 25 bulls from 6 to 18 months of age, bred from imported and show stock; also about the same number of heifers, none better. Prices right.

W. H. HUNTER,
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Aberdeen-Angus

For sale: The right sort, some of them by Klondyke, imp. Drumbo station.

WALTER HALL,
Washington, Ontario.

GLENGORE ABERDEEN ANGUS Present offering: One bull 2 years old, and three choice bull calves, and anything in the female line. A choice lot and sold right. **GEO. DAVIS & SONS, ALTON, ONT.** Station, C. P. R.

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HOMESTEAD ABERDEEN-ANGUS



Good individuals and good breeding, at prices that anyone wanting a good young bull or heifer can afford to pay. Come and see them.

WM. ISCHE,
Sebringville, Ont.

ABERDEEN-ANGUS CATTLE!

FOR SALE: Some of the best strains. Several fine heifers; also cows and a couple of bulls. Apply: **MANAGER,**

GRAPE GRANGE FARM, CLARKSBURG, ONT.

Angus Cattle for Sale—A few choice females and young bulls. Prices right. Three miles west of Erin station. C. P. R., 16 miles north-east of Guelph.

J. W. BURT, Coningsby P.O., Ont.

10 Imported Scotch Shorthorn Bulls 10

Personally selected from the leading Scotch herds. Now in quarantine. Will be for sale at my farm first week in January. They are of such noted families as Broadhooks, Butterfly, Claret, Clara, Roan Lady and Jilt. I also have for sale four bull calves from imp. sire and dam, and a number of good young cows and heifers. Catalogue being prepared. Write for one. Prices, as well as quality and breeding, will please you. Farm ¼ mile from Burlington Junction station, G. T. R.

FRED. BARNETT, MANAGER.

J. F. MITCHELL, BURLINGTON, ONT.

Scotch Shorthorns



Four young bulls recently imported, one Brawith Bud, a grandson of Bapton Diamond; two Kilbean Beautys and one a Marr Emma; also Canadian-bred bulls, and a grand lot of heifers.

H. J. Davis,
Woodstock, Ont.

Long-distance Bell phone.

C. P. R. & G. T. R.

VALLEY HOME Shorthorns and Berkshires

For sale: Six young bulls fit for service, and young cows and heifers; some are choice show animals. Also ten fine young Berkshire sows of prolific strains. Write, or come and see our stock. Visitors welcome.

S. J. Pearson, Son & Co., Meadowvale, Ont.

Stations: S. Meadowvale, C. P. R., and Brampton, G. T. R.

Stock Bull Trout Creek Sailor = 59421 = 247242, A. H. B., for sale; also roan show bull, fit for service. **A. M. SHAVER, ANGASTER, ONT.** Station 13, Brantford and Hamilton Electric Line; three minutes' walk from barns. Inspection invited. Priced right.

SPRING VALLEY SHORTHORNS.



Our herd is pure Scotch, imp. and home-bred. 50 head to choose from. Our present crop of young bulls are the best we ever had. All sired by the great stock bull, imp. Bapton Chancellor. High-class show things among them, including this fall Toronto winners. Nearly every one a herd leader.

KYLE BROS., AYR, ONT., P. O. and STATION.

SHORTHORNS!



Present offering: Choice young stock, either sex, by Golden Crescent = 72325 = and Nonpareil Victor 2nd = 34534 =. Prices reasonable.

John Racey,
Lennoxville, Que.

Shorthorn Bulls Ready for service. One will make a show bull. Also young things from Matchless, Crimson Flower, Miss Ramsden, Rosemary, Diamond and Lady Fanny dams, the get of Chancellor's Model. Prices to suit times. Come and see. **Israel Groff, Elmira, Ont.**

Pleasant Valley Herd

Present offering: 7 high-class young bulls by Imp. Ben Lomond = 45160 = (80468) and Bud's Emblem = 63850 =, and good imp. and Canadian-bred dams. Write for particulars and prices, or visit personally.

GEO. AMOS & SON, Moffat Station and P.O.
Moffat is 11 miles east of Guelph on C. P. R.

Subscribe for "Farmer's Advocate"

WILL MAKE PRICES ON THE FOLLOWING LIST OF Shorthorns, Clydesdales, Shropshires and Cotswolds

That No Man Keeping Live Stock Can Afford To Overlook: dam, amongst the best. The filly is good and has the quality wanted in a show mare. A small number of imported cows and heifers, and some splendid young bulls and heifers from imported sires and dams. Good young Shropshire and Cotswold ewes in lamb to high-class imported sires.

ROBERT MILLER, Stouffville, Ont.

WILLOW BANK STOCK FARM Shorthorns, Leicesters.



Herd established 1855; flock 1848. The great Duthie-bred bull, imported Joy of Morning = 32070 =, at the head of herd. A choice lot of cattle of either sex to offer. It will pay you to see them. Also choice Leicesters. **JAMES DOUGLAS, Caledonia, Ont.**

Choice Shorthorns FOR SALE!

Some fine young stock, either sex, including some extra heifers from imp. dams, and all got by the Cruickshank (Duthie-bred) bull, Sittytton Victor, imp., = 50093 = (87397). Also young Yorkshires, either sex. Address: **JOHN BRYDNE, Milverton, Ont.** C. P. R. and G. T. R.

Rowan Hill Shorthorns The 1908 Toronto grand champion, Royal Chief 65495, heads my herd. For sale are: 3 spring bulls and a few heifers, sired by him, and out of show cows. These are choice young things that are sure to please. **R. F. DUNCAN, Carlisle P. O., Ont.** Caledonia Station, G. T. R., or station 13 Hamilton and Brantford Electric Road.

SHORTHORNS

FOR SALE!

I have a dozen young cows and heifers, got by the Brawith Bud bull, Golden Abel (imp.), and in call to the Bruce Mayflower bull, Royal Bruce (imp.), that I will sell very reasonable. A number of them are out of imported dams, and registered in Dominion and American Herd-books.

R. J. DOYLE, OWEN SOUND, ONT.

GOSSIP.

At the annual sale of Shorthorns from the herd of Hector Cowan, Paulena, Iowa, on December 9th, thirty-four head sold for an average of \$169.55, the highest price for a bull being \$500 for the yearling, Roan Knight, and the highest for a female \$400, for the seven-year-old, Merry Lady (imp.).

D. C. Flatt & Son, Millgrove, Ont., importers and breeders of Large Yorkshire swine, ordering a change in their advertisement, announce that to reduce their stock they are prepared to sell at moderate prices selections from their noted Summer Hill herd, which has made such a splendid prizewinning record in recent years at the Canadian National and other leading exhibitions, as the award lists of those shows indicate.

EDINBURGH FAT-STOCK SHOW.

The grand champion award for the best cattle beast in the Edinburgh Fat-stock Show, held the first week in December, went to the blue-roan cross-bred Angus-Shorthorn yearling heifer, Bluebell, exhibited by D. R. Arnot. Her weight was 1,349 lbs., and she won over Jas. McWilliams' champion Shorthorn heifer, two years old, which weighed 1,632 lbs., an extra good one, which was reserve to the supreme champion.

CLEANING SEED GRAIN.

Experiments have shown that several bushels more grain per acre are obtained from good, large seed, compared with small and large seed sown together. The Perfection Seed and Grain Separator advertised in this paper by the T. C. Rogers Company, of Guelph, Ont., it is claimed is the first and only perfect machine to clean, separate and grade grains and seeds of all kinds, for every purpose. It will pay for itself many times over in one year in the increase of crop and lessening of noxious weeds on the farm. This machine is needed on every farm. Write for catalogue and prices of this and other farm machines carried by this firm.

A PROFITABLE DAIRY COW.

The year's authenticated record of the Jersey cow, Bessie Bates, bred and owned by the Missouri Agricultural College, whose portrait appears on another page in this issue, gives her a prominent place in the list of extraordinary producers. In the year ending October 23rd, 1908, she gave, as reported by C. H. Eccles, Professor Dairy Husbandry, Columbia, Mo.: Milk, 13,885 lbs.; fat, 680.7 lbs. The average per cent. of fat was 4.97, the highest average per cent. for one month being 5.60. Estimating the yield of butter according to the rule of the American Jersey Cattle Club at 85 per cent. fat, the production of this cow was 801 lbs. butter for the year. The college has kept a record of the product of this cow for five years, the first record at two years old, when she gave 5,942 lbs. milk, and 345 lbs. butter in the year; second record 7,592 lbs. milk, 412 lbs. butter; third record 8,737 lbs. milk, 459 lbs. butter; fourth year 10,273 lbs. milk, 541 lbs. butter; fifth record 13,885 lbs. milk, 801 lbs. butter; the first four being private records, and the last authenticated, according to the rules of the Jersey Cattle Club. This record was authenticated by State Dairy and Food Commissioner Washburn and Acting Commissioner Lamb.

ENCOURAGE YOUR HORSE.

The fact that, with few exceptions, all animals enjoy human companionship, and that the horse ranks first in his appreciation of sociability is fully appreciated by all who understand equine nature. It is utterly impossible for a trainer to gain the respect and confidence of his charges if he does not talk to them. The amount and quality of conversation used in giving commands or in centuring the animal, when a command has been misinterpreted is not sufficient. Take advantage of every opportunity that offers to give your charge a friendly word or pat; it will encourage him to greater efforts and incidentally will place you on more friendly terms with yourself. The horse, it is realized when one speaks to him kindly and, although some would say that such things may not always be a great advantage,

ly tone, the horse always does. The horse that trusts his master will do anything he can for him, which is not the promise of a politician, either. The horse will do it or die. One of the secrets of all skilled trainers and teachers is that a low, well-modulated voice is much more effective than harsh words or a whip. This is most especially true of the horse whose sensitive, excitable nature makes him so miserable and unstrung when angry words are yelled at him that he loses his head entirely and the lesson such words were intended to convey is not only lost, but a bad effect is produced.—Horse World.

The Scottish Farmer Almanac, a popular farmer's annual, full of useful farm and live-stock essays, and information, and liberally illustrated with portraits of prizewinning horses, cattle, sheep and swine, reproduced from photographs, with which is incorporated The Farming World Yearbook for 1909, is now ready for mailing, and is advertised in this paper. The price is very moderate, 20 cents in paper covers, and 34 cents in stiff boards, postage prepaid.

Messrs. David Rife & Son, Hespeler, Ont., in ordering a change of advertisement, write: "We have had excellent results from advertisement in 'The Farmer's Advocate.'" We sold the heifer advertised a few days after the advertisement appeared, and have made several other sales of Holsteins and poultry. We find 'The Farmer's Advocate' has no equal as an advertising medium. We have still for sale some fine calves and some choice White Rocks and Buff Oringtons, which we are offering at close prices to quick buyers."

Imported and home-bred Clydesdales are advertised for sale by D. McEachran, Ormstown, Que., who sends us a long list of prizes and championships won in Scotland by his imported mare, Hilda, now Lialethgow Lass (15912), as a two-year-old, as a three-year-old, and this year as a four-year-old; also of Imp. Mary o' Argyle (20868), a Kintyre-bred two-year-old filly, and of Imp. Kintyre Belle, two years old, a grand specimen of the old Clyde families, whose pedigree goes beyond the Clydesdale Studbook, and will come to weigh 1,700 lbs. Several richly-bred, recently-imported stallions are for sale, and correspondence is invited.

It is told of the late Ira D. Sankey that one day in Geneva he entered a music-box shop, and asked to see some music boxes. The salesman graciously showed him a number, but none was what he wanted. "Have you none that play sacred music?" he asked. "Why," answered the salesman, "we have some that play a kind of half-way sacred music." "What?" inquired Mr. Sankey. "Oh, these Moody and Sankey hymns; I can't imagine what the people see in them, but we sell thousands of the boxes that play them. We have enormous orders for these boxes," continued the salesman, "from part of Europe," and then he added, apologetically, "it's a matter of business, you know, with us."

An Irishman was one day told to put up a signboard on which were the words: "To Motorists—This hill is dangerous."

Away went Mike with the signboard and placed it at the bottom of a very steep hill. A few days later his employer went to see how the board was put up, and, finding it at the bottom of the hill, sought and found Mike.

"You blooming fool!" he cried, "why didn't you put that sign in the right place?"

"Shure and ain't it?" asked Mike. "Don't all the accidents happen at the bottom?"

"What we complain of," exclaimed the "ery orator," "is the unequal distribution of the good things of this world! Is not that so? Don't you—and you—and you?"

"Yes," answered one of the hearers, a well-dressed young man in one of the side seats, "I give worlds if I could raise enough money my great-aunt would give me."

QUESTIONS AND ANSWERS.
Miscellaneous.

FROSTING WINDOWS.

What is the "frosting" for church windows composed of? I. T. M.

Ans.—There are different methods of frosting glass.

1. Rub with a small muslin bag containing fine sand, powdered glass, or grindstone grit and water. Some sand may be placed directly on the window.

2. Clean the window thoroughly and moisten with hydrofluoric acid. When sufficiently frosted, wash thoroughly.

ALIEN CARPENTER.

Is there anything in the laws of Canada to prevent a citizen of the United States, a carpenter by trade, coming into Canada and working at his occupation? Prince Edward Island. D. B.

Ans.—The law does not seem to deal directly with this point, but doubtless a carpenter coming over from the United States could work at his occupation. Communications with the Department of Labor brought evasive answers, with a disinclination to interpret the statute as bearing on the above query.

COW GIVES BITTER MILK.

A few weeks ago the milk from a Jersey cow that has been milking since August, 1907, became so bitter that it was almost offensive. We couldn't churn, at least we couldn't get butter, though we churned a full half day. It foamed up just like whipped cream. Then we fed her a medicine made up of resin, sulphur, saltpeter, alum, copperas and salts. At the same time we kept her out of the gully where she had been tied, thinking the gully grass wasn't good for her. Instead, we fed her on corn and lucerne. She got better and we had two churnings of good butter. We put her back in the gully and she became worse again. The milk wasn't so bitter, but we couldn't get butter, so we again put her in the stable on the old rations, but her milk isn't right yet, though it is improved. The cow is in good flesh and healthy. F. A.

Ans.—I would judge that the cow, when pasturing in the gully, gets something of a bacterial nature, which causes the trouble referred to. Sometimes cows get material in their pasture which gives the milk an unpleasant flavor, also makes it difficult to churn. Usually pasteurization of the milk or cream will overcome the difficulty. If the trouble continues I would suggest giving the cow one or one and one-half pounds of Epsom salts and pasteurizing the milk for use at a temperature of 160 degrees, then cool to as low a temperature as possible. In the case of churning the cream into butter, the cream should be pasteurized 24 hours before it is needed for churning. After cooling to about 70 degrees, we would recommend the addition of about one cupful of good-flavored sour skim-milk or buttermilk to induce the ripening process. H. H. DEAN.

BUILDING ICE HOUSE.

Kindly give me a plan for building an ice house that would hold about 80 or 100 blocks. I would like one in which the ice and sawdust would not come in contact with each other. G. M.

Ans.—There is no need of going to great expense in building an ice house. It is well to place it on the north side of a large building, or in such place that it does not stand exposed to direct sunlight throughout the day. The main object should be to protect the ice from being melted by the hot air of summer months. Sawdust has been proven to be the most satisfactory material for this purpose when cheapness and efficiency are considered. A building ten feet square should suffice for storing 100 blocks. It is necessary to have 12 inches of sawdust on a dry bottom, and to leave space for a foot of sawdust on all sides of the ice. Then a foot or more also should be used as a covering on top. Posts can be set as required, and rough lumber used as siding. Some advise nailing the lumber on the inside of the posts, but for appearance sake it is well to have the posts inside. For efficiency it might be wise to leave slightly more than 12 inches space for sawdust, and to see that the sawdust is thoroughly packed around the posts. Openings should be left to allow free circulation of air above the sawdust.

Your suggestion to have the ice and sawdust not come in contact is attractive from the standpoint of having clean ice, but for efficiency of protection it would cost too much for construction. A little water will readily wash the sawdust off a block. Thorough insulation of walls and ceiling, as well as double doors, would be required.

CHARGE FOR ILLUSTRATIONS.

I have been a subscriber for "The Farmer's Advocate" for a number of years, and in that time I have been benefited very much by reading your valuable paper. It is through "The Farmer's Advocate" that I got to breeding pure-bred stock. I have some very nice animals at present and would like to know what it costs to have pictures of pure-bred animals appear in "The Farmer's Advocate"? H. P. D.

Ans.—The charge for illustrating pure-bred animals in "The Farmer's Advocate" is \$6 for a cut 1 column wide, \$8 for a cut 1 1/2 columns wide, and \$10 for a cut 2 columns wide. When the photograph is supplied to us the charge for illustrating is \$1 less than the figures quoted above. Only creditable illustrations are accepted at any price.

COMPARISON OF BREEDS.

How do the four following breeds of sheep compare for size, hardiness, and for mutton and wool? Oxford Down, Suffolk, Shropshire and Southdown.

I have a chance to secure Suffolk. Would this breed likely be as satisfactory as any other, where the pasturage is only average, and where mutton is the chief object? C. P.

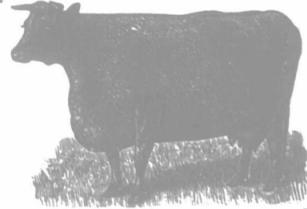
Ans.—In size these breeds compare in the order named, the Oxfords being the largest and the heaviest. In hardiness there is little difference, though the Southdowns, being the smallest, would probably do best on sparse pasturage. For quality of mutton and wool it is a question between the Suffolks and Southdowns, while for quantity and quality combined, it is between the Oxfords and the Shropshires. The Suffolks are well adapted to farms with some good arable land, and a considerable range of pasture, not over luxuriant. The quality of their mutton is first-class.

GRAIN RATIONS FOR STEERS.

Is it necessary to feed steers any grain during the first month's feeding, when they are being fed silage, well matured, and with lots of corn in it, and a good feed of hay at noon? Which is the best for fattening purposes, fed along with silage, such as I mention? Barley, ground fine; oats, ground fine; bran, ground fine? Would it pay to buy oil cake to feed to them at \$32 per ton? H. B.

Ans.—In suggesting a meal ration to be fed with corn silage, it is rather important to know the kind of hay fed with it. If the hay is alfalfa or clover, the steers might be started fairly well without any concentrates, although a pound of bran and a handful of oil cake would certainly give results. If straw or timothy hay is fed with the silage, we would certainly advise using a little bran, oil cake, and possibly a little oat chop if it is plentiful, say two or three pounds of the mixture a day, during the first month, gradually increasing the oil cake and oatmeal and adding some barley meal or corn meal as the feeding period progressed. It will certainly pay, and pay well, to use a pound or so of oil cake per day on the average during the feeding period when this can be purchased at \$32 per ton. Bran and oil cake are especially well adapted for feeding with corn silage, and while the bran possesses a special virtue as a diluent of the heavier meals, the oil cake contains over twice as much protein per pound and about three times as much vegetable fat, or oil, as bran; only in carbohydrates is it lower, and as this element is abundantly contained in the silage and the rest of the meal mixture, its comparative deficiency in the oil cake is not of such great consequence. We buy bran and oil cake mainly for the protein they contain. While oil cake should not be fed in large quantities alone, there is no doubt that at current prices it is the cheapest one concentrated feed that can be bought by the dairyman or cattle-feeder, particularly for feeding along with corn silage, corn or barley meal, straw or timothy hay.

High - class Imported
SCOTCH
SHORTHORNS



BY AUCTION
AT THE
Village of Enterprise,
CO. ADDINGTON,
ON
THURSDAY,
Jan'y 14, 1909

Sale will commence 12 o'clock sharp.
Terms cash, or 9 months at 5%.
CAPT. T. E. ROBSON, Auctioneer.
Trains arrive: C. P. R., 8.30 a. m.;
G. T. R., 9.30 a. m.

Mr. C. D. Wagar will sell positively without reserve

28 HEAD
of imported and home-bred Scotch Shorthorns of the Orange Blossom, Belona, Wimple, Village Maid, Broadhooks, Rosebud, Mayflower and Lady Eden tribes. Six of them are imported; high-class show stuff in heifers and young bulls will be sold.

Catalogues on application to:
C. D. Wagar
ENTERPRISE, ONT.
Farm only 40 rods from depot.

Shorthorn Cattle
AND LINCOLN SHEEP.

A. Edward Meyer,

Females of all ages for sale of the thick-fleshed, low-down kind that have been raised naturally, neither stuffed nor starved. Twenty-five Lincoln ewes, bred to our best imported stud ram, also a few choice yearling rams. Prices very reasonable for quick sale.
J. T. GIBSON, DENFIELD, ONT.

P. O. Box 378, Guelph, Ontario,
Breeds SCOTCH SHORTHORNS Exclusively
Twelve of the most noted Scotch tribes have representatives in my herd. Herd bulls: Scottish Hero (imp.) = 55042 = (90065) 292765 A. H. B.; Gloster King = 65703 = 28304 A. H. B. Young stock for sale. Long-distance phone in house.

Scotch Shorthorns

BULLS: 4 choice yearlings, IMPORTED; 8 yearlings and a number of choice calves of our own breeding. **FEMALES:** A number of cows and heifers forward in calf, including showyard material. Tempting prices.
W. G. PETTIT & SONS, FREEMAN, ONT.
Bell telephone at each farm. Farms only 1/2 and 1 1/2 miles from Burlington Jct., G. T. R.

SHORTHORNS

Nine bulls from 8 to 20 months old, reds and roans; 10 yearling heifers and a few cows. Will sell very cheap to make room in stables.

CLYDESDALES

One pair of bay mares and one dark brown, heavy draft and two spring colts.
JAMES McARTHUR, Gobles, Ontario.

1854 MAPLE LODGE 1908
STOCK FARM

A few extra good young SHORTHORN bulls and heifers for sale.
LEICESTER ram lambs by the grand champion ram, "Sanford." Right good ones, and a few choice ewes.
A. W. SMITH, MAPLE LODGE P. O., ONT.
Lucan Crossing Station, G. T. Ry.

SOME SHOW PROPOSITIONS IN BOTH MALE AND FEMALE

SHORTHORNS

as well as a number of the useful sort of both sexes. Prices right. Large lot to select from. Up-to-date in breeding, etc. Catalogue.
JOHN CLANCY, Manager.
H. Cargill & Son, Cargill, Ont.

Scotch Shorthorns Canada's greatest living sire, Milled's Royal, heads my herd. For sale are young bulls and heifers, show stuff and Toronto winners, out of Stamford, Lady Ythan, Claret, Emeline, Matchless and Belona dams. A visit will be appreciated. **GEO. GIER, Grand Valley P. O., Ont.**
Waldemar Sta., C. P. R.

TWO IMP. BULLS of excellent color and breeding. One 7 months old, sired by imp. Joy of Morning = 32070 =; dam Blossom 2nd, imp. Also heifer calves and young cows, and heifers in calf. And choicely-bred Yorkshires of either sex. Prices very moderate.
GEO. D. FLETCHER, BINKHAM P. O., Ont.
Eria Station, C. P. R.

Shorthorns!
BELMAR PARC

John Douglas, Peter White,
Manager. **Pembroke, Ont.**

Calves for sale by our grand quartette of breeding and show bulls:
Nonpareil Archer, Imp. Proud Gift, Imp.
Marigold Sailor. Nonpareil Eclipse.
Females, imported and from imported stock, in calf to these bulls.
An unsurpassed lot of yearling heifers.

Shorthorns for Sale—Broadhooks Price = 65793 =; also eight grand bulls, 6 to 15 months; also cows and heifers of the best dairy sort and of excellent breeding. Prices right, and on terms to suit purchaser. **DAVID MILNE, Ethel, Ontario.**

Greengill Shorthorns!

We offer for sale our herd bull, imp. Lord Roseberry, also young bulls and females all ages, either imp. or from imp. stock. Prices right. Long-distance phone.
R. Mitchell & Sons, Nelson P. O., Ont.
Burlington Jct. Sta.

PLEASE MENTION THIS PAPER.

J. A. WATT,
SALEM, ONTARIO.

I can sell twelve young bulls, two of them leading winners at the big Western show and Toronto. Look up the records of the leading fairs, and note the breeding of many of the winners
Elora Station, G. T. R. and C. P. R.

LIVER COMPLAINT

The chief office of the liver is the secretion of bile, which is the natural regulator of the bowels.

Whenever the liver becomes deranged, and the bile ducts clogged, liver complaint is produced, and is manifested by the presence of constipation, pain under the right shoulder, sallow complexion, yellow eyes, slimy-coated tongue and headache, heartburn, jaundice, sour stomach, water brash, catarrh of the stomach, etc.

Liver Complaint may be cured by avoiding the above mentioned causes, keeping the bowels free, and arousing the sluggish liver with that grand liver regulator,



LIVER COMPLAINT.

Mr. Geo. Fawcett, Hamilton, Ont., writes: "Having suffered with liver complaint for years and tried all sorts of remedies, I was advised to try Milburn's Laxa-Liver Pills. I must say, that after taking two vials of them, I feel quite a new man, and can strongly recommend them to anyone."

Price 25 cents per vial or 5 for \$1.00, at all dealers or mailed direct by The T. Milburn Co., Limited, Toronto, Ont.

You cannot possibly have a better Cocoa than

EPPS'S

A delicious drink and a sustaining food. Fragrant, nutritious and economical. This excellent Cocoa maintains the system in robust health, and enables it to resist winter's extreme cold.

COCOA

Sold by Grocers and Storekeepers in 1/2-lb. and 1-lb. Tins.

Charity workers often feel great awkwardness in making public appeals for funds.

Few of them, declares the Washington Star, can carry off that embarrassment with the grace of the colored preacher, who said to his congregation:

"Brudren, Ah kain't preach hyah an' board in heb'n."

Bishop Burgess is one of the few American clergymen who, being graduates of the University of Oxford, are entitled to wear the Oxford hood.

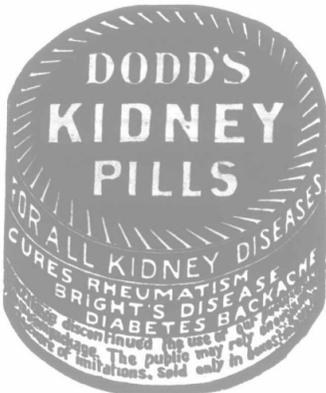
At a certain service, another bishop, also an Oxford man, nodded toward the officiating clergyman, and whispered excitedly to Bishop Burgess:

"Why, look; he has got an Oxford hood on."

"So he has," said Bishop Burgess.

"But he is not entitled to it. He has no Oxford degree," exclaimed the first bishop. "Why, the man is wearing a lie on his back."

"Hush," said Bishop Burgess. "Don't call it a lie. Call it a false hood."



QUESTIONS AND ANSWERS. Miscellaneous.

CEMENT FOR WALL.

How much gravel and cement will be required to build three walls, two of which are 12 feet by 5 feet, and the third 16 feet by 5 feet? How much will it cost? I can secure gravel on my farm. How thick would the wall need to be to avoid danger of roots stored being frozen if only two feet of the wall stands above ground.

Huron County.

Ans.—For ordinary purposes, a cement wall one foot thick is sufficient. If little weight rests thereon, less thickness will do. Your wall, if made one foot thick, would comprise 200 cubic feet. Allowing for waste and compacting, 128 cubic feet of cement-gravel mixture builds 100 cubic feet of wall. In other words, 256 cubic feet of mixture will be required. Of course, small field stone can be used to advantage, thus lessening the quantity of cement and gravel. If no stones are used, cement and gravel at the rate of 1 of the former to 10 of sharp gravel makes a good mixture for a wall. This would mean, approximately, 23 cubic feet, or six barrels of cement, and 223 cubic feet, or over 8 cubic yards of gravel. The retail price of Portland cement varies in different parts of the Province, but in your county should be procured at about \$1.90 per barrel. The cost of gravel will consist in hauling, and varies with the distance of the pit from the building. As regards keeping out frost, it would be impracticable to make a solid cement wall thick enough to protect roots. A hollow cement wall could be constructed to fill the bill, but your best plan is to bank up on the outside and equip with double windows or double doors where openings are necessary. Studding may be set up inside the wall and boards nailed to it, thus affording a space between roots and solid wall. A great deal, too, depends on the covering above the roots.

BALSAM A NUISANCE—MOVING LARGE TREES.

1. I have in my grounds several dozen ordinary balsam or spruce trees which have outgrown their beauty; in fact, are almost a nuisance in their present position. I have almost decided to top them and sell the tops for Christmas trees, leaving the lower part to be trimmed smaller next June, or whenever is best time. Kindly let me know whether the present would be good time to cut them off and save the lower part for ornamental tree. If you think it will damage the trees to cut them at present, I will wait until the proper time, which I think is about in June.

2. In another part of my grounds one balsam has died, leaving a break in a long row of trees; I have a good tree exactly the size required to fill the gap, and have thought of cutting around the good tree, leaving a large amount of root and earth with it, and moving it into the vacant place. Is this plan practicable, and what is the best time to move it?

Ans.—1. If the trees have outgrown their beauty and are, as you say, a nuisance, the best thing would be to cut them out and use them as you propose, for Christmas trees. The lower parts of such trees are of no use for ornamental purposes, for when an evergreen has lost its foliage it will not regain it by any amount of pruning, as deciduous trees can be made to do.

2. With regard to filling a gap in hedge by transplanting another tree in the place left by the dead one, there is always more or less difficulty in getting the new tree to do well, particularly if it is at all crowded by adjoining trees. It may be done, however, if care is taken in the removal and other trees do not crowd too much upon it. If the tree is large, the best time to move it is in the winter when it can be moved with a ball of earth frozen to the roots. For this purpose, it is best to dig out the hole to which the tree has to be moved before the ground freezes, and also to dig around the tree to be moved, filling in again with straw or manure to keep out frost until the ball of earth about the roots freezes.

H. L. HUTT.

Maple Line Holsteins and Oxforde—(For Sale)—17 cows and heifers, due to calve in April and May, and stock bull, whose dam has official record of nearly 19 lbs. at three years old. Also a few choice Oxford Down ewes. W. A. BRYANT, Cairngorm, Ont. Middlesex Co.

The Maples Holstein Herd!

RECORD OF MERIT COWS. Headed by Lord Wayne Mechthilde Calamity, also in the Record of Merit. Nothing for sale but choice bull calves.

WALBURN RIVERS, Falden's, Ont.

HOLSTEINS Choice bull calves from high-producing and Record of Merit dams. White Rocks and Bull Orpingtons. Winners of silver cup and sixteen regular and special prizes at Galt and Hespeler shows. David Rife & Sons, Hespeler, Ont.

OIL CAKE

J. & J. Livingston Brand

DOMINION LINSEED OIL CO., LIMITED, BADEN, ONTARIO. 31 Mill St., MONTREAL, QUE.

Now is the time to buy a bull for service next year, because we sell CHEAPER now than we do next spring. Why not write to us RIGHT AWAY for a BARGAIN and see us.

E. & F. MALLORY, FRANKFORD, ONTARIO.

LYNDALE HOLSTEINS

Offers for sale 5 young bulls from Record of Merit cows, and sired by Count De Kol Pieterje. Also 2 bulls sired by Sara Hengerveld Korndyke, and a number of heifers bred to this bull.

BROWN BROS., LYN, ONTARIO.

FAIRVIEW HERD HOLSTEINS

The greatest A. R. O. herd of in northern New York. Headed by Pontiac Korndyke, the greatest sire of the breed, having five daughters whose seven-day records average 29 1/2 pounds each, and over 4 3/4% fat. Assisted by Rag Apple Korndyke, a son of Pontiac Korndyke, out of Pontiac Rag Apple 31.62 pounds butter in 7 days, and 126.56 pounds in 30 days, at 4 years old. Cows and heifers in calf to the above two bulls for sale, also young bulls sired by them out of large-record cows. Write, or come and inspect our herd. E. H. DOLLAR, Heuvelton, St. Lawrence Co., N. Y., near Prescott, Ont.

MAPLE HILL HOLSTEIN - FRIESIANS!

Two cows due to calve inside of six weeks. Two cows giving milk, bred to Prince Posch Pieterje C.

G. W. CIEMONS, ST. GEORGE, ONT.

EVERGREEN STOCK FARM offers for sale choice young HOLSTEIN BULLS, from 10 to 12 months old, sired by sons of Mercena 3rd and Tidy Abbecker, each of which made over 27 lbs. of butter per week, and 80 lbs. milk per day. Also choice young females. Write for prices. F. E. PETTIT, Burgessville, Ont.

HOLSTEINS

We must sell at least 25 cows and heifers at once in order to make room for the increase of our large herd. This is a chance of a lifetime to buy good cattle at bargain prices. The best way to arrange to come and look the herd over. If you cannot, we will do our best for you by correspondence. Also a few young bulls. 100 head to select from. Imported Pontiac Hermes, son of Hengerveld De Kol, world's greatest sire, head of herd. All leading breeds represented.

Putnam station, near Ingersoll.

H. E. GEORGE, Crampton, Ont.

Centre and Hillview Holsteins

125 head to select from. 35 in the R. O. M. Stock bulls Bonheur Statesman, high official backing, and is closely related to Colantha 4th's Johanna; Brookbank Butter Boy. All nearest dams over 20 lbs. From these sires, out of R. O. M. dams, are several young bulls and a few heifers. Prices right. P. D. EDE, Oxford Centre, Ont. Woodstock Station.

Riverside Holsteins

For sale: Seven young bulls from two to nine months old, out of Record of Merit cows, sired by Sir Pieterje Posch De Boer, whose dam and sire's dam average in official test 25.87 lbs. butter in 7 days, and 87.6 lbs. milk in 1 day.

J. W. Richardson, Caledonia, Ont.

Only Bull Calves FOR SALE, HOLSTEINS and AYRSHIRES, Of the best performing strains. GEO. RICE, ANNANDALE STOCK FARM, TILLSONBURG, ONTARIO.

Spring Brook Holsteins and Tamworths.

32 choice young Tamworths from imp. sows, and sired by imp. Knowle King David, of best British blood and Royal winners. Correct type. Holsteins of best strains. Write for what you want, or, better, come and see. Will not exhibit this year. Stock better than ever. A. C. HALLMAN, BRESLAU, WATERLOO CO., ONT.

BUSINESS HOLSTEINS!

Over 60 head to select from. Milk yield from 60 to 85 lbs. a day, and from 35 to 47 lbs. a day for 2-yr-olds. There are 10 2-yr.-old heifers, 8 1-yr.-olds, and a number of heifer calves. Bulls from 1-yr.-old down. Priced right. Truthfully described. W. Higginson, Inkerman, Ont.

Holsteins & Yorkshires

R. Honey, Brickley, Ont. All surplus stock of Holsteins sold, except this crop of calves. Ready to book orders for them. Best bacon type Yorkshires, one to six months, both sexes, at moderate prices.

Maple Glen

For sale: Two bull calves born April 28th. One sired by Brightest Canary; dam of calf has 22 1/2 lbs. butter record, over 4 per cent. fat. The other from 19.48-lb. 2-year-old A. R. O. test, sired by a bull with a 22 1/4-lb. tested dam, with 93 lbs. milk 1 day. Also a 4-year-old cow due in Oct., sire's g. dam sister of Carmen Sylvia. G. A. Gilroy, Glen Buell, Ont.

BRAMPTON JERSEYS

CANADA'S PREMIER HERD.—Strengthened regularly by importations from United States, England and the Island of Jersey. We have animals of all ages and both sexes for sale, and the largest herd in Canada to choose from. Write for prices and particulars. Long-distance telephone at farm.

B. H. BULL & SON,

BRAMPTON, ONT.

HOMESTEAD HOLSTEINS

For sale: 4 bulls of serviceable age, sired by the champion, Count Mercedes Posch, whose nearest dams records average 25 lbs., and out of Advanced Registry dams. G. & F. GRIFFIN, Burgessville, Ont. Oxford Co.

HOLSTEINS FOR SALE.

Both males and females, including our present stock bull, Cornucopia Album De Kol, 3 years old, and both kind and sure. A grandson of ex-world's champion butter cow, Aagie Cornucopia Pauline. A. R. O. record of 34 1/2 lbs. butter in seven days. J. A. CASKEY, MADOC, ONT.

DON'T Buy a HOLSTEIN BULL till you get my prices on choice goods from 14 months to 1 month old. From best producing strains. Fairview Stock Farm, FRED ABBOTT, Harrietsville, Ont.

FOR SALE! Blue Bell's Fox

Two years old; T. S. Cooper's breeding. Bred right. Blue Bell on sire side. Crampton on dam's side. The two best cows Cooper has imported. And he is nice and gentle.

T. PORTER, WEST TORONTO, ONT.

JERSEYS We have the get of Ethel's John, a 75 FOR SALE per cent. Mary Ann of St. Lambert bull; also of Minette's Star, a son of Brampton Minette, Brampton Monarch (imported), Blue Blood, and Financial King. Write for what you want. H. S. Pipes & Son, Amherst, Nova Scotia.

SECURE ONE OF OUR PREMIUMS.

GOSSIP.

BIRMINGHAM FATE-STOCK SHOW.

At the Birmingham Fate-stock Show the first week in December, the grand championship prize for the best cattle beast, any age, breed or cross in the show, went to the pure-bred Angus heifer, Her Majesty 5th of Cullen, shown by the Countess Dowager of Seafield, weight at 1,048 lbs. Average daily gain, 1.60 lbs. The reserve was Sir R. P. Cooper's pure-bred two-year-old Hereford steer, Favorite, weight at 1,050 lbs. Average daily gain, 1.99 lbs.

The grand champion prize for a pen of three sheep, open to all breeds, went to H. M. the King's Southdown yearling wethers, whose average weight at 530 days was 207 lbs. Average daily gain, 0.33 lb. The reserve went to A. S. Berry's Shropshire wethers, whose weight is not given in the report.

The grand champion prize for the best pen of pigs went to Arthur Hiscox's Berkshires, and the reserve pen was the Earl of Ellesmere's Large Whites.

HIGH-CLASS SHORTHORNS BY AUCTION.

At the village of Enterprise, on the Bay of Quinte Railroad, between Napanee on the south and Tweed on the north, about 18 miles from either, with close connections at both places, on January 14th, 1909, Mr. C. D. Wagar, owing to his having sold his farm, will sell to the highest bidder, by public auction, the whole of his herd of 28 head of extra choice Scotch Shorthorns, six of which are imported, and represent the pick of Mr. W. D. Flatt's herd on the occasion of his last dispersion sale. Seldom indeed have the public had the opportunity of purchasing at their own prices such high-class quality Shorthorns as will be offered at this sale. The terms will be cash, or nine months on bankable paper, with 5 per cent. For fuller particulars look up our next issue. At the village of Enterprise there is good hotel accommodation, and the sale will be held within a quarter of a mile of the hotels and station. Write Mr. Wagar for catalogue to Enterprise P. O., Ont.

A TRIBUTE TO JOHN THORNTON.

An intimate friend of the late Mr. John Thornton, the prince of British auctioneers, says in the Live-stock Journal: "Perhaps one of the strongest points in his exceptional character was the love of detail and the thoroughly systematic manner in which he carried out anything that he undertook. Although possessed of a marvellous memory, he never trusted to it, and no matter where he was or upon whatever he was engaged, he made copious notes in his small, characteristic handwriting. His sense of humor, ready wit, and quickness of repartee, were of great assistance to him while selling, and it was rarely that he came off second best in an encounter at the ringside. Mr. Thornton excelled while conducting a sale of moderate cattle with a poor company; it was then he rightly earned the appellation of the prince of auctioneers. No man could better adapt himself to circumstances, and in whatever company he found himself he was 'Hail fellow, well met.' The many pleasant little meetings of breeders that he organized were never dull, for he was fond of relating anecdotes gathered during his wide and varied experience. Few men have led a more interesting life. He has many times remarked to the writer, 'What a splendid life this is; what more can man desire than to travel about the country, see beautiful places, the finest cattle, and meet good fellows?' After such weeks of pleasurable labor he would retire to his beautiful little riverside home at Laleham, with its charming garden, every tree and flower in which he loved, and enjoy a quiet game of bowls with his friends. He was a man of extraordinary energy, but during the last twelve months he constantly said that 'Anno Domini was telling its inevitable tale,' and after a heavy sale he was frequently tired out. His kindness of heart was unbounded, and an appeal to his generosity never failed to meet with response. After an arduous and useful life, may he rest in peace, and perhaps I cannot conclude these few words more appropriately than by quoting a favorite saying of his: 'Happy to meet, sorry to part, hope to meet again.'"

QUESTIONS AND ANSWERS. Miscellaneous.

ACETYLENE-GAS PLANT.

What is the value of acetylene gas for light, and also for cooking purposes. What is the cost of installing a plant? Is it safe to place the generator in the cellar? What is the cost compared with coal oil?

W. G. F.

Ans.—A reader of "The Farmer's Advocate" who has had experience with acetylene gas, states that he would not recommend it for cooking purposes as other fuels are cheaper. It is advisable for lighting, because lanterns and lamps can be discarded, and while the gas used costs more than coal oil, time is saved in housework. An ordinary jet, it is claimed, is sufficient for any room in a house. The light is remarkably good. It is recommended that the plant be placed outside in order to avoid bad odors and to remove insurance-company objections. Besides, it is more convenient to arrange to remove the sludge by pulling a plug and allowing it to run to a cesspit than to carry it upstairs from a cellar. A machine of greater capacity than that actually required is advised. Readers who have had experience with acetylene gas might give our enquirer valuable information as to cost, efficiency and installment.

FEEDING CALVES.

Please give a good growing grain ration for calves about seven or eight months of age. Is oil cake good? How much of it should be given at a feed? Calves have a stunted appearance. Should they have gruel? If so, how is it made?

M. D.

Ans.—Gives the calves choice alfalfa, clover, or mixed hay, if any is to be had, and a few sliced or pulped roots, twice a day. The ration can be varied by feeding a little silage, leafy corn fodder, or even oat straw, once a day. A quart of skim milk daily will do much for a calf in overcoming the effects of stunting, in so far as this can be done by anything. We would not advise gruel, but the calves should be watered twice a day with water from which the chill has been removed. As for meal ration, feed a mixture of one part wheat bran, one part crushed oats, one part corn or barley meal, the corn or barley being more especially beneficial if the bulky part of the ration consists largely of clover or alfalfa. If these are not to be had, double the proportion of crushed oats. Of the mixture, do not feed at any time a large quantity. Begin with a very small handful, and gradually increase, so long as their appetites for it remain keen.

PUMPING FROM DISTANT WELL—SEX IN GEES.

1. I have a well 20 feet deep about 400 feet from the barn. Can I pump the water into the barn by a gasoline engine? 2. In pairing young geese, by what marks, or in what way, can a goose be told from a gander?

A. A. S.

Ans.—1. Yes; pumping equipment with gasoline engine can easily be installed. Perhaps your best plan would be suitable piping from well to barn and a force pump at the barn to place the water in a tank.

2. Until geese are about full-grown, the sexes can scarcely be distinguished; after that time, difference can be noticed in these respects:

1st. In form. The goose is rounder-bodied and plumper-looking than the gander. The gander not only seems the longer-bodied of the two, but his head and bill are larger.

2nd. In voice. The gander's call is shriller (he screams more), and is generally, though not always, set on a higher pitch.

3rd. In carriage. This is probably the most readily-noticed distinction of the three. When going about, the point of the gander's bill is slightly elevated, he appears to be looking rather upward than on the level. The bill of the goose, on the other hand, points slightly downward, she seems more demure, and, in general, is not so fussy and aggressive. The above relative distinctions apply, of course, to individuals of the same breed.



Stoneycroft Ayrshires

Choice young bulls and heifers of the very best breeding, combining show and dairy quality.

Large Improved Yorkshire Pigs from imported sires and dams, now ready to ship.

Stoneycroft Stock Farm, Ste. Anne de Bellevue, Que.

Stockwood Ayrshires!

My Ayrshires are producers as well as show stock. For sale are females of all ages. Also my stock bull, Pearlstone, a high-class sire and show bull. Am now booking orders for bull calves

D. M. WATT, ST. LOUIS P. O. & STA., QUE.

Stonehouse Ayrshires.

36 head to select from. All imported or out of imported sire and dam. For sale: females of all ages. Am now booking orders for bull calves.

HECTOR GORDON, Howick, Quebec.

UTILITY GLENORA OF KELSO = 15798 = AYRSHIRES of all ages, and several young bulls, some out of 11,000 lb. cows. Come and see, or address: R. C. CLARK, Hammond, Ont. Railway station, Hammond (G. T. R. and C. P. R.).

CHERRY BANK AYRSHIRES.

I am now offering young bulls and heifers true to type and high in quality. Some with imp. sire and dam; also will spare a few older females.

P. D. McArthur, North Georgetown P. O., Que. Howick station, Que.

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We will sell or exchange for a young cow our (imp.) 3-year-old bull. On hand: Young bulls fit for service (imp. or home-bred). Choice August and September, 1908, calves from imp. sires, some imp. dams. One a grandson of Eva of Menie. Females any desired age. Bargains now, as we are crowded. We will only fill orders for 1909 importation. Young sows ready to breed. Phone Campbellford.

ALEX. HUME & CO., MENIE, ONTARIO. HOARD'S STATION, G. T. R.



HOWGLEN AYRSHIRES!

For sale: 75 pure-bred registered Ayrshires, all ages; prizewinners; many imported. Apply to ALLAN P. BLUE, Eustis, Quebec.

AYRSHIRES

Bull and heifer calves from producing dams. Right good ones. Hickory Hill Stock Farm. N. DYMENT, Dundas Station and telegraph. Clappison, Ont.

ESTABLISHED 1865. E. T. CARTER & CO. 84 Front Street, East. TORONTO, CANADA. RAW FURS. Write for our LATEST PRICE LISTS. CONSIGNMENTS SOLICITED. We Pay All Express Charges. Prompt Returns.

Shropshire and Cotswold Ewes

I am offering 70 choice shearing Shropshire ewes of my own breeding, from imp. Minton and Buttar dams, and bred to a first-class imp. ram; also 20 extra good Cotswold ewes of first-class breeding. They must be sold to make room.

JOHN MILLER, Brougham, Ontario. Claremont Stn., C. P. R.

OXFORD DOWN SHEEP

We have 50 yearling ewes, all bred to our imported ram, champion at Toronto Exhibition, 1908, which we will sell at especially reduced prices for the next thirty days, in lots to suit purchaser. Also a few yearling rams and ram lambs by imported sires. Terms reasonable.

HENRY ARKELL & SON, ARKELL, ONTARIO. Arkell, C. P. R. Guelph, G. T. R.

SPRINGBANK OXFORDS

20 lambs from imp. stock; both sexes. A choice bunch of shearings, both sexes. Low prices in lots for quick sale.

WM. BARNET & SON, Breeders and Importers, Fergus, C. P. R. and G. T. R. Living Springs, Ont.

FAIRVIEW SHROPSHIRE EWES

For sale at very moderate prices. They were sired by a champion ram. And are being bred to another champion. Are of first-class type and quality. Write for circular and prices.

J. & D. J. CAMPBELL, WOODVILLE, ONTARIO.

YOUNG SHROPSHIRE EWES

FOR SALE. Bred to one of our best rams. Glad to receive communications.

MAPLE SHADE FARM. LONG-DISTANCE PHONE. John Dryden & Son, Brooklin, Ont.

SHROPSHIRE

Flock of the most approved type. We offer good animals at reasonable prices.

W. D. MONKMAN, BOND HEAD, ONT.

CLAYFIELD

Buy now of the Champion Cotswold Flock of America, 1906. Flock headers, ranch rams, ewes of different ages. All of first-class quality, and prices reasonable. Write, or call on J. C. ROSS, Box 61, Jarvis, Ont.

SOUTHDOWNS AND COLLIES.

Long-distance Telephone.

10 good yearling rams, including the first and third prize winners at London. Also some good breeding ewes, which must be sold, as the flock is being reduced.

ROBT. McEWEN, Byron, Ont. Ry. Stn., London, Ont.

Sheep Breeders' Associations

American Shropshire Registry Association, the largest live-stock organization in the world. Richard Gibson, President, Delaware, Canada. Address correspondence to MORTIMER LEVERING, Secretary, Lafayette, Indiana.

POPLAR LODGE SOUTHDOWNS AND BERKSHIRES.—At right prices, 2 aged, 3 shearing rams, 2 ram lambs. Flock headers. Berkshires all ages, both sexes. Ideal type. Correct description guaranteed. S. Lemon, Kettleby, Ont., P. O. and Sta., also Aurora Sta. Long-distance phone.

Morrison Tamworths, Sherbornes and Clydesdales. Tamworths from Toronto winners. Either sex. Any age. Sows bred and ready to breed. Pairs not akin. CHAS. CURRIE, Morrison, Ont. Schaw Sta., C. P. R.

ELMFIELD 50 young pigs for sale, both sexes. Young sows bred to imported boar, also sows to Canadian-bred boar due to farrow about 1st October. 6 R. Mason Ave. Ont. Av. C. P. R. Paris, O. T. W.

Improved Yorkshires Just farrowed a choice lot of improved Yorkshires, sired by S. H. Gladiator and S. H. Eclipse, bred from imp. stock. Also a few young sows, from 3 to 5 months old. Pairs not akin supplied. Geo. M. Smith & Sons, Haysville Ont. Long-distance phone.

Summer Hill Herd of Large English Yorkshires



We are bound to get rid of 100 Yorkshires, either sex, any age, within the next few weeks. Since the United States ports are closed against us, our trade has been more than cut in half, and we must sell double the number to Canadians to make room for natural increase in the herd. If you think of buying a large, growthy Yorkshire in the near future, do it now and save your money. We have the greatest show record on earth. Also the world's public sale record. Better write now. We will also sell a few choice Holstein heifers, in calf to the best backed-up bull in Canada.

D.G. Pratt & Son, Millgrove, Ont., Hamilton Sta.

NEWCASTLE Tamworths, Shorthorns and Cotswolds. I can furnish right now a large number of extra choice boars fit for service, some sows in pig, and any quantity about two months old, of such noted sires as imported Cholderton Golden Secret, Colwill's Choice, and Newcastle Warrior—champion boars at Toronto National several years in succession, and out of great big show sows. A few choice heifers; some safe in calf. Bulls ready for service. Will be sold very reasonable for the next 30 days. Also ten ram lambs and two shearing rams. **A. A. Colwill, Newcastle, Ont.**

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Willowdale Berkshires!

Won the leading honors at Toronto this fall. For sale are both sexes and all ages, from imp. stock on both sides. Show things a specialty. Everything guaranteed as represented. **J. J. WILSON, MILTON, ONT., P. O. AND STATION. C. P. R. AND G. T. R.**



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Highest standard of type and quality. For sale: Sows of all ages, and 4 yearling boars. A grand, good lot. Also younger ones. Pairs not akin. **JOHN McLEOD, C.P.R. & G.T.R. Milton P.O. Ont.**

OHIO IMPROVED CHESTER WHITES.—Largest strains. Oldest-established registered herd in Canada. Young sows in farrow. Choice pigs 6 weeks to 6 months old. Pairs furnished not akin. Express charges prepaid. Pedigrees and safe delivery guaranteed. **E. D. GEORGE Putnam, Ont.**

Duroc-Jersey Swine and Leicester sheep—25 one and two shear ewes, 3 shearing rams, and this year's crop of ram lambs. Also sows in pig, and sows ready to breed; boars fit for service, and pigs ready to wean. **Mac Campbell & Sons, Harwich, Ont.**



MONKLAND YORKSHIRES

are the easily-fed, quick-maturing kind. The sort the farmers want. All ages for sale. 100 sows bred now.

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Maplehurst Herd of Tamworth Swine Bronze Turkeys, Toulouse Geese, Pekin Ducks, S.-C. W. Leghorns.

Tamworths of excellent breeding and ideal bacon type. Herd won sweepstakes at Toronto and London, 1905-6-7-8; winnings at World's Fair, St. Louis, 1904.—sweepstakes aged and junior herd, and two grand championships. Apply to: **D. DOUGLAS & SONS, MITCHELL, ONTARIO.**

Maple Leaf Berkshires

For sale: Sows bred and ready to breed. Guelph winners among them. Boars all ages. The highest types of the breed. Imp. sires and dams. Pairs not akin.

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Weak, Sick Men, Here Is STRENGTH AND HAPPINESS

If you are losing the strength of youth, and can see evidence, from day to day, that your physical system is going to decay, you should, in common justice to your future happiness, take steps to check this.

Don't make the mistake of thinking that this can't be done; it can and has been done in thousands of cases.

Don't deceive yourself into believing that it is natural for any man to thus exhaust his power.

Nature is appealing to you every moment to save yourself. The slight pains that you feel, the momentary spells of weakness, the periodical loss of memory, dullness of brain, drowsiness—all point to the necessity of curing yourself now. We have a positive cure for you in our Dr. McLaughlin's Electric Belt.

It will make you strong. It will send the life blood dancing through your veins; you will feel the exhilarating spark warm your frame, the bright flash will come to your eye, and a firm grip to your hand, and you will be able to grasp your neighbor and feel that what others are capable of doing is not impossible to you. This grand appliance has brought strength, ambition and happiness to thousands in the past year.

It is a quick and lasting cure for all Nervous Debility, Weakness, Rheumatism, Pains in the Back and Hips (Sciatica), Lumbago, Constipation, Indigestion, Weak Kidneys, Failing Memory, and all evidences of breaking down. It cures when all else has failed.

My arguments are good, my system is good, but I know you haven't time to study these. You want proof, and I give you that, and lots of it. When your own neighbors tell you I cured them you will know I did it.

Dr. McLaughlin:
Dear Sir,—After using one of your Electric Belts, I can heartily recommend it to anyone afflicted with kidney trouble. I was troubled with a weak ankle for over twenty years, which it has completely cured, and after one month's lapse since using it I have had no return of the trouble. I also found it an excellent remedy for throat trouble of long standing.
H. F. STENABAUGH,
216 King St. E., Hamilton, Ont.

Dr. McLaughlin:
Dear Sir,—This is to certify that I was cured of a sore, weak back, which bothered me a great deal at times, especially after heavy lifting. Your Belt cured me completely, and my back is perfectly strong now, and I can do heavy lifting without any bad after-effect.
W. G. ARNELL, Poplar, Ont.

Dr. McLaughlin:
Dear Sir,—I have worn your Belt for several months, and it has cured me of Rheumatism and Piles. I would not take \$100 for the benefits I have received from it so far and be without it. I can recommend it to anyone suffering from any troubles for which it is recommended.
J. H. MIKEL, Mapleview, Ont.

Dr. McLaughlin:
Dear Sir,—After wearing your Belt for only one week, I am glad to tell you that it has greatly helped my stomach, kidneys and liver. From this out I shall be pleased to let everyone know what the "Dr. McLaughlin Belt" has done for me, as it is well worth advertising.
W. I. CHASE, West Gore, N. S.

If you are skeptical, all I ask is reasonable security for the price of the Belt, and you can

PAY WHEN CURED

If I don't cure you, my Belt comes back to me, and we quit friends. You are out the time you spend on it—wearing it while you sleep—nothing more.

This appliance has cures in almost every town and city in the country, and if you will write me I will send you testimonials given to me by people that are probably well known to you. My Belt not only cures weakness, but Rheumatism, Sciatica, Lumbago, Backache, Kidney Trouble, Nervousness, Constipation, Indigestion and Stomach Trouble. I have a beautiful 80-page illustrated book, which I will mail, sealed, to any address FREE. This book is full of lots of good, interesting reading for men. Call to-day. If you can't call, send coupon for Free Book.

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Office Hours—9 a.m. to 6 p.m. Wed-
nesday and Saturday, 9 a.m. to 5 p.m.

QUESTIONS AND ANSWERS
Miscellaneous.

ECZEMA.

Mare in foal. She has a sort of itch; she bites herself, and, when let out, rubs against straw stack or tree. Cannot see anything wrong with her; no sores or scabs. She is in good order; her coat is sleek. What can I do for her, as I would like to get rid of it before she foals, and don't want colt to get it.
READER.

Ans.—This is eczema, and is very hard to treat when the hair is long, and it would be unwise to clip now. Make a solution of corrosive sublimate 40 grains to a quart of water. Heat it to about 150 degrees Fahr., and rub well into the skin twice every day, then blanket to prevent taking cold.

TREATMENT FOR INFLUENZA.

Please give treatment for influenza in horses?
J. McL.

Ans.—Influenza is a serious disease among horses, and the services of a competent veterinarian are advisable. If you wish to treat them yourself, keep them comfortable in well-ventilated stalls and free from draft. Steam the nostrils three times a day by holding the head over a pot of boiling water, to which has been added half an ounce of carbolic acid; rub the throat twice daily until it blisters, with equal parts spirits of ammonia, oil of turpentine, and raw linseed oil. Give one dram quinine and two drams chlorate of potash three times a day by dropping on the back of the tongue out of a spoon. Do not drench, as the throat is probably so sore he cannot swallow. Hand rub and bandage the legs; clothe warmly. Give milk, eggs, and a little whiskey to drink, holding the pail high so that the horse will not need to lower the head; also feed out of a high manger.

BUCKWHEAT AS FOOD.

What is the feeding value of buckwheat compared with oats? Is it good feed for hogs, or is it safe to feed to horses? Would it be better boiled for idle horses?
D. B. B.

Ans.—Pound for pound, buckwheat contains .87 and oats .89 pounds of dry matter. The nutritive ratios are: Buckwheat, 1:6.9, and oats 1:6.2. In digestible nutrients, buckwheat contains .077 protein, .533 carbohydrates (and fat), total .610; while oats contains .092 protein, .568 carbohydrates (and fat), total .660. A comparison of buckwheat mixture and wheat mixture at Ottawa showed that while the former was a satisfactory hog feed, it required 6 per cent. more to give 100 lbs. of gain. The black, woody hulls have little feeding value, but that part immediately inside the hull is rich in protein, and has a high feeding value. Buckwheat stands lower than the grains commonly used for feeding stock, and is advisable only when cereals are high in price. For horses it would give best results if ground and mixed with oats, not more than one part of buckwheat to three of oats.

BLISTERING FOR SPAVIN.

A filly one and a half years old went lame on right hind leg; later on I found she was growing a spavin. Would you advise blistering? If so, what with?
D. B. B.

Ans.—Long rest and repeated blistering form a standard treatment for bog spavin. Clip the hair off the part affected and tie the head so that the horse cannot bite the part. Rub well with an ointment made of two drams each of biniodide of mercury and cantharides, mixed with two ounces of vaseline. Two applications, one each day, should be made. Then wash on the third day and rub with sweet oil. Turn the animal in a roomy stall and oil the hock daily until the scale comes off. Then tie up and repeat the treatment.

If the trouble is bone spavin, as is more probable, the treatment is much the same. Trim off the hair and make the part soft by washing with warm water and soap. Tie up the head and apply blister made from two drams biniodide of mercury, two drams powdered cantharides and two drams lard. Repeat the blister several times and keep the parts greased. Firing, the second time, is frequently called for, as well as blistering. Firing, of course, be done by a competent veterinarian.

Contents of The Farmer's Advocate and Home Magazine.

VOL. XLIII.

JULY 2 TO DECEMBER 31, 1908.

PART II.

APIARY.		DAIRY.	
Beekeeping Industry, The	1108	Agriculture and Dairying, Massachusetts	1994
Bees Hanging Out	1191	Alfalfa: Feeding Value of	1475
Honey Abused by Many Beekeepers	1691	American Holsteins: Semi-official Yearly Tests of	1829
National Beekeepers' Meeting	1656	Ames Moisture Test	1402
Preparation for Winter	1477	A Novel Device	1184
Robbing	1249	An Important Step in Advance	1586
		Average Differences: How They Multiply Out	1106
		British Milk Producers and Their Trials	1163
		Butter: Another Test for Moisture in	1189
		Butter Boxes Made of Straw	1331
		Butter, Good, and How to Produce it	1402
		Butter: Moisture in	1956
		Butter Boxes, High Prices for	1994
		Buttermaking on the Farm	2032
		Canadian Cheese, Praise for	1995
		Cash for Applied Brain-power	1364
		Cheese: Varieties of	1190
		Cheeseries: Among the	1273
		Cheesemaking on a Small Scale	1548
		Cheese: Improvement of, by Pasteurization of Whey	1586
		Cheese: Cool-curing Rooms for	1763
		Cheese: Home Market for	1836
		Cheesemaking: More Co-operation in	1954
		Cheese Factory, A Representative Eastern Ontario	1995
		Cows: Feeding Without Silage or Roots	1838
		Cornell University and Agricultural College: A Visit to	1248
		Cow-testing Associations	1274
		Cows: To Keep Clean	1366
		Cow: Crimes Against	1403
		Cow-testing as Preparation for Advanced Feed Prices	1729
		Cow-testing Association Waked Dairy-men Up	1800
		Cow Question, Interest in, Stimulated	1800
		Creamery Patrons: A Unique Gathering of	1164
		Creamery Business in Saskatchewan	1303
		Creamery Butter: A Noted Brand of	1366
		Cream Gathering in Autumn	1729
		Creamery Men to Meet	1839
		Dairy Notes	1134
		Dairying as a Business	1134
		Dairy Conditions Improving	1163
		Dairy-herd Competition, Do You Want a?	1190
		Dairying in China	1191
		Dairying: Labor Saving in	1218
		Dairy-herd Competition: Prepare to Enter	1329
		Dairy Conditions in Iowa	1402
		Dairy Cows: One Hundred	1439
		Dairying: Increasing the Profits of	1548
		Dairying: Knowledge and Skill in	1620
		Dairy Cows: Winter Feeding of	1655
		Dairy Pointers	1690
		Dairy Professor for Manitoba	1729
		Dairy Meetings, Important	1729
		Dairy Problems: The Cow and the Stable	1762
		Dairy Problems: Keep up the Milk Flow	1799
		Dairy Problems: Creaming the Milk	1838
		Dairy Problems Discussed at Simcos	1837
		Dairy Problems: Churning Temperature	2029
		Dairy Meeting at Platon	2031
		Daily Versus Intermittent Records	1838
		Dairy Farming Prospects	1895
		Dairy Products: Magnitude and Value of	1248
		Dairy, Problems of the	1994
		District Dairy Meetings in Eastern Ontario	1855
		District Dairy Meetings in Western Ontario	1955
		Duty of Patrons in Winter	1763
		Educate Non-members	1956
		Feeds: Comparison of, in Dairy Stable	1511
		Fewer Cows and More Feed	2033
		Grain for Cows on Grass	1218
		Holstein Milk, Butter and Beef	1190
		Holstein Breeders: Questions for	1620
		Inferior Cows Sold	1954
		Jersey May Show, The	1106
		Jersey Cow: The Champion	1303
		Long Churning and Creamy Butter-milk, Remedy for	1163
		Milk, and the Sanitary Handling of	1308
		Milk Distribution in Towns and Cities	1380
		Milk-condensary at Aylmer	1330
		Milk: Reject the First Few Streams of	1366
		Milk-condensary Prices	1548
		Milking Shorthorns: Keen Demand for	1690
		Milking Function: Maintaining the	1729
		Milk: Cost of Producing in Winter	1955
		Modern Dairy Cow: A	1134
		Montreal Milk-shippers' Meeting	1438
		One Association or Two	1840
		Our Yearly Dairy Production	1218
		Pasteurizing Whey: Benefits of	1547
		Pasteurizing Whey: Patrons Favor the	1547
		Pasteurized Whey vs. Whey Butter	1585
		Pasteurizing Saves Cans and Improves Whey	1586
		Pasteurizing, Wish it Continued	1586
		Pasteurization: Another Word for	1620
		Pasteurized Whey: Thinks it Equals Separated Milk	1620
		Pasteurized Whey: Pigs Did Well On	1656
		Pasteurization: Another Vote for	1689
		Pasteurizing Whey: Continue	1729
		Pasteurizing Whey: Method of	1837
		Pasteurized Whey: Winter Fair Discussion on	2030
		Profitable and Unprofitable Cows	1690
		Pure-bred Cows, Official Testing of	1365
		Quebec's Dairy Industry	1894
		Results Satisfactory in Every Way	1656
		Ropy Milk	1549
		Run the Machine at Full Capacity	1655
		Send Rich Cream	1440
		Shorthorn Grades: A Good Average for	1954
		Silage, Roots and Clover Hay	1655
		Skimming of Factory Milk Illegal	1689
		Stimulated Liberal Feeding	1956
		Swine, Poultry and Calves, Relished by	1586
		Tuberculosis: Human and Bovine	1106
		United States Milk Consumption	1839
		What the Figures Tell	1995
		Whey Butter: Experimenting With	1190
		Whey-butter Making	1585
		Whey, Milk and Cheese: Improved	1586
		Whey, Cans and Milk Better	1586
		Whey Worth 35 Per Cent. More	1620
		Whey: No Bitter Flavor Since Pasteurized	1620
		Whey: Feeding Value of, Doubled	1620
		Whey Tanks: No Sickly Smell About	1655
		Whey Sweeter, Cans Easier to Wash	1763
		Whey Butter Output	1995
		Whey Worth More Money	2032
		Winter Feeding as Economical as Pasture	1656
		Winter Dairying	1955
		Women's Institute Meeting	1163
		Education: Technical in Nova Scotia	1397
		Education: Technical, Needed	1507
		Electricity in Agriculture	1326
		Electors: Facts for All	1471
		Embargo is Britain's Affair: The	1825
		English-sparrow Nuisance	1831
		Exhibition Catalogues	1269
		Fair Circuit, The	1186
		Farm as a Home, The	1421
		Farming as an Education	1759
		Farmers' Institutes: Are They Wanting	1988
		Farm Accounts	2023
		Farm Woodland from Taxation: Exempt	2023
		Fletcher: The Late Dr.	1759
		Foot-and-mouth Disease	1831
		Free Trade: Argument for	1949
		Future Mothers: Education of	1987
		Georgian Bay Canal	1213
		Genius Misjudged	1472
		Hidebound Party Press	1157
		Hiring Good Men by the Year	1898
		Home-makers: Train the	1988
		Index to Issues January 2nd to June 15th, 1908	1102
		In the Light of Experience	2024
		Irish Store Cattle Trade	1579
		Judges and Judging	1607
		Judging Pavilions at Fairs	1543
		Judges as Educators	1543
		Judges: Trusting	1615
		Lightning-rod Agent: The Wiles of	1269
		Limited Experience May Mislead	1795
		Manure: Manitoba Farmers Using	1580
		Milk: Must Have More	1987
		Montreal Harbor and the St. Lawrence Waterway	1857
		Murder: Only One Degree of	1856
		Not Aeration, but Cooling	2024
		Notting on the Farm	1615
		Official Organship	1794
		Old-age Annuities Versus Pensions	1158
		Optional Referendum	1857
		Our Maritime Letter: The Crop Outlook	1186
		New Brunswick Agriculture	1398
		The Delegates and the Maritime Provinces	1472
		The Winter Fair	1508, 1616, 1724
		Our Great Fresh-water Ocean Port	1355
		Patriotism: What It Is	1269
		Pasteurize the Whey	1685
		Petulance at Exhibitions	1269
		Photographs Wanted	1543
		Phosphate Rock, Raw, Ground, as a Stable Absorbent	1759
		Pioneers: The Example of the	1214
		Protection: Taft Defines	1831
		Price of Beef	1157
		Progress or Retrogression	1435
		Protect the Game	1724
		Practical Work in Hands of College Men	1796
		Protection vs. Free Trade	1949
		Protection: Argument for Higher	1959
		Protection, High, A National Handicap	1129
		Pure-breds: When They Shall Become Common	1355
		Pure-bred Stock, Wise and Unwise Investments in	1355
		Quality Before Price	1544
		Railway Responsible	1325
		Reading that Educates	2023
		Reforestation of Farms and Public Lands	1129
		Agricultural Education at the N. E. A.	1214
		Agricultural Opportunities in Nova Scotia	1270
		Agriculture in Western New York	1298
		Agricultural Education is Power	1325
		Agents and Agents	1398
		Agricultural Press: Functions of	1580
		Agriculture: Science of	1794
		Agent: The Seductive	1297
		Aims and Objects of the Grange	1988
		Alberta and the Dominion Exhibition	1185
		Alaska Wheat	1397
		Alfalfa as a Provision Against Drouth	1543
		Alfalfa: Prepare for	1649
		American Sheep-import Regulations	1101
		An Ideal Business Transaction	1898
		Apple-growing: To popularize	2023
		Beautify Homes Through Public Schools	1831
		Breeding: Performance Records in	1435
		Business Outlook Brightening	1832
		Canadian Cattle: Health of	1685
		Character and Reputation	1472
		Christmas on the Farm	1873
		Cleanliness vs. Bacteria	1435
		Clydesdales: Is Substance Wanted in	1987
		College and the Farm: The	1101
		Co-operation of Co-operative Associations	1129
		Constitution the Basis of Success	1185
		Country Life: To Improve Conditions of	1297
		Cow-testing Association: Weakness of the	1832
		Constable and Fee System: Inefficient	1949
		Constabulary: Favors, Reform	2024
		Customs Regulations re Imported Stock	1130
		Dairying: Up-to-date	1435
		Dairy Instructors: How They Earn Their Salaries	1579
		Date of Warranty Demand Postponed	1795
		Danger That Lurks in the Home	1796
		Doing Things Well	1157
		Dominion Grange: Sound Suggestions by	1949
		Drainage: Increasing Interest in	1241
		Drag Before the Freeze-up	1649
		Dual-purpose Aberdeen-Angus	1760
		Education of the Rank and File	1241
		Education: How it Pays	1723
		Education: Broadening the, of the People	1269

Rural Crime: To Cope With	1213	Flax: A Crop and an Industry	1863	Agriculture: New Minister of, for Ontario	1589	Galloway-cattle Breeders	1803
Rural Mail-delivery System	1471	Four-horse Age: The	1183	Agricultural Bluestone: A Warning	1658	German-Canadian Trade, For	1803
Rural Police Forces	1723	Gate: To Tighten the Frame of	1689	A Land of Plenty	1165	Good Roads Convention at Buffalo	1803
Rural Mounted Police Force Needed	1949	Gasoline Engines for the Farm	1799	Alberta Pork Commission	1167	Good Prices for Early Fruit in Boxes	1803
Scottish Commission: The Purpose of the	1471	General Farm Crop Experiments	1992	American Poultry Association Meets	1306	Greenway: Death of Mr.	1803
Schools and Tariffs	1723	Good-farms Competition in Manitoba	1328	Amateur Exhibitors at Winter Fair	1731	Halifax Exhibition	1447
Season in the West: A Review of	1326	Harvesting, Early	1105	American Industry Reviving	1731	Hessian Fly	1393
Selected Seed Corn on the Stalk	1397	Handling Pitchforks	1161	An Ideal Institute Picnic Meeting	1332	Hon. Sydney Fisher's Address	2049
Shorthorn Colors	1724	Hay, Fair Crop of Good	1401	Apples: Shipment of, Early	1333	Horse-breeders Meet	1447
Speculation: A Wholesome Check on	1213	Harvesting Roots	1584	Automobile Question Again, The	1589	Horticultural Association Programme	1447
Stock: Fitting for Show	1101	Horse Muzzle	1134	Ballantyne, Death of Hon. Thos.	1136	Horse Show: Arrangements for	1695
Student Time: Waste of	1580	Hunter's (Mr.) Farmhouse	1273	Boys' Discontent: Source of	1621	Horse-breeders' Annual Meetings	2035
Summer Cultivation and Moist Soil	1685	Intensive Farming	1273	Brandon Exhibition	1250	Horticultural Convention	1695
Tariff Must Not be Raised	1507	Lightning Rods, Homemade	1182	Brantford Convention, Programme for	2000	Hydro-electric Transmission Line Contracted	1806
Three-year Veterinary Course	1185	Lightning Rods: Utility of	1438	Burke, Rev. Dr.	1167	Independent Telephone Convention	1447
The Long and the Short of It	1242	Lime-nitrogen Fertilizer	1438	Buttermaking Competitions	1250, 1448	International Institute of Agriculture	1999
The Point of View	1297	Manure and the Atmosphere	1132	Buttermaking Competition at Western Fair	1484	Iowa Men for Manitoba	1998
They All Make a Living	1436	Manure Spreaders: Disapproves of	1546	Canadian Independent Telephone Convention	1332	Irrigation Experience Requested	1137
The Logic of Facts	1685	Manure Spreaders: Dual Profit of	1728	Canadian National: Great Agricultural Display at	1406	Ireland: Notes from	1695
Timber Supply Vanishing	2023	Manure Spreader: Likes the	1728	Canadian National: Issues Completed at	1440	"Isaleigh Grange" Sale of Ayrshires	1803
Tuberculosis: Cease Breeding	1649	Manure: Vitality of Seeds in	1835	Canadian Bounties and Tariff Benefits	1517	Joly de Lotbiniere: Death of Sir Henri	1802
Useful Instead of Wasted Effort	1298	Manurial Value from Various Feeds	1762	Canadian Grain Production	1658	Judging Programme for Winter Fair, Guelph	1803
Warranty of Butchers' Stock	1615	Manure Spreader—Split-log Drag	2028	Canners: Situation With	1772	Land for Show Purposes	2000
Western Harvest Excursions	1471	Mower, Keep Close up to	1105	Canadian Cheviot, Suffolk and Black-face Records	1965	Lecture Programme at Ontario Winter Fair	1802
Where Responsible Government Falls Down	1298	Motor Cars and Tarred Roads	1438	Canadian Hereford Breeders' Annual Meeting	1965	Leicester Breeders, American	1998
What Will Keep Boys on Farm?	1579	Neighborly Neighbors	1247	Central Canada Exhibition a Success	1514	Lime-nitrogen Factory at Niagara Falls, Ontario	1805
What Makes the Difference?	1987	New Zealand, A Few Facts About	1401	Cheese: Improvement in	1109	Lindsay Agricultural Office to Have Assistant	1731
Winter Fairs: The	1759	Notes from Ireland: Encouragement for Tobacco Growers	1245	Cheese: Make of, for Present Season	1278	London Dairy Show	1622
Winter Fair: Housing	1987	Noxious Weeds on Quebec Highways	1654	Cheese Factory and Creamery, New	1998	Maintaining High Prices	1250
FARM.							
Agricultural Excursion to Truro, N. S.	1161	O. A. C. Experimental Department: Kernels from	1133	Cold-storage Space for Fruit Shipping	1278	Manitoba Horticultural Exhibition	1805
Alfalfa, Red Clover, and Timothy Hay, Making	1105	Orange Hawkweed	1133	Constables: More Freedom to	1304	Macadam-road Making	1384
Alfalfa, August Seeding of	1217	Plowing: Plea for Better	2029	Co-operative Experiments with Autumn-sown Crops	1338	Maine Fruit-growers' Co-operate	1409
Alfalfa Inoculation in Alberta	1864	Poisoning Sparrows	1993	Country Fair, The	1404	Maine State Fair	1484
Alfalfa, Splendid Growth of	1401	Posts: Preservation of	1301	C. P. R. Strike Ended	1551	Manitoba Agricultural College, Appointments at	1621
Alfalfa from Chemist's Standpoint	1654	Post Driver, A	1864	Crop Prospects in Simcoe Co.	1109	Maritime Winter Fair, Change in Management of	1137
Alaska Wheat: Where it Belongs	1799	Ragwort: Women Undertake to Eradicate	1836	Crop Prospects Good, Though Not Rosy	1304	Milk Scales: More Revelations of the	1136
An Aristocratic American Farm	1546	Roads: The Proper Stage to Drag	1104	Cumberland Co., N. S.	1448	Minister, Would Elect, by Provincial Vote	1192
Alcohol vs. Gasoline for Heat, Light and Power	1273	Roof: Preservative for	1952	Dairy Herd Competition	1484	Militarism Again	1804
Bath Tub, The	1217	Root and Fodder Crop Yields	1992	Dairy Interests: Push the	1804	Milk Supply, Municipal Control of	1408
Bad Example: Force of	1952	Seed Selection	1273	Dairymen's Convention in Prescott	1998	Milk, Bacteriological Test of	1409
Better Farming Needed	1729	Silo Building	1217	Dominion Exhibition at Calgary, Alberta	1166	Milking Contest at Western Fair	1484
Big Yields: How They May Be Calculated	1729	Silo Idea: Many Converts to	1328	Dominion Monthly Crop and Live-stock Reports	1221	Moths, Trapping by Electric Light	1998
Black Oats: Color in	1835	Silo-building a Good Investment	1401	Dominion Grange: Position of the	1447	National Dairy Show	1958
Bonused Tree-planting	1799	Six-horse Team for Plowing	1302	Dominion Grange: Meeting of	1803	New Brunswick: Notes from	1167
British Columbia Forest: Preservation of	1801	Simcoe County Farmstead	1836	Dominion Grange: Annual Parliament of the	1841	New Brunswick's Provincial Exhibition	1483
Brain or Brawn	1438	Split-log Drag: Two Seasons' Experience with	1688	Drainage Ditches: Area Assessable for	1550	New Stud for Northumberland Co.	2035
Bumblebees: Encouraging the	1133	Sparrow: On Behalf of	1835	Dry-farming Congress	1694	Nova Scotia's Timber Resources	1137
Canadian Thistle Easy to Combat	1188	Sparrows: To Catch with Net	2028	Duthie-Marr Shorthorn Sale	1658	Nova Scotia Agricultural College: Growing Attendance at	1772
Canada, at the Franco-British Exhibition	1246	Sparrow Trap	2028	Duthie: Presentation to Mr.	1278	Official Referee of Butter and Cheese at Montreal: Acting	1165
Canadian Thistle: A Variety of	1302	Storing Seed Corn	1655	Eastern Townships Notes	1167	Ontario Natural Science Bulletin	1137
Cement Block Silo in Elgin Co., Ont.	1619	Summer Field Meetings	1161	Eastern Townships Notes (Mr. Stephens)	1305, 1550	Ontario Winter Fair Remains at Guelph	1193
Clover and Fall Wheat Acreage	1993	Sweating Process: Trust Something to	1105	Editorial Staff: An Addition to	1833	Ontario Winter Fair	1384
Coal Ashes as a Fertilizer	1272	The Season and the Crops	1247	Electricity to Promote Plant Growth	1277	Ontario Crops for 1908	1482
Corn: Harvesting and Storing	1272	Tile Drainage on Highways	1728	English vs. Canadian Farm-labor Conditions	1136	Ontario Horticultural Exhibition: Change in Date of	1518
Corn Crop: Harvesting and Disposing of	1328	Topping with Sheep, Loading with Forks	1762	Experimental Farm at Lacombe, Alberta	1136	Ontario Crops and Live-stock Conditions	1803
County Road Systems	1953	Water System for Farmers	2027	Factory Patrons: An Appeal to	1278	Ontario's Future in Farming	1804
Crops: Observations on the	1216	Weeds: What They Do	1105	Farm-to-Farm Inspection	2034	One Ontario Breeder at Chicago	1848
Cresote as a Fence-post Preservative	1272	Weed Evil: Diligence to Combat	1328	Farmers' Institute Convention at Toronto Fair	1304	Ontario Agricultural and Experimental Union Meeting	1959
Crop Rotation: Experiments	1584	Wheat Fields of the Present and Future	1511	Farm Values of Principal Crops	1332	Ontario Provincial Winter Fair	1961
Denatured Alcohol in Germany	1954	Wireworms: Sulphur Treatment of Seed for	1105	Farmers' Institute Convention at Toronto Fair	1304	Pettit: Death of F. O.	1187
Ditching Machine, A Satisfactory	1993	Winter Wheat for Southern Alberta	1364	Farm Values of Principal Crops	1332	Percheron Breeders Meet	1221
Dodder and Toad Flax	1189	Wireworms, Cutworms and White Grubs	1474	Farmers' Institute Convention	1446	Peace Movement, International	1869
Dog Power: Wheel for	2028	Winter: Preparation for	1728	Farm Gate and Fastener	1803	Pedigrees Must be Genuine	1517
Draining: Do Some	1438	Wood Ashes for Clover Seeding	1546	Fire at Union Stock-yards	1368	Potato: Institute Club Discusses The	1695
Drag the Roads	1689	FARM BULLETIN.					
Durum Wheat	1438	Agricultural News from the Front	1165	Foot-and-mouth Disease: Outbreak of	1804	Pork and Dairy Produce: Lower Prices for	1731
Ensilage Crop, Handling the	1401	Agricultural College at Truro, N.S.: Visitors and Live Stock at	1192	Foot-and-mouth Disease: Quarantine	1843	Poultry Club Officers	1934
English Sparrow, The	1762	Agricultural Legislation and Appropriations at Ottawa	1220	Fruit-crop Prospects	1137	Prizes for Field-crop Competitions at Winter Fairs	1219
Fall Wheat, Preparing for	1189	Agricultural, Horticultural and Vegetable-growers' Meetings at Toronto Exhibition	1369	Frost in the West	1334	Provincial System of Trunk Roads Advocated	1219
Fall Wheat Seeding	1246	Agent: Should We Set Dog On?	1404	Fruit-crop Report, Summary of 1908	1551	Prince Edward Island: A Good Season in	1306
Farmer and the School	1273	Agriculture and Military Drill in Schools	1514	Fruit Crops and Pests	1408	Prince Edward Island Orchard and Seed Oats	1333
Fall Wheat Experiments at the O. A. C.	1362	Agriculture: New Plan to Interest Children in	1550	Fruit Inspectors: Meet	1448	Prince Edward Island	1447
Fall Pasturing: Close	1585	FARM BULLETIN.					
Fertilizers: Experiments	1953	Agriculture: New Minister of, for Ontario	1589	French-Canadian Horse Show	1551	Prizes: Increased for M. I. S. and P. Show	1517
Fertilizers on Muck Soil	1953	Agricultural Bluestone: A Warning	1658	Fruit, Flowers, Vegetables	1765	Prince Edward Island Horticultural Exhibition	1551
Fertilizers on Muck Soil	1953	A Land of Plenty	1165	Free Courses in Agriculture	1802		
Fertilizers on Muck Soil	1953	Alberta Pork Commission	1167	Fruit: Feed	1250		
Fertilizers on Muck Soil	1953	American Poultry Association Meets	1306				
Fertilizers on Muck Soil	1953	Amateur Exhibitors at Winter Fair	1731				
Fertilizers on Muck Soil	1953	American Industry Reviving	1731				
Fertilizers on Muck Soil	1953	An Ideal Institute Picnic Meeting	1332				
Fertilizers on Muck Soil	1953	Apples: Shipment of, Early	1333				
Fertilizers on Muck Soil	1953	Automobile Question Again, The	1589				
Fertilizers on Muck Soil	1953	Ballantyne, Death of Hon. Thos.	1136				
Fertilizers on Muck Soil	1953	Boys' Discontent: Source of	1621				
Fertilizers on Muck Soil	1953	Brandon Exhibition	1250				
Fertilizers on Muck Soil	1953	Brantford Convention, Programme for	2000				
Fertilizers on Muck Soil	1953	Burke, Rev. Dr.	1167				
Fertilizers on Muck Soil	1953	Buttermaking Competitions	1250, 1448				
Fertilizers on Muck Soil	1953	Buttermaking Competition at Western Fair	1484				
Fertilizers on Muck Soil	1953	Canadian Independent Telephone Convention	1332				
Fertilizers on Muck Soil	1953	Canadian National: Great Agricultural Display at	1406				
Fertilizers on Muck Soil	1953	Canadian National: Issues Completed at	1440				
Fertilizers on Muck Soil	1953	Canadian Bounties and Tariff Benefits	1517				
Fertilizers on Muck Soil	1953	Canadian Grain Production	1658				
Fertilizers on Muck Soil	1953	Canners: Situation With	1772				
Fertilizers on Muck Soil	1953	Canadian Cheviot, Suffolk and Black-face Records	1965				
Fertilizers on Muck Soil	1953	Canadian Hereford Breeders' Annual Meeting	1965				
Fertilizers on Muck Soil	1953	Central Canada Exhibition a Success	1514				
Fertilizers on Muck Soil	1953	Cheese: Improvement in	1109				
Fertilizers on Muck Soil	1953	Cheese: Make of, for Present Season	1278				
Fertilizers on Muck Soil	1953	Cheese Factory and Creamery, New	1998				
Fertilizers on Muck Soil	1953	Cold-storage Space for Fruit Shipping	1278				
Fertilizers on Muck Soil	1953	Constables: More Freedom to	1304				
Fertilizers on Muck Soil	1953	Co-operative Experiments with Autumn-sown Crops	1338				
Fertilizers on Muck Soil	1953	Country Fair, The	1404				
Fertilizers on Muck Soil	1953	C. P. R. Strike Ended	1551				
Fertilizers on Muck Soil	1953	Crop Prospects in Simcoe Co.	1109				
Fertilizers on Muck Soil	1953	Crop Prospects Good, Though Not Rosy	1304				
Fertilizers on Muck Soil	1953	Cumberland Co., N. S.	1448				
Fertilizers on Muck Soil	1953	Dairy Herd Competition	1484				
Fertilizers on Muck Soil	1953	Dairy Interests: Push the	1804				
Fertilizers on Muck Soil	1953	Dairymen's Convention in Prescott	1998				
Fertilizers on Muck Soil	1953	Dominion Exhibition at Calgary, Alberta	1166				
Fertilizers on Muck Soil	1953	Dominion Monthly Crop and Live-stock Reports	1221				
Fertilizers on Muck Soil	1953	Dominion Grange: Position of the	1447				
Fertilizers on Muck Soil	1953	Dominion Grange: Meeting of	1803				
Fertilizers on Muck Soil	1953	Dominion Grange: Annual Parliament of the	1841				
Fertilizers on Muck Soil	1953	Drainage Ditches: Area Assessable for	1550				
Fertilizers on Muck Soil	1953	Dry-farming Congress	1694				
Fertilizers on Muck Soil	1953	Duthie-Marr Shorthorn Sale	1658				
Fertilizers on Muck Soil	1953	Duthie: Presentation to Mr.	1278				
Fertilizers on Muck Soil	1953	Eastern Townships Notes	1167				
Fertilizers on Muck Soil	1953	Eastern Townships Notes (Mr. Stephens)	1305, 1550				
Fertilizers on Muck Soil	1953	Editorial Staff: An Addition to	1833				
Fertilizers on Muck Soil	1953	Electricity to Promote Plant Growth	1277				
Fertilizers on Muck Soil	1953	English vs. Canadian Farm-labor Conditions	1136				
Fertilizers on Muck Soil	1953	Experimental Farm at Lacombe, Alberta	1136				
Fertilizers on Muck Soil	1953	Factory Patrons: An Appeal to	1278				
Fertilizers on Muck Soil	1953	Farm-to-Farm Inspection	2034				
Fertilizers on Muck Soil	1953	Farmers' Institute Convention at Toronto Fair	1304				
Fertilizers on Muck Soil	1953	Farm Values of Principal Crops	1332				
Fertilizers on Muck Soil	1953	Farmers' Institute Convention	1446				
Fertilizers on Muck Soil	1953	Farm Gate and Fastener	1803				
Fertilizers on Muck Soil	1953	Fire at Union Stock-yards	1368				
Fertilizers on Muck Soil	1953	Fight Fire with Fire	1518				
Fertilizers on Muck Soil	1953	Foundation Stock for New French-Canadian Studbook	1369				
Fertilizers on Muck Soil	1953	Foot-and-mouth Disease: Outbreak of	1804				
Fertilizers on Muck Soil	1953	Foot-and-mouth Disease: Quarantine	1843				
Fertilizers on Muck Soil	1953	Fruit-crop Prospects	1137				
Fertilizers on Muck Soil	1953	Frost in the West	1334				
Fertilizers on Muck Soil	1953	Fruit-crop Report, Summary of 1908	1551				
Fertilizers on Muck Soil	1953	Fruit Crops and Pests	1408				
Fertilizers on Muck Soil	1953	Fruit Inspectors: Meet	1448				
Fertilizers on Muck Soil	1953	French-Canadian Horse Show	1551				
Fertilizers on Muck Soil	1953	French-Canadian Horse Show	1588				
Fertilizers on Muck Soil	1953	Fruit, Flowers, Vegetables	1765				
Fertilizers on Muck Soil	1953						

Provincial Exhibition at New Westminster1588
 Prince Edward Island Farmers Well Circumstanced1622
 Profit from Management1657
 Prince Edward Co., Ont., Good Season in1694
 Premature Ripening vs. Defective Seed1695
 Prize Grain, Owners of1999
 Protection by its Fruits2035

Revision of American Standard of Perfection1772
 Royal Show at Newcastle1167
 Rural Mail Delivery1404
 Rural Mail Box: Working of1481
 Rural Delivery: Welcomes1550

Salvation Army Immigration Restricted1334
 Scottish Agricultural Commission to Canada1305
 School and Tariff Questions1513
 Semi-arid Belt of Alberta1304
 Sewing-machine Agent1477
 Sheep for International Exhibition1518
 Sheep Records: New1518
 Short Hay Crop in Huntingdon County1221
 Sherbrooke, Que.: Good Exhibition at1405
 Sheep for International Show1518
 Short Course at Essex1999
 Siphon Not Working1369
 Sixteen-year-old Cow: Good Record by1551
 Slings: Reply to Mr. Annett's Inquiry re1108
 Speakers for Annual Cheese-factory Meetings1772
 Standard Oil Brought to Bay1193
 St. Thomas Horse Show1517
 Swamp Drainage: Suggestions Asked for1304
 Swamp: Drainage of1409

Temiskaming Heard from Once More1305
 Thanksgiving Day too Early1306
 Thieves or Hogs: Either2035
 Timothy Hay, Late vs. Early Cut1278
 Toronto's Horse Parade1137
 Toronto Milk and Cream Producers1447
 Toronto Milk Producers Win Out1551
 Tree Nursery in Norfolk Co., Ontario1193
 Track Driver Banqueted1658
 Tuberculosis: Human and Bovine, Not Identical1551
 Turnips: Easy Method of Harvesting1658
 Tuberculosis: Dr. Bang on1843
 Two More Agricultural High School Teachers1278

United States Crop1278
 United States October Crop Report1589
 Union Stock-yards, West Toronto: Sale of1589
 United States Crop Report1772
 United States Bulletin on Alfalfa2000

Vegetable-growers' Programme1446
 Vegetables in Abitibi1517
 Vegetable-growers Meet1964
 Ventilation for Dwellings, Rural Schools, and Stables2000
 Victim of Lawless Cads1694

Wentworth Crop Prospects1279
 Western Fair a Magnificent Success1477
 Western Ontario Creamerymen Meet1965
 Who is the Master of the Farm?1109
 Wheat: 115,651,000 Bushels of1588
 Wheat Traffic via Pacific1998
 Winnipeg Industrial Exhibition1221
 Winter Fair Extension Deferred1408
 Winter Fair Prizes1551
 Winter Fair: Programme of Addresses at1841
 Women's Institutes for British Columbia1731

GARDEN AND ORCHARD.

Ants: To Destroy1164
 Apple Orchard: Methods in1840
 Apple Trees: Cankers on1800
 Apples: No Central Selling of This Season1362
 Apple Prices1524
 Apples as Grown in Annapolis Valley1523
 Apple Trade in Manchester1996
 Apple Trade with England2033
 Aragus Pest: A New1107

Ben Davis Apples in Disfavor1302
 Blackberry Rust1107
 Black-knot1135
 Blind-eyed Sphinx1192
 British Columbia Fruit-growers, Central Organization of1403
 Brown Rot the Cause of Gum on Peach Trees1694
 British Columbia: Prospects in1840

Canadian Cider Market in Britain1587
 Canned Tomatoes and the Retailers1840
 Canada's Largest Orchard1888
 Canadian Fruit in the Antipodes1997
 Celery: Storing1587
 Cider Vinegar Making1731
 Co-operative Association: A Strictly1656
 Co-operation Strengthens Even the Strongest1191
 Co-operation Needs a Grower at the Head1192
 Co-operation Movement, Faith in1192
 Co-operation Mutually Advantageous1250
 Co-operation of Fruit-growers1250
 Co-operative Selling, Not Ready for1274
 Co-operative Apple Selling1867
 Co-operative Association Finds Ready Sale for Apples1730
 Co-operation, Three Years': Result of1956
 Cover Crop: Sow a1274

Early Apples: Market for1512
 Fameuse, or Snow Apple, The1621
 Fly-paper Bands for Tussock Moth1192
 Fruit Crop at the Pacific Coast1106
 Fruit Prospects: Co-operation and the Middleman1250
 Fruit as Food1250
 Fruit Crop Report1274
 Fruit Crop in Niagara District1275
 Fruit-growing in British Columbia1337
 Fruit Notes from the Kootenay1513
 Fruit-farm Practices in November1692
 Fruit Cooled Before Shipping1801
 Fruit-growers at Middleton2033

Garden Maggots: To Destroy1275
 Ginseng Culture1275
 Good Local Association1192
 Gooseberry Mildew Conquered1802
 Grapes and Shrubs: Hardiness of1621
 Grapes: Winter Protection of1621

Hedge: Planting a1621
 Insect Devastation in Maine1587
 Insect Life Discussed by Experts1763

Joint-stock Company: A1219
 Jordan Harbor: Progress and Experiments1693

Lime-sulphur Wash Injures Nursery Stock1957
 Low Heading of Peach Trees1656

Maine Pomologists in Summer Session1164
 Montreal Musk Melons1476
 Mulching for Winter Protection1730

National Apple Show1802
 New Farmers' Packing Company, A1764
 Old Country Buyers Did Not Turn Up1218
 Ontario Horticultural Exhibition1367
 Orchard in October, The1587
 Orchard Survey in New York State: Results of1801

Peaches: White vs. Yellow1549
 Plum Trees Splitting1135
 Potato Blight and Rot: Spraying to Prevent1107
 Potato Crop: Harvesting1549
 Prince Edward Island Fruit-growers Will Co-operate1995
 Propagating Berries, Currants, Gooseberries and Crimson Rambler Roses1165

Quebec Pomological Summer Meetings1332
 Quebec Fruit-growers' Convention1957

Rainy Days on the Fruit Farm1275
 San Jose Scale: Spraying in Autumn1692
 Soap Insecticide, A1302
 Squash, Large: Big Crop of1764
 Stalk Rorer, The1135
 Standard Commercial Variety: Best Specimen of1621
 Suggests a Modest Attempt1218

Tobacco Crop, The1807
 Tomato-growing Unprofitable1512
 Tomatoes in Saskatchewan1801
 Twig Blight on Apple Trees1331

Vegetables and Fruits, Experiments

With1996

Welsh Apple Market1997
 White Grub in Strawberry Plantation1108

HORSES.

Action1650
 Alfalfa for Horses1686
 American Hackney Registration Fees1158
 Army Hacks1400
 Arab Horses1760

Balky Horses, Handling1358
 Best Horse for the Farmer1989
 British Army Remount Problem1216

Canadian Pony Record1215
 Canadian Percheron Horse Breeders' Association1686
 Care of Colts' and Horses' Feet1725
 Changing Stallions1102
 Clydesdale: Origin of1892
 Clydesdales: Foundation Lines of1187
 Clydesdale Judging at Toronto1509
 Clydesdales: Judging of1686
 Clydesdale Registration: Certificate of Service Now Necessary1726
 Clydesdales, Imported, Suggestions re Registration of1726
 Colts: Feeding Milk to1859
 Colt: Teaching to Follow Rig1760
 Colts: Profit in Raising1798
 Colts: How Many?1102
 Colts: Making Money from Raising2025
 Cracked or Chapped Heels and Mud Fever in Horses1832

Docking: Cruelty of1544
 Driving: The Art of1270
 Draft Horses: Treatment of1990
 Dublin Horse Show1472

Educated by Buyers1797
 Exclusive Use of Names: Re1299
 Exercise for Stallions1899
 Export Duty on Breeding Mares Suggested1650

Fatality in Foal and Dam1158
 Fall Foals1800

Gait Horse Show1102
 General-purpose Horse1651
 Good Horses Wanted1270
 Greasing the Hoof After Washing1686

Hackney: The Improved1243
 Hackney Reminiscences1358
 Harness Racing, 19082025
 Horse's Hoof, Internal Structure of1242
 Horse-breeding: Government Enterprise in1243
 Horse Unrivalled in Winter1859
 Horse and Motor Power1473
 Horse Trade: The1581
 Hoof: Harm to, By Use of Oils1581
 Horses: Exercise for, When Not at Work1616
 Horse Classes at Fairs1650
 Horse Notes1725
 Horse: In History and Romance1878
 Horse Thief Uncaught1951
 Horse-breeders' Exhibition2024
 Horses in the Making2025

Interfering1159
 International Horse Show1186
 Injustice and Insult1216
 Irish Horse-breeding Scheme1508

Kicking1130

Lameness in Horses1899
 Laminitis1433

Matching Farm Teams1327
 More Important than Weight1797
 Muscles of the Horse1544

Names: Claiming1130

Pennsylvania Stallion Enrollment Law1327
 Percheron: The Future of1617
 Percheron Registration: Re1798

Percheron Certificates Recognized in Canada1950
 Pricks in Shoeing1130
 Pure-bred Scrubs1187
 Pulse of the Horse1858

Regularity in Feeding1508
 Riddell: David1833

Season's Track Winnings by The Eel1687
 Shying from Fear or Defective Vision1368
 Shetland Pony1725
 Showing Practices1798
 Sick Horse: To Examine1833
 Splints: U. S. Authority on1581
 Swamp Fever1833

Tonic for Horses1436

We Still Need the Horse1299
 Weaning Foals1509
 Weaning: Skim Milk for the1617
 Weanlings: Care of1760
 Winnipeg Horse Show1102

ILLUSTRATIONS.

A Country Mill, Queen's Co., P. E. I.1185
 A Curve in the Grand River Near Acton, Ont.1917
 A Field of Ontario Flax in Stook1863
 A Familiar Winter Job1885
 A Fine Cheese Factory at Bloomfield, Ont.1995
 Again the Call for Harvest Hands1107
 A Handy Chest1414
 Air-tight Cement-block Silos, Figs. I, II, and III1896
 Alberta Alfalfa1864
 Allen Raine's House, Treasith, Wales1592
 "All These for Me"1901
 A Modern Threshing Outfit1890
 An English Rustic Scene1190
 An Old Country Dairy Scene1898
 Angelique and Amelie2042
 A Palatial Rural Residence1164
 Apples Grown on Tree Sprayed with Home-made Lime-sulphur Mixture1769
 Apples Grown on Tree Sprayed with VI. Solution1769
 Apples at the Nova Scotia Exhibition, Kentville, N.S., Oct., '081894
 Ardgowan Commander1989
 A Relic of the Good Old Times1913
 A Royal Field Artillery Horse1400
 Arab Horse, Lord Tullyhardin1879
 Arrival of the Shepherds, The1905
 Arnold: Home and Farm Buildings of T. W. R., Simcoe Co., Ont.1896
 A Summer Morning1881
 A Typical Irish Hunter1546
 A Thrifty Group of Baconers1892
 Autocrat, The1103
 Auchentorlie Bloomer1866
 Autumn Days1374
 A Village Harvest Scene1891
 Ayrshire Cow Class at the Canadian National Exhibition, 19081406

Ballantyne: The Late Hon. Thos.1136
 Barn at the Horticultural Experiment Station1693
 Baron of Buchlyvie1399
 Barboigh Big Nancy 2nd1442
 Basilica, Ste. Anne de Beaupre1486
 Basilica, Ste. Anne de Beaupre, Interior of1486
 Barns and Stables on White Springs Farm1547
 Barn and Cement-block Silo on Farm of R. A. Penhale, Elgin Co., Ont.1619
 Baked Beans Moulded with Sausages1629
 Barns on Farm of John Gathercole, Wentworth Co., Ont.1689
 Barn-raising1728
 Baby Beef1889
 Banff Hotel and Mount Rundle, Banff, Alberta1900
 Bees Hanging Outside1191
 Bees: Where They are Tame1219
 Bead Chains and Fobs, Figs. I, II, III, IV, V, and VI1702
 Bermuda Foliage1911
 Bermudian Residence, A Typical Old-fashioned1911
 Benson: Homestead of S. Neepawa, Man.1447
 Bessie Bates 1553732031
 Bonnie Buchlyvie1187
 Bourne Beauty1860
 Borden, R. L., Esq., K.C., M.P.1627

Boats Waiting for Tide, Ha Ha Bay.....1811	Filing the Good Old Crosscut1880	Milk-shipping Scene at Howick, Que.....1895	Smoke Island in Canadian Channel, View from.....1252
Breaking the Prairie in Saskatchewan1299	Fifty-nine Romney Shearling Rams.....1953	Milk Wagons Unloading at Blanchard Cheese Factory, Perth Co., Ont.2032	Snug Homestead: A.....1453
Brampton Primrose1512	Flash Cadet1358	Montreal from St. Helen's Island.....1253	Souris Valley, Western Manitoba.....1361
Brigham Radiant1581	Flemish Lace Makers1524	Mona's Rocket1545	Sous le Cap Street, Quebec.....1808
Bronze Turkey Male2084	Fletcher: The Late Dr. Jas.1767	Moonlight Scene in Muskoka1910	South Yarmouth Farm Home, Elgin Co., Ont.: A Glimpse of1967
Burgess, Jos.1277	Foster Mother: The Young2038	New York's Skyscrapers: Some of.....1523	Stretching His Limbs1105
"Buckboards" at Ha Ha Bay1811	Four-horse Harrowing Outfit in Oxford Co., Ont.1133	New Zealand Native, A1631	Steamer "Brockville" in the Long Sault Rapids, in St. Lawrence River.....1253
Bunch of Yearlings Picked Up in Ottawa District1889	Fowl, Technical Points of a1368	Noaparel Marquis1272	Steer Calf.....1618
Bunch of Calves from Shorthorn Cows1889	Franciscan Nuns at Prayer1337	"Number Four," Count Zeppelin's.....1734	Steadings and Stock on Farms of Smith & Richardson, Columbus, Ont.....1893
Bunch of the Right Sort, A.....1889	Friends1113	Old Shepherd's Chief Mourner1556	Stephen, W. F., Huntingdon, Que.....1894
By Brook and Meadow1908	Franco-British Exhibition: The Royal Pavillion1246	One of Ireland's Beauty Spots1663	St. Louis Gate.....1887
Canadian Fruit Exhibit at the Franco-British Exhibition1246	Franco-British Exhibition, London, W.: Bird's-eye View from a Balloon1247	Onion Crop, Harvesting1693	St. Anthony of Padua.....1904
Canadian Building, Franco-British Exhibition1247	Frame-work of Farman's "Flying Fish"1735	On the Road to London from New Zealand1883	Sultana 24th.....1438
Capes Eternity and Trinity, Saguenay River1450	Fruit-growing in British Columbia: Goldstream Ranch, Vernon, B.C.....1888	Orville Wright's Aeroplane1735	Sundowers Grown for the Poultry.....1765
Canning Factory and Cold Storage.....1693	French-Canadian Dairy Farm1894	Ostriches: Hen and Cock1890	Surf-bathing, Bermuda1912
Cart Horse, Dodman (Foaled About 1780)1879	Fulford Carnation1163	Ostriches: A Large Flock of, Feeding in Lucerne Camp1891	Tarrel Uxor.....1800
Calf Paddock, In the1892	Fyvie Knight1886	Over-reaching, Forging and Clacking.....1159	Taft: Wm. H.....1733
Champlain, Samuel de1223	Gate and Fastener1803	Ox Teams, Kentville, N. S.1369	The First Step.....1903
Champlain's Drawing of Quebec, as it was in 16081224	Genuine Dual-purpose Type1918	Oxen Plowing1903	The Summer Sun Shone Hot, on the New-mown Hay in the Meadow-lot.....1111
"Chums"1873	George o' the Scales1582	Oxen: The Great Lumbering1882	The Replica "Habitation" of Champlain.....1309
Champlain's Ship, the Bon de Dieu, Replies of1412	Gilchrist: Home of Alex., Simcoe Co., Ont.1665	Oxford Daisy 203891997	The Big Game Season is Here.....1787
Cherry Trees in Bloom1888	Gladiolus Field in New York State: Groff's Hybrids1902	Palton Sorais1160	Thornciffe Duchess 2nd.....1833
Citadel, Docks, Chateau Frontenac and Dufferin Terrace, View Showing1281	Golden Beam1691	Pastoral Scene in New South Wales, A1357	Time-saving Implement, A1881
City Man in the Country1871	"Got Him"1701	Panoramic View on White Springs Farm1547	Tormentor.....1725
Clemons, Mr. G. W.1865	Grande Salle des Fetes1999	Packing Apples in the Orchard1587	Tommie and Johnnie Lloyd-Jones.....1776
Cliffs, Ha Ha Bay1811	Grisdale, J. H., B.S.A.1889	Pastoral Scene in Scotland1807	Traction Ditcher at Work.....1993
Condensing Plant at Aymer1330	Groff, Mr. H. H.1901	Paw-paw Tree, Bermuda1912	Traction Ditcher, Not in Operation.....1993
Corn Fodder in This Condition, etc.....1829	Groff's (Mr.) 5-ft. Plant, and Some "Buds," Simcoe, Ont.1902	Parliament Buildings at Quebec1336	Trumpet Daffodil.....1873
Concrete Silo: Finishing1402	Half a Row at a Time—Slow Work.....1134	Parke: Home of J. H. M., Sherbrooke Co., Que.1835	"Trust Her Not, She is Fooling Thee".....1878
Coffin Bone: Under Surface of, Showing its Position Within the Hoof1242	Halstead Royal Duke1271	Peace and Plenty1132	Trimming Father's Beard.....1955
Comier1617	Halstead Duchess 3rd1359	Pet Lambs1191	Turkeys Out of Turkey: A Christmas Parade.....1897
Covered Bridge in Quebec.....1887	Haying on Dyked Lands of Nova Scotia1885	Persian Yaboo in Native Cart (14 Hands)1879	Tug of War, A.....1908
Coming Out to See What Santa Has Brought Him1906	Highland Herd at Home1898	Peshale: House and Barn on Farm of R. A., Elgin Co., Ont.1619	Tuberculosis: What New York is Doing to Stamp Out.....1595
Cosy Canadian Home, A1914	Highland Ewe Flock, the Shepherd and His Dog2003	Pilgrims Ascending the Sancta Scala, Ste. Anne de Beaupre1487	Typical Ontario Flax Mill.....1863
Country Home, A1914	Hybrids: Some Light1901	Pick of the Litter, The1594	Typical Southern Laurentian Uncut.....1877
Corn: Shredding on an Indiana Farm1328	Homes Bespeaking Comfort1884	Plains of Abraham, Showing Wolfe's Monument, Marking the Spot Where General Wolfe Fell1281	Union Stock-yards, West Toronto, Can.: Scene of the Recent Conflagration in.....1368
Corn: An Easy Way of Harvesting.....1329	Imported Clydesdales1760	Pleasant Valley Jilt1583	Ursula Raglan.....1401
Cotswold Ewe Lambs: Pure-bred.....2027	Indian Church, Tadousac1451	Plan of Cheese Factory and Cooling Room1763	Village Belle.....1360
Crutches Left by Pilgrims Cured at the Shrine of Ste. Anne1487	Indian Steers Ready for Action1688	Plowmen Hying Home1892	Virgin, Infant Jesus, and St. John.....1904
Creelman, G. C., B.S.A., M.S.....1882	Itchen Royal Rose1369	Pony Nursery, A1131	Wayfarers, The.....1196
Creamery at Kelso, Huntingdon Co., Que., Owned by Small Bros.....1895	Jacoba Irene (146443)1799	Post Driver, Illustrated by Diagrams.....1364	Watching the Races at Edmonton.....1245
Dairy Farm of A. McKay, Lawndale, P. E. I.1163	Jack and Miss Jersey1894	Post Office, Quebec1370	What We Want More of.....1622
Dalriddle Grace 2nd1585	Jersey Dame1729	Polyanthus Narcissi, One of the1372	When the Last of the Leaves Have Fallen.....1693
Daisy Chain: Finished1702	Jerseys: Judging at Royal Show, Newcastle1365	Prince Ideal1761	When Shall We Three Meet Again?.....1702
Dairy Herd in Contentment, The1887	Judging Highland Ponies in Aberdeen1437	Prize Squash1764	When the Frost is on the Pumpkins and the Corn is in the Shock.....1885
Dissenter1243	"June Bug," the Ill-fated1734	Primitive Seeding Methods1880	Winning two-year-old Shorthorn Heifers at the Dominion Exhibition at Calgary.....1327
District Maid1359	Kaatie de Boer 3rd1407	Prize-winning Field of Grain in Stook1991	Word from the Missing.....1593
Difference of Opinion1848	Keystone1366	Quebec, the Historic City, Where the Tercentenary Celebration is Being Held1215	Woodland in Welland Co., Ont.....1876
Dodder1189	Kirkfield Farmstead and Jerseys: Property of Mr. Wm. McKenzie, at Kirkfield, Ont.1899	Queen of Quality1473	Wood-lot Protected from Grazing for a Number of Years.....1877
Double Abbotsford1244	Lady Aggie De Kol 41271995	Queen Ideal1727	Yearling Clydesdale Colt.....1399
Dorothy1690	Lateral Cartilages, etc., of the Foot.....1242	Quebec Barns Thatched and White-washed1951	
Drummond, Mr. Dan1365	Labor Problem, Solving1302	Ranch in the Foothills, Alberta1104	
Driveway, A Well-laid-out1915	Laurier: The Rt. Hon. Sir Wilfrid.....1627	Ralph Young1726	
Duff: Hon. Jas. S.1622	Lansdowne1651	Refreshing1404	
Dunrobin Villager2027	Lake Memphremagog, Quebec, etc.....1918	Redbank1509	
Earth Road Kept in Condition with Split-log Drag1689	Laird, J. O., Blenheim, Ont.1961	River Scene1909	
Eclipse, One of the Most Noted of Early English Race-horses1879	Lawson: Home of Wm., Halton Co., Ont.1403	Road Through the Woods: The Rowallan1473	
Eel in Action (2.024)—Dan. McEwen Up1687	Levis, from Quebec, View of; Warship in Distance1280	Royal Chief1475	
Edmonton Exhibition Grounds, View of1276	Lemster Plum1361	Roan Jim1886	
Egg: Composition of1247	Le Chien D'Or (The Golden Dog).....1371	Rural Mail Box1481	
Electrified Wheat Compared with Un-electrified, Grown on Same Farm.....1277	Leading "Suffragists" of Great Britain1629	Sara Jewel Hengerveld.....1275	
Elliott (Jas.), Home of Successful Quebec Dairyman, Tatehurst, Que.....1894	Lessnessock Durward Lely1655	Sara Jewel Hengerveld 3rd.....1275	
Entricken: F. W.1687	"L'Entente Cordiale": The Arrival of the French Fleet at Cowes1907	Sanitary Dairy Stable.....1439	
English Country Home of To-day.....1913	Livestock Barns at Calgary Exhibition Park1166	Sanitary Dairy Stable: Interior of.....1439	
Entrance and Central Facade1999	Likely1274	Scene from the Pageant: King Francis and His Court.....1411	
Eurota1361	Lincoln Shearling Ram1362	"Scotland Forever," the Charge of the Scots Greys at Waterloo.....1521	
European Pastoral Scene: An Artist's Conception of1653	Lovers' Lane, Stanstead, Quebec1916	Sensitive Foot: Sole and Frog.....1242	
Exhibition Park, New Westminster, B. C., A Corner of1588	Malsie1951	Sensitive Foot: Side View1242	
Farmers Visiting the Nova Scotia Agricultural College at Truro.....1192	Making Beef on the Great Plains.....1890	Seed Corn: Selecting1692	
Farm Residence of Mr. John Hunter, Sr., Norval, Halton Co., Ont.....1273	Marjorie1188	Seven-headed Wheat1836	
Faultless Queen de Kol1548	Martello Towers, Quebec: One of the.....1309	Shorthorns: Judging Yearling Bulls at Windsor Exhibition1244	
Farm Scenes in Norway1875	Marshall Baron Fullwood1516	Shires: Judging at Royal Show.....1187	
Fernow, Dr. B. E.1874	Magdala's Gem1638	Shropshire on Ontario Farm.....1161	
Ferns: The Town of, Co. Wexford.....1263	Marion Cassius (imp.)1797	Shropshire Shearling Ewes1262	
Financial Countess1303	McEwen, Dan1687	Shropshire Shearling Rams.....1544	
First-prize Yearling Steer, Sired by Shorthorn Bull1441	Metropolitan Life Tower8523	Scene from the Pageant: Indian (Part 2)1475	
	Milk Pail and Strainer Cover1475	Scene from the Pageant: Ste. Marie1475	
	Mina Princess1516	Scene from the Pageant: The1475	
	Minnie1517		

LIVE STOCK.

Actinomycosis1400	Ample Digestive Apparatus1762	Are Our Breeders Patriotic?1992	Auction Sales: Managing1271
Baby Bees from Dual-purpose Herds1103	Baby Beef Sells Well2027	Beef-cattle Prospects1687	Beef Cattle: Economical Feeding of.....1761
Boller's (Mr.) Extravagant Claims.....1103	Bovine Tuberculosis: Control of1652	Boar: Care of the1798	Breeds: Condensed Information About1359
Breeding Sow: Care of1951	Calving: Experimental Notes on.....1327	Cattle: Determining the Ages of.....1328	Cattle Embury: The Scotchmen's Views on1436
Catch in Sheep Pens for1728	Charcoal for1103	Chemical and Transportation In-1798

Dips Approved by U. S. Bureau of Animal Industry1131
 Dogs: Legislation Against, to Aid Sheep Industry1834
 Dual-purpose Shorthorns in New England1160
 Early Winter Care of Stock1798
 Education and Experiment1181
 Embargo Editorial: British Exchanges1545
 Exhibition at Victoria, B. C.1582
 Farmers and the Bacon Trade1272
 Fall Care and Feeding1545
 Fatten Your Own Stock1583
 Fall Care of Feeding Cattle1619
 Farmers Should Fatten Their Own Stock Young1653
 Foreign Records Recognized at Ottawa1161
 Foot-and-mouth Disease1951
 Hog Cholera: Cause of1301
 Hog Feeders: Pointers for1362
 Holstein: True Type of1510
 Hog-feeding Account1833
 Hog Prices: Will They Advance?1896
 Hog-feeding: Fair Profit from1991
 Hog-feeder: Another Successful1991
 Importing Stock Duty Free1181
 Improving the Flock1327
 Importation: Condition of1990
 Indian Steer in Jamaica1688
 Irish Calf Meal, An1181
 Ireland's Interest in the Cattle Embargo1583
 Jersey Cow: The1898
 Judging Live Stock1216, 1243
 Judging Rings, On Giving Reasons in1301
 Judges: Specially Trained1509
 Lambs: Sweet Clover for1762
 Liability for Condemed Hogs1584
 Liquid Manure: Saving the1990
 Management of a Flock1271
 Mating the Flock1544
 Maritime Winter Fair1952
 Meal Ration: Economizing the1617, 1727
 Milking-Shorthorn Movement in Britain: The1102
 Milk and Beef: Feasibility of Combining1474
 Milking Shorthorn: American View of1474
 Milking Shorthorns: Circuit Breeding of1510
 Milk Fever Discussed1991
 Mix the Manure1992
 Muslin Curtain Ventilation Experiments at O. A. C.2028
 Naming Animals1160
 Ninth International Live-stock Exposition1886
 Oil Cake1651
 Oil Cake a Great Feed and Fertilizer1653
 Ontario Veterinary College Opened1617
 Our Scottish Letter.....1159, 1300, 1437, 1618, 1726
 Our Scottish Letter, The Royal Agricultural Show1187
 Pig Business, The1400
 Piggeries: Dryness and Ventilation in1728
 Production: Records of1727
 Ram: Choice of1301
 Roots, Silage and Alfalfa1653
 Sheep-breeding Records1991
 Sheep-breeding: Unique Experiment in1883
 Sheep: Parasitic Diseases of1835
 Sheep: Diseases of1761
 Sheep and Swine at the Royal Show.....1188
 Sheep: Management of1244
 Sheep: Keep More1510
 Sheep: Economical Feeding of1688
 Sheep Barn, Building a1727
 Shorthorns: Color in1244
 Silage and Chaff are Economical Roughage1653
 Silage, Straw, Clover, and Three Pounds Meal1653
 Silage for Hogs1798
 Sows: Breeding1761
 Trimming of Bulls' Feet1160
 Tuberculosis: Animal, Economic Importance of1544
 Tuberculosis: Exaggerated Emphasis on1401

U. S. Sheep Quarantine Unnecessarily Sweeping1216
 Wasting Disease in Irish Calves1828
 Warranty of Butchers' Stock1437
 Weaning Pigs1798
 Western Cattle Shipments1883
 What Stock Pays Best?1103
 Whitewash in Piggens1182
 Winter-feeding Stock at O. A. C.1688
 Worms in Sheep: Treatment for2027

MISCELLANEOUS.

A Canadian Necromancer in Plant Life1901
 Agricultural Co-operative Movement Started1496
 Agriculture: Interesting School Pupils In1680
 Agricultural Conditions in Eastern Townships, Que.1943
 Air-tight Cement Block Siloes1896
 Alfalfa-fed Cattle Wanted1178
 Alaska-Yukon-Pacific Exposition1317
 Alaska Wheat and the Newspapers.....1433
 Alaska-Yukon-Pacific Exposition: Live Stock at1974
 American Wood-pulp Industry1125
 American Bison1642
 Ancient Agriculture: A Glimpse at.....1781
 An Old Boy's Recollections1880
 Apples to Peaches: From1902
 Argentine Import Regulations1461
 Automobile Question: English View of1423
 Australia: Modern Sheep-shearing in1747
 Ayrshires at the Highland1285
 Bacteria in Eggs1607
 Beef Industry: Outlook for1889
 British Crop and Live-stock Statistics1304
 Breeders' Horse Show1820
 British Stud Stock Prices, 1908.....1975
 Canadian and English Wheats1149
 Canadian Holstein Official Tests1463
 Camel Meat the Latest Delicacy1607
 Canada in the Eyes of a Scotchman.....1711
 Canadian Observations on Latin Agriculture1882
 Champion Steers at Chicago1927
 Clydesdale Men Make Grant1819
 Clover-seed Crop: Insects Infesting.....1823
 Cow Tie, Essentials to a Good1643
 Crops in the Peace River Valley1747
 Dairy Barns: Direct and Diffused Light in1743
 Dairy Signs: All Fail1787
 Derby Winner of 19081123
 Dog Judges for Toronto Exhibition.....1178
 Dual-purpose Cow, The Place for the.....1460
 "Eel," Facts About the1979
 Famous Literary "Fists," Some1193
 Fat Milk and Fat Meat1251
 Farming in Norway1874
 Feeding Stuffs: Mineral Matter in.....1731
 Feeding: Science and Practice of.....1857
 Forestry: A Farmer's Interest in.....1876
 Formalin as a Disinfectant2046
 Fruit Pests: Parasites Do Not Destroy1743
 Good Roads: The Grange Favors Federal Aid for1742
 Great Milk and Butter Records1121
 Hackneys at Olympia.....1173
 Hill, Jas. J., as a Farmer.....1120
 Highland Show, The1251
 Holstein Cows Admitted to the Canadian Record of Merit During May: Official Tests of1177
 Horse Notes.....1207
 Hogs at the Highland.....1285
 Hogs-action Developer.....1285
 Holstein Association, New.....1287
 Horse-breeding, Status of.....1348
 Hog Cholera, and Vaccination as a Preventive Treatment.....1533
 Hogs: Phosphate for.....1643
 Hudson's Bay: The Country West of.....1293
 International Show Changes.....1124
 International: Entries for the.....1820
 Jacobs Irene: Test of1823
 Judges at International Show1672

Kirkfield Farm and Ranch.....1898
 Manitoba Stock Improving.....1607
 Manufacturers at O. A. C.1742
 Maritime Agriculture: Trend of.....1884
 Milking Tests at Royal Show.....1193
 Mixed Farming in Northern Alberta.....1494
 New Jersey Stallion Bill.....1643
 Nitrogen, Wizardry of1153
 Onion Industry in Barbadoes.....2047
 Ontario Field-crop Competition: Awards in.....1492
 Orange River Colony Farming.....2045
 Ostrich Farming in Africa.....1890
 Peach Culture: Electricity in.....1318
 Petty, Jas., Death of.....1672
 Pig Troubles: Preventing.....1640
 Piggery: Foundation Stock for1745
 Poultry at the Western Fair, London, '08, Awards in Utility Classes of.....1493
 Poultry Awards at Central Canada Exhibition, Ottawa, 1908.....1562
 Prairie Canada: Past and Present.....1900
 Presentation to Wm. Duthie.....1819
 Prince Edward County for Apples.....1937
 Ragwort: Sheep to Fight.....1533
 Riddell, David, Honored.....1816
 Roads: Destruction of, in France.....1640
 Rock Phosphate: Results of, on an Illinois Farm.....1786
 Russian Seed Wheat.....1265
 Saskatchewan: The Tricky.....1263
 Scours in Calves.....1178
 Science Balked.....1784
 Self-sucking Cows.....1533
 Seed Grain for Distribution.....1939
 Sheep and Swine at Royal Show.....1228
 Sheep-raising: Advice re.....1235
 Sheep: Income from.....1263
 Sheep at the Highland.....1285
 Sheep: Brighter Prospects for.....1784
 Siberian Wheat Fields.....1785
 Smith & Richardson's Clydesdales and Shorthorns.....1892
 South Ontario Plowing Match.....1747
 Stock-yards for Winnipeg.....1499
 Stewart, Henry, Death of.....1518
 Superfoetation1153

The Final Federal Ram Sale.....1673
 Thornton: Death of John.....1972
 Training of a Foal to Lead.....1743

United States Increasing Her Arable Acreage.....1204
 Vacuum Cleaner for Horses1634
 Veneering: Wood for.....1349
 Western Fairs, Proposed Circuit of.....1204
 Wheel and Its Origin, The.....1180
 Wisconsin Agricultural High Schools.....1541
 World's Biggest Farm.....1781
 Woods: If You Are Lost in.....1781

POULTRY.

American Poultry Convention, Programme of1219
 Attentions that Pay1997
 Bantams: Breeding1550
 Beginners: A Few Hints to1549
 Blackhead in Turkeys1657
 Breeding Selected Layers: Results of the Maine Experiment in1330
 Bumble Foot1331
 Building and Equipment for a Two-thousand Bird Plant1800
 Chickens: Fattening1276
 Chicks: Teaching to Roost1331
 Chickens in Cold Storage1440
 Chickens Hatched too Late1998
 Chickens Scratch: Make the2034
 Cockerels: Feeding1404
 Doctoring Fowls1368
 Eggs: and Their Food Value1248
 Eggs: Marketing of1276
 Eggs or Fowls, to Commence With.....1620
 Egg Production: Management of Hens for1690
 Egg-laying Competition1839
 Exhibition Virtues vs. Eggs1403

Fattening Poultry1691
 Fowl: Technical Points of a1868
 Fresh Air and Strong-germed Eggs.....1165
 Geese, Experience with1998
 Guinea Fowl: Distinguishing Sex in.....1108
 Guinea Fowl: Mating and Rearing.....2034

Inbreeding: Objections to1889
 Killing Fowls1586

Manitoba Egg and Broiler Plant.....1191
 Mites and Lice: Combating1839
 Moulting, Forced: Against1839
 Musical Egg: Why Not?1276

Normal vs. Abnormal Development1780
 O. A. C. Poultry Department1185
 Organization of Local Poultry Association in Ontario1513

Plagiarism1477
 Poultry Genius: A1897
 Poultry: Undersized1108
 Poultry Classes and Prizes at Toronto Exhibition1219
 Poultry: Preparing for Exhibition.....1249
 Poultry Farming in New South Wales1802
 Poultry Mites1831
 Poultry-house Ventilation1657
 Poultry-keepers: Three Good Plants for1764
 Poultry Association, Western Ontario1997
 Poultrymen, Questions for1998
 Poultrydom: A Quarter of a Century in1897
 Provincial Poultry Plant, A1868
 Prince Edward Island Flock: Returns from1956

Scalding a Disadvantage1586
 Summer Poultry Pointers1219

Turkeys: A "Hot Powder" for1956
 Whitewash for the Henhouse1477

QUESTIONS AND ANSWERS.

Miscellaneous.

Abortion: Contagious, Probably.....1598
 Acre and Mile Measurements1816
 Acetylene-gas Plant2051
 Adjoining Land-owners1122
 Alfalfa: Clipping1884
 Alfalfa Meal Grinders1882
 Alfalfa, Applying Ashes for1890
 Alfalfa Queries1891
 Alfalfa Seeds: Saving1531
 Alfalfa in Maritime Provinces1600
 Alien Carpenter2049
 Alsike Poisoning1892
 Aphis and Red-humped Caterpillars.....1194
 Apple Evaporator, Homemade1232
 Auctioneer's License1341

Balsam a Nuisance2050
 Barren Mares1202
 Bank of England Discount1228
 Barn-building Questions1288
 Babcock Tester: Cost of1819
 Barred Rock Cockerel Markings.....2011
 Beautifying the Country1151
 Beekeeping Queries1292
 Bindweed1148, 1200, 1882
 Blacksmithing: Questions of1751
 Black Powder1924
 Bloody Milk1746, 1518
 Blackleg1122
 Black Langshan Fowl1924
 Bladder Campion1144, 1317, 1422
 Blight on Hops1820
 Blackhead1847
 Blind Teats1847
 Black-knot on Cherry Trees1500
 Board and Lodging1174
 Bog Spavin1603
 Boiled Turnips as Hog-feed1974
 Breach of Contract1203
 Bridge Tolls1264
 British Cattle Embargo1639
 Breeding Habits of Buffalo and Deer.....1751
 Breeds: Comparison of2049
 Brown Swiss Cattle1817
 Buckthorn or Ribgrass1820
 Buckwheat1426
 Buckwheat as Food2052
 Buckwheat for Cows2035
 Buttermaking1427
 Butter, Percentage of Fat in.....1148

Bush Fires	1462	Fowl Trespass	1288	Moving-picture Show Apparatus	1420	Squab Raising and Marketing	122
Bull: Fearing a	1815	Foal, Feeding a	1382	Mutual Lane Privileges	1175	Stone and Sand for Wall	170
Calves	1535	Formalin-treated Oats: Feeding	1422	Mushroom Culture	1228	Statute Labor	1410
Calves Coughing	1205	Founder: Symptoms of	1921	Mushrooms	1500	Stallion Accommodation: Cost of	1280
Calves: Feeding Grain to	1427	Foot-and-mouth Disease	1924	Muskat Skins: To Tan	1856	Stallion: Sale of	1340
Calves: Feeding	1978, 2051	Foot-and-mouth Disease Inspectors	2044	Note: Liability on	1924	Strawberries: Fall Planting of	1200
Cedar Hedge: Time to Prune	1291	Fruit Evaporators	1286	Nut Grass	1317	Stifle: Dislocation of	1200
Cedar Seedlings	1570	Free-martin	1696	Oak Apple	1148	Stallion's Services	1364
Celery	1109	Frosting Windows	2049	Oestrus: Absence of	1179	Stacking Corn	1289
Celery: Swamp Land for	1291	Fumigating Chrysanthemums	1749	Oestrus: Cows Not Showing	1203	Street-car Rails for Girders	1317
Cement and Coloring for Cement-block House	2011	Gall Mites on Grapevines	1289	Oil Well: Investigating	1941	Stationary Engineering	1518, 1565
Cement Silo: Building	1853	Garget	1347	Onion Sets: Growing	1204	Stove-pipe: Liquid in	1354
Census Returned	1531	Gasoline Engines	1605	Ornamental Climbers	1532	Surveyor's Charges	1179
Cement Corner Posts, Size and Mixture	1462	Geese on Railway	1604	Oxford Downs: Canadian Registration of	1978	Steering an Engine	2013
Cement Inquiries	1448	Geese: Cross-breeding	1822	Parturition Irregularities	1152	Steers: Grain Rations for	2049
Cement at Fence Posts	1427	Geese: Breeding	2015	Payment for Cow	1496	Sugar: Brands of	1921
Cement Silo	1382	Geese: Sex in	2051	Patent Rights	1815	Sweeny	1641
Cement Floor	1205	Ginseng	1175	Pass-book: Custody of	1941	Swedes vs. Sugar Beets	2047
Cement New on Old	1233	Goitre in Sheep	1233	Peach Trees Past Bearing	1751	Tanning Cat or Dog Skins	2015
Cement Mixer	1259	Grape-gall	1148	Pear Blight	1320	Thousand-headed Kale	1148
Cement Silo, Building	2000	Green Aphid	1261	Perennial Flowers, Protection of	1320	Thoroughpin	1232
Cement	2050	Grain Lodging	1743	Perennial Sow Thistle a Bad Weed	1345	Three-horse Evener	1420
Churning: Imperfect	1176	Hackney: Registering a	2044	Pears: Scab on	1500	Thorn Trees: Killing	1564
Churning: Difficult	1260, 1390, 1936	Hay Caps	1206	Pear Blight	1500	Time to Bud Trees	1228
Chicken-raising for Delicate Persons	1288	Heaves	1637	Pea Weevil: Fumigating for	1534	Tile Drains in Orchard	1286
Chicory	1382	Hock: Puffs on	1598	Perpetual Motion	1749	Timothy: Sowing in November	1822
Chop Caked in Bags	1603	Holidays	1448	Plums: Disease of	1391	Top-working Apple Trees	1750
Christmas Number Verse	2015	Holidays and Hours	1448	Plum: Scab on	1816	Toad-flax	1148
Cholera in Poultry House	1815	Holidays for Hired Man	2014	Pigs Ailing	1202	Tomatoes, Canning	1426
Chancery: Court of	1750	Hoofs Brittle	1637	Pigs on Dry Ground Floor	1941	Tomato Seed: Saving	1531
Cider: Preserving	1495	Hop Clover	1317	Plantain	1264	Toll Roads	1532
Cistern: Contents of	1603	Horned Corydalis	1193	Plum: Disease of	1391	Trees Damaged After Sale	1259
Clover Seed	1426	Horses: Cost of Keeping	1222	Post-office Regulations	1289	Trees: Moving Large	2050
Clover: New, Cutting or Pasturing	1564	Horse Rubs Tail	1286	Poundkeeper, A	1174	Trespassing for Berries	1261
Clydesdale Importation Duty-free into U. S.: Conditions of	1924	Horses and Cows Coughing	1347	Poison Ivy	1390	Treadmills Wanted	1462
Clover Seeding	1978	Horses Slobber	1420	Poison Ivy Killing	1500	Trees: Piling Manure Under	1500
Cows Chewing Bones	1150	Horses: Judging Age of	1532	Poultry Dying	1604	Turnip Lice	1334
Cornucopia as Manure	1974	Horse's Hoofs: Moisture for	1603	Poor Field	1710	Tuberculin-testing of Cattle	1464
Cow Ailing	1179	Horses: Feeding Mangels to	1743	Poultry Standards	1715	Tuberculous Cow	1584
Cows Failing to Breed	1260, 1641	Ice House: Building	2049	Potassic and Phosphatic Fertilizers	1817	Turnips: Lice on	1570
Colt Sides in Harness	1391	Illustrations: Charge for	2049	Propagating Gooseberries	1175	Tuberculosis in Fowls	1570
Cow-pox	1423, 1598, 1815	Indigestion	1148	Prizes at Fat-stock Show	1286	Tuberculous Cows	1941
Contract: Duration of	1448	Indigestion in Calf	1149	Pruning Currants and Gooseberries	1292	Twin Ram vs. Single Ram	2011
Cows: Feeding Pumpkin Seeds to	1300	Influenza: Treatment for	2052	Protein in Oats	1708	Umbilical Hernia	1262, 1422
Cow Killed on Railway	1623	Insect Collection: Preserving	1320	Pumping by Tread Power	1534	Unthrifty Hog	1179
Cow Gives Bitter Milk	2049	Injured Trees: Treating	1382	Ragweed	1151	Vetch: A Species of	1203
Cream Should be Uniformly Ripened	1262	In-foal Mare on Tread Power	2013	Rasperry Blight	1317	Vegetable-growing	1500
Cross of Leghorn and Minorca	1426	Irregular Lease: Effectiveness of	1122	Railway: Poorly Fenced	1462	Vermicide: Homemade	1518
Cream Separator: Unsatisfactory	1636	Italian Bees Wanted	1746	Raspberries	1571	Vendor and Purchaser	1605
Cream Will Not Churn	2035	Joint Ownership: A	1463	Railway Crossings	1636	Vinegar: Cider	1518
Crimson-clover Growing	1819	Joint Worm	1534	Ram Lambs: Feeding	1641	Water Tank Above Ground	1151
Creosote as a Preservative	1819	Judging Live Stock	1286	Railway Crossings	1714	Watch Repairing	1345
Creamery: Painting Inside of	1598	Judging Leghorns and Plymouth Rocks	1530	Registering Shorthorns in A. H. B.	2015	Wages: Payment of	1604
Crop: Right to	2014	Jurors: Appointment of	1935	Retention of Placenta	1232	Walnut, Manitoba Maple and Horse-chestnut Trees: Raising	1605
Cutworms Destroy Tomato Plants	1152	Kitchen Cistern	1151	Registered Stock: Transfer of	1286	Water to House and Barn	1715
Dairy Shorthorns Wanted	1427	Knuckling	1637	Registry of Roadster Stallion	1286	Weak Fetlocks	1149
Dairy Herd: Balanced Ration for	1853	Lady's Slipper	1148	Registering Cross-breeds	1392	Weeds for Identification	1345, 1696
Dandruff: Treatment for	1941	Land, Conveyance of	1233	Registering Holsteins	1605	Well: Pumping from Distant	2051
Defective Udder	1203	Large Crab Grass and Old Witch Grass	1392	Rent: Paying	1822	Whitewash for Stable	1977
De Kol Creamella: Milk Record of	1422	Landlord and Tenant	1462, 1532, 1598	Registering Pure-bred Holsteins	2015	Whitewashing Stable	1500
Ditch, Constructing a	1382	Leaking Milk	1194	Rheumatism in Pigs	1750	White Turnips	1288
Diarrhea, Chronic	1605	Leached Ashes	1204	Rib Grass, Ribwort and English Plantain	1262	Wheat: Smut in	1924
Ditch: Repairing	1822	Leaking Kettle	1462	Ringbone on Colt	1530	White Grubs	1427
Dodder in Alfalfa Seed	1382	Legacy: Lapse of	1921	Right of Way	1315	Wireworms	1204
Dogs: Law re	1710	Line Fence	1122	Road, Rights Regarding	1174	Witch-hazel to Find Water	1257
Dominion Exhibition, 1909	2035	Lightning Rods, Twisting Wire for	1152	Rose Bug	1231	Wife's Property	1261
Draft-horse Registration	1200	Life-insurance Beneficiaries	1179	Ropy Milk	1600	Wild Oats: Killing	1426
Driving Posts	1179	Lightning Rods: Homemade	1203	Roaring	1637	Winter-laying Breeds	1818
Drainage Procedure	1532	Lime-sulphur Dip	1233	Rotation	1816	Wild Tares	1978
Drainage Questions	1535	Lightning Rods: Loop Points on	1288	Roup	1816	Worms in Horses	1420
Drenching a Horse	1750	Lightning-rod Questions	1289	Round Eggs for Pullets	1973	Woolly-louse of the Apple	1420
Drainage	1815	Line Fencing	1532	Ruptured Foal	2011	Worms	1531, 1750
Eczema	1120, 1530, 1856, 2014, 2052	Lice on Cattle	1815	Russian Thistle or Tumble Weed	1420	Working Days and Chores	1637
Egg-laying	1822	Liver Complaint: Probably	1817	Rye	1463	Worms for Identification	1782
Electric-power Line	1566	Lice	1819	Sand Filter for Rain Water	1535	Worms: Infoal Mare Has	1924
Electric Power Contracts	1573	Lump on Knee	1149	Sale of Diseased Pig	1715	Yeast Treatment	1202
Ensilage Carrier	1259	Lumpy-jawed Steer	1203	Sand and Cement: Proportions of	1782	Veterinary.	
Ensilage of Stoked Corn	1564	Lump-jaw	1232, 1815	Sale: Completing a	1925	Abscess	1258
Enteritis	1939	Luxation of Patella	1815, 1941	Sawdust as Manure	1974	Aphtha	1567
Enteritis in Poultry	2013	Lymphangitis	1924	Score-card for Judging Horses	1658	Azoturia	1148
Estate: Division of	1462	Mare: Lameness in	1387	Scratches	1921, 2014	Barb-wire Wound	1425
Exports of Animals and Animal Products	1464, 1904, 1907	Mangels vs. Sugar Beets	1422	Selfheal	1200	Bandages: Applying	1462
False Flax	1151	Manure Spreaders	1422	Servant: Sickness of	1572	Belladonna Solution: Making and Using	1462
Farming on Shares	1462	Mare Does Not Conceive	1427	Separators vs. Shallow Pans	1819	Bloody Milk	1462
Feeding Heifer	2035	Mare has Sore Neck	1530	Seed-bed Without Plowing	2011	Bog Spavin and Thoroughpin	1390
Fence: Restoring a	1120	Master and Servant	1600	Sheep on Shares	1221	Brain Trouble	1258
Fertilizer for Wheat	1392	Master and Man	1604	Sheep Killed by Dogs	1288	Bursal Epidemics	1120
Fertilizer Questions	1448	Mammoth White Clover	1708	Show-ring, What Counts in	1382	Bull: Fertility in	1496
Fencing	1495, 1565	Mammoth Clover	1714	Sheep Dip	1972	Calves	1148
Feed for Cows	1600	Mammoth Clover	1844	Sheep: Foxtail Seeds for	1973	Calves: Chores	1316
Fertility	1816	Manure: Applying	1854	Slander	1925	Chronic Coughing	1920
Fertilizers on Light Land	1708	Meadow Salsify	1148	Sore Heels	1202	Cheese With a Crust	1258
Fencing Materials	2013	Melons	1202	Sow Thistle	1315, 1382	Chickens	1390, 1658, 1855
Fishworms: Liquor on	1224	Melons: Blight of	1291	Sour Cream: Test of	1601	Chickens:	1390
Fishing Supplies: Duty on	1924	Meals: Time for	1935	Sow Lacking Milk	1743	Chickens:	1390
Flies: Protection from	1286	Milking Machines	1289	Soft Soap: Making	1856	Chickens:	1390
Fliebane	1734	Mixed Grain Crops Cured as Hay	1518	Soy: Planting	1856	Chickens:	1390
Flag-pole: Erecting	1605	M. Pests: Thrashing	1604	Soy: Planting	1856	Chickens:	1390
Flesh Wound	1605	M. Pests: Changing	2011	Soy: Planting	1856	Chickens:	1390
Flaxseed Meal	1924	M. Pests: Regarding	1264	Soy: Planting	1856	Chickens:	1390
Flax Terriers Wanted	1282			Soy: Planting	1856	Chickens:	1390

Colt, Unthrifty1462
 Cocked Ankle1568
 Colt: Ailing1748
 Eczema1420, 1567, 1708
 Erysipelas1820
 Exhaustion1258
 Fardel-bound1890
 Farcy: Thinks Horse Has1658
 Fibrous Tumor1822
 Fistulous Withers1944
 Founder1744
 Heel: Growth on2047
 Hematuria1176
 Hocks: Enlarged1855
 Horse: Lamé1928
 Influenza1567, 1714
 Indigestion, Chronic1708
 Indigestion2047
 Injured Leg1820
 Itchy Legs1855
 Kneesprung1150
 Knuckling1820
 Lameness: Periodic, Severe1534
 Lambs: Unthrifty1564
 Lumps on Shoulder1425
 Lump Jaw1636
 Lymphangitis1567
 Mare, Lamé1420, 1600, 1658
 Mare, Unthrifty1820, 1924
 Milk Duct: Obstruction in1816
 Mud Fever1744
 Oestrus: Continuous1978
 Off-colored Nose1425
 Opacity of the Cornea1150
 Open Joint1714
 Ophthalmia1820, 1855
 Ophthalmia: Infectious1944
 Orolitis1258

Patella: Partial Luxation of1714, 1977
 Paralysis of Lips1419
 Periodic Ophthalmia1420
 Pigs: Sweet or Sour Milk for Young1928
 Pleuro-pneumonia1816
 Removing Harness at Noon1150
 Recurrent Tympanitis1934
 Ridgeling1708
 Rupture1316
 Scab2047
 Shoe Boil2047
 Skin Trouble1934
 Sore Teat1420
 Sore Shoulder1567
 Sweeny1345
 Tail: Injury to1258
 Tumor1568, 1977
 Tuberculosis1820
 Urachus: Persistence of the1944
 Urine: Incontinence of2044
 Uterine Discharge1816
 Vagina: Inversion of the1944
 Warts on Teats1420, 1855
 Weak Knees1708
 Wound1534

HOME DEPARTMENT.

Apple Recipes1414
 Apple Cheese1525
 Apple Butter, Cider1488
 Bacon Curing1226
 Begonias: Diseased1456

Bead Chains and Fobs1702
 Bermuda: An Interesting British Possession1911
 Beans: Baked1812
 Bulbs for Winter Blooming1372
 Cake: Economical1595
 Candy Recipes1915
 Christmas Cookery1915
 Champlain: Samuel de1223
 Cheesemaking1374
 Chocolate Fudge: How to Make156
 Christmas Cake1847
 Christmas Goose1915
 Christmas Decorations and Devices1915
 Corn: Dried1284
 Colds and Tuberculosis1595
 Cranberries: Spiced812, 1847
 Desserts: Tempting for Hot Weather1225
 Drinks: Hot Weather1171
 Elderberry Wine1284
 Etiquette: Some Points on1208, 2006
 Fat: About1455
 Games: Some New1776
 Games: Some Old Christmas1907
 Green Peas: Canning1144
 Grape Wine1374
 Grape Jam1374
 Grapes: Spiced1525
 Griddle Cakes, Bread1557
 Hammock: Homemade1199
 Hallowe'en Party1489
 Hallowe'en Social1489
 Hands: Care of the1847
 Heliotrope1372
 How to Stand1815
 Jelly-making1225
 Laundering in Cold Weather1626

Manners: A Country Boy's1808
 Mock-oyster Soup1812
 Navigation of the Air1734
 Oatmeal Cookies1557
 Old-age Pensions1775
 Painting Walls and Ceilings1458
 Peach Butter1374
 Pears: To Can1874
 Peaches: To-Can1874
 Pear Marmalade1416
 Pies1198
 Pickles1388
 Pickles: Little, White Onion1557
 Pictures: Ethical Significance of1000
 Plum Butter1000
 Plums: Spiced1000
 Plum1000
 Pumpkin1000
 Raspberries: When They Are In1000
 Ribbon Cake1800
 Sandwiches1198
 Salad Dressing1488
 Salad Dressing, Cream1198, 1874
 Spelling Reform1846, 1967
 Sweet Peas: Insects on1414
 Tea, and How to Make it1812
 Unfermented Wine1874
 Vegetables: Canning1284
 Wedding Anniversaries1595
 Wild Plum Jelly1874
 Winter Protection of Shrubs, Vines and Flowers1700
 Wild-flower Quest in the Frozen North1667