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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE *

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Vol. XXXIV. LONDON, ONTARIO. JANUARY 2, 1899. WINNIPEG, MANITOBA. No. 469

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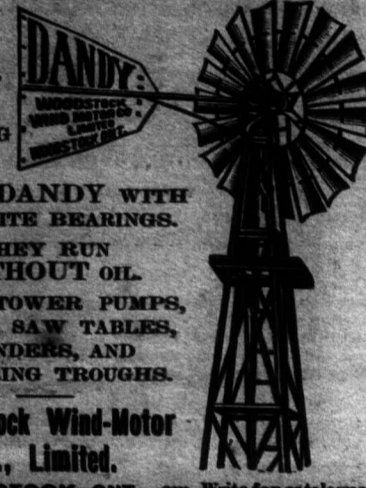
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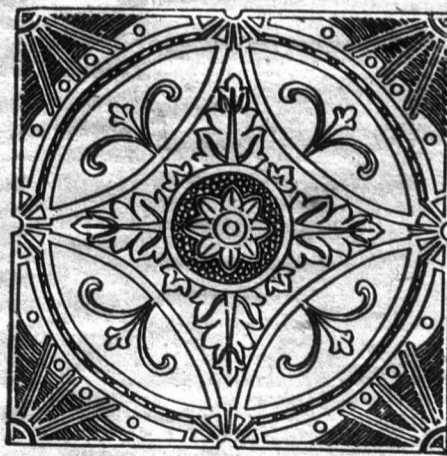
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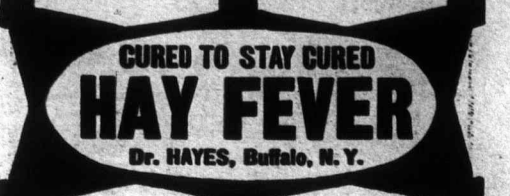
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AND HOME MAGAZINE

* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.*

VOL. XXXIV. LONDON, ONT., AND WINNIPEG, MAN., JANUARY 2, 1899. No. 469.

EDITORIAL.

Starting Right.

Success or failure in any undertaking depends largely on the character of the start we make. "Well begun is half done" is an old axiom with a considerable amount of truth in it, and applies with a good deal of force in matters agricultural as well as in those of other industries. The importance of a right beginning is frequently made painfully apparent when the discovery that a mistake has been made comes too late to prevent loss and dissatisfaction. It is well, if possible, to be sure we are right before going ahead, and while it is true in relation to farming as well as to other matters that "the best laid plans of mice and men gang aft a-glee," yet it is well to look ahead and lay plans for future work, counting the cost as nearly as we can, but above all things remembering that what is worth doing is worth doing well. The beginning of the new year is a favorite time for making good resolutions, and it is certainly better to make them at this time than not to make them at any time, and it is wise to resolve to be thorough in all we undertake to do. Among the matters which may well engage the attention of the farmer at this season is the construction of such farm buildings as are necessary to the better and more economical handling of his crops and stock, or the improvement of the buildings he has so as to make them more suitable for these purposes. In this connection it pays in the long run to be thorough in the methods employed, making all improvements of a permanent and enduring nature. Sanitary conditions favorable to healthfulness of the farm stock, affording ample supplies of fresh air and sunlight, should be among the first considerations in the plans for stock barns. Durability and economy of material in the work of construction should be kept in view, and economy of space and of time and labor in storing the feed and in the feeding and care of the animals is important, as time properly used is equivalent to money, and in these days of close competition the labor bill is a considerable factor in the cost of production of meat and milk as well as of grain and other crops, and must be taken into account.

Starting right in the selection and breeding of the different classes of farm stock is of paramount importance. As the security and endurance of a building depends largely on the character of its foundation, so does the success of a herd or flock depend upon the quality and character of the individual animals constituting the foundation of the family. Given a sound constitution and good feeding qualities in the dam, and a wise selection of sires having and inheriting the same qualities, it is reasonable to expect that with proper care and treatment each successive generation will be at least equal in individual merit to the preceding one, and by skillful and judicious selection and mating of parents may show distinct improvement. But in order to attain this it is important that the offspring get a right start in life, as not only its own individuality but also that of future generations in which its blood may play a part depends largely upon the feeding and treatment of the youngster during the early days of its life. We have an idea that a much larger share of the breeding than breeders are willing to admit depends on the kind, quality and quantity of food which goes down the throat of the animal in its young days, and on its general treatment with a view to proper development of bone, muscle and tissue, and of the vital organs, which tells for good, not only on itself, but on its descendants of future generations. An animal that has been stunted by insufficient nourishment in its early life, or has been overfed without sufficient exercise, may never recover the ground that has been lost, and many an animal which had within it the potentialities of greatness has been doomed to obscurity by injudicious early treatment.

Desirable Types.

The illustrations in other pages of this issue of prizewinning animals at the recent fat stock shows in Ontario, and of representative animals in many herds in all the Provinces portrayed in our Christmas number, may well serve as model types of the classes of stock to which they belong, and, we trust, may have a good influence on all the farmers and feeders who see them and read of them, giving inspiration and inciting ambition to excel in breeding and raising animals of the approved type. The cattle of the beef breeds and crosses, it will be noticed, are uniformly of the short-legged, thick-fleshed sort, smoothly turned in their conformation, and calculated to mature at an early age, some of them weighing 1,600 to 1,800 lbs. while under three years old, free from roughness or excess of fat, but well-covered with natural flesh of approved quality. Probably these animals have been liberally fed from the time of their birth, and have been kept constantly gaining in weight, and they represent heavier weights than are required even for the export trade; but good, well-bred grade steers of this class may, by such a course of feeding as the average farmer can readily adopt, be made to weigh 1,300 to 1,500 lbs. at the same age, which is heavy enough to meet the demands of the best markets and to secure the highest prices.

It is only by good breeding and good feeding combined that such results can be attained, and it is only by these that the best returns can be secured for the labor and food expended in raising and fattening cattle. It is worthy of note that enquiry into the breeding of the prizewinners at the fat stock shows reveals the fact that nearly all of them were sired by prizewinning bulls, or by the sons and grandsons of bulls made famous by having many prizewinning sons and daughters in the breeding classes at the leading exhibitions in the country. The inference, therefore, is that the best is none too good even for producing steers and heifers for the block, but that the better the bull used, the better, as a rule, will be his descendants, and the lesson is apparent that it is unwise to use a sire that is deficient in quality and character, even if he has a fashionable pedigree, or to be content with a cheap bull, or one whose services can be secured for a low fee, if your judgment tells you he is not, individually, as good as you ought to use. It is true that all cannot have the best, but if an honest search is made it will be found that there are more good, useful bulls than we had thought, and, as a rule, a fairly satisfactory one can be secured at a price which the general farmer can afford to pay.

Essentials to Business Success.

"The success of any article of merchandise, any publication, any movement, depends entirely upon the manner in which it is given publicity. Its fate is ever in the hands of the advertising agent." So asserted a prominent advertising expert not long since.

We cannot accept this sweeping statement. No amount of advertising can insure the permanent success of any article or undertaking without merit of its own. A transient, ephemeral advance may be effected by tricky methods, false claims and lying advertisements, but ultimately these resorts defeat their own object. Substantial inherent value is necessary to hold the purchasing public for any length of time. Honest methods are the only safe methods. The business man who dupes a customer once will not do so again. He loses him, and sooner or later will be doomed to failure. It is astounding the number of rascally adventurers who prey upon the public. In the past we have taken occasion to expose the bogus character of a good many designs against the agricultural community particularly, in the face of vexatious legal and other proceedings, and have also rejected many thousands of dollars' worth of advertising, which

we had good reason to believe was questionable in character, or which we proved to be so by actual investigation. Thirty-three years' experience has fully demonstrated the safety and wisdom of this policy of shutting out the spurious, not only as a protection, so far as practicable, to the reader, but to the honest advertiser as well. In the development of modern business, advertising has become indispensable. It is now both a science and an art. Advertisements are scrutinized as they never were in times past. They are the great means of communication between the seller and the buyer. Properly-placed and well-worded announcements bring replies. A recent advertisement that cost \$5,000 brought \$50,000 worth of business. On the part of the public there was a generous response that bespoke confidence in the house. Assuming that a business has the necessary backing of capital and enterprise, its self-perpetuation is then dependent upon fair profits, reasonable prices, and square dealings.

Quality and utility are to-day, as never before, essentials in what is placed before the public, whether merchandise, live stock, or publications. In discussing these points lately, a writer in the Philadelphia Saturday Evening Post, a remarkably successful journal, reached the following conclusion:

"The world has reached a high plane in business dealings. The self-respecting business man or publisher lets nothing leave his establishment that is not as represented. So far as he can make it, the goods or the publication is absolutely 'the best value for the money.' In merchandise there is more chance for adulteration and deception than in literature. Goods may look well and wear poorly. But the quality of a publication is apparent at a glance. Periodical literature is multiplying endlessly, and the paper which is intrinsically good is receiving its share of support proportionately as the people know of its existence and the quality of its material. It is not a question of the passing of the monthly, the weekly, or the daily. It is but the inevitable rule of the survival of the fittest. In the long run, public taste is not at fault. It recognizes the good in literature; it expresses recognition by practical support."

A Two-Cent Postal Rate.

Following the inauguration on Christmas Day of a two-cent postal rate on letters between Canada and Great Britain and all other portions of the British Empire, comes the announcement from Ottawa that the Postmaster-General, Hon. Wm. Mulock, has, under authority vested by an Act passed at the last session of the Canadian Parliament, authorized the reduction of the rate for letters within the Dominion from three to two cents, beginning on New Year's Day. By the terms of the postal arrangement with the United States the reduction will also apply to letters from Canada to that country. This new rate will undoubtedly have the effect of very largely increasing the rapidly growing volume of correspondence in the Dominion, especially in business matters. It may involve a temporary reduction in revenue, but we believe the history of such reforms has always been in the end very large increases. The proclamation of the Governor-General inaugurating the reduced domestic rate appeared in the Official Gazette of Saturday, December 31st, 1898.

Prof. Haecker, of the Minnesota Experiment Station, remarks that there is no one rule of feeding that has led astray so considerable a number of American experimenters and destroyed the practical value of their work so often as the one declaring that animals should be fed according to their size. It is not true of any species of animals, but least of all is it true of the milch cow. With all and every one, the amount of food required must depend in part upon the nervous energy—the force required to keep up the system to the work it has to do—modified, of course, by the digestive power.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

PUBLISHED BY
THE WILLIAM WELD COMPANY (LIMITED),
LONDON, ONTARIO, AND WINNIPEG, MANITOBA.

LONDON, ENGLAND, OFFICE:
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LONDON, CANADA.

Rev. John Robertson's Death.

In the death of Rev. John Robertson, at Ingersoll, Ont., on Saturday, December 17th, Canada lost a worthy citizen who has for many years been identified with the work of dairy instruction. Mr. Robertson was born at Dunlop, Ayrshire, in 1828. Away back in the fifties he became closely associated with the Rev. Mr. Gebble, the parish minister of Dunlop, noted throughout Scotland for the fervor and zeal of his religious life. From that time Mr. Robertson gave himself heartily to the advancement of the Christian cause. In 1863 he sub-let his farm in Scotland for three years and devoted himself as a missionary among the coal miners and iron workers at Ardeer. In 1875 he brought his family to Canada, and settled on the Maple Grove farm, London Township, Ont. He had a practical knowledge of the farming methods and dairying of his native country, Ayrshire, and was of course at once interested in the agriculture of Ontario. He associated himself in various ways with the development of the Canadian dairy industry, acting as an official instructor for the Western Ontario Dairymen's Association, and subsequently for several years as superintendent of the dairy industry in the Province of New Brunswick. For a lengthy period he was a valued contributor to the columns of the FARMER'S ADVOCATE. At a later date he devoted some of his spare time to Farmers' Institute work. In addition to his many other duties, he ministered acceptably to several churches in Middlesex County, mainly in connection with the Baptist denomination. His first wife was Mary Wilson, of Langton, Scotland, and his second Louise Edwards, of Ingersoll, Ont. His family of children included Prof. Jas. W. Robertson, Dominion Agricultural and Dairy Commissioner; Mr. John Robertson, who was for several years dairy instructor in the southwest of Scotland, and now engaged in the dairy produce trade for probably the largest firm in Scotland; and Mr. Robert Robertson, for some time on the staff of Hodgson Bros., of Liverpool, Eng., importers of Canadian dairy produce. At the present time he is the British Columbia representative of J. Y. Griffin & Sons, of Winnipeg, Man., extensive pork-packers and dealers in butter and cheese. Deceased was not only a man of many attainments and great capacity for work, but with a high sense of personal integrity as becoming a Christian gentleman.

CHRISTMAS FARMER'S ADVOCATE.

STRIKES A POPULAR CHORD ALL OVER THE CONTINENT—WILL PROVE A GREAT STIMULUS TO CANADIAN AGRICULTURE AND DO THE DOMINION GOOD. SO WRITE THE READERS.

FROM THE PRINCIPAL OF QUEEN'S UNIVERSITY.

Dear Sir,—The Christmas number of the FARMER'S ADVOCATE has reached me in good order, and I am delighted and astonished at its uniform excellence of paper, type, illustrations and descriptions. Such a paper should be widely circulated to show the varied agricultural resources of Canada and their highly developed condition. Wishing you a happy Christmas.

Yours truly,

G. M. GRANT.

Queen's University, Kingston, Ont., Dec. 24, 1898.

MAGNIFICENT.

Dear Sir,—Allow me to congratulate you on the magnificent Christmas issue of the FARMER'S ADVOCATE. Every subscriber should keep his own copy and get another to send to some friend in Great Britain as a souvenir, and also to make our great agricultural industry known.

Yours very truly,

C. C. JAMES,

Deputy Min. Agr. for Ontario.

Toronto, Dec. 26th, 1898.

DELIGHTED WITH IT.

Dear Sir,—On my return from the School of Agriculture I found the Christmas number of the FARMER'S ADVOCATE on my desk. It is really a work of art, and to this art are added many valuable and practicable articles. I am delighted to see such wonderful growth in every direction in the FARMER'S ADVOCATE.

I. P. ROBERTS, Director.

Cornell University, Ithica, N. Y., Dec. 23rd, 1898.

SHOULD BE SCATTERED BROADCAST IN BRITAIN.

Dear Sir,—I have to thank you for the holiday number of the FARMER'S ADVOCATE just received. Its artistic make-up, as well as the high literary quality of its contents, are certainly most creditable alike to the enterprise of the publisher and the resources of Canadian journalism. The engravings and descriptions of the fine series of beautiful homesteads make one, as he looks on them, envious of the prosperous Canadian farmer, affording the readers, in imagination, a delightful trip from ocean to ocean across the most productive belt of the continent. What a valuable immigrant agent this number would prove if scattered broadcast among the ambitious young farmers of Great Britain. While all the articles and departments are first-class, yet I lingered longest at the fine poem by Mr. Robt. Elliott, entitled the "Yeoman's Path," to which you give the well-deserved place of honor.

Yours very truly,

JOHN DEARNESS,

Public School Inspector.

London, Dec. 26th, 1898.

NO PAPER LIKE IT IN AMERICA.

Dear Sir,—The Christmas number of the ADVOCATE has just reached me. Am delighted with it. It is the most interesting holiday agricultural paper I ever saw, and proves what I have many times said, in public talks and private, that no agricultural paper in America has made such wonderful and rapid advances as the FARMER'S ADVOCATE. I congratulate you on your up-to-date enterprise, and your subscribers as well on having such a practical agricultural paper to use.

Yours truly,

F. S. PEER.

Mount Morris, N. Y., Dec. 26th, 1898.

THE BEST.

Sir,—The Christmas number of the FARMER'S ADVOCATE is to hand. Without doubt, it is the finest paper I have ever saw. We take four agricultural papers, but think more of the ADVOCATE than all the other three. Every number seems to be more interesting and instructive. Allow us to compliment you on this Christmas number.

F. C. ELFORD.

Holmesville, Ont., Dec. 28th, 1898.

A SUPERB PRODUCTION.

Dear Sir,—The Christmas number is to hand, and although our opinion may count but little, we think it is really superb, and a splendid production of Canadian literature. Canadian farmers should be proud of their grand ADVOCATE. Enclosed please find fifty cents, for which please send another copy of the Christmas number for a friend.

Yours truly,

GEO. CUSHING.

Kenilworth, Ont., Dec. 24th, 1898.

WILL HELP AGRICULTURE.

Dear Sir,—Your Christmas number received. It is certainly very fine. Such a journal as the FARMER'S ADVOCATE should be carefully read by all those engaged in agricultural pursuits. I think it has a tendency to arouse our energies and elevate us to a higher sphere of work; and, considering that Canada must depend on agricultural pursuits, her people should aim at a point of excellence, and be prepared to meet any and all competition in the markets of Great Britain.

W. D. FLATT.

Hamilton, Dec. 20th, 1898.

AN INSPIRATION.

Dear Sir,—The Christmas number of the FARMER'S ADVOCATE is certainly a great credit to its publishers. We are sure it will do incalculable good in inspiring young men to put forth every effort to win the enviable, but attainable, success achieved by the leaders in a noble calling.

J. E. CREALY, Western Dairy School.

A SURPRISE.

R. G. STEACY, Brockville, Ont., writes under date of Dec. 22nd, 1898: "With pleasure I congratulate you on your fine Christmas number of the FARMER'S ADVOCATE. I had but little idea that you could execute such choice workmanship. As an instructor your paper is my choice. Wishing you the compliments of the season, I am, sincerely,"

CONTINUED SUCCESS.

ANDREW PATTULLO, M. P. P., editor *Sentinel-Review*, Woodstock, Ont.: "I have always admired the FARMER'S ADVOCATE, and sincerely congratulate you on the many evidences of its continued success."

FACTORY PATRONS WANT IT.

GEO. H. BARR, Sebringville, Ont., Dec. 23rd: "The Xmas number of the ADVOCATE received this morning. It is a dandy. One of our factory patrons gave me his subscription when he saw it. I enclose amount. I received the binder also a few days ago and am greatly pleased with it."

IMPROVES WITH AGE.

C. W. PICKART, Kent Bridge, Ont.: "The FARMER'S ADVOCATE has been in our home since 1899. We cannot do without it. It gets better all the time."

THE CALL FOR EXTRA COPIES.

W. W. OGILVIE, Montreal, P. Q. (telegram): "Please forward me one hundred and fifty copies of your Christmas number at rate stated."

WILL BENEFIT THE WHOLE DOMINION.

Dear Sir,—I received the special Christmas number and was more than pleased with the effort you have made, and exceedingly gratified with the results. It cannot fail to have a stimulating influence throughout the whole Dominion. I sincerely appreciate the work performed, and take much pleasure in showing it to my friends. Please mail a copy to Rev. Ralph Trotter, Victoria, B. C. Enclosed please find amount. Yours, etc.,

Amherst, Nova Scotia. T. R. BLACK.

ABLY REPRESENTS CANADIAN AGRICULTURE.

"The FARMER'S ADVOCATE has issued a Christmas number of exceptional merit in design and execution. In the artistic frontispiece, and in many of the articles, Canada's pre-eminent agricultural importance is fittingly emphasized. The special articles are well written, and cover a wide range. There are illustrated descriptions of representative farms in the different Provinces, and a complete resume of the experimental farm system. The ADVOCATE was founded in 1896, and this excellent Christmas number shows that it has grown and expanded with the leading Canadian industry it so ably represents."—From the *Toronto Globe*, Dec. 22, 1898.

BETTER THAN A ROMANCE.

(From the *London Free Press*.)

The Christmas FARMER'S ADVOCATE, of London, Ont., a copy of which we have just received, is a graphic revelation of the agricultural progress of Canada during the past fifty years, and of its capacities as a food producer for the British Empire. The articles reviewing these and other subjects read equal to a romance, but, like the half hundred engravings illustrating its 72 beautiful pages, they are the faithful portrayal of realities in every part of Canada, from the humble home of the settler to the mansions of those who have risen to a competence. Our old contemporary modestly says little or nothing about its own 33 years' service on behalf of the farmers' advancement, which, in the opinion of many best competent to judge, has been probably the most effective for good of all agencies.

This number contains the most complete survey ever given of the Dominion Experimental Farm system and the Ontario Agricultural College. There are sketches of German Agriculture, by Prof. Shuttleworth; the English Country Gentleman, by Richard Gibson; Reminiscences, by Wm. Miller; Agricultural Education, by Rev. Principal Bryce; Starting Right on a Prairie Farm, by Supt. Bedford; and Canada's Resources, by the Dominion Statistician; any one of which is alone worth the price (50 cents) of the number, which is being supplied gratis to all new subscribers for 1899 at the old rate of \$1.00 per year. The design on the front cover represents Canada as the Empire's Rising Hope, and the poem, "The Path of the Yeoman," by Mr. Elliott, and John Bull's Christmas Dinner, by J. W. Bengough; "Ramshackle Farm," by Frank Stockton, are among the many features that will catch the popular fancy in this splendid issue of the ADVOCATE, which will not only be a benefit, but a surprise and delight to its readers.

STOCK.

Lessons from Smithfield.

EARLY MATURITY AND GAIN PER DAY.

A correspondent of the *London Live Stock Journal* has tabulated the results of the weighing of the prizewinning animals in the principal cattle classes at the late Smithfield Fat Stock Show in regard to daily gain at different ages, from which we give the following summary. This live weight gain was obtained by dividing the present live weight by the age, not counting the weight of the calf at birth. A table is given in another column showing the percentage of dressed to live weight in the case of animals entered for the carcass competition:

NOT EXCEEDING TWO YEARS OLD.	
	Average live weight gain per day from birth in lbs.
Cross-bred.....	2.32
Shorthorn.....	2.24
Hereford.....	2.13
Aberdeen-Angus.....	2.03
Devon.....	1.96
Galloway.....	1.90
Average.....	2.12
ABOVE 2 BUT NOT EXCEEDING 2½ YEARS OLD.	
Cross-bred.....	2.05
Aberdeen-Angus (only one prizewinner).....	2.03
Shorthorn.....	1.99
Hereford.....	1.90
Devon.....	1.66
Average.....	1.92
ABOVE 2½ YEARS BUT NOT EXCEEDING 3 YEARS OLD.	
Cross-bred.....	1.89
Aberdeen-Angus.....	1.88
Shorthorn.....	1.75
Hereford.....	1.73
Devon.....	1.57
Average.....	1.76

These figures serve to confirm and emphasize what has been known to advanced feeders for many years—that young animals gain weight much more rapidly than older ones, and there is a great advantage in producing young beef.

The same point is made even more apparent by the results of the prize-winning animals over three years old, which show an average gain per day from birth of only 1.21 pounds.

Regarding the teaching of the carcass competition at the show, there are no special features to report, saving that in the endeavor to present animals showing a large percentage of lean, some of the contestants sent animals in a really unfinished state, a feature which was also noticeable in the carcass test of pigs at the Brantford Show. This is undoubtedly a mistake, and judges will no doubt take measures to prevent a lapse into the marketing of ill-fed animals; but, on the other hand, it was remarkable that only in four instances were the animals that won first prize alive placed first when dead, so that judges have yet something to learn before they can estimate with certainty by handling the live animal what will be the quality of the flesh when dressed.

Our Scottish Letter.

THE SMITHFIELD AND OTHER SHOWS.

We have just got over our annual fat stock shows, and feel happy, because it has throughout been a case of Scotland first and the rest nowhere. On hoof the champion of the year is, as so often before, an Aberdeen-Angus heifer. In carcass the Galloways have made a clean sweep, taking all before them. The cross-bred classes have been led throughout by cattle bred in Ross-shire. And in the sheep department the Scottish mountain breeds have done well as carcasses, although the best mutton was declared to be that of a Suffolk lamb. There can be no doubt at all that the future belongs to the breed or cross which can break the record, not on hoof, but in carcass. There are now five great fat stock shows in the United Kingdom—Norwich, Inverness, Birmingham, Edinburgh, and London—occurring in the order above indicated. At the Norwich Show the champion was a Scots cross-bred heifer named May, in many respects a most level, well-furnished and beautiful animal. She was bred by Mr. John Ross, Meikle Tarrel, Easter Ross, and was got by his famous stock bull Ringleader, bred at Collynie, and without doubt the most extraordinary sire of cross-bred cattle the history of stock-breeding has known. How successful he is may be inferred from the fact that out of five classes of cross-bred cattle at the Smithfield Show he was sire of five, all of which were bred by Mr. Ross, and another animal, a pure-bred Shorthorn heifer named Silence, was also got by

Ringleader, and bred by Mr. Ross. She was beaten by May at Norwich, but turned the tables at London, where Silence beat everything except the supreme champion of the Show, the A.-A. heifer, Ju-Ju of Glamis, bred and owned by the Earl of Strathmore, and also winner throughout at Birmingham. One of the most notable animals at Norwich and Smithfield was the champion steer Master Harbinger, a great big, massive red, bred by Mr. Ross, and got by Ringleader. He was the heaviest bullock at the show, scaling 19 c. 1 qr. 6 lb. at three weeks less than three years old. It is significant of the change in public taste that in spite of his victories, which include the steer championship at Norwich, Birmingham, and London, Master Harbinger was one of the last of the prize animals to find a customer. All the lighter weights were sold early, but by the middle of the third day he had not been sold. Mr. Ross' cattle, which thus distinguished themselves, are got from black cross cows, whose sire was an A.-A. bull named Carol, from the Castle Craig herd, and their dams were ordinary unpedigreed Shorthorn cows. These celebrated cattle are thus practically three-parts-bred Shorthorns, and wonderfully level, well-finished animals they are. At all of the shows in question they were in the front rank, and were only beaten at Inverness and Edinburgh by the exhibits of another Ross-shire breeder, Mr. J. Douglas Fletcher, of Rosehaugh. Mr. Fletcher is one of the most spirited of Scottish landlords. Possessed of great wealth, he has acquired an extensive tract of land in the Black Isle—the peninsula lying between the Moray and the Cromarty Firths. Mr. Fletcher keeps a fine Shorthorn herd on one farm, an Aberdeen-Angus herd on another, and a herd of feeding or cross cattle on a third. He has also a fine Clydesdale stud, and a rising flock of Border Leicester sheep. Whatever he does he does well, and everyone was delighted when in 1894 he won the Smithfield championship with an Aberdeen-Angus heifer, Pride of the Highlands. He tries all kinds of crosses, and this year

months this heifer weighed 15 c. 3 qr. 5 lb., or, to put it otherwise, 1,700 pounds. The victory of Ju-Ju, alike at Birmingham and London, was very popular, and if Lord Strathmore wins the cups again they become his absolute property. He has a heifer in training for the purpose, and will likely prove triumphant when the proper time arrives.

It is rather curious that all the Smithfield champions of the A.-A. breed have been heifers, and a wonderful series it has been—Lusury, Benton Bride, Bridesmaid, Pride of the Highlands, Mina of Glamis, and Ju-Ju of Glamis. Three of these heifers belonged to Mr. Clement Stephenson, M. R. C. V. S., Newcastle-on-Tyne; two to Lord Strathmore; and one to Mr. Fletcher, of Rosehaugh. It is grand business, and in the fat stock showing on hoof the doddies are invincible.

In carcass the honors go to the other polled breed of Scotland—the Galloways. No class of cattle are in better favor with butchers than these great, old-fashioned beef producers. Some prefer them pure, and others like their cross—the blue-gray. Up to a few years ago the idea was that there was only one way of getting blue-grays, namely, by putting the Shorthorn bull on the Galloway cow. But in 1892 Smithfield was won by a blue-gray got by a Galloway bull from a Shorthorn cow, and this set men a-thinking. Last year (1897), again the same thing happened, and now many are looking to the Galloway sire and the Shorthorn dam to produce the thing wanted. In the carcass competition this year Galloway stirks—a steer and a heifer from 21 months to 22 months old respectively, and both bred and owned by Mr. H. G. Murray Stewart, of Cally—have been champion and reserve champion in keenly-contested classes, containing representatives of all breeds and crosses. These Galloways made prime carcasses of the kind wanted by butchers at the present day, and there was no gainsaying their title to the supremacy. The champion carcass yielded 64 per cent. dead to live weight, and this was also the percentage in the case of the heifer. The best percentage in the competition was made by a South Devon steer, which won first in the two-year-old class, and killed 67 per cent. dead to live weight. These results are very significant, and must do much to increase the popularity of the Galloway with meat salesmen.

THE SHEEP CLASSES.

Amongst the sheep no breed is more rapidly coming to the front than the Suffolk. This is one of the newest breeds in England. It is not claimed that it came out of the Ark; on the contrary, it is plainly acknowledged that the breed is the result of crossing the native horned sheep of East Anglia with the Southdown, the result being the modern Suffolk, a hornless black-faced short-wooled sheep which weighs remarkably well and yields plenty of lean mutton. In the carcass competition

the championship went to a Suffolk lamb nine months old, whose weight before being killed was 164 pounds, and its carcass weighed 106 pounds. The second prize in the lamb class for short-wooled sheep also went to a Suffolk, and in the shearing class a Suffolk-Cheviot cross won. At 19 months old its weight was 184 pounds, and its carcass weight 123 pounds. For long-wool lambs the premier honors went to a black-faced lamb seven months three weeks old, and weighing alive 120 pounds and 74 pounds dead. A Lincoln lamb was second. Its age was nine months, its live weight 182 pounds and its carcass weight 106 pounds. A Cheviot lamb was third. Age seven and a quarter months, live weight 103 pounds, carcass 64 pounds. These are the weights and this the class of mutton for which in the present day the highest prices are given. The Smithfield Club has undoubtedly in the past fostered early maturity. By instituting the carcass competition it has done an incalculable service to the breeders of the cattle and sheep which produce the choicest quality of beef and mutton. Your Guelph Fat Stock Club telegraphed its congratulations to the Smithfield Club on attaining its Centenary, and a cordial response was sent in reply. H. R. H. the Prince of Wales was present at the Centenary general meeting, and also attended the show for some time on its two opening days. The Smithfield Club has been a most useful institution. "SCOTLAND YET."

A very peculiar accident happened at Hon. W. Clifford's farm at Austin, Man., last week. He had purchased two cows from different parties and tied them side by side in the stable. Not appreciating one another's company, during the night they decided to settle their differences by a free fight, with the extraordinary result that they got their horns locked in such a manner as to throw each other, and in the fall each animal broke its neck, and they were both found dead in the morning.



MEMBERS OF THE DOMINION SWINE BREEDERS' ASSOCIATION PRESENT AT THE ANNUAL MEETING, BRANTFORD, 1898.

Pointers on Bacon Hogs, Picked Up at Brantford Fat Stock Show.

To the Editor FARMER'S ADVOCATE:

SIR,—I think I would be correct in making the statement that more general interest was taken in the exhibit of bacon type hogs than was shown in any other section of the great fair just closed.

A pertinent question crops up just here. One of our foremost breeders of "up-to-date bacon hogs" put it to me thus: "Where is the utility of our farmers and breeders seeking to evolve, through the comparatively slow process of selection, breeding and feeding, a type of hogs suitable for this business, but differing widely from the foundation stock, when we have now existing one or more strains which fill the bill almost perfectly?"

Killing Test.—This was, without doubt, the best number on a good programme. So far as one demonstration carries weight, it went to show that no breed has a monopoly of desirable bacon type.

As to clover pasture as a supplement to a moderate grain ration, it is desirable in reducing cost of production and maintaining hogs in vigor; as a complete ration, in the opinion of our packers it is a failure.

For some time past the packers have been making their requirements known to the farmer, and rightly so. Now it is the farmer's turn.

Canadian cheese and butter have an enviable reputation in the markets of Great Britain. There is a large trade in bacon over there. In '96 Britain imported over \$65,000,000 worth of hog products.

Nearly two decades of centuries ago the Roman agricultural writers recommended the careful selection of seed wheat, and it is not improbable that such selection was practiced with more care than is the case with many farmers of to-day.

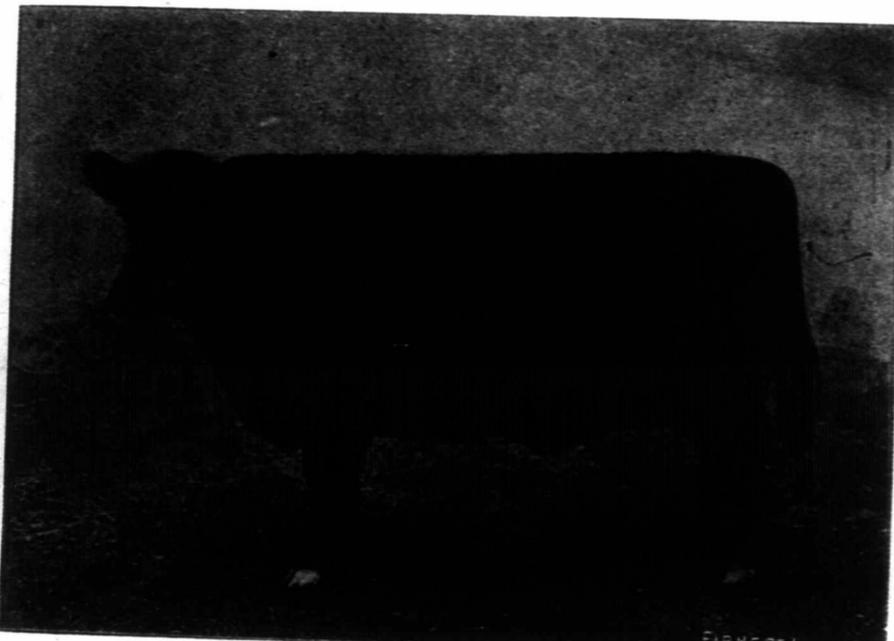
C. C. JAMES, Deputy Minister of Agriculture, Toronto, Ont.: "Please send me one dozen copies Christmas number, with bill for same."

That Tuberculosis Investigation.

SIR,—Those who still believe in the truth of the old adage that "figures cannot lie" must have had their faith rudely shaken when they read in the FARMER'S ADVOCATE of Dec. 1st an article headed "The Tuberculosis Investigation."

Such a statement issued by authority would lead to the belief that tuberculosis is exceedingly prevalent in this Province, while in the other Provinces the percentages in the same table are comparatively low, ranging from 5.26% in Prince Edward Island to 17.55% in Nova Scotia.

The total number of cattle which have been submitted to the tuberculin test in this Province is comparatively small. By far the larger number of these are the dairy cows of the City of Winnipeg. Now, the percentage of reactions in this class of cattle is generally higher than in ordinary farm stock, and we might therefore expect to find a higher percentage for them than for the cattle of the Province as a whole.



ABERDEEN-ANGUS HEIFER, JU-JU OF GLAMIS. CHAMPION OF THE SMITHFIELD SHOW, 1898.

McEachran and Adami should publish full particulars of the number of herds tested, and the number of animals in each which reacted and which did not. If the average of 49.22 is based upon the examination of one or two herds, it is important that the public should know it, as well as the "special reasons for the apparent greater prevalence of the malady" in this Province, which are hinted at but not specified.

Without showing the total number of cattle submitted to the test, tables, such as the one referred to, comparing the percentages of reaction obtained in the various provinces of the Dominion, are worse than useless. They are misleading, and in some quarters where the statements of the Dominion Veterinarian may obtain credence, would create a feeling of mistrust and prejudice against the cattle of this Province most injurious to the interests of our stock breeders.

The Favorite Scotch Crosses.

Direct crosses between the pure-bred polled Angus and Shorthorn cattle are not so largely employed in Scotland as is commonly supposed. The system usually followed is to put a pure-bred bull of either of the breeds mentioned to cross-bred cows in which the blood of the opposite breed is largely represented; in other words, the usual plan is to mate cross-bred cows got by Shorthorn bulls with pure-bred Aberdeen-Angus bulls, or cross-bred cows got by Aberdeen-Angus bulls with pure Shorthorn bulls.

Method and Advantages of Dehorning Cattle—Farmers Shipping Their Own Cattle.

To the Editor FARMER'S ADVOCATE:

SIR,—Dehorning steers for feeding purposes seems to be approved of by all those that have tried it in this section. Five years ago a veterinary who dehorned 32 steers for me said that cold would not hurt them if left outside after being dehorned, so I left them out in the cold for about five hours in November. The consequence was that the majority of them suffered a good deal from their heads, and it took them over two weeks to get over it.

With regard to farmers shipping their own cattle to the British market, as compared with consigning them to a commission man to sell for you, my opinion is that the latter plan is no good, as I have tried it twice. Four years ago last May there were about 900 head shipped by farmers in this district, some to London and some to Liverpool.

The Qualifications of a Judge.

Mr. Mortimer Levering, of Lafayette, Indiana, in an address delivered at the annual meeting of the New York State Breeders' Association, recently held at Rochester, on "Judging Live Stock in the Showring," after emphasizing the great responsibility of the position, summed up the requirements of a judge as follows: "An eye for symmetry and outline, a fine sense of touch, an education in animal anatomy to detect blemishes, defects and malformation, a complete knowledge of the points of excellence governing the variety under consideration, a mathematical genius for comparing sizes and weights, a cool head and resolute nerve, an unprejudiced mind, the courage of his convictions, unimpeachable integrity, and a disposition to do what is honest and right."

The Carcass Competition at the Smithfield Show.

Table with columns: Breed, Fasted weight, Dressed weight, Percentage dressed to live weight, Award alive, Award dressed. Rows include Devon, Cross-bred, etc.

Table for STEER OVER 1 AND NOT EXCEEDING 2 YEARS. Columns: Breed, Fasted weight, Dressed weight, Percentage dressed to live weight, Award alive, Award dressed.

Table for HEIFER NOT EXCEEDING 3 YEARS. Columns: Breed, Fasted weight, Dressed weight, Percentage dressed to live weight, Award alive, Award dressed.

Table for ONE LONG-WOOLED WETHER OVER 12 AND UNDER 24 MONTHS. Columns: Breed, Fasted weight, Dressed weight, Percentage dressed to live weight, Award alive, Award dressed.

Table for ONE LONG-WOOLED WETHER LAMB UNDER 12 MONTHS. Columns: Breed, Fasted weight, Dressed weight, Percentage dressed to live weight, Award alive, Award dressed.

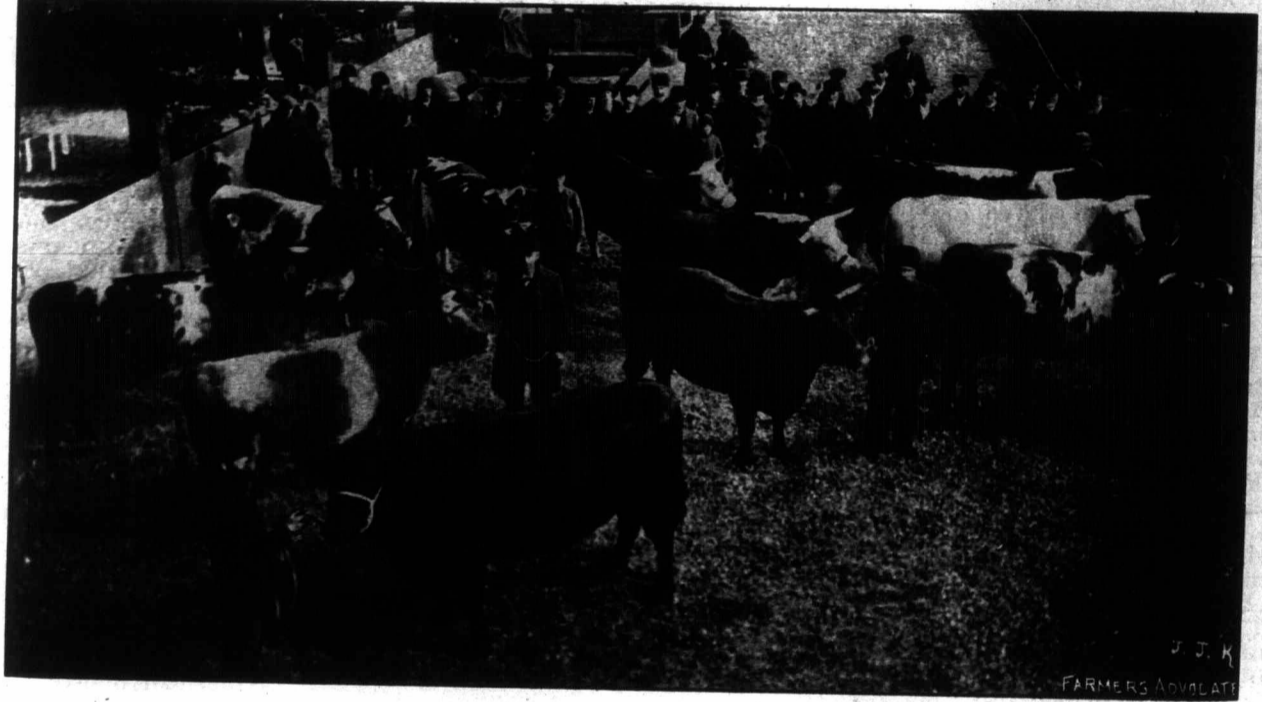
Table for ONE SHORT-WOOLED WETHER OVER 12 AND UNDER 24 MONTHS. Columns: Breed, Fasted weight, Dressed weight, Percentage dressed to live weight, Award alive, Award dressed.

Table for ONE SHORT-WOOLED WETHER LAMB UNDER 12 MONTHS. Columns: Breed, Fasted weight, Dressed weight, Percentage dressed to live weight, Award alive, Award dressed.

A Centenary Retrospect.

From the Illustrated London (Eng.) News.

Just a century ago, in the good old days of farming, when American beef and Australian mutton were not, when sheep stealing was a hanging matter, and wheat was low at forty shillings a quarter, a Derbyshire farmer named Wilkes had an idea. Do not infer that farmers in general, or Derbyshire farmers in particular, ever lacked ideas; but the one which emanated from the fertile brain of Mr. Wilkes was an idea worthy of capital—almost an inspiration. This mental acorn, if one may use the expression, was the seed whence sprang "The Smithfield Cattle and Sheep Society."



COMPETING FOR CHAMPIONSHIP, GUELPH FAT STOCK SHOW, 1898.

Transport was the difficulty in pre-railway days. Fat oxen driven up from the grazing counties were thin oxen by the time they reached London, and not every stock-breeder could afford to adopt the ingenious Mr. Terrett's plan of sending beasts to the show in a specially constructed van. Hence the club languished somewhat. After forty years of existence, the executive scheduled fourteen classes for cattle, sheep, and pigs, and offered £300 in prizes. The era of real prosperity dawned with the spread of railways. In 1862, when the show was held for the first time at Islington, there were fifty classes, and over £2,000 in prizes was offered, while the members of the club numbered 400. At the show of 1888 there were ninety-four classes, containing 364 cattle, 640 sheep, and 270 pigs; the prize list fell

short by £34 9s. of £5,000 in cash, cups and medals. It was possible for one steer or ox to win about £400 worth in money and gold and silver plate, if he carried off every prize for which he was entered, including the prize of the centenary show—the Queen's challenge cup—value £150. A pen of three sheep could bring their owner about £228; while a pair of triumphant pigs could win about £138. Animals of such overwhelming merit, however, are rare in this imperfect world, and the rewards of obesity are more widely distributed.

FARM.

The Ontario Agricultural and Experimental Union.

The twentieth annual meeting of the Ontario Agricultural and Experimental Union was held at the Agricultural College, Guelph, on December 7th, 8th and 9th. In the absence of the president, Geo. Harcourt, B. S. A., Winnipeg, the chair was occupied by the vice-president, Mr. H. L. Beckett, B. S. A., Hamilton. The president's address, which was read by the chairman, referred to the encouraging growth of co-operative experimental work and its beneficial influence upon Ontario agriculture. It was recommended that co-operative experimental feeding of bacon pigs be carried on with a view to finding out the cause of soft bacon. The collecting and exhibiting of foul weeds and their mature seeds was recommended as being of valuable service to farmers in aiding them to recognize bad weeds at sight.

The chief object of the annual meeting is to bring together the students, ex-students, and other co-operative experimenters to hear reports of the season's work and to discuss various phases of it.

stood, when the areas sown to the various crops are considered, which were in 1898 as follows:

Table with columns: CROP, ACRES GROWN IN 1898. Lists crops like Hay, Oats, Winter wheat, Peas, Corn, Barley, Spring wheat, Potatoes, Rye, Turnips, Buckwheat, Mangels, Beans, Carrots with their respective acreages.

The tests, as reported at the Union, dealt with the leading varieties of the crops mentioned above as found by several years' comparative tests on the Guelph Experimental Farm. We will publish the tables later in the season, when our readers are more interested than at present in the sorts of the various crops to plant in the coming spring.

Rational Dietary.—Mrs. S. T. Rorer, director and principal of Philadelphia Cooking School, gave a vigorous address upon the subject of scientific feeding of the human race. The inconsistency of having our farm animals carefully and regularly nourished by balanced rations, while little, if any, scientific insight is given to the preparation of human foods, was pointedly dwelt upon. The result of the present course is that the human race is becoming weaker and weaker. To illustrate the effect of certain foods on a race or a people, it was pointed out that the large-framed Scotchman was largely the result of the use of oatmeal as a diet through succeeding generations, while the agile, small Jap acquired his magnificent muscles from the continuous use of protein foods, such as eggs, fruit and rice, the last differing from our rice in being highly nitrogenous. The use of cow's milk for infants was strongly denounced on the ground that it is so composed as to build up a massive mature animal in three years. Young children deprived of their natural paternal food should receive cow's milk only after it was modified to a condition to suit the object of its use. Referring to combinations of foods for the human family, the use of potatoes and pork was denounced, as each of these products are deficient in muscle-forming material, but potatoes and beef, or pork and beans, answers very well when prepared in a digestible form. Mrs. Rorer strongly recommended the introduction of a domestic science department into the Ontario Agricultural College, as is being done with great advantage in several American colleges.

At the request of President Mills, the correct methods of cooking vegetables of various sorts were referred to. Potatoes are more digestible when baked, because of the slower and longer cooking. When potatoes are peeled it should be done very thinly, as the richest part of the tuber lies next the skin. They should never be put on to boil in cold water, but into water at the boiling temperature, but the temperature afterwards should be a little below the boiling point, about 200 degrees Fahr. Cabbage should be entirely immersed while cooking, and the water kept below the boiling temperature, when no odor will be given off, and the cooked dish will be rendered white in color, much more digestible than is ordinarily the case. Oatmeal should be cooked for several hours in a double cooker, but never stirred. Meat to be boiled should go at once into boiling water, and that to be roasted into a very hot oven so as to sear the surface and thus retain the juices of the flesh. By giving proper attention to the things that have to do with our very being we can enjoy almost perfect health, and render a more perfect service to our fellow men as well as to ourselves.

The Effect of Feed on the Quality and Quantity of Milk.—This subject was gone into very exhaustively by Prof. C. F. Curtiss, director of Iowa Experiment Station, who reviewed at length the work of many experiments conducted on this line by European and American Experiment Stations. Our best cows and breeds of cows represent, in many cases, the result of over a hundred years of effort in intelligent feeding and selection. While it is a much disputed point, especially among hard-headed, practical men, whether or not food does influence the percentage of fat in milk, the general result of carefully conducted tests go to prove that it has little effect upon the quality of milk. American experiments nearly all go to sustain this position, as was also the case in other countries when the tests were conducted with similar cows under similar conditions except food. Prof. Henry, in his valuable new book on "Feeds and Feeding," sums up the question with the statement that "richness of milk depends on breed rather than feed. Good treatment will always tend to develop a cow's

potatoes are peeled it should be done very thinly, as the richest part of the tuber lies next the skin. They should never be put on to boil in cold water, but into water at the boiling temperature, but the temperature afterwards should be a little below the boiling point, about 200 degrees Fahr. Cabbage should be entirely immersed while cooking, and the water kept below the boiling temperature, when no odor will be given off, and the cooked dish will be rendered white in color, much more digestible than is ordinarily the case. Oatmeal should be cooked for several hours in a double cooker, but never stirred. Meat to be boiled should go at once into boiling water, and that to be roasted into a very hot oven so as to sear the surface and thus retain the juices of the flesh. By giving proper attention to the things that have to do with our very being we can enjoy almost perfect health, and render a more perfect service to our fellow men as well as to ourselves.

capacity, but it is only through permanent environment that the proportion of butter-fat can be influenced. To illustrate this, the Professor referred to the cows of Holland, which have been developed in a moist climate, and therefore succulent pasture, as giving a large quantity of milk having a low percentage of fat, and compared them to the Channel Islands breeds, which on the scanty vegetation give a rather small quantity of rich milk. These same breeds, after a few generations of liberal treatment on this continent tend to come more nearly together in their quantity and quality of milk. With regard to the immediate influence of food on the percentage of butter-fat, the general trend of the address brought out the lessons that a change in composition of milk is effected by food only when it interferes with the system of the animal. Good feeding will increase the flow of milk over poor feeding, and so increase the total fat and other contents, but it is only through generations of selection, breeding, and feeding that a higher percentage of butter-fat can be attained.

Advances in Agriculture.—A number of ex-students present, and others who could not be there, gave addresses or papers dealing with advances that were taking place in the farming of their respective districts. Among the progressive movements mentioned, the more generally spoken of were in the direction of advanced agriculture, and included the following: Doing away with the bare fallow, more thorough surface cultivation of the soil, less selling of grain in the raw state, an increased acreage of corn, the more general use of pure-bred sires in all classes of stock, an improvement in farm buildings and in fences. In connection with the question of stabling for live stock, it was pointed out that cement floors, inside watering, more light and ventilation were being given increased attention. In conjunction with more general dairying, hog-raising along bacon lines has made rapid strides, and the production of poultry and eggs is being given more thoughtful care. The wonderful increase in the number of silos in use was spoken of by many of the speakers, as well as the practice of dehorning cattle and feeding steers loose.

Visitors.—Among the distinguished visitors to the Union were: Hon. Sydney Fisher, Minister of Agriculture for the Dominion; Hon. John Dryden, Minister of Agriculture for Ontario; Hon. Mr. Dechene, Minister of Agriculture for Quebec; Hon. Mr. Duffy, Minister of Public Works for Quebec; and Prof. J. W. Robertson, Dominion Dairy Commissioner. The Quebec Provincial Ministers have in view the opening of a school of agriculture in that Province, and came to Ontario to gather pointers, which, the Hon. Mr. Fisher remarked, the Guelph College can give to any country in the world.

Prof. Robertson addressed the Union for a short period on the proposed illustration stations, with which our readers are already familiar. To illustrate the value of these stations, which will show the actual results of better varieties of grain and better methods of farming, Prince Edward Island was referred to as having taken fifteen years to learn to grow turnips; when given an illustration cheese factory, put there by the Dominion Government, had, in three years from that time, forty-two private cheese factories, which are modern in construction and well conducted. While farmers are generally slow to take in and act upon advances made by others as pointed out in printed reports, they are not slow to appropriate lessons which can be gathered from the practices of men as seen in actual operation.

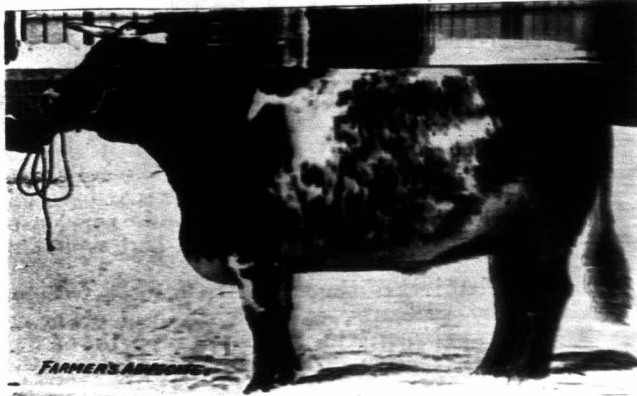
Soil Moisture.—During the past season experiments in soil physics were conducted by Prof. J. B. Reynolds, B. A., who received samples of soil weekly from a clay farm in Hastings, a sandy soil in Middlesex, and a clay soil in Welland. This was only the commencement of a line of investigation which will be carried on much more extensively in coming years. The results of the past season's work proved that surface cultivation does much to conserve moisture, and that a sandy soil will give up its moisture to growing plants much more readily than will clay land. Plants will not wilt in sandy soil that contains as low as one per cent. of moisture, while a clay soil containing 10 to 13 per cent. of moisture will not keep its growing plants in fresh condition. In the discussion which followed Prof. Reynolds' paper, it was pointed out that underdrainage never removes water that is useful to plants, but tends to increase the moisture for the use of plants in a dry time.

Noxious Weeds.—Prof. F. C. Harrison, B. S. A., in his report upon weed investigations, stated that in his opinion many of the bad weeds are introduced by clover and grass seed. Out of sixty samples of seeds secured from seed merchants, and tested at the College, only one sample was found free from weed seeds, and in one case over one thousand weed seeds were found in a single ounce of grass seed. Reports received from farmers show that the law against noxious weeds is not generally enforced. Weeds are becoming more numerous, especially those of more persistent character. It was recommended that no seed be purchased without careful examination, and that in the case of grass and clover seed a small hand magnifying-glass should be used.

Varieties of Fruits Compared.—Prof. H. L. Hutt, B. S. A., director of co-operative fruit experiments over the Province, reported that in fifteen experiments twelve plants of Haverland strawberries of the second year's growth produced 147 ounces of fruit, while Wolverton gave 129 ounces, Buback 125 ounces, and Van Diemen 84½ ounces. The last

named is one of the earliest, and is useful for fertilizing the Haverland. In raspberries, the first in bulk of crop, Cuthbert second, Golden Queen third, and Marlboro fourth, the last being one of the best early-producers available. In black raspberries, Palmer came first, and Hibbum second. Raby Castle currant stands ahead, and Prof. H. L. Hutt's prolific second, the latter being of better quality. Of gooseberries, the English varieties, Industry and Whitesmith, surpassed the American Houghton and Downing; the former, however, required regular spraying to avoid mildew.

Apicultural Investigations were reviewed by R. F. Holtermann, who has conducted a number of experiments in connection with the Union. Heavy and light comb foundations were compared, and the latter found the more desirable, as the former remains heavy. Very handsome five-handled Italian queens were placed in the hands of good beekeepers and found to be of less value than darker sorts. It has been found that unripened honey should not be extracted, as it remains too thin, and therefore inferior, which, if placed on the market, will injure the name of Canadian honey. During the past season samples of honey have been secured from the

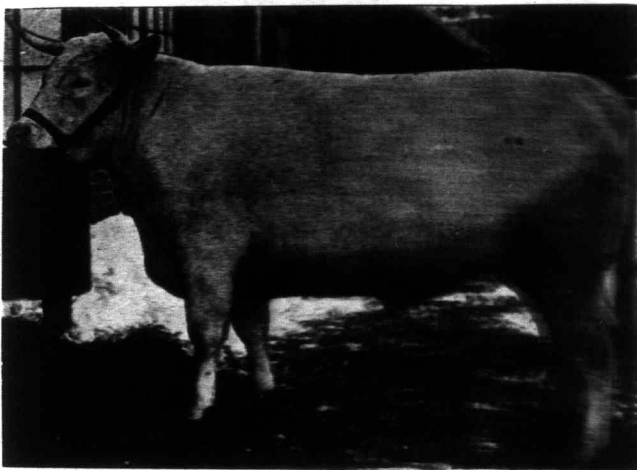


GRADE SHORTHORN STEER, PERFECTION.

Winner of the championship over all breeds and crosses at the Provincial Fat Stock Show, Brantford 1898. Bred and exhibited by John Campbell, Woodville, Ont.

various provinces of the Dominion and sent to the Dominion Analyst at Ottawa, in order to ascertain their respective consistency. No reports have yet been made.

Dairy Lessons.—Prof. H. H. Deane, B. S. A., reported for the Dairy Committee, who have carried on experimental work in various factories and creameries. The time taken for churning in the various creameries varies from 30 to 60 minutes, and the temperature of cream from 50 to 60 degrees. The temperature of the storerooms varies from 32 to 50 degrees. The cost of making butter runs from 3 cents to 4 cents per pound, the cost of finishing milk from 5 to 10 cents per hundred pounds, and the price



PURE-BRED SHORTHORN STEER, LADY MINTO.

Winner of the championship over all breeds and crosses at the Guelph Fat Stock Show, 1898. Bred by J. S. & W. J. B. Watt, Salem. Exhibited by Matt. Ferguson, Ont.

received by the patrons last year was 13 to 17 cents per pound of butter. The variation in butter-fat ranged from 2.8 to 4.6 per cent.

Vigorous complaints are still current regarding the bad condition of milk received from cheese-making. The common faults mentioned were: bad straining, cowy odors, root flavors, overripeness, etc. Straining is best done through several thicknesses of cloth. Aeration should be accomplished by dipping and by use of aerator. Fat has been found in whey from a trace to .3 per cent. Curing rooms are heated from 60 to 70 degrees Fahr. Cheese was reported to have been held at factories from eight days to six weeks. The season has been successful in most sections of Ontario. The improvements suggested were more cows per area of land, better feeding, better care of milk, better selection of cows, better factories, more frequent shipments of cheese, and returning whey in milk cans, pay by test, and so on, in order that the good name and therefore good price of Canadian cheese be maintained. Regarding the results of experiments in curing cheese at Kingston and Guelph Dairy Schools, the proper temperature was found to be from 60 to 65 degrees Fahr. An increase over this gives unnecessary shrinkage, as well as depreciation in quality.

Resolutions.—In view of the fact that the room in which the two last Union meetings have been

held is to be converted into an agricultural museum, a committee of R. F. Holtermann, Brantford; Nelson Monteith, Stratford; and H. L. Beckett, Hamilton, president of the Union, were, on motion, appointed to ask the Hon. Minister of Agriculture for a new hall in which to hold the annual Union meetings. President Mills heartily supported the motion, and in his remarks concerning it stated that a farmers' college should have as complete an equipment for carrying on its work as any of the arts universities.

In view of the abnormal spread of weeds throughout Ontario, on motion of Prof. Lochhead, B. A., it was resolved that the members of the Union request that the study of weeds and weed seeds form an important part of the course in botany in high schools, and in the nature study course in the public schools, in order that the boys and girls be enabled to recognize the noxious weeds when they see them, and by understanding their habits know how to combat them successfully.

Officers.—The election of officers for the ensuing year resulted as follows: President, H. L. Beckett, Hamilton; Vice-President, H. R. Ross, Gilead; Secretary and Editor, C. A. Zavitz, O. A. C.; Treasurer, H. L. Hutt, O. A. C.; Directors—Dr. Mills; Nelson Monteith, Stratford; A. Shantz, Waterloo; T. J. Hurley, Belleville; C. A. Zavitz, O. A. C.

Committees.—Agriculture—C. Zavitz (Director); Dr. Mills; J. Buchanan; J. H. Clark, O. A. C.

Horticulture.—H. L. Hutt (Director); Elmer Lick, Oshawa; C. D. Jarvis, O. A. C.

Dairying.—Prof. Deane (Director); F. J. Sleight-horn, Stratford; T. C. Rogers, O. A. C.; H. W. Hart, Kingston; T. V. Linklater.

Apiculture.—R. F. Holtermann (Director), Brantford; E. Baird, W. J. Black, O. A. C.

Live Stock.—G. E. Day, O. A. C. (Director); Wm. Bennie, O. A. C.; G. W. Morgan, Kerwood.

Economic Botany.—F. C. Harrison, O. A. C. (Director); W. M. Doherty, O. A. C.; W. Steele, Toronto; W. A. McCallum, O. A. C.

Soil Physics.—J. B. Reynolds, O. A. C.; E. E. Bean, Black Creek; M. Rayner, O. A. C.

Entomology.—Prof. Lochhead, O. A. C.; A. M. High, O. A. C.; J. W. Crow, O. A. C.

Auditors.—G. A. Putnam, O. A. C.; G. H. Huttin.

Progressive Prince Edward Island.

BY WALTER SIMPSON.

Up to date of writing there has been frost enough for one day to stop the plow. We have had a very open and an exceedingly wet fall. We have had the heaviest rainfall since April that we have had in that period for thirty-five years. We do not now ship near half the quantity of coarse grains and potatoes we did six or seven years ago. Oats and potatoes were our main exports then; now it is cheese, butter, cattle, sheep, eggs, and bacon. A huge quantity of butter is being made on the Island this fall, and it is of good quality. A shipment of butter made direct to England last month realized \$8 to 100 shillings, which was the top of the market for Canadian at that time. As this shipment was made up from the output of several different creameries, it shows that our butter is uniformly good. Dairying is fast getting to be an all-year-round business with our farmers.

Shipments of stock this fall have been the largest in many years. One shipper has, since the 13th of October, shipped 11,035 sheep and lambs, mostly to American markets. He has also shipped 6,000 live geese in this time, and has paid out to farmers about \$20,000, and he is only one of many shippers that operate here all through the season. A shipment of apples, composed of Ribston, Spies, Baldwins, Russets, and Kings—35 barrels in all—forwarded by direct steamer in November to the British market, netted the shipper here over \$2.60 per barrel. Another steamer will sail from Charlottetown about the 15th of December, and will carry from here large quantities of meat, poultry, fruit, cattle, and sheep. Cheese are mostly sold. The prevailing price has been about 8c for September and October. Good cattle are in demand, at 6c to 6½c dead weight. Fat sheep sell at about \$4 each. Bacon hogs and heavy fats are on a level as to price, and sell for \$3.75. Oats are worth 32c to 34c. Potatoes, 28c. Hay is worth \$5 to \$6 for the best.

Agricultural Instruction in the Maritime Provinces.

Mr. W. C. Archibald, of Wolfville, Nova Scotia, a large and successful fruit farmer and Chairman of the Board of Control of the N. S. School of Horticulture, has been on an official visit to Ontario inspecting the Agricultural College at Guelph and the Experimental Fruit Station at Grimsby. Nova Scotia has also a School of Agriculture and Farm at Truro, but the Government there contemplate a forward movement in the work of agricultural instruction, hence Mr. Archibald's mission. A joint agricultural college for the three Maritime Provinces has been suggested. We are only witnessing the beginning of a great and grand advance of this industry in these thrifty Eastern Provinces.

A. W. MASON, McGregor, Man.:—"I have gained much valuable information from your useful paper."

W. A. MAYNES, Dominion City, Man.:—"Your magazine is a boon to the farming community, as well as being very beneficial to stock-raisers."

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le, Nova Scotia, er and Chairman School of Horti- sit to Ontario in- at Guelph and Grimsby. Nova ulture and Farm re contemplate a agricultural in- mission. A joint Maritime Prov- re only witness- grand advance of ern Provinces.

—“I have gained our useful paper.” y, Man.:—“Your g community, as ck-raisers.”

How to Make and Mix Cement Concrete and Gravel.

To the Editor FARMER'S ADVOCATE:

SIR,—As I have received quite a number of letters from farmers all over Ontario, making enquiries about concrete for walls, floors, silos, etc., I thought I would answer them through your valuable paper, which I find in nearly every practical farmer's home. I may first say that I served my apprenticeship at the masons' trade twenty-two years ago, and have followed it ever since, and for the last three years I have devoted my time and attention to the use of hydraulic cement for farm building purposes all over Ontario, being employed by the year by the Estate of John Battle Cement Works to give instructions how to use cement for concrete work for barns, stable floors, silos, etc.

moist earth. When taken in the hand and pressed it should simply pack, and not leave any moisture on the hand. I mix all my concrete the same way, only I use different proportions, according to the class of work required. FORVAL B. HAGAR. Welland Co., Ont., Dec. 12th, 1898.

Commercial Fertilizers—Preservation of Fence Posts.

To the Editor FARMER'S ADVOCATE:

Can commercial fertilizers be used with profit in growing crops in Ontario? Have often seen this asked, and the answer has been: We don't know what your land needs; you must experiment. This is not a good answer, and seems to me like shelving a difficult question. I think I understand what my land needs, whether in nitrates, potash or phosphates. The question is, Can a profit be made out of manure at \$40 a ton when wheat is only \$24 a ton, potatoes \$10 a ton, and hay \$6, all other farm crops in proportion? If the fertilizer man would come up and take an inning he might perhaps make it clear.

Is there anything known as to the preservation of fence posts? Have lately heard of setting them in masonry. Is it supposed that it would impregnate the post with lime? It is easy to fill small pieces of wood, inch boards, etc., with lime, but I should suppose fence posts, from their size, would be more difficult to fill. J. L. Grey Co., Ont.

[The questions raised by our correspondent are open for discussion, and we shall be pleased to hear from readers disposed to deal with them. —ED. F. A.]



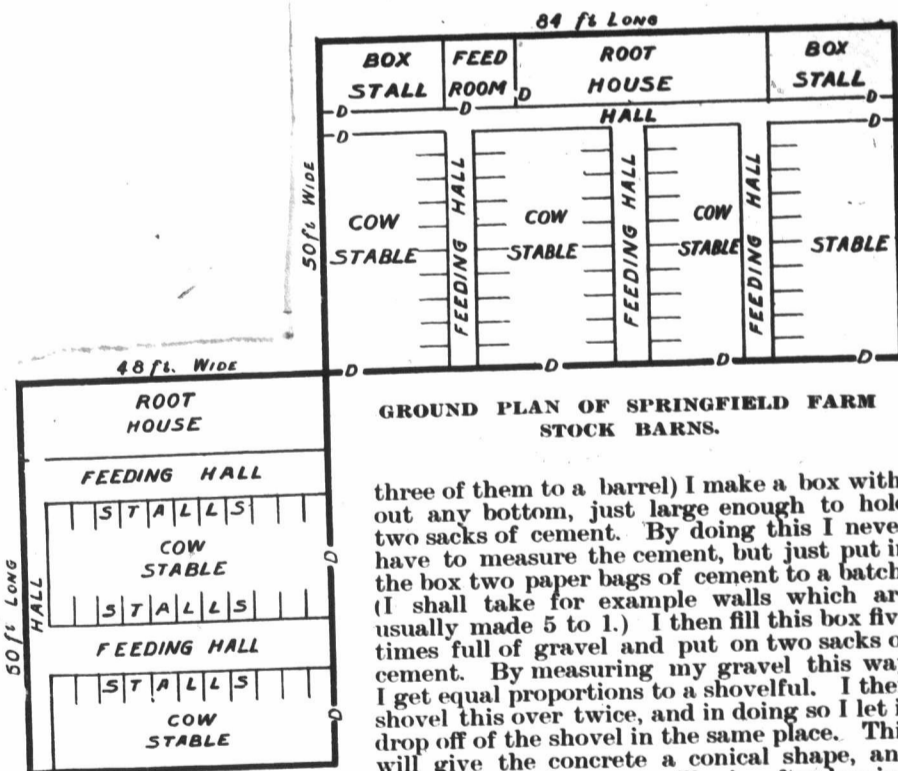
SPRINGFIELD FARM STOCK BARN. THE PROPERTY OF MR. C. RANKIN, WYEBRIDGE, ONT.

I am also a practical farmer, having bought the old homestead of one hundred acres twelve years ago, which I have always managed in connection with my brothers. I simply mention this fact in order to show that I am familiar with the needs of farmers and farm buildings. In order not to take up too much space in your valuable paper, I shall only deal with the making of concrete. The making of concrete is one of the simplest branches of mason work, but at the same time it cannot be slighted in the least, and must be done systematically and no guesswork about it. The way I make my concrete is as follows: I first level off the ground and place straight-edge boards right on the ground, and drive stakes on each side to keep the boards from working apart. This platform should be at least twelve feet square. I do not put any sides to this platform. If the cement is in paper bags (there are

fact that our flocks need improvement, and that our farmers are very slow to make that improvement, has made up his mind to do it for them. He has accordingly imported a carload of Shropshire rams, which are to be distributed throughout the county. No charge is made for their use, but at the end of four years they are to be returned to him. It is both an enterprising and a generous act on the part of Mr. Mahoney, but we should feel ashamed that such an act is necessary. It shows that we are lacking in enterprise and good business management. It is not likely that Mr. Mahoney would have gone to the expense of making this importation if our common sheep would satisfy the demands of the market as well as those which are more highly bred. It has been proved, the world over, that it is the well-bred stock which pays the best, but it is a fact which we are very slow to realize and still slower to take advantage of. I hope that those who will benefit by the use of these rams will not let improvement end with them, but will procure good rams for themselves. The same need of improvement is to be found in our cattle also, and the necessity for it is becoming more and more urgent. While we had our markets to ourselves the necessity was not so apparent, but we have now to compete with the other Provinces of the Dominion, and our consumers are being educated up to a demand for better beef, and the best trade is now supplied almost entirely from Ontario. It is strange that improvement is so slow when we consider the low prices at which pure-bred animals can be bought, and the very generous grants which our Government makes to agricultural societies.

A new line of trade is now opening up for the farmers of Canada in the export of fowls to the English market. I sincerely hope that our Maritime Provinces farmers will make an effort to secure a share of it. The trade is only beginning, but it promises to develop into something very large. The Beaver Line steamer which sailed from St. John for Liverpool on December 7th carried 35 carloads of Western turkeys, and the Parisian, which sailed the following day, took 67 crates of fowls. These are only two examples of the extensive shipments already being made. Yet, although the port of shipment is almost at our doors, not a single fowl raised in the Maritime Provinces is to be found in these shipments. We do not, in fact, raise enough to supply our home markets. The same paper which mentioned these shipments quoted the price of fowls in our own markets as follows: Turkeys, 15c. per pound; geese, \$1 each; and chickens, 50c. per pair. Surely if the Ontario farmer can afford to raise poultry at 8c. per pound, we should be able to make it pay with prices nearly double. I know from personal experience that poultry will pay, and pay well; but, like every other branch of farming, it requires good stock, suitable buildings, and good care.

With poultry, as with all other farm stock, it is the well-bred bird which gives the best return for food and care. By well-bred I do not mean those birds which have been bred for show purposes only, where the coloring for feather or leg or the shape of a comb is considered of more importance than a



three of them to a barrel) I make a box without any bottom, just large enough to hold two sacks of cement. By doing this I never have to measure the cement, but just put in the box two paper bags of cement to a batch. (I shall take for example walls which are usually made 5 to 1.) I then fill this box five times full of gravel and put on two sacks of cement. By measuring my gravel this way I get equal proportions to a shovelful. I let it shovel this over twice, and in doing so I let it drop off of the shovel in the same place. This will give the concrete a conical shape, and the gravel and cement will mix after leaving the shovel by rolling down the sides. If the concrete is simply turned over and thrown up against the sides of the pile it does not mix properly, and it would have to be shoveled over three or four times at least. After the concrete is mixed dry I then level off about shovel deep, with a hole in the center, and put in one or two pails of water, then take the back of the shovel and turn the concrete towards the center. The concrete should be turned twice after being wet. The last time of turning I use a rose sprinkler: it distributes the water evenly through the concrete. Care should be taken not to get it too wet. It does not require to be more wet than is

Springfield Farm Stock Barns.

The stock barn of Mr. C. Rankin, at Wyebidge, Ont., is quite modern in design and arranged with a view toward great economy of space—perhaps more so than some authorities would sanction, except an excellent ventilation system is employed. We trust, however, this has not been neglected, as intelligent care has been given the preparation of the plan, which, it will be seen, is admirably adapted for convenience in feeding the animals. The stable at the east end, as shown in the ground plan, is for horses, and is separated from the cattle stables by a brick wall, which makes it a separate compartment. The height of the stone walls is 11 feet, and from the top of the stone wall to the peak of the barn is 41 feet, making the height from ground to peak 52 feet.

Maritime Notes.

prolific egg yield or good table qualities. I mean those which have been selected and bred for their utility, while keeping as close to the standard as possible. The ordinary farmer need concern himself but little about the exhibition points of a breed; utility is what he requires. A fowl may possess all the most desirable characteristics of a breed and yet be unfit for show purposes. In grading up a flock of common fowls select a male bird from a pure-bred flock with a good utility record, and change him every year. If pure-bred fowls are kept, and they are always to be recommended, it will still be in the interest of the farmer to buy his male birds from a good breeder rather than use those of his own raising. In this case, also, utility should be the first consideration in buying, but close attention should be given to those points of perfection which are required of the standard of the breed. In cases where a double mating is required to produce standard fowls of both sexes, as with the Plymouth Rocks, the farmer should always breed for pullets, as they are the ones he will want to keep. In this case the cockerels will be very light colored, but they will suit the dressed poultry market as well as if they conformed to the standard. There is money to be made from poultry if they are only managed properly, and now that this new trade is springing up, it will be a disgrace to us if we do not strive to capture a share of it.

The enterprising little Province of Prince Edward Island has entered the list of fruit shippers, and is bound to capture a share of the apple trade. The returns from some trial shipments have been secured and have proved very satisfactory. A shipment of seventy-three barrels of several varieties was made by the Fruit Growers' Association, and was sold in Liverpool. Alexanders brought 20s. per barrel, Wealthies, 15s. 6d., and other varieties not so high. A shipment by Senator Ferguson, to London, realized £19 for thirty-five barrels, or \$2.63 per barrel.

AGRICOLA.

DAIRY.

The Use of the Cream Separator.

The use of the cream separator on a dairy farm where butter is made, cream is sold, or a creamery is patronized, is in not a few districts rapidly supplanting the older methods of cream separation by the gravity system and the use of ice. Nor is the new method receiving undue attention and support, when its advantages are fully realized. First and foremost, considerably more cream, of a decidedly better quality, is secured from the milk; second, it is done when the milk is warm from the cow, with very little loss of time; third, the skim milk has not to be carried away from the stable, but can be fed warm to calves or pigs, in a condition to do them most good; and, fourth, a tremendous amount of sloppy labor is saved by not having to set the milk, skim it, warm calves' milk, etc., which means considerable of woman's drudgery on a farm. Now, at this particular season there are many butter and cream dairymen who are hesitating between getting a separator or putting in a supply of ice and adhering to the gravity plan of creaming the milk, and to assist these in deciding we would ask those of our readers who have used hand or power separators to write us about its advantages or disadvantages, not forgetting its first cost and that of running it, and explain their method of running the separator, whether by hand, horse, bull, gasoline or steam power.

It would seem that there is a place for the separator that it has not heretofore filled, and that is on the farms of creamery patrons who have been accustomed to have the whole milk hauled to the butter factory, there separated, and their allowance of skimmed milk drawn home for the young stock. Now, if the milk were separated while warm from the cow, the calves would get the warm milk at once, and the expense of hauling the entire bulk of milk to and from the factory would be saved. No doubt the creamery-man would reduce his charges for making the butter to the extent of the cost of heating up the milk and running it through the separator. The cream could be taken in double cans, so that hot weather could have no effect upon it while going to the creamery, so that there seems many advantages in having the milk separated at home. Viewing it from the creamery-man's standpoint, he would require to measure each patron's cream and test it with the oil-test churn, the same as is done in cream-gathering creameries. We would like to have the opinions of dairymen upon this subject.

As the result of some experiments, it is concluded that the highest per cents. of fat usually follow the shortest period between milkings. The lowest per cents. of fat usually follow the longest period between milkings. Where the cows are milked at equal intervals the highest per cent. occurs most often at or near the noon hour, and the lowest per cent. about equally often at morning and night, with a much larger number at midnight than at noon.

Buttermaking in Canada on the Creamery Plan.

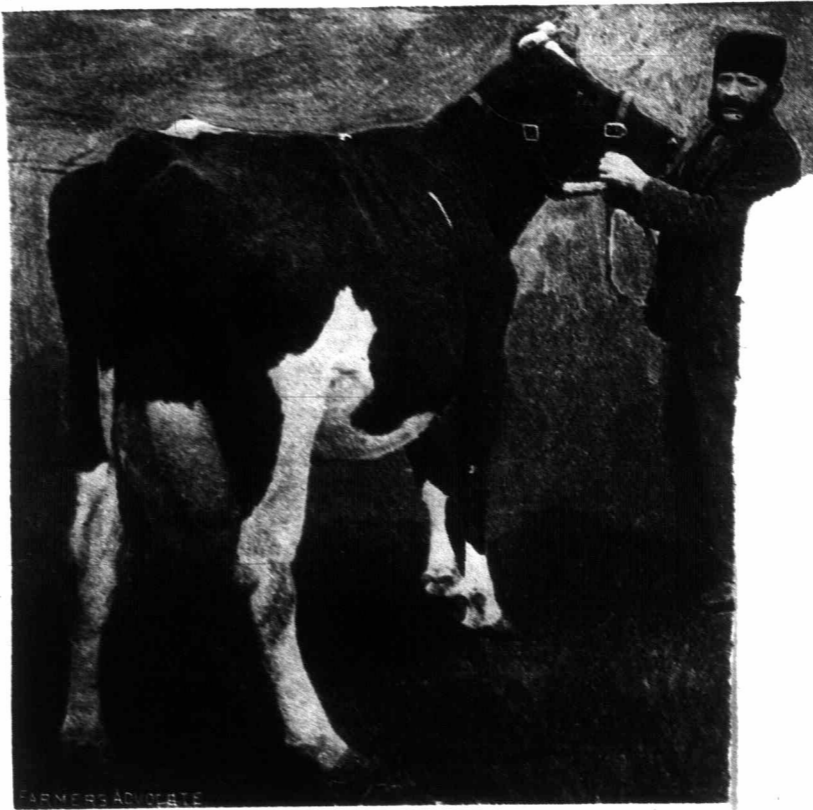
[SIXTH PAPER.]
PACKING AND PRINTING.

To the well-read, wide-awake individual there is nothing particularly new to report in this connection. There is, nevertheless, much to be studied and acted upon by the proprietors and makers in many of our creameries before trade requirements are fully met. Briefly, these requirements are as follows:

The pyramidal 56-pound box is the kind required. It should have just enough slope to make the butter strip readily. Once during the past season we have had inquiries about using a perfectly cubical box, an exporter saying that they were the correct thing for the English market. The opinion was, however, an isolated one, and thus far the pyramidal box is the box to use. The nailed box may be made cubical, and knocked apart to free the butter, but does not look as well as the trim dove-tailed box.

Spruce is the material.—The cover may be held in place by nails, by two or four side clips, or by screws. We prefer the latter as the firmest, neatest, safest method. Nails are not to be thought of by the thorough workman, and clips work loose somewhat easily, and do not hold the lid tightly down. Screws are handy, and do the work properly. The lid should be slightly let into the box. Loose or false covers are valueless, in our opinion, and they cost a cent apiece.

The boxes must, of course, be paraffined. This makes them practically air tight if the work is well done. Buyers of boxes will do well to examine closely into this matter. Before the butter is put



HOLSTEIN HEIFER, DAISY TEXAL 2ND.

Winner of 1st prize in the Milking Test for heifers under 36 months, at 1 Dairy Show, Brantford, 1898. Property of A. & G. Rice, Currie's Cross.

in, the box must be carefully lined with parchment paper, which should weigh 40 to 60 pounds per ream. From experience we find that the heavier paper gives best satisfaction, and we are now using 60-pound paper entirely for this class of work, though it costs a little more per box. This paper should be soaked in brine before using, chiefly because brine is, to some extent, a preventive of mold. The opinion expressed to us by one exporter that paper not brine soaked resulted in a wrinkled paper is not in keeping with experiments carried on here, as we find that when soaked in brine paper wrinkled quite as much as when just dipped in clear water.

How to line a box.—Parchment paper is not now cut in proper sizes when it leaves the manufactory, and in consequence there is considerable waste in further cutting for the creamery. We find that the most satisfactory sized sheets for lining a 56-pound box to be:

TWO SHEETS—24 inches long, 11½ inches at one end and 12½ at the other.
TWO SHEETS—18 inches long, 11½ inches at one end and 12½ at the other.
ONE SHEET—13 inches by 13 inches (square.)

The first two are put in on opposite sides, and cover the bottom, two sides, and lap over enough to hold while being filled. The second pair cover the other two sides and lap a little top and bottom. The fifth sheet covers the top, and on this is placed a thin layer of salt paste just thin enough to spread. The first two sheets can be cut from sheets 24 inches square without any waste; the second pair from sheets 18 inches by 24 inches without waste, and the fifth from sheets 13 inches by 52 inches without waste. Boxes lined with paper cut and used after this style present such a smooth, perfectly fitting appearance that a casual observer would not notice that they were lined.

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square their accounts on the butcher's block as soon
as fit. There are, however, a large number of our
readers who have used and are continuing to use the
scrutinizing searchlight of these two instruments,
knowing that is the only way to conduct their
business with financial success, and it is to these
that we appeal at this time to send us letters for
publication in the FARMER'S ADVOCATE as to the
lessons they have learned and advantages received
from their use of the weigh scales and the Babcock
test in the dairy herds. It would be well to refer to
the sort of scales used in the stable, the time and
labor it takes to weigh the milk at each milking,
how often the fat tests should be made to get at
satisfactory results, the method of conducting the
test if done at home, and such other points as will
make clear the operation of testing the capacity of
individual cows of a herd. By opening up this sub-
ject, dairymen will not only do a valuable service to
fellow farmers, but it may lead to discussion that
will expose many useful lessons from which all can
reap an advantage.

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The Babcock versus the Churn.

BY GEORGE RICE.

In reply to a series of questions submitted to Professor W. A. Henry, who is known the wide-world over as a "safe" man to follow, being a thorough, painstaking and reliable investigator, I am favored with the following clear and comprehensive answers, which explain themselves. Professor Henry says:

"Without being able to prove my statement, but basing my judgment upon the results of the most carefully and fairly conducted dairy tests, I believe that most of the records showing thirty pounds or more of butter in seven days are unreliable. I do not affirm that the parties did not get thirty pounds of something which they called butter for seven days, but I am firmly convinced that a large part of these so-called records were not honest, merchantable butter. I believe that private tests with dairy cows and those where the milk and butter are not analyzed are no more reliable than private trotting tests would be with horses, for human nature is the same in the owners of both these animals. I believe that the Babcock test together with the scales combined give us a far more correct method of estimating the butter-productive capacity of a cow than the churn itself. This is true because with these two instruments we can determine the total quantity of fat yielded by a cow in a given time, and when the cow has produced this fat she has done her part and is entitled to full credit. The churn is not a measure of a cow's butter-productive capacity, because fat may be lost both in separation and churning, and the cow can not be held accountable for either of these losses. Again, unless the butter is analyzed it may not be a merchantable product, for which fault again the cow is not to blame, nor, on the other hand, should she have credit for water, casein, extra salt, or all of these, which the worker, through his desire for a larger production, may leave in excess in the butter.

"Of course, the Babcock test can be wrongly used, or it can be misrepresented, but with the scales it forms the simplest and most direct combination for measuring a cow's butter value. A man who will cheat with the churn will also cheat with the Babcock test, but the skimming device and the churn may both cheat the cow when the man or committee are honest. This the Babcock test will not do.

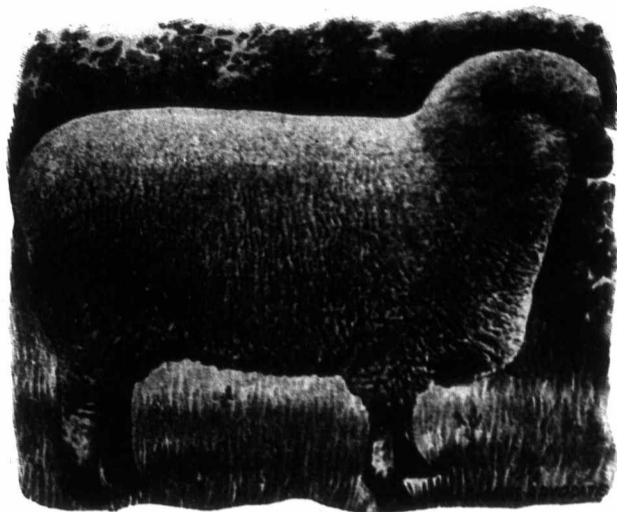
"By means of properly conducted official tests and the use of the Babcock test the representatives of our various breeds of dairy cattle are in a position to establish records which are reliable and in time will become immensely valuable as the data accumulates and the effects of breeding and selection are realized."

I would direct special attention to what Prof. Henry says as to the value butter records will have in time to come. Before the invention of the Babcock test the churn was the only practical method of testing the butter capacity of the cows. And there is no doubt that the earliest records were made under such conditions as to really be a disadvantage to the cow. But we cannot say the same of those of a later date. In fact, there seemed no limit to the advance of the cows up to the famous World's Fair test, when cows that had butter records made by the churn of 30 pounds and upwards were under the most favorable conditions unable to make 20 pounds of butter, 80 per cent. fat, in the same period of seven days. If the World's Fair test did no more good than to "throw a great light" upon the methods being pursued in making these so-called butter records, these tests were not altogether in vain, and it does seem to me rank foolishness in anyone trying again to impose such fabulous records upon the public. Although the public may not know exactly how these churn records are made, still they know well enough that they are not correct. Although I do not pretend to know all the different methods used, I do know, as a practical buttermaker, that butter may be a very indefinite quantity.

As I have experimented a little along this line, I may as well give the result. I never have made a churn test of any single cow. I have not desired to "gull" the public, and by the same token I have no intention of being "gulled." With, then, a desire to know from my own personal knowledge how butter records are made, I will ask you to follow me through the operation.

Taking, then, a quantity of rich cream, which on account of its richness we can churn at a low temperature, the cream being properly ripened and ready for churning, we churn this cream until we reach that point where we would say it is "broke." The butter has not gathered yet. The stuff has about the consistency of porridge. I fancy the enthusiastic maker, with an eye on doing some record-breaking work, looks at this mass of stuff which Prof. Henry aptly says is something they called butter (of course it is). Reason along this line: it is not cream, and there is no buttermilk that will run from it; then it *must* be butter, and so the record is broken, 46 lbs. butter (?) in 7 days. It is cold and thick, and if chilled in this state would be about as "dry" as snow. But when I eat porridge I don't want this butter as a substitute. So we will pursue our investigation further (as the cream contained 33 per cent. fat, this "butter" would contain the same). Now, with the butter "broke," before starting the churn we will add some cold water. As our future work, and, in fact, all this work, depends upon churning at as low a temperature as possible, we add the water and churn a little while, and as the gathering goes on keep on adding more cold water. The idea is to keep the butter from massing, and when the butter is in the fine granular state, stop the churn, as it is well-known the moisture is contained inside these granules; and although this practice may really cause a loss of butter-fat in the buttermilk, yet it is more than made up by the buttermilk encased in these butter granules. We may then draw off the buttermilk and pour on cold or ice water to harden up the butter; butter in that state may be drained for hours and will look dry as wheat. In this churning I am referring to, I don't think anyone not a practical buttermaker would have any suspicion that there was any extra moisture in this butter. Here, then, I have 18½ lbs. of *dry, well drained* unsalted butter; if, then, the intention is to make a large butter record of salted butter, we must further

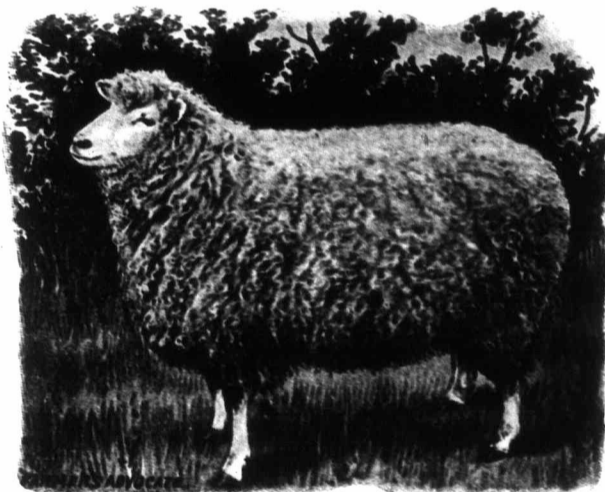
chill this butter before adding the salt to harden up the butter granules, as they increase the moisture. But in order to know just how much butter and how much moisture there is in the churning, I salted in the churn and let it stand awhile to warm up and dissolve the salt. The butter will now *mass*, the butter granules are broken up, and from this 18½ pounds of *dry, unsalted* butter I actually put up 11 pounds of butter, and had 7½ pounds of water and buttermilk. It would make all the difference in the world whether we quoted a butter record of 18½ pounds or 11 pounds; or with double the quantity, 37 pounds made one way or 22 pounds of butter made another way. One may not always get such a big lot of moisture incorporated. But I have an idea that with experience one could do something "handsome" in the way of making butter records just from simply having rich cream and keeping the right temperature through the whole process. It will be seen



SHROPSHIRE YEARLING EWES, CAMPBELL'S 757.
Winner of first prize at the Provincial Fat Stock Show, Brantford, Ont.

from this what an indefinite quantity butter is. I think we should not be too severe upon the butter records of earlier times, because there was no other method of making records than by the churn. The deception was, however, carried to such length that in the light of the present we cannot put much value upon some of these so-called butter records. This is unfortunate, as such must appear in our pedigrees of stock, and as most of these cows are now dead, we have no other means of getting at their true worth. No doubt most of these cows were great cows, but just how much credit (or discredit) to give to the maker of the great records and how much to the cow will never be known, because we have no means of knowing how much butter-fat was in this so-called butter, and being of such an indefinite quantity, containing anywhere from 40 per cent. butter-fat and upwards, such records form no basis for comparison.

But now, with the farce ended and [the curtain rung down, what must we think of those who



PRIZEWINNING LINCOLN YEARLING EWES.
Owned by Gibson & Walker, Denfield, Ont.

would continue the *game*. The Babcock test has the confidence of everyone whose opinion is worth anything. It is simple and easy to operate, whilst to churn the product of each cow separately involves a good deal of time and labor. And nobody is going to this extra trouble unless they expect to make a corresponding gain. Therefore it is plain a churn test is made with the purpose of deception, and such tests, great or small, are unworthy of notice. And I do think it is an insult to the intelligence of its readers for a paper to print them. To make such test is losing to the breed valuable time, as such tests are already discredited, which time and further knowledge will only intensify.

Eden Bank Creamery, Chilliwack, B. C.

MONTHLY REPORT - NOVEMBER, 1898.

Quantity of milk received	76,346 lbs.
" cream	4,303 lbs.
" butter-fat obtained	4,343 lbs.
" butter made	4,982 lbs.

Net price realized by sales after deducting commissions, freight, and a making charge of 3 cents per pound, 23.60c. per pound.
J. H. SCART, Secretary.

POULTRY.

The Demand for Poultry.

BY J. M'CAIG, PETERBORO CO., ONT.

Though with regard to all animals that multiply rapidly, such as sheep, swine, and fowl, we may often have a glut of the market locally, it is undoubtedly true that the demand for poultry has come to stay. There are two main causes operating to produce this condition. The first is that a foreign demand has been growing and is now pretty well established. Coincident with this, and indeed one of its causes, is the improved facility for transportation so effectively aided by government effort. The losses customarily met with in handling these delicate meats have been practically done away with. A second and more universal cause, as it applies to both home and foreign consumption, is the change in public taste. An unflinching feature of the progress of civilization and the tendency to aggregation of population in towns is the liking for delicate foods. Two-year-old beef has taken the place of four-year-old; lamb is supplanting mutton; the hothouse lamb is becoming more and more popular; while pork must not only be young, but likewise lean and streaky, such as is produced from mixed foods; swine must not live on corn alone. The reason of this change is not a matter of whim or fashion, but is founded on the changing physical character of man. The progress of invention, and the resulting changes from manual to machine production, involves less heavy labor, and consequently less heavy food. The appetite is not so strong, and requires pampering with more delicate foods, and with a greater variety of them. From this point of view, the demand is likely to be constant, and there will be a rising movement in supply to meet it.

The increase in demand affects not only the supply, but the character of the supply. In an industry that is producing a commodity the demand for which is rising and becoming general, there is at the beginning a profit for all grades of it. The invariable effect of good demand, however—in other words, the economic remedy for over-demand—is over-supply. The pioneers reap a profit, but when production has become general—i. e., when a commodity has become a staple—then the margin on it narrows almost to the vanishing point. Popularly expressed, there is slight profit in producing what everybody else is producing. The ones first to suffer in such conditions are those producing the lower and inferior grades. There is profit still in the business, but it goes to the higher grades. This applies not to poultry alone, but to every other industry as well. The principal lessons to be learned from this economic truth are: For those already established, improve the quality; and to those beginning, begin right.

Canada stands high as a meat-producing country. Her invigorating climate and succulent vegetation give the appetite and means of satisfying it, so necessary to rapid growth and the much-desired early maturity. Her mutton, beef, and bacon stand well in both United States and British markets. The Government has not only aided in promoting the right kind of storage, but has done much to educate by example in properly fitting fowl for market so as to secure the best appearance and greatest possible uniformity in sample. All that is wanting is the application of the skill of the breeder and feeder to have Canada lead rather than follow in this industry, and so prevent the best of it falling into other hands.

Business Principles in the Care of Poultry.

Adherence to business principles is as important in poultrykeeping as in the conduct of a mercantile enterprise if a profit is to be secured. A flock of winter layers should be down to business, every hen of them, by this time, if they were wisely chosen, properly prepared during the fall for their work, and are receiving the right care in suitable quarters. The profit must come from the excess of receipts for eggs over cost of food, which latter must necessarily be liberal. The pullet that has not yet commenced to lay or the hen that has ceased will keep on eating and should be fattened and sent to market. By so doing she will no longer eat the food of idleness, but bring value for her meat; and not only that, but her space will be turned to good account in allowing the remainder of the flock better accommodation. The poultry business is one of detail, and to succeed one must give constant wise attention. The little leaks take off the profit, and non-attention to details leads many a beginner to abandon poultrykeeping, believing there is no money in it. Cockerels not to be retained as breeders should have been well fattened and disposed of before this date; but if any still remain, they should be rather closely and comfortably quartered, and rushed to a plump condition and sold or eaten.

In the experience of wide-awake poultrykeepers, small flocks lay better than larger, from 25 to 30 hens being considered enough, and these should have a house having 12x15 feet of ground space, besides a roomy run. Even less than this number together will return a greater profit under ordinary conditions, as a higher percentage of eggs will likely be produced. Cut roots, clover, green bone and fresh meat scraps are known to be cheaper and give better results in eggs produced than an entire grain diet. This food should be prepared into

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Legal.

SUBSCRIBER, Prince Edward Co., Ont.:—"After I had purchased a house and farm, and had taken possession, the vendor demands payment of some storm windows and storm and screen doors which are stored in the house, now in my possession. Did I purchase these with the house or should I pay extra for them?"

[These articles, if they were the property of the vendor and were ordinarily used for the house when you purchased, should be considered as having been sold to you and purchased as a part of the house.]

BREACH OF CONTRACT.

SUBSCRIBER, Lennox Co., Ont.:—"At Toronto Fair I purchased a sheep and paid the price (cash) \$15. The agreement was that the seller was to deliver the sheep at Kingston for me on the following Saturday, free of charges. On the following Tuesday I received a post card telling me that the man could not get the sheep off at Kingston and took it on to Quebec. I then wrote and told him when and where to send the sheep to me, but it did not come until about three weeks after, when the express company's agent notified me of its arrival, and of \$1.35 charges for carriage to pay. I then refused to accept it, and the express company sent it back to the seller. I bought the sheep to show at the exhibition, and it came too late. I then demanded my \$15 back from the seller, and he has sent me \$11. Am I entitled at law to recover the balance, \$4, and can I collect damages?"

[You should compel the repayment of the \$4, but the damages are too indefinite and cannot be collected.]

FARM LABORER'S DUTIES.

SUBSCRIBER, Cardwell Co., Ont.:—"A man hires to do general work on a farm for a year; he is asked to clean a team of horses during the usual working hours, but refuses, saying that he is not working the horses and will not clean them, and he leaves of his own accord. If he returns next day and offers to go to work again—1. Must I take him back? 2. Must I pay him his wages earned? 3. If upon his return the next day I tell him not to work and that we will try and have a settlement and we fail to agree, and he threatens to sue me at once, have I by trying to settle with him prejudiced myself, and must I pay his wages to date?"

[1. No. 2. No. 3. No. The rule in all these cases is that a servant is bound to obey all reasonable commands of his master, and to perform the contract he has entered into, whether for a week, month or year, and if the servant declines or refuses to perform his part of the contract, the law will give him no relief.]

Veterinary.

SKIN DISEASE IN CALF.

W. M. S., Ontario Co., Ont.:—"I have a heifer calf which has a skin disease from the base of the tail to about fifteen inches along back, and about eight inches down on each side. In appearance it is a thick scurf, broken up like a crocodile skin; the hair on affected part seems healthy, and does not come away with the scurf."

[From your description it appears that your calf is suffering from some parasitic disease of the skin, which is distributed by means of the animal's tail. Treatment consists in the removal of the cause, and continue the methods that you have already done, also be sure to thoroughly cleanse the tail, and also secure for a few days by means of a side line. Apply the following ointment three times at intervals of a week, well washing the scabs before each application: Hydrag. unguentum pilule, 1 ounce; sulphur vervain, 4 ounces; carbolic acid, ½ ounce; lard, 4 ounces.

DR. W. MOLE, M. R. C. V. S., Toronto.]

SWELLING OF THE PAROTID GLANDS.

W. H. T., Muskoka:—"My mare had distemper three years ago, and the swelling of the glands in the neck have never gone away entirely. My horse caught cold eighteen months ago, with a slight discharge of matter from the nose. I turned him out to grass, and thought that I had cured him, but symptoms returned this fall. My other horse, the hair never lays smooth, and is continually biting himself along sides and back; is not hidebound, and I cannot find any vermin on him."

[It is more than likely that your mare is suffering from an enlarged condition of the parotid glands, which is sometimes described as inflammation of the guttural pouches. It is principally when horses have become liable to attacks of strangles that these purulent collections are formed; they are marked by an increase of size, and more or less interference with swallowing of water or food. Only a surgical operation of extreme delicacy can relieve these conditions, and we advise non-interference. This will answer questions one and two. We recommend the application and dressing as recommended to W. M. S., as above.

DR. W. MOLE, M. R. C. V. S.]

TAPEWORM IN LAMBS.

C. J., Huron Co., Ont.:—"I have a flock of sheep that lost about one-half of their lambs this season. They were taken sick, and inside of a couple of hours would be dead. My veterinary surgeon examined one of the dead animals and found a large quantity of tapeworms. This lamb acted somewhat different from the rest, as it lingered for about twenty-four hours after taking sick. There were several flocks in this vicinity affected the same, all of which run on the roadside, whilst flocks that were never allowed on the road were not affected. Do you think the other lambs died from the same cause? If so, how do you account for the tapeworms killing the lambs and not the sheep? Will sheep from these affected flocks, if taken to another farm and put on clean pasture, cause the same trouble next year? Can anything be done to prevent it? If so, what?"

[There is no doubt that you have lost your lambs from the presence of the parasite known as the cestode form of tapeworm, and by the name of *TENIA EXPANSA*. Veterinary surgeons have often recorded cases where they have measured 30 to 40 feet from end to head. Older animals can resist the irritation set up in the bowels by these parasites, so that a genuine epidemic is rarely seen in adult sheep, but the lambs quickly succumb. The ova of tapeworm are to be found in abundant quantities during the autumn months in the neighborhood of woods, watercourses and gullies, or where the herbage is coarse, the drainage bad. It is upon the rough grasses that these ova find shelter, and are then taken up into the stomach of the sheep, and as they are not flesh-feeders it is almost certain that some of the small mollusca or snails and insects found in water or in damp situations are the bearers of the tapeworm larva. It is not likely that sheep, if removed from the source of infection, will cause any trouble next year, especially if you see that your dog is rendered free from the same disease. Give your dog two or three doses of worm medicine, as it is quite likely that he will be an intermediary bearer of these parasites. Santonin, 6 grains; areca, 2 drams; jalap, 1 scruple; aloes, 1 scruple. Mix into six pills or powders. Give one every day. This will remove the most likely cause of infection.

DR. W. MOLE, M. R. C. V. S.]

BARB WIRE WOUND.

R. M., Peel Co., Ont.:—"I have a colt that was cut on the fetlock joint with barb wire, which has left an unsightly scar. If there is any remedy to make hair grow will you kindly let me know?"

[In the healing of wounds it is highly desirable to produce contraction of granulation, so that the cicatrix or scar shall be of the smallest possible size. More can be done at the time of the accident by judicious care on the part of the surgeon to prevent the unsightly scars than any subsequent operation. When the follicles in which the roots are imbedded are anyway injured, then the hair ceases to grow, and it is from this cause that scars are so unsightly. It is to be seen from their condition that nothing can be done in your case.]

THRUSH IN HORSE'S FOOT.

J. E., Simcoe Co., Ont.:—"I have a horse suffering from 'thrush' in front feet for some considerable time. Will you please publish a remedy in your next issue?"

[Thrush, or, as it is very frequently designated, running thrush, is a well-known affection amongst horsemen, is due to damp stables, and most frequently seen in old horses. The prominent symptom is the discharge of a whitish evil-smelling fluid, which issues from the glands between the cleft of the frog. Treatment: Wash the feet in warm water, cleaning out all the effete material, and apply the following ointment every day until well: Powdered alum, 2 ounces; powdered sulphate of copper, 2 ounces; Stockholm or wood tar, six ounces. This should be well mixed and allowed to stand for a day or two.

DR. W. MOLE, M. R. C. V. S.]

SWELLING IN MARE.

SUBSCRIBER, Nipissing, Ont.:—"I have a mare four years old that has a small swelling each side of the belly, one a little larger in front of the udder. She has also a cough. You will please give an answer, state the cause and cure for same?"

[It is absolutely impossible to give any satisfactory answer to this question. The diseases of the udder in the mare are so uncommon that unless the swelling is the result of an injury we cannot account for it. When the gland becomes hard and indolent it may be rubbed daily with iodine ointment—iodine, 1 part; vaseline, 6 parts—until all soreness disappears. For the mare's cough give the following powders: Digitalis powder, 1 ounce; liquorice powder, 1 ounce; potass. tartrate of antimony, half ounce; a teaspoonful every day in the animal's food. DR. W. MOLE, M. R. C. V. S.]

DEPRAVED APPETITE.

A. P., Nova Scotia:—"Since my cows have been in the barn they have taken to gnawing and biting their stalls. When out in the yard gnaw and chew wood wherever they can get it. They have rock salt constantly before them, and I have tried giving them raw bones, also put lime in their drinking water, but all to no purpose. I feed them best meadow hay three times a day, and a feed of pulped mangels once a day. Can you explain the cause and give me a remedy?"

[The causes of this disordered state of the digestive system in cows is rather obscure. Cattle suffer-

ing have a variable appetite as regards their ordinary food, but evince a strong desire to lick, eat, and gnaw substance for which healthy cattle have no inclination. Alkaline substances are especially attractive: lime, earth, coal, sticks, bones, etc. Animals in this condition become unthrifty, lose condition, their coat staring, gait slow, restless, uneasy, always bellowing, the milk thin and watery. Causes: Unless we were able to investigate the cause, it seems hard to suggest bad food, but it must be something of this kind. Cattle pastured on low, swampy land are often affected; especially is food which has undergone changes which lessen its digestibility liable to create this craving. Treatment must be to improve the process of digestion by supplying the animal with a sufficiency of sound, wholesome food, with a good grain ration. The following may be given after a good purgative: Carbonate of iron, ½ oz.; powdered gentian, ½ oz.; powdered aniseed, ½ oz.; powdered charcoal, 1 oz.; one dose, to be divided in three parts, and given to each animal every day.

DR. W. MOLE, M. R. C. V. S.]

OSSEOUS TUMOR.

W. A. DOWLING, Cardwell Co., Ont.:—"I have a colt with a hard, bonelike lump on its jaw about as large as a small goose egg. The lump was there at birth, and it has grown with the colt. What is its nature, and can anything be done for it?"

[Osseous tumors originate from bone or its periosteum; those growing from the periosteum occur most frequently on the external surface of the skull of the animal; around the orbit or on the upper jaw is an especially favorite seat, and are often dense, hard and immovable. They are well marked, usually a line of demarcation between them and the bone proper. The periosteum from which they grow covers them, and is continuous with that of the old bone. They are perfectly innocent tumors and their growth is slow. They rarely attain a large size, and most often hereditary, occurring in early life of the animal. The only treatment is to excise the tumor. This should be entrusted to a qualified veterinary surgeon, who is well acquainted with the anatomy of the subject.

DR. W. MOLE, M. R. C. V. S.]

COW FAILING TO BREED.

W. J. T., Oxford Co., Ont.:—"I have a good cow that will not breed. She is nine years old and has had a calf every year since she was two years old. We have a sure bull; he is four years old, and in good condition; is turned out with the cows every day. The cow has been bred to him ever since last spring. Sometimes she goes two months without coming in season, and sometimes only one week. What can be done for her? I do not want to beef her, as she is a first-class milker, and gets excellent stock. She is in good condition now, and is milking well; is fed ensilage, shorts and clover hay. Bull is fed same?"

[From the symptoms given, the cow would seem to have become an habitual aborter, and should not be allowed with other pregnant cows.

Have the neck of the womb (os uteri) examined by a competent veterinarian, and see if it is not nearly closed up; and if so he will dilate the opening and remove fibrous obstructions. Give her the following mixture in her feed, in teaspoonful doses, twice daily for a month: Powdered iris vesicular, *Helonias dioica* and *viburnum prunifolium*, of each one ounce; powdered nux vomica, half ounce; well mixed. And make a daily injection of creolin diluted in 200 parts clear water, and disinfect her stall frequently. If the cow has aborted it will be safer not to use your stock bull, as he may carry infection to your other cows.]

OBSTRUCTION IN COWS TEAT.

J. C., York Co., Ont.:—"I have a heifer calved April last. About six weeks ago there came in the two teats on right side very small lumps, which have grown to about the size of an ordinary pea, and do not seem to be getting any larger. Will you kindly give me a cure, if possible, through the columns of the *ADVOCATE*?"

[Apply a little of the following ointment to the affected teats once a day around the seat of the lumps: Iodine crystals, half dram; potassium iodide, one dram; lard, two ounces. Ask the druggist to decolorize with hyposulphite of soda. If milking becomes tedious from the obstructions, employ carefully a silver milking tube, but only as a last resort, as there is always danger of injury from its use.]

RINGBONE.

SUBSCRIBER, Wentworth Co., Ont.:—"I have a mare six years old with a ringbone, the result of a runaway in May, 1897. Has been blistered twice by a veterinary, but the enlargement has not been reduced, though the lameness was cured for a time, but she goes lame now at times after standing. What would you recommend?"

[Have the mare properly fired and blistered by a competent veterinarian and give her a couple of months rest. The proper blister to employ after the firing is the following, well mixed and thoroughly rubbed in for half an hour: Biniodide of mercury and iodine crystals, each 1 dram; Russian cantharides, 1½ drams; lard, 1 ounce; oil on third day after blistering and each succeeding third day until hair starts to grow. Insist on the pointed iron being used.]

DEHORNING IN WINTER.

SUBSCRIBER, Perth Co., Ont.:—"Would it be advisable to dehorn cattle at this season, the animals being all housed?"

[We should judge it is as safe to dehorn at this season as at any other, provided the animals are not left out in the cold longer than fifteen minutes at a time for the first week after the operation, and that they are not allowed access to a straw or hay stack till the wounds are healed, as chaff or dust getting into the wounds is apt to set up inflammation and cause trouble.]

LICE OR ECZEMA.

ANXIOUS ENQUIRER :—"I have a mare that is very itchy, continually biting herself, especially on the back, and rubbing her head. The hair comes off head in spots, her coat is very rough, and skin scaly. She seems healthy and eats well. What is the matter with her, and tell me what will cure her?"

[A very careful examination of the neck and withers will reveal small lice if they are present. If any are found she should be thoroughly washed with one of the many good sheep dips, and hens should be kept away from her stable. In case the trouble is not lice, the symptoms point to eczema, for which give the mare half-ounce doses, twice daily, of hyposulphite of soda in her feed, which should be clean hay, ground oats, and a liberal supply of bran. Continue the medicine for two weeks or until the itching stops, and then give her two of the following powders daily: Nitrate of potash, bicarbonate of soda, gentian, of each one ounce; nuxvomica and colchicum, of each half an ounce; arsenic, 36 grains; all well mixed and divide into 12 powders. If skin is thickened, make a few light applications of tr. iodine to the parts a few days apart.]

INDOLENT SORE.

T. C. S., Saskatoon, N.-W. T. :—"Please advise me regarding one of my horses (a heavy draft) which is suffering from swelling of left hind leg and a sore on the inside, half way between hock and pastern, which is not healing properly. The history of the case is this: Epizootic catarrh affected nearly all the horses in the settlement, and this horse had it, but so slightly that it was scarcely noticeable. After we thought he was quite well, though I now think he was not, we put him to draw a pretty heavy log some distance. Generally he would have done it easily, but he had to exert himself, and showed it was heavy for him. This was in September. He very soon after began to go down in flesh, and had stony coat. Soon the leg swelled, beginning above the pastern and going upwards till the whole leg was affected. Pain was intense, and the horse in high fever. I concluded erysipelas was the trouble and (besides anodynes and febrifuges) gave him perchloride of iron. The swelling broke where the sore above spoken of is, with rapid destruction of the outward tissues and discharge of large quantity of pus. The leg was washed with disinfectants and the open sore washed or syringed with perchloride of iron solution for some time and afterwards with carbolic acid lotion. During recovery we gave quinine in 20-grain doses, which has lately been discontinued, and the horse seems in good health—skin soft and normal, with hair silky to the touch. For last week we have been giving him half-ounce doses of Fowler's solution, and full doses of soda bicarb., but the leg does not improve. There is no discharge from the sore, which is reduced in size from a circular patch of about 2 inches diameter to about 1 inch. He was doing so well in November that we gave him no medicine internally, so that the condition of his skin did not then at least depend on the Fowler's solution. We think standing in the stable the chief cause of the leg swelling now and of the wound not healing satisfactorily, but are afraid of turning him out on account of the cold. With the swelling there has appeared for the last fortnight or more, in front of the hock and over the heels, what is generally called sallenders and scratches. We are feeding ordinary hay (not cultivated) and half rations of oats, with small quantity of turnips."

[Your diagnosis and treatment of the case I think was nearly correct. I would advise you now to prepare the animal for a purgative by feeding exclusively on bran mash diet for at least sixteen hours, and then give the following in the form of a ball: Barbadoes aloes, 7 drams; colamel, 1½ drams; ground ginger, 2 drams; soap, 1½ sufficient quantity. Continue the bran mash diet until physic has ceased to operate. After this give, morning and evening, in food or water, for ten days: hyposulphite of soda, ½ oz. Touch the sore with hydrochloric acid (full strength), and when the scab becomes sufficiently loose remove it, and keep the part covered, until healed, with the following powder: Burned alum and boracic acid, of each 2 ozs.; iodoform, 1 oz.

W. A. DUNBAR, V. S., Winnipeg.]

SHEEP GOING BLIND.

JAS. H. MACLELLAND, Ottawa Co., Que., writes :—"In your issue of 1st December, I. E., Brockville, Ont., writes about sheep going blind. I have often found it beneficial to bleed them by puncturing the eye vein with a sharp knife and allowing it to bleed freely. In Scotland many sheep go blind in the way mentioned by your correspondent, and the blindness is most prevalent during the cold east winds of spring and fall."

A. W., Wentworth Co., Ont. :—"Oblige in your next issue with a remedy for dry, husky cough in young growing pigs." [It is sometimes due to constipation, and the remedy may be found in succulent food, such as pulped roots, or in greasy food. It may be due to a want of grit or gravel. Let them out on fine days for half an hour where they can get at the ground; or, if this is not practicable, throw them a few

shovelfuls of earth from the root cellar, and a little ensilage, if you have it. Charcoal or salt and ashes, kept in a flat box in the pen where they can take it at will, may be helpful. Keep the bedding dry by replenishing it frequently.]

Miscellaneous.

LONG CHURNING AND NO BUTTER.

MR. THOS. BLACK, Dundas Co., Ont. :—"We churn, but cannot get butter. We are milking 13 cows, and they are fed corn in the morning, mixed feed (sheaf oats and corn) at noon, and green oats at night. The cows have all the salt and good spring water that they need. The milk is kept in Cooley cans in a tank made on purpose for it. Ice is kept around it, and a little hot water is put in each can. The cream rises all right and plenty of it. Nicer cream could not be had. The cream is kept in cans beside the stove and stirred daily. The first cream has been kept a week before there was sufficient to make a churning. Before mixing the cold cream taken from a Cooley can with the other cream, it is first heated to the same temperature. We have churned such cream for two days and still got no butter. When it was taken from the churn at the end of this time and left for some time, the thick cream rose to the top just like 'ice cream.' The cream is heated up to 68°, and then, after churning till tired, hot water was put in. We even tried putting salt and butter with it, but of no avail. Now, what more to do we do not know, and to see so much lovely cream going to waste seems a shame. If you can give a reason or know of any better method of taking care of the cream, please tell us what it is?"

[Such problems as the above appear knotty at first sight, as the course pursued has been intelligently followed, and, generally speaking, along right lines. About a year ago one "Esme" came forward with just such a difficulty, and her question, accompanied by Mr. F. J. Sleightholm's answer, appeared in January 1st, 1888, issue. The feed given by Mr. Black appears all right, although the addition of a few roots to give succulence would improve the ration. One very common cause of slow churning at this season is the presence in the herd of a number of "strippers"—cows long in milk. We judge this is the case in Mr. Black's herd. We judge this is the case in Mr. Black's herd from the remark that it takes a week's cream of thirteen cows to make a churning. While 65° is usually high enough to bring butter in a reasonable time, the temperature should have been raised to as high as 74° if necessary, not by adding hot water, but by turning the cream into a pail and surrounding it with hot water. Adding water thins the cream, which increases the difficulty, and it is possible that the cream was too thin to commence with.

Regarding the care of cream, we would suggest several changes in the method indicated by Mr. Black. It is not considered the best plan to keep the cream vessel near the stove, especially if it be the one on which the cooking is done, for the reason that objectionable odors and flavors are sure to become incorporated in the cream. Again, cream should not be kept in a warm temperature for several days before churning. A better way is to keep it cool, and stir the cream to the bottom each time a fresh supply is added. About 36 to 40 hours before churning in the winter season, two or three quarts of sour, but good flavored, buttermilk should be added, and the temperature raised to 70° by setting the cream pail in a hot water bath at 100°, keeping the cream stirred till 70° is reached. Now lift out the cream pail, and after stirring well, set it where it will remain at the same temperature till ready to churn. If our suggestions are followed we would be pleased to learn the result.]

NO BUTTER AFTER LONG CHURNING.

A. McDONALD, Grey Co., Ont. :—"We are milking four cows that have been milking say seven months, also two heifers milking say four months. We feed them chaff, pulped turnips, and some barley and pea meal mixed. We scald the churn and then slightly cool cream to 64-5 Fahr. We churn 1 hour, no butter; churn 2 hours, no butter; pour in some warm water to raise the temperature, churn 3½ hours, no butter; churn any length of time, no butter. Have tried churning twice, but same result each time. Where is the butter gone? What is the cause of there being no butter obtained, and what is the remedy? P.S. I have churned for 40 years and never known such a thing to happen before."

[Long churning seems to have been general during the closing weeks of the old year, as a similar difficulty was referred to us by Mr. Thomas Black, Dundas Co., our reply to whom appears in this issue. We would suggest that the cream be skimmed closer (with less skim milk), be further ripened and churned with greater concussion at a higher temperature.]

SHEEPSKIN MATS.

READER :—"Would you advise me how to treat a sheepskin to be used as a floor mat?" [We noticed recently in a British contemporary the following plan recommended, but perhaps some reader can suggest a better: "Nail the fresh skin tightly against a door or table, and with a piece of flesh; then give a thorough rubbing with chalk, continuing the operation until it begins to fall off as powder, after which take down the skin, sprinkle it over with ground alum, roll up, and keep it closely wrapped for three or four days. At the end of that time unfold it and shake out the alum.]

A PIG WITH A SWIRL.

SUBSCRIBER, Waterloo Co., Ont. :—"I have recently purchased a pair of pure-bred Yorkshire pigs (sow and boar) from a noted breeder. The boar has a swirl in his hair on his back. Is that any drawback to his use as a breeder; and if so, why? I have been told that some will reject a pig on that account."

[Some people will "strain at a gnat and swallow a camel"; will reject a Berkshire pig that has a few white hairs elsewhere than on his face, his feet and his tail, though he may be perfect in form, quality, and constitution, and purely bred, and will prefer one that is fashionably marked, though built on the plan of a greyhound, and though they know that a half-bred Berkshire may be perfectly marked. We once heard a man, of whose sanity we had doubts, remark that he never had given and never would give a prize to a pig with a swirl. Fortunately for the man he hadn't a "cow lick" on his head. If he had, we suppose that according to his rule he would have been disqualified and rejected as a judge. Judges should have straight hair, parted in the middle, and should do straight work. Seriously, we do not suppose a pig will require any more pounds of food to make a pound of pork because a few hairs on his back have "swirled," and we have frequently seen the best pig in the litter marked that way, as we have often noticed that the best pig in a litter of Berkshires was the one having the most white marks on it. There are meaner things in the make-up of some hogs than swirls and spots, which are not even skin deep; they are such as turtle shoulders, fish backs, cat hams, and rickety limbs. Of such abominations beware!]

HENS DYING

A. D. :—"What is the matter with my hens? They begin to limp, otherwise seem to be all right, eat well for a while, then commence to pine away, and in two or three months die. They took the disease about nine months ago, and we have lost a great many. We shut our henhouse up in the summer, and they roosted in the shed and sheep house, but still they are dying off. I have a good henhouse, with plenty of light and sunshine. I cleaned it thoroughly and burnt sulphur and brimstone in it before letting them in this fall. Our yard is a good farmyard, where they run in fine weather. They have the range of the farm in summer. Is it contagious or is there any cure? Please answer through the FARMER'S ADVOCATE?"

[I should say from the length of time from discovery of disease to fatal termination that death was caused by a wasting away—consumption—tuberculosis. Or the trouble might be caused by a form of liver disease, which often causes the victim to limp. The superinducing cause in the first instance might be "roup" in one of its many forms brought about by cold. In the second instance the drinking of water running through the barnyard, or from a manure heap, might be the origin of the trouble, or it might be brought on by overfeeding during the winter, which would result in so lowering the vitality that in early spring the hens would be liable to take cold easily; particularly so if they have been over-stimulated to lay well during the winter. But from the symptoms described, the wasting away diagnosis is most likely to be correct. A thorough spraying of every crevice and out-of-the-way corner of the poultry house with bichloride of mercury or corrosive sublimate is necessary. A neighboring druggist will give proportions to suit size of house. All movable articles should be taken out of poultry house and burned, as also all the straw in nests, on floor, etc. Make a complete job of it, and not only disease germs, but lice, if any, will be completely eradicated. The hens, of course, should meanwhile be removed to other quarters. Before being put back into the cleansed quarters every bird showing the least symptoms of the disease should be killed, and so should every one showing the slightest symptoms afterwards of roup or its varied types of colds, catarrh, etc., and care should be taken that the well fowls do not go back to the house with any lice on them.

SILVER SPANGLED HAMBURGS AS LAYERS.

E. W. C., King's Co., N. S. :—"Would you recommend the Silver Spangled Hamburgs as the best layers of the non-sitting type, and where in Eastern Canada could the thoroughbred be purchased at a reasonable figure?"

[In reply to the query of E. W. C., I beg to say that I would not prefer the Silver Spangled Hamburgs to White or Brown Leghorns as layers. There is no doubt about the Silver Spangled Hamburg being a prolific layer, but I do not think it is the acclimatized breed that the Leghorn family is. Much, of course, depends upon strain. Many strains of Leghorns have been so handled for "show" purposes as to have become small in size and layers of only an average number of small eggs. A reaction, however, has taken place, and at the shows of the "Ontario" and "Eastern Ontario" last winter and the winter before, a marked increase in the size of both White and Brown Leghorns was very noticeable. Some strains of White Leghorns lay large eggs. The Silver Spangled Hamburg lays the largest egg of its class. I might put it in this way: Rather than inbred Leghorns I would have Silver Spangled Hamburgs, but not otherwise.

Ottawa.

NOTE.—Parties having Silver Spangled Hamburg or any other pure-bred poultry for disposal would do well to use our advertising columns.—**ED. F. A.]**



Jennie Wren's Post Christmas.

It was New Year's Day, and very cold and cloudy. Jennie Warren stood by the window of the warm sitting-room, her forehead pressed against the pane, and an expression of weariness and discontent on her pretty face.

By and by a carriage turned the corner, and stopped before the door; then a bright-faced lady got out, came up the steps, and rang the bell. Then in a moment a sweet voice was heard calling through the hall, "Where is my Jennie Wren?"

The little girl's face was bright with smiles as she ran out crying, "Oh, Cousin Florence, how good of you to come; I was so lonely and so cross. I got out all my toys, but it was no fun playing all alone—and dolls are such stupid things, Cousin Flo!"

Cousin Florence smiled. "Even the wonderful talking doll that Aunt Mary sent you at Christmas?"

"Oh, that is more stupid than all the rest—it just says 'Twinkle, twinkle, little star,' over and over in such a horrid squeaky voice. It is too silly, and you'd never know what it meant if the box it came in hadn't been labeled. It sounds just as much like—

"Tinkle, tinkle, little star,
Over yonder—there you are—
Up and down the streets you go,
Like a newsboy through the snow."

And Jennie mimicked the doll's squeaking voice exactly.

"There they all are," she continued, pointing to a row of dolls seated upon the sofa. There were fashionably dressed ladies and gentlemen, sailor boys and little girls, and Japanese dolls of different sizes, and one pretty baby in long clothes.

"Did you ever see such a sight, Cousin Flo? All staring at you with their big round eyes—it's enough to give you nervous chills. I feel as if I never wanted to see them again."

Cousin Florence looked at her for a minute and then she smiled. "If you really mean that, Jennie, suppose you give them away to some poor children who would think them the most beautiful things in the world?" "I think I would like to," said Jennie doubtfully. They soon started off in the carriage with such a heap of toys and dolls.

"Where are we going?" Jennie asked. "We are going to a house," said Cousin Flo, "where twelve sick children are taken care of by kind people, who try to nurse them back to health. And these little ones, Jennie Wren, are all taken from miserable homes in the poorest parts of the city, where they were beaten and ill-used."

They soon reached a plain brick building, and went into a light, airy room, where six little beds stood side by side.

"This is the boys' ward," Cousin Flo told Jennie, as she led her from bed to bed, with a kindly word for each of their little occupants.

One little bright-eyed fellow, whose foot had been crushed by a heavy truck, was sitting up in bed, trying to draw with the stump of a pencil on the margin of an old newspaper. Jennie gently pulled her cousin's sleeve. "I'd like to give him my paint-box and crayons, and the painting book," she whispered.

Cousin Florence smiled as she nodded assent.

In the next cot lay a little cripple, who was drumming with his finger on the counterpane, and trying to hum a little tune. "He shall have the music-box," she whispered. And so they went from bed to bed.

When they entered the girls' room, Jennie opened her eyes wide, to see them all so happy with their poor shabby toys.

In one cot a little deformed girl lay fast asleep; her face was very sweet, in spite of its pale, pinched look, and her pillow was covered with the masses of her soft light hair.

"There is a dolly for each one," whispered Jennie, "and the tea-set for them all together—but she," and she pointed to the sleeping child, "she shall have the prettiest doll of all."

They then presented the toys, and Jennie laughed merrily at the children's quaint exclamations of delight.

"Oh my eye," cried one little fellow, "what a stunner! Little girl, you're a regular brick!"

And then what rapture as the little girls hugged and kissed their new treasures, laughing, and murmuring their expressions of delight.

Then Cousin Florence put her arms about Jennie and hurried her away, followed by a chorus of happy voices crying, "Goodbye, goodbye little girl! Come see us again." Jennie fairly flew into her own house and exclaimed, "Oh papa, papa, I've had such a lovely time, I never was so happy before in all my life!"

"Life."

"Life is a stocking," grandma says,
"And yours is just begun,
But I am knitting the toe of mine,
And my work is almost done.
With merry hearts we begin to knit,
And the ribbing is almost play—
Some are gay-colored,
And some are white,
And some are ashen gray.
But most are made of many a hue,
With many a stitch set wrong,
And many a row to be sadly ripped
Ere the whole is firm and strong.
There are long plain spaces without a break,
Which in youth are hard to bear,
And many a weary year is dropped
As we fashion the heel with care.
But the saddest, happiest time is that
Which we court, and yet would shun,
When our Heavenly Father breaks the thread,
And says that our work is done.
The children come to say good-night,
With tears in their bright young eyes;
For in grandma's lap, with a broken thread,
The finished stocking lies."

"Time to Retire."

"Time to retire," I should think it is
It was time to retire long ago;
These kittens, so bad, should be sent to bed,
— Like the children, they don't want to go.
Young Frisky has broken the glass to bits,
And he says, "Now we're having great fun!"
While Topsy helps Time more swiftly to fly;
Oh! what mischief these creatures have done."

MINNIE MAY'S DEPARTMENT.

MY DEAR NIECES,—

I have, I think, on more than one occasion suggested the plan of forming some sort of club amongst yourselves. I do not know whether any of my readers ever followed out my suggestions, but however that may be, I want to tell you about a club started about a year ago at Stony Creek, which is called the "Woman's Institute." The secretary of this Institute informs me that their subjects are divided into six branches, as follows:

1. Domestic economy.
2. Architecture (with special reference to sanitation, light, heat, etc.).
3. Physiology, hygiene, medicine, calisthenics, etc.
4. Floriculture, horticulture.
5. Music and art.
6. Literature and sociology, education and legislation.

Now, I certainly think these subjects cover a wide field of interest and information, and I am sure you will all agree with me in congratulating the "Woman's Institute" upon its undertaking and wishing it every success. It appears that the members have written several good papers upon these various subjects, and we propose to print some of them, and feel sure that they will prove of much interest.

I do not know whether this club excludes men entirely. This is, of course, optional. As in everything else, there are reasons for and against, but I do not see why a club of this kind should not include both sexes, provided that the objects of the club are strictly carried out and that mere social amusement does not take the place of what is really instructive and most interesting. There is plenty of time for both kinds of enjoyment. I have in my mind as I write a mixed club, to the meetings of which the members look forward with great pleasure. In this club are middle-aged people, girls and young men, and the amount of good reading they have done is really surprising.

Now, girls, look about you. The winter is upon us and we want something to fill in the long evenings and keep our brains bright—to keep us, in fact, in touch with the times. This is the age of progression, and my girls must not lag behind. A Happy New Year, from your loving Auntie—MINNIE MAY.

The Sea Queen Wakes.

She wakes! In the furthest West, the murmur has reached our ears;
She wakes! In the furthest East, the Russian listens and fears;
She wakes! The ravens clamor, the winds cry overhead,
The wandering waves take up the cry: "She wakes whom nations dread."
At last ye have roused the Sea Queen, at last when the world unites.

She stirs from her scornful silence and wakes to her last of fights.
Alone with a world against Her, She has turned on the snarling crew;
No longer the peaceful trader, but the Viking the North Seas knew.
She called, and her ships of battle—dragons her seas have bred,
Glide into Plymouth harbor and gather round Beachy Head.
She wakes, and the clang of arming echoes through all the earth,
The ring of warriors' weapons, stern music of soldiers' mirth.
In the world there may be many nations, and there gathers round every throne
The strength of earth born armies, but the sea is England's own.

As she ruled she still shall rule it, from Plymouth to Esquimalt,
As long as the winds are tameless, as long as the waves are salt.
This may be our Armageddon; seas may purple with blood and flame,
As we go to our rest forever, leaving the world a name.
What matter? There have been none like us, nor any to tame our pride;
If we fall we shall fall as they fell, die as our fathers died.
What matter? The seas that bred us shall rock us to rest at last,
If we sink with the Jack still floating, nailed to the Nation's mast.
—Capt. Clive-Phillips Wooley, in B. C. Colonist.

Habit.

How difficult (nay, unaided, it is impossible!) to break a chain forged by habit! One's resolutions may be unimpeachable, and one's judgment correct; yet still, unless the will is superhumanly strong, the habit of a lifetime insidiously holds its influence over our moral nature. What a lesson this ought to teach us, of the undying importance of each act of our lives! We do a thing once, repeat it, etc., and gradually what was originally the outcome of an impulse, becomes a ruling current in the stream of our life!



Dear Beauty looks down from her dangerous perch,
While she timidly begs them to leave;
No notice they take of her pleading words,
And her warnings they will not believe.
But punishment soon will overtake them all,
Bad company brings one to shame;
So Beauty, I think you'd better retire,
If you wish to preserve your good name.

Both.

Grandmother knit for the baby
A jacket of blue.
"No color for boys," she wrote it,
"But this one will do."
And she sent a gold pin with a blank for the name,
To wait till "he" came.
Next day came from lovely Aunt Mollie—
Now, what do you think?
All scented, embroidered, and dainty,
A jacket of pink?
"To dress a girl-baby in blue is a shame!"
She wrote: "What's her name?"
"Dear Grandma," wrote Mamma one morning,
"Your jacket in blue
Is just the right thing for our baby,
His eyes are so blue."
And her note to Aunt Mollie was strange, you may think:
"Our dear little girl is so pretty in pink!"
I fear that you'll say her two letters
At variance seemed,
Or that I am telling you something
I could but have dreamed;
But the fact is, her stories were nothing but true:
For the twins wore both jackets—the pink and the blue!
—Agnes L. Mitchell in Babyhood.

IX.

O, how much more does beauty beauteous seem
By that sweet ornament which truth doth give,
The rose looks fair, but fairer we it deem
For that sweet odor which doth in it live.
—Shakespeare.

X.

The love that survives the tomb is one of the noblest
tributes of the soul.—Washington Irving.

XI.

Be a man! Bear thine own burdens; never think to thrust
thy fate upon another.—Robt. Browning.

XII.

Nothing is impossible. There are ways which lead to every-
thing, and if we had sufficient will we should always have
sufficient means.—Roche foucauld.

XIII.

To dare is great. To bear is greater. Bravery we share
with brutes; fortitude with saints.—C. F. Deems.

“The Return from the Honeymoon.”

This picture seems to be a fitting sequel to the
one in our last issue. Truly this looks like a joyous
home-coming, and from appearances we should say
that our bride and bridegroom belong to the
wealthy and leisure class.

Probably those pleasant little meals, so delight-
fully secluded, during the honeymoon will now have
the dignified addition of the old family butler and a
staff of young footmen, all eager to serve the sweet
young mistress their master has brought them.
There is evidently a right royal welcome for them,
and their new life is surely opening with brilliant
prospects. The whole animated scene is extremely
well drawn. Those grand old trees so full of foliage,
and the stately mansion seen through the gates,
bring a vivid and realistic picture before us. The
eager attitude of the welcoming friends and retain-
ers, the postillions as they urge on their horses,
the horses themselves,
and the excited
dogs (one bent
on being first!),
all speak of a
scenewhich our
young couple
are evidently
discussing, and
one which they
will not easily
forget. As the
years roll on,
joy and sorrow
may touch
them—(does it
not touch us
all?)—but I
fancy they will
often think of
that sweet,
quiet honey-
moon time—
when she pour-
ed out his tea
in that pretty
old room—and
of the triumph
of their home-
coming.

True
Charity.

Every good
act is charity.
Giving water
to the thirsty is
charity. Re-
moving stones
and thorns
from the road
is charity. Ex-
horting your fellow men to virtuous deeds is
charity. Smiling in your brother's face is char-
ity. Putting a wanderer in the right path is
charity. A man's true wealth is the good he does
in this world. When he dies mortals will ask
what property has he left behind him, but angels
will enquire, “What good deeds hast thou sent
before thee?”—Mahomet.

Ready-made Happiness.

We spend so much time getting ready to be
happy! The picnic to-morrow; the journey next
week; the preparation now; the fulfillment of our
desire to-morrow, and the frequent disappointment
of our expectations, day after day! This is the
true history of many days, is it not? Suppose you
try for just one day to be happy in the little things
that come without anticipation or preparation.
Suppose you take note of your mother's smile and
father's “Good morning,” and baby's eager chuckle
as you appear. Suppose you abandon yourself to a
frolic without anxious care for the good time to-
morrow. Suppose you give yourself up to the sun-
shine and the out-of-doors and the new book, and
the helping father and mother for their sake
purely. Suppose you talk with your friends about
the pleasant things already yours, and let those of
the future wait. Oh, you don't think that “take
no thought for the morrow” means you? But it
does. Heaven leaves a touch of the angel in all
little children, to reward those about them for their
heavy cares.—Dinah Mulock Craik.

Agriculture in the Bible and Bible Times.

BY REV. W. A. BURMAN, B. D., LECTURER IN BOTANY,
ST. JOHN'S COLLEGE, WINNIPEG.
[Copyrighted.]

INTRODUCTION.

The aim and intention of this series of papers is
to give the reader such information on the subject
of agriculture in early ages, and especially in Bible
times, as may be likely to interest and instruct.

It is hoped thus to interest the members of many
farm households in the Bible itself, and to throw
light upon its pages, so that its simple and beautiful
stories of the home life and occupations of its char-
acters and peoples may receive added charm and
significance, especially for those whose lives are
lived in country places.

The subject will be illustrated by references to
the nations existing in the earliest ages, or during
the periods covered by the Bible records, whose
homes were in countries near the Holy Land.

Recent researches and discoveries have given us
a wonderful amount of information about these
people, their home life and industrial pursuits.

These records are all the more instructive from
the fact that they are often illustrated by paintings
or sculptures on rocks and buildings; or by im-
pressions left upon clay tablets and earthenware;
or implements and other articles in stone and metal.

Cuts and other illustrations will be used when-
ever possible, thus, it is hoped, rendering the series
still more helpful.

CHAPTER I.

“The making of the fields.”

We begin our study of early agriculture most
naturally by glancing at the origin of the fields.
For agriculture means the culture of fields.

comparatively recent origin, and consist largely of
animal remains, such as coral insects, shellfish and
organisms seemingly almost midway between the
animal and vegetable world.

From the igneous rocks, constantly worn away
by the action of the air and water, and especially
by the carbonic acid which water often contains in
large quantities, as well as by friction of stone upon
stone, a deposit was formed which became in part
the lower layer of soil, upon which the vegetable
mould was afterward deposited.

The material washed down by rivers, after it has
thus been broken up by chemical and other forces,
and deposited under water either in the sea or in
the lake, is called “alluvium.” Often it has been
at length raised above the surface of the water, or
has been left exposed. It constitutes what may be
called the mineral soil of many valleys, lying just
underneath the vegetable soil, formed chiefly by the
decay of vegetable matters. It consists of sand,
gravel, stones, and fine sediment or mud.

Recipes.

ONION SOUP.

One quart of milk, six large onions, yolks of four
eggs, three tablespoonfuls of butter, a large one of
flour, one cupful of cream, salt, pepper. Put the
butter in a frying-pan. Cut the onions into thin
slices and drop in the butter. Stir until they begin
to cook; then cover tight and set back where they
will simmer, but not burn, for half an hour. Now
put the milk on to boil, and then add the dry flour
to the onions, and stir constantly for three minutes
over the fire. Then turn the mixture into the
milk and cook fifteen minutes. Rub the soup
through a strainer, return to the fire, season with
salt and pepper. Beat the yolks of the eggs well;
add the cream to them and stir into the soup.

Cook three
minutes, stir-
ring constan-
tly. If you have
no cream, use
milk, in which
case add a
tablespoonful
of butter at the
same time.

PRESSED
CHICKEN.

An easy way
of preparing
boneless chick-
en.—Boil a fowl
in as little wa-
ter as possible
till the bones
slip out and
the gristly por-
tions are soft.
Remove the
skin, pick the
meat apart,
and mix the
dark and white
meats. Re-
move the fat,
and season the
liquor highly
with salt and
pepper; also
with celery
salt and lemon
juice, if you
like. Boil down
to one cupful,
and mix with
the meat. But-
ter a mold, and
decorate the
bottom and

sides with slices of hard-boiled eggs; also with thin
slices of tongue or ham cut into round or fancy
shapes. Pack the meat in, and set away to cool
with a weight on the meat. When ready to serve,
dip the mold in warm water, and turn out carefully.
Garnish with parsley, strips of lettuce or celery
leaves, and radishes or beets.

PUFF PASTE.

One pound of the best butter, one pound of
pastry flour, one scant teaspoonful of salt, about
one cup of ice water. By measure, use one quart
of flour and one pint of butter. Scald the bowl and
dip your hands in hot water to keep the butter from
sticking. Wash the butter in cold water, divide
into four parts, pat until thin, wrap it in a napkin
and place in a pan between two pans of ice. Mix
the salt with the flour, rub in one part of the butter,
add the ice water slowly, mix with a knife, and cut
till it can be taken up clean from the bowl. Toss
out on a well-floured board, pat into a flat cake,
then roll out until half an inch thick. Roll one
part of the butter thin and lay it on the middle of
the paste. Fold the sides toward the middle, then
the ends over, and double again. Pat and roll out
again. Repeat this process with the remaining
pieces of butter. When the butter is all rolled in,
the paste should be rolled and folded till no streaks
of butter can be seen. After the last rolling, place
it on the ice to harden, as it may then be cut and
shaped more easily.

ANDREW G. BURTON, Roland, Man.:—“I have
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years, and I think it is as good a farm paper as I
can get.”



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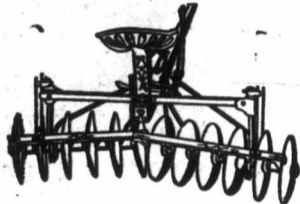
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...OF...

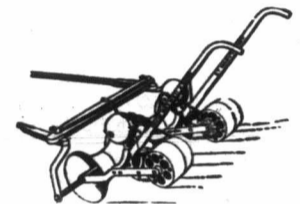
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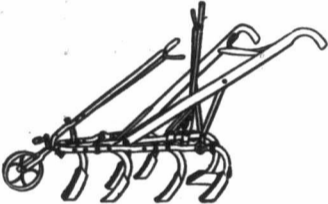
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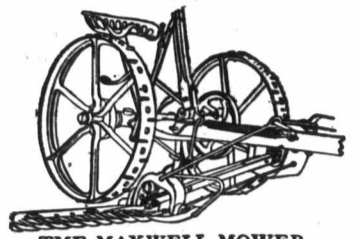
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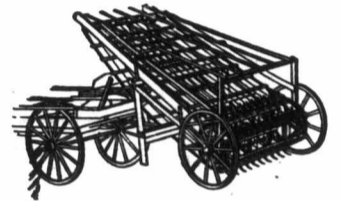
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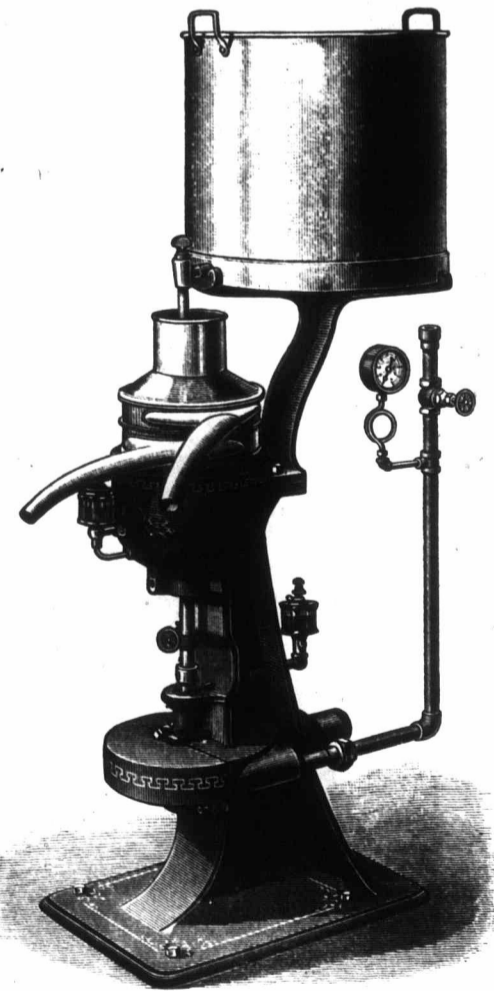
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Stratford Station and Telegraph Office.

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A fine lot of boars and sows from April and May litters. Also older stock and fall pigs. Prices low.
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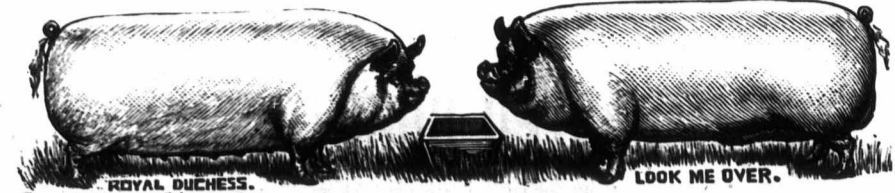
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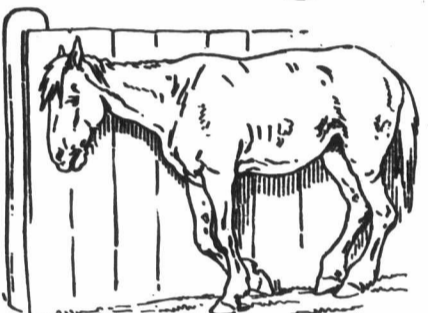
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EXTRACT FROM ANNUAL REPORT FOR 1897
OF THE
CONSULTING CHEMIST OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
Published in their Journal, 31st December, 1897, page 732.
"It has been necessary to call attention to the fact that under the name of 'slag,' and sometimes even under that of 'basic slag,' have been sold refuse materials of a very different character, and having little or no manurial value. These have not been the product of the now well-known 'Basic' or THOMAS process of iron or steel making, and have contained little or no phosphoric acid such as basic phosphate has. In several instances the purchasers believed that they were buying the true basic slag. It behooves one, therefore, to be careful to stipulate for THOMAS-PHOSPHATE, and to have a guarantee of phosphoric acid contained, and of fineness of division."
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I have now to hand a choice lot of Tamworth sows, 8 months old, and have a few Berkshire boars left, at 8 months old; also, a few Victoria sows with pig at one year old. They were bred from imp. stock. Don't forget to write at once to secure the best. Also write for my new Catalogue.

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Ready for service, young sows ready to breed, and young sows safe in pig, bred to an imported boar. A choice lot of pigs, three months old, of either sex.
E. DOOL, Hartington, Ont.

3 TAMWORTH BOARS 3
And one sow, five months old, sired by Aggett (615) and dam sired by Nimrod (Imp.), at \$8.00 each.
D. J. GIBSON,
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For sale—young boars and sows, 3 and 4 months old, by Sandy 3rd and Nimrod, and out of prize-winning dams; also young pigs. Prices reasonable.
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GOSSIP.

It will be a serious matter if the success of white Shorthorns in winning prizes at the leading exhibitions should lead to a craze and run on white bulls; the number being so limited there would be a strong temptation to some Leiter to corner the stock and send prices up to the booming point. We sincerely hope it will not come to this, but more unlikely things have happened.

Mr. John Bergin, Cornwall, Ont., who many years ago pinned his faith to Herefords as his ideal beef cattle, and who had his confidence in them well tried during the years of depression, when prices ruled discouragingly low, but kept up the struggle till the clouds cleared away, retaining the best and weeding out those not up to the standard, finds himself, now that brighter and better days have dawned and encouraging prices are prevailing, the happy owner of the largest and best herd of "white-faces" in Eastern Ontario. The great success which these grand beef cattle have scored in the Western States and in the ranching districts of our own Northwest, where they have been tried and found eminently satisfactory, has created an active demand for them. Mr. Bergin has many enquiries for them, and has had a tempting offer for his whole herd from a Western breeder, but prefers to continue breeding his favorites, and offers a few young bulls of good breeding and merit at fair prices, as intimated in our advertising columns.

Mr. W. D. Flatt, Hamilton, Ont., reports the following recent sales from the Trout Creek herd of Shorthorns: To Mr. W. H. Easterbrooke, Freeman, Ont., Lady Blythe, by imp. Royal Prince, and her four months heifer calf Lady Blythe 2nd, by Bridegroom, by Sittvton Chief, dam by the famous Barmpton Hero. Also Maggie, a handsome roan, yearling heifer, by Kinellar 2nd, a grandson of Barmpton Hero, and out of Red Empress 2nd, of the Kinellar Roan Betty tribe. To Mr. Wm. McCarthy, St. Catharines, Mr. Flatt has sold the eight-months bull calf Senator - 27638 - by Carlisle, dam Dewdrop 3rd - 30243 - Carlisle was by Prince Royal, first-prize winner at the World's Fair at Chicago, and at the Toronto Exhibition. Senator is a calf of fine form and quality of flesh and hair. Mr. Flatt has also sold to Mr. O. J. Statton, Cookshire, Que., the bull calf Waterloo Champion, by Carlisle, dam Dew Drop - 27173 - a calf of fine promise; also, to the same buyer, the 7-months-old bull calf, Missie's Heir, by Carlisle, dam 4th Missie of Neidpath, by Prince Royal, one of the most promising calves ever sold from the Trout Creek herd.

MR. J. A. R. ANDERSON'S AYRESHIRE.

Mr. Anderson's dairy farm is situated some three miles from the center of the City of Hamilton, Ont., right opposite the Jockey Club, on the Beach Road. The result of some ten years' attention is a very select young Ayshire herd of 25 or more animals, among which we saw some splendid and useful cows whose udders bespeak for them the class to which they rightly belong. The stock bull, Royal Monarch 1911, by Monarch (imp.) 77, and out of the noted Sprightly 3rd 185, by Royal Chief, is now three past. Royal Monarch was bred by David Morton & Son, and to his strong breeding and true dairy conformation no doubt lies much of the responsibility of the high standing attained by this young herd in the local showings. Lately purchased from Mr. R. G. Steacy is the yearling bull, Model of Maple Grove 2363, by Carlyle of Lessnessock (imp.) 1655, and out of Blinkbonny (imp.) 2042, and in his purchase we would consider Mr. Anderson has made a wise selection. His strong breeding, coupled with his style, strength and strictly up-to-date type, can scarcely fail to make his impression on the Royal Monarch females. Among the long row of females our attention was especially attracted by Belle 4331, by Forest King 437, and out of Grace Mass 2nd 1380. She has been a very profitable cow to Mr. Anderson, placing as she has a splendid and useful lot of young things to her credit. Her daughter, Annie Laurie 3267, is a cow capable of attracting attention in any company, having a splendid constitution and a great feeder. Barton Queen, by Jim Henderson 494, with her daughter, Princess Alice 3247, also show strong evidence of the family's usefulness in the dairy. They are splendid-looking cows, with grand udders and full of showing quality. Among the younger females we saw some highly desirable yearlings and calves whose breeding runs along the same family lines, which Mr. Anderson holds himself open to price at any time. In the showing Mr. Anderson has been very successful, and frequently in strong competition, at Barton landing three firsts and five seconds, including the South Wentworth Society's special. At Brook, Wentworth County, the herd won six firsts, three seconds and two thirds in strong competition. Parties desirous of purchasing Ayreshires having usefulness their leading quality will do well to communicate with Mr. J. A. R. Anderson.

BERKSHIRES CHAMPIONS.

At the Smithfield Club Show, London, Eng., December 5th to 9th, the champion plate, value \$100, and the Centenary gold medal, for the best pen of two pigs, went to J. A. Fricker's Berkshires. The champion plate, value \$25, for the best single pig, was won by the Earl of Carnarvon's Berkshire, and the reserve to Sanders Spencer's Large White. The Duke of York's challenge cup, value \$250, and the Centenary gold medal, for the best two pigs bred by the exhibitor, went to Mr. Fricker's Berkshires. The reserves in this, as also in the first-named competition, were cross-bred pigs. Writing of the champions, the London Live-Stock Journal says: "They had considerable length, combined with high quality, being good representatives of the style of Berkshires now generally sought after."

CONSUMPTION CURED.

An old physician, retired from practice, had placed in his hands by an East Indian missionary the formula of a simple vegetable remedy for the speedy and permanent cure of Consumption, Bronchitis, Catarrh, Asthma and all Throat and Lung Affections; also a positive and radical cure for Nervous Debility and all Nervous Complaints. Having tested its wonderful curative powers in thousands of cases, and desiring to relieve human suffering, I will send free of charge to all who wish it, this recipe, in German, French or English, with full directions for preparing and using. Sent by mail, by addressing, with stamp, naming this paper, **W. A. NOYES**, 820 Powers Block, Rochester, N. Y.

Work Done With **THOROLD CEMENT** Speaks for Itself.



BARN OF WM. PATTON, SOUTH CAYUGA, ONT.
Size of Basement Walls, 36 x 60 x 9 feet. Built with Thorold Cement.

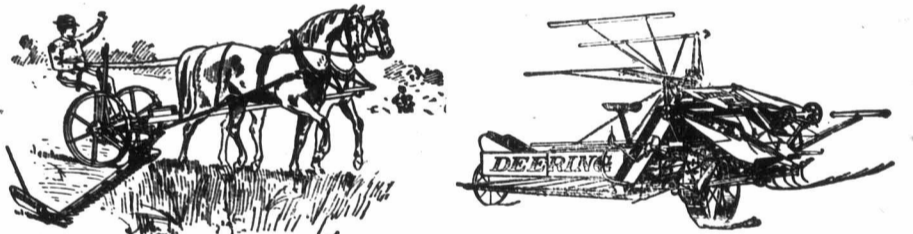
Dunnville, Ont., Nov. 1, 1898.

Estate of John Batt'e, Manufacturers of the Thorold Cement, Thorold, Ont.:
DEAR SIRS,—It is with pleasure that I testify to the good qualities of your Thorold Cement for building purposes. During the past summer I have built a barn 36x60 feet, with basement walls 9 feet high, and with cistern under driveway 8x19x7 feet high. I also put concrete floors throughout, for cow stables as well as horse stables. I consider both wall and floors to be much better and cheaper than if they were built of any other material.
Sincerely yours,
WILLIAM PATTON.

FOR FREE PAMPHLET WITH FULL PARTICULARS, ADDRESS

ESTATE OF JOHN BATTLE, THOROLD, - ONTARIO.

Agents wanted in unrepresented districts. -om



The Machines THAT MADE America Famous

- A DEERING IDEAL BINDER, 5, 6 OR 7 FT. CUT.
- A DEERING IDEAL MOWER, 3 1/2 FT. TO 7 FT. CUT.
- A DEERING CORN HARVESTER,
- A DEERING IDEAL REAPER,
- A DEERING STEEL HAY RAKE, 8 1/2 FT., 10 1/2 FT. OR 12 FT.

Also have none but Deering Twine to tie your grain, and Deering Harvester Oil for your implements, and your harvest will indeed be a happy one.



Main Office and Factory:
CHICAGO, U. S. A.

Permanent Branch House:
LONDON, ONT.

THE FROST & WOOD CO., LIMITED, SMITH'S FALLS, ONT.



NO. 2 LIGHT STEEL BINDER.

OUR NEW LIGHT
BINDER
IS NICE LOOKING,
EASY RUNNING,
AND A
PERFECT WORKING
MACHINE.

OUR AIM
IS TO PLEASE THE
CANADIAN FARMER.

WE SELL IN NO
OTHER COUNTRY.

"CANADA IS OUR
HOME."

WATCH THIS PAPER FOR CUT OF OUR NO. 8 MOWER.

ADDRESS—

Catalogue with Description.

FROST & WOOD CO., LIMITED,

77 Jarvis Street, TORONTO, ONT.

GOSSIP. A HIGH-PRICED BERKSHIRE.

At a public sale of Berkshire hogs made by Mr. Reuben Gentry, of Danville, Ky., at Springfield, Ill., on Nov. 16th, the two-year-old boar, Columbia's Duke, brought \$1,200, the highest price ever paid for a Berkshire at auction. He has been a very successful prizewinner and sire of prizewinners. The purchasers were Messrs. John J. J. J. J., Barclay, and Jos. Berry, Dawson, Ill.

HIGH-PRICED SHORTHORNS IN BUENOS AYRES.

The well-known prizewinning Shorthorn bull, Sign of Riches, purchased by Mr. D. MacLennan, and exported by him to Buenos Ayres, was sold there last month for \$8,000 to G. Aldo. Another first-class bull, Bapton Victor, imported into Buenos Ayres by Messrs. H. and W. Nelson, was sold at the same sale for \$5,500, his purchaser being J. A. Urbary. The prices realized for the two bulls named above, even if the dollars be paper dollars, prove the high value attached to first-class imported stud bulls. A late report states that Sign of Riches failed to pass the tuberculin test when he landed. He was not permitted to pass into the country, but was kept in quarantine for thirty days. At the end of that time he was again tested, and passed, and was sold by public auction on 5th October, as above. Now, it does seem queer that this fine bull should have been tuberculous when he landed and perfectly healthy thirty days afterwards. Possibly the tuberculin was not good, or the operator may have been at fault. Such mishaps should not, however, be possible in a reliable test.

ROBT. DUFF'S SHORTHORNS.

Half a mile from the G. T. R. station and village of Myrtle, is the stock farm of Mr. Robt. Duff, whose chief aim in stock-rearing has been directed toward the establishment of a Shorthorn herd of cattle, and in this respect Mr. Duff has perhaps been more favorably located than many of the young stock-raisers in the Province, as he is so conveniently situated beside some of the leading herds, thus having access to some of the best sires in the breed. The Shorthorn herd is over 25 in number and comprises animals purchased from herds and families of high repute. Rose Flower 2166, by Sussex (imp.) 6438, and out of Roan Berry (imp.) 11077, is a roan seven-year-old cow that was bred by Hon. John Dryden. She is a strong, fleshy animal of the early-maturing type. Mayflower 2nd 12943, by Challenge 253, and out of Mayflower 10031, is also a good sort and is credited with perhaps the choice of the young bulls in the herd, a smooth roan fellow whose quality would recommend him anywhere. Matilda 18207, by Aboyno (imp.) 6312, and out of Bessie 5435, is a nine-year-old red cow of very useful type, possessing high dairy qualities. She raises a splendid red heifer calf this year to Oxford that Mr. Duff regards amongst his choicest. She also raised Oxford 2nd, by Oxford, a promising young bull. In all we were shown half a dozen young bulls that show the good attention they are receiving. The young females too are responding readily and making good progress. They are worthy of the attention of intending purchasers, as we were told that anything on the farm would be priced at any time.

EVERY SUCCESSFUL farmer who raises fruits, vegetables, berries or grain, knows by experience the importance of having a large percentage of

Potash

in his fertilizers. If the fertilizer is too low in Potash the harvest is sure to be small, and of inferior quality.

Our books tell about the proper fertilizers for all crops, and we will gladly send them free to any farmer.

GERMAN KALI WORKS,
93 Nassau St., New York.

CREAM SEPARATORS.

Write to Headquarters or Ask Name of Local Agents.

LISTER CO. (LIMITED)

18 St. Maurice St., Montreal,
or King St., Winnipeg, Man.

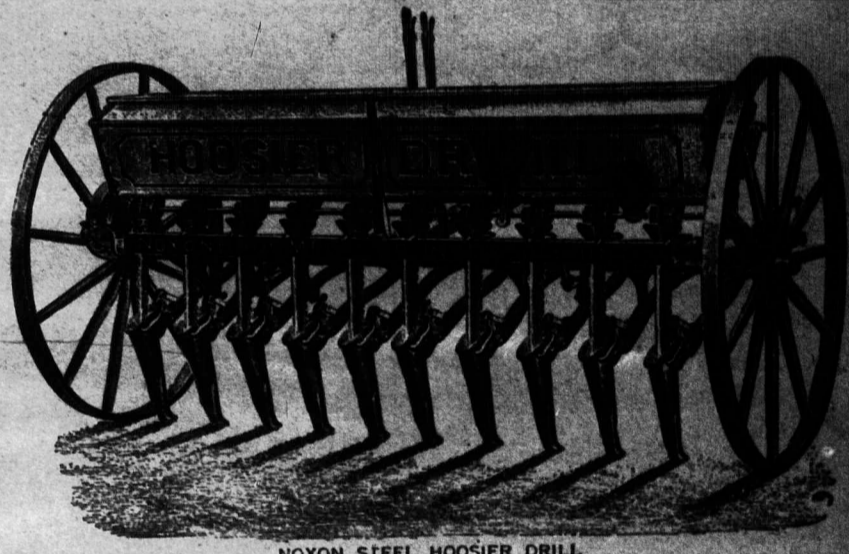
WINDMILL A sixteen-foot patented Windmill for \$25.
AGENTS WANTED. R. BRUCE,
551 William St., LONDON, ONT.

The Hoosier Needs No Introduction.

Over 40,000 Drills and Seeders of our manufacture in use in Canada. The only Drill made with lever for instant and perfect regulation of depth of hoe in all kinds of soil while team is in motion. Sows absolutely correct to scale; saves seed, as every kernel is deposited at a proper depth to grow. Purchase only the best and you will be satisfied. We also manufacture Binders, Reapers, Mowers, Rakes, Cultivators, and Pulpers, as good as the best. Send for illustrated catalogue.

NOXON BROS. MFG. CO., Limited, Ingersoll, Ont., Canada.

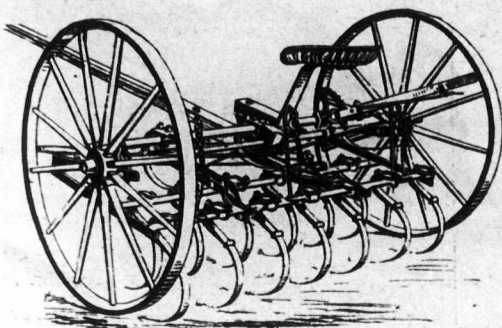
THE BEST DRILL MADE.



NOXON STEEL HOOSIER DRILL

THE No. 12 CULTIVATOR IS A MARVEL OF SUCCESS.

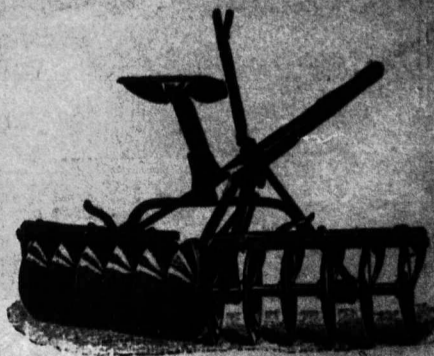
The only Cultivator made that both lines of teeth will cut an even depth in the ground. Examine it and you will see why. The only Cultivator with a movable tooth seat so that the angle of the teeth can be regulated to suit any condition of soil. Pressure can be regulated to act differently on every section requiring it. The teeth are carried between the wheels instead of trailing behind, as in other machines, thus securing lighter draught. This machine is furnished with grain and grass seed box when required. It has reversible diamond steel points for the teeth; also extra wide thistle-cutting points can be furnished. Examine it and you will buy no other.



NOXON BROS. MFG. CO., Limited, Ingersoll, Ontario, Canada.

The Buffalo All-Steel Disc Harrow.

This is the only Disc Harrow made or sold in Canada having independent adjustable spring pressure upon the inner ends of the gang discs, allowing any amount of pressure to be thrown upon the inner ends of the gangs by the foot of the operator. By this means a perfectly flexible action is secured, and the ground can be worked at a uniform depth. Examine this machine carefully and compare with others.



NOXON BROS. MFG. CO., LIMITED,
INGERSOLL, ONTARIO.

T Speaks for Itself.



Old Cement.
Ont., Nov. 1, 1888.
Thorold Cement for basement walls 9 feet throughout, for cow and cheaper than if they WILLIAM PATTON.

ULL
TTLE,
RIO.

ECURE A
erry Christmas
AND A
ppy New Year
ur order for whatever
achine you are going
e for the coming har-
be sure the order is for

NDER,
WER,
RVESTER,
APER,
Y RAKE,

ment Branch House:
NDON, ONT.

TUBERCULOSIS IN CATTLE
IMPORTANT TO FARMERS.

The following letter is sent by the Department of Agriculture at Ottawa to persons desirous of having their cattle tested for Tuberculosis, and sets forth the conditions under which the Dominion Government undertake to apply the Tuberculin Test FREE OF CHARGE.

DOMINION OF CANADA.
DEPARTMENT OF AGRICULTURE.
OTTAWA.....

DEAR SIR,—
In response to your letter of the..... I beg to say that the following are the conditions upon which the Department applies the Tuberculin test to cattle.—
When a person makes application to the Department to have his cattle tested for the purpose of ascertaining whether any of them are affected with Tuberculosis, a Government Inspector is sent to test, and all expenses in connection with this are paid by the Department. The owner must accept all responsibility for food he will have to furnish. The Government does not order the slaughter of diseased animals. No compensation will be given in cases where owners slaughter of their own free will, if any of the animals are found to be suffering from the disease, they will have to be incised and the shed or corral in which they are kept will be quarantined. The owner will then be prohibited from selling any of them or their raw products. Should he desire of his own free will to slaughter them and dispose of their carcasses for food he will be allowed to sell them. The premises in which diseased animals have been must be cleaned and disinfected to the satisfaction of the Government Inspector, as recommended on page 11 of the Farmer's Bulletin on Tuberculosis, a copy of which I enclose you. The premises in which diseased cattle have been quarantined will also have to be disinfected and cleaned, as mentioned above, after the animals have been disposed of. When the Minister of Agriculture receives a certificate from the Inspector that the disinfection has been done to his satisfaction the premises will be released from quarantine. No application will be considered unless the owner agrees to submit all his cattle to the test.

If an applicant refuses to have his cattle tested after having made formal application, he will be charged with the cost of the Tuberculin test. Expenses may have been incurred by the Department in connection with the sending of a Veterinarian to make the tests.
Upon your signing and returning to us the attached form of request a Government Inspector will be sent to test your cattle.
Yours truly,
W. SCARTH,
Deputy Minister of Agriculture.

To the Honorable the Minister of Agriculture for Canada, Ottawa, Ontario:

I hereby request that my entire herd of cattle, consisting of—
..... Bulls,
..... Cows,
..... Steers,
..... Heifers,
..... Calves,
.....

be tested for Tuberculosis with Tuberculin, and I hereby agree to conform to the Government conditions as expressed in their letter dated..... which I acknowledge having received.....
The nearest railway station to my premises is.....
..... on the line of the..... Railway Company at the station I will meet him and drive him to my premises and, when the testing of my animals is completed, will drive him back to the station free of charge.
Signed.....
Date.....
Address.....

IMPORTANT TRUTH

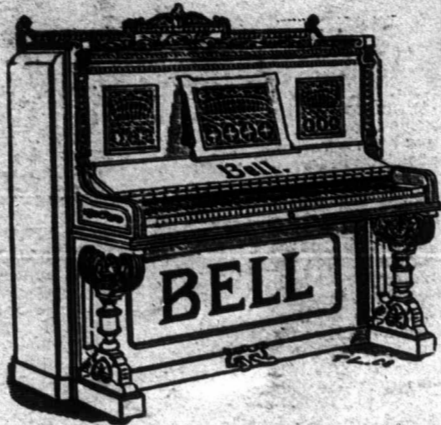
FOR STOCK RAISERS.
LUMP JAW has been transformed from an incurable to an easily curable disease. The entire credit for this wonderful result is due to
Fleming's Lump Jaw Cure.

When this remedy was discovered no other real cure was known. No other positive cure is yet known. FLEMING'S CURE was first introduced in Saskatchewan, and from there its reputation has spread over the entire continent. It is the only remedy endorsed by leading ranchers, shippers, and stock journals. It is positively guaranteed; money is returned if it fails. One bottle usually cures one to five cases.
Like all other articles of exceptional merit, it is imitated in external respects, but these imitations wholly lack the distinctive qualities of the genuine.

GET FLEMING'S LUMP JAW CURE AND BE CERTAIN OF RESULTS.
SEND ANYWHERE BY MAIL.
TREATISE AND IMPORTANT REPORTS SENT FREE.
FLEMING BROS.,
CHEMISTS,
ST. GEORGE, ONTARIO.

NO DUTY TO PAY NOW
RUNS EASY
SAWS DOWN TREES
ON THE FOLDING SAWING MACHINE. It is made in Essex Centre, Ontario. It saws down trees. Saws any kind of timber on any ground. 9 CURBS BY ONE MAN IN 10 HOURS. Send for free illustrated catalogue showing latest improvements and testimonials from thousands. First order secures agency. Address Main Office, Folding Sawing Mach. Co. 64 Clinton St. U71, Chicago, Ill.

CURED TO STAY CURED
ASTHMA
Dr. HAYES, Buffalo, N. Y.



BELL
Pianos
and Organs

Superior in TONE, QUALITY, CONSTRUCTION and FINISH. Full description to be found in our Catalogues. Mailed free on application to

The BELL ORGAN AND PIANO COMPANY, Limited,
GUELPH, ONT.
OVER 75,000 OF OUR INSTRUMENTS NOW IN USE.



"The Scientific Compounds for Stock and Poultry."
Formulated by a Physician and Veterinary Surgeon.

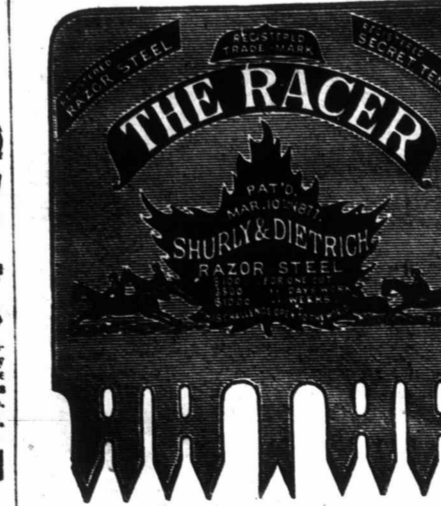
DR. HESS' STOCK FOOD
For Horses, Cattle, Hogs, and Sheep; an appetizer, a flesh producer, a blood purifier and tonic. It expels worms.
DR. HESS' POULTRY PAN-A-GE-A
Cures Diseases and Makes Hens Lay.
INSTANT LOUSE KILLER KILLS LICE.
Awarded medals at the Toronto Exhibition; medal at the Western Fair, London; first premium at Chicago Poultry Show; first premium at St. Louis Poultry Show; first premium at Rock Island Poultry Show; endorsed by the London Poultry and Pet Stock Association, St. Louis Fanciers' Association, Rock Island Poultry Association, Davenport Poultry Association, by the President of the American White Plymouth Rock Club, thousands of testimonials on file. Sold by dealers generally, or address:
DR. HESS & CLARK, Ashland, O., U. S. A.
PRICE: Pan-a-ge-a and Louse Killer, 35c. each; Stock Food, 7 lbs., 65c.; 12 lbs., \$1.00; 35c. articles by mail 5c. extra.
Send for Scientific Book on Stock and Poultry, FREE.

"RAPID-EASY" GRINDERS.



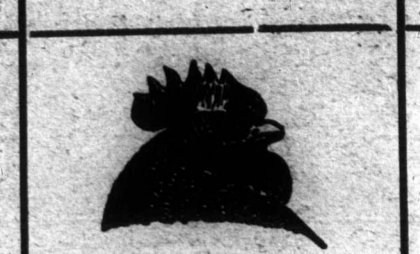
WORK OF
Best Quality; Greatest Quantity
WITH LEAST POWER.
80 lbs. of steam on "Rapid-Easy" Grinders will do more work than 100 lbs. on any other. Four horses will do as much work as six horses on other Grinders.
Mr. Valentine Fisher, Ayrton P. O., Ont., December 16th, 1898: "I purchased one of your Rapid-Easy Grinders from Mr. Koenig. The machine gives the very best of satisfaction. I ground a bag of grain in three minutes with two teams. I have not seen a machine equal to it. It runs very light."
Mr. Guy Bell, Brampton, Ont., December 12th, 1898: "I have very much pleasure in adding my testimonial to the many you already have as to the efficiency of your No. 2 R.E. Grinders. I have tested it thoroughly with all kinds of grain. It is easy running, and I can confidently recommend it as a machine that grinds better and faster than any other I have ever seen."
J. FLEURY'S SONS,
AURORA, ONTARIO.
Medal and Diploma for Plows at World's Fair, Chicago.

The Razor Steel, Secret Temper, Cross-Cut Saw



WE take pleasure in offering to the public a Saw manufactured of the finest quality of steel and a temper which toughens and refines the steel, gives a keener cutting edge and holds it longer than by any process known. A Saw to cut fast "must hold a keen cutting edge."
This secret process of temper is known and used only by ourselves.
These Saws are elliptic ground thin back, requiring less set than any Saws now made, perfect taper from tooth to back.
Now, we ask you, when you go to buy a Saw, to ask for the Maple Leaf, Razor Steel, Secret Temper Saw, and if you are told that some other Saw is as good ask your merchant to let you take them both home, and try them and keep the one you like best.
Silver steel is no longer a guarantee of quality, as some of the poorest steel made is now branded silver steel. We have the sole right for the "Razor Steel" brand.
It does not pay to buy a Saw for one dollar less, and lose 25 cts. per day in labor. Your saw must hold a keen edge to do a large day's work.
Thousands of these Saws are shipped to the United States and sold at a higher price than the best American Saws.
MANUFACTURED ONLY BY
SHURLY & DIETRICH,
GALT ONTARIO.

There is No Doubt About the MERIT of **DEHORNING**
It cuts both ways, does not crush. One clip and the horns are off close. Write for circular. The Keystone Dehorner Mfg. Co., Picton, Ont., Can.



PERSIATIC HEN HOUSE SPRAY....

VERMIN is the most persistent enemy of the feathered stock. Keeps the fowl in bad health, listless and drooping; destroying its good qualities for show, laying or breeding purposes. Not much use in doctoring the fowl until the houses are in shape. Strike at the root of the trouble by keeping them in perfect sanitary condition with

PERSIATIC HEN HOUSE SPRAY....

No insects or lice can live after its application, and one thorough dose lasts a long time. Keeps the atmosphere pure and healthy, destroying disease germs and the bad effects of gases, vapors, etc. Makes up for insufficient ventilation in the winter months. If your dealer hasn't it, write us direct.

The Pickhardt-Renfrow Co.
(LIMITED),
STOUFFVILLE.

BUTTER, HONEY, JAM!

Farmers and Dairymen!
The best packages for putting up butter, honey, jam, etc., whether for shipment or for storage, are made from our

Antiseptic Ware

WRITE FOR CATALOGUE AND PRICES.
THE
E. B. EDDY CO.,
LIMITED,
Hull, Montreal, Toronto, Quebec, London, Hamilton, Kingston, St. John (N. B.), Halifax, Winnipeg, Victoria, and Vancouver, St. John's (Newfoundland).

WEST'S FLUID

IF PROPERLY USED IT IS A POSITIVE PREVENTIVE FOR SUCH DISEASES AS
Contagious Abortion and Hog Cholera
AND A MOST EFFECTIVE DISINFECTANT, SIMPLY BECAUSE IT IS A STRONG ANTISEPTIC AND DESTROYS THE GERMS UPON WHICH SUCH CONDITIONS DEPEND, AND DOES NOT CONTAIN CORROSIVE NOR IRRITATING PROPERTIES. FULL INSTRUCTIONS ON APPLICATION.
THE WEST CHEMICAL CO.,
TORONTO, - - ONTARIO.
Agents wanted in all countries.

ONTARIO FARMERS' FAVORITE!
BETTER THIS SEASON. IMPROVED STOCK AND INCREASED DEMAND. 12 GOLD MEDALS MEAN GENUINE WORTH AND STERLING QUALITY. BE SURE YOU INSIST ON HAVING
ROGERS' "PEERLESS" MACHINE
YOU WILL EFFECT A GREAT SAVING.
QUEEN CITY OIL CO., Limited, TORONTO.
SAMUEL ROGERS, President.