

**PAGES  
MISSING**

# FARMER'S ADVOCATE

AND HOME MAGAZINE

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

Vol. XXXIII.

LONDON, ONT., AND WINNIPEG, MAN., FEBRUARY 1, 1898.

No. 447.

## EDITORIAL.

### Our Dairy Industry.

Judging from the large number of earnest, enthusiastic and intelligent representatives of the dairy interest who attended the annual conventions of the Butter and Cheese Makers' Associations of Eastern and Western Ontario, recently held at Lindsay and London, reports of whose proceedings are given in this issue, we are persuaded they have full faith in the future of the special branch of farming in which they are engaged. We have been pleased to note the hopeful and even confident feeling prevailing as an offset to the pessimistic view of some people outside of the pale of the dairymen's domain who have feared the business was being overdone or had nearly reached the limit of its profitable prosecution. The fact that the value of our exports of butter and cheese for last year was close to \$20,000,000, and that the value of those products shipped from the port of Montreal from the first of May to the twentieth of November in 1897 was \$3,370,000 more than during the same period in 1896, and that without materially breaking down prices, only serves to show how vastly capable of expansion is our market for these products, if we but continue to hold the grip we have secured on the British market for our cheese, and to gain in the same proportion a place in the same market for our butter.

But it is practically certain that our trade in butter will grow to immensely larger proportions in the near future, since we are assured of the success of shipping in cold storage, and an increasingly large number of creameries are being operated in all the provinces, many of our cheese factories having arranged for the necessary plant for making butter during the winter months, while they will continue to manufacture cheese in summer, a system which has much to commend it, since it furnishes work for the whole year, giving constant and profitable employment the year round to many who but for this would be out of work for nearly half the year.

If the possible output of these productions were to be of doubtful or only average quality we could readily understand the possibility of overdoing the market, but that is just what our intelligent dairymen are determined it shall not be. *Quality* is the watchword they have inscribed on their banners, and they all understand it to mean first-class, and will aim at that standard, realizing the truth of the axiom "There is always room at the top." If we produce an article which suits the tastes of those to whom we cater, the market is capable of almost indefinite expansion, and we have all the requisite facilities to meet those conditions, and, best of all, we have the people fired with the ambition to excel in the line of their chosen vocation.

There is no branch of farming so intensely interesting or which requires and calls into action so much intelligent study and skill as that of dairying, since it includes the science and the arts of breeding, feeding, and manufacturing, dealing with the delicate problems of the development of animal life and of molding it to the performance of a purpose and the attainment of a high standard of perfection. The problem of profitable and economical feeding for the production of the

largest quantity of the best quality of milk and butter or cheese at the least cost is an equally interesting study, while the manipulation of the product through all the processes of manufacture with the aid of modern appliances and in the light of modern discoveries has a fascination about it which none but those who have experienced it know how to appreciate.

While all the advantages of modern methods are possible to the private dairymen of only moderate means, we are persuaded that the greatest measure of success in these lines lies in the principle of co-operation. Uniformity of quality is immensely important as a factor in gaining and holding a place in the preferences of the people to whom we cater, and it is more easily possible to attain that point in the factory system where the same methods are followed and mainly by men trained in the same school or affiliation of schools.

What is needed is that every butter and cheese maker in Canada shall catch the spirit of the leaders in this campaign and do his individual best to raise the standard,—first for his own sake, of his cows and his methods of feeding, and then for the

in the Central Farm report on stock, while there are 3 from Brandon, 3 from Indian Head, a few lines from British Columbia, and none at all from the Maritime Provinces farm; while the reports on horticulture at Ottawa alone take up 82 pages! And the accounts of experiments with endless varieties of potatoes (no less than 90), grapes, small fruits, ornamental shrubs, flowers (generously illustrated), etc., fill up a great deal of space, and must have cost an immense amount of thought, time, and money to carry out. Surely the great end and aim of these farms is not to make them show-places for tourists or visitors from the towns, but rather to render a source of useful instruction and object lessons for the farming community. The work done by our Manitoba and Northwest farms along the lines of successful grain, grass, and shelter-belt growing is worthy of all praise; but what we, as farmers depending on mixed husbandry for our living, want to see is more attention paid to the best methods of live-stock farming and less to fads, or to renewed tests of inferior grains, potatoes or fruits. As to ornamental shrubs, etc., a very small amount of time is all any farmer can spare for them in actual practice, and not one in a hundred of those who receive these reports ever read the results of the hybridizing of grain or berries, but the great majority want to know what the farms are doing with the marketable articles—wheat, barley, oats,

cattle, sheep, hogs, and horses. Cannot more attention be given these lines, and less to the ornamental side? Prof. Robertson did thorough good work in the dairy lines. Let us have an equivalent in the beef and mutton branches, horse-rearing, etc., which, properly done, would surely prove more profitable to the country than the exploiting of Ladoga wheat in the West and two-rowed barley in the East a few years ago! It may be objected that the Government has no right to engage in live-stock breeding, feeding and selling, as it would prejudice the sale by private owners. As a stockman and owner of a few pure-breds, I cannot see it in that light, unless the Government stock were of inferior merit, or bought from political friends in the neighborhood of the several farms; rather, on the other hand, it would serve to show the capabilities of good stock in good hands, and such a demonstration is certainly needed in this Province, where some 17,000 stockers were sold last spring. There was plenty of feed in sight for them, and if there had been more knowledge of stock-breeding and its advantages, they might have stayed here until fit for the butcher. The ornamental departments of the farms

will "keep"—say for ten years—for the present let us have more of the practical, every-day, bread-winning variety of demonstration. Stock-raising is an essential part of a permanently successful system of farming in Canada. In 1896 our exports of animals and their products brought us nearly \$35,000,000, or two and a half times that of our exports of all other farm products, including grain, hay, fruits, seeds, etc., and more than one-third of all the exports of Canada put together. Exportation is being developed at heavy cost. Each season will develop fresh problems in regard to production and demand, where experimental investigation can be of great service to the farmer. All these facts point out the pathway our investigators should pursue. Trusting that the farmers who largely sustain these institutions will insist that such features be made more conspicuous in future—in short, be given first place, as their importance demands—and that the suggestions made will be adopted in the spirit in which they have been given, I remain,

Yours respectfully,  
H. NEWMARCH.  
Rockwood Municipality, Man., Jan. 20, 1898.

JAMES McMAHAN, Lambton County, Ontario:—Gentlemen,—Please accept thanks for premium ring No. 4; it is all right, better than I expected. Will try and send more subscribers. We take three agricultural papers in our house, and all think the *ADVOCATE* beats them all. Please send order blank and envelope.

## Appreciation.

To the Editor *FARMER'S ADVOCATE*:

DEAR SIR,—Having just returned, after an eight days' absence, have seen the Christmas Number of the *FARMER'S ADVOCATE* for the first time, and feel so pleased with it that the thought came into my mind that it was the right and proper thing to let you know that the good work you are doing for the farmers of this country is appreciated. Although I am writing only for myself, I am quite sure that I am but voicing the sentiments of the great body of your readers when I say that it is a good thing for the farmers of this country that we have such a splendid agricultural paper, and it is not at all too much to say that if the *ADVOCATE* was read in every farm home in this country that the average farming would be very much better than it is. I am not ashamed to say that I am a better farmer because I have been a constant reader of your paper.

Yours respectfully,

JOHN I. HOBSON.

Guelph, Ont., January 3rd, 1898.

sake of his country, including himself, of the quality of the goods placed upon the market. This juncture has the merit that there is money in it for every man who makes a forward movement, and at the same time the satisfaction of healthful and comfortable home surroundings. Compared with the lot of those who have booked for the far-away fields of Klondyke, where the blanks will certainly be in sad proportion to the prizes, the odds are immensely in favor of the patient plodder on the home farm.

### Experimental Farms -- Useful or Ornamental -- From the Standpoint of Our Greatest Farming Industry, Live Stock Rearing.

To the Editor *FARMER'S ADVOCATE*:

SIR,—In a late issue of the *ADVOCATE*—that of November 15th—the management of the Dominion Experimental Farms was criticised, and (without deprecating good work undertaken with great care and zeal) to my mind rightly so—first of all because of the disastrous records of the Central Farm with tuberculosis. Then the last report of the farms, that for '96, issued in '97, deals very sparingly with stock farming, with the exception of poultry, on which subject there is a full report of great value. In a volume of 474 pages there are only some 18 pages

## THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN  
THE DOMINION.

PUBLISHED BY  
THE WILLIAM WELD COMPANY (LIMITED),  
LONDON, ONTARIO, AND WINDSOR, MICHIGAN.

JOHN WELD, MANAGER.

1. THE FARMER'S ADVOCATE is published on the first and fifteenth of each month.
2. It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical, and reliable information for farmers, dairymen, gardeners, and stockmen, of any publication in Canada.
3. TERMS OF SUBSCRIPTION—\$1.00 per year in advance; \$1.25 if in arrears; sample copy free. European subscription, £1, or \$1.50. New subscriptions can commence with any month.
4. ADVERTISING RATES—Single insertion, 20 cents per line. Contract rates furnished on application.
5. DISCONTINUANCES—Remember that the publisher must be notified by letter or post-card when a subscriber wishes his paper stopped. All arrears must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post Office address is given.
6. THE ADVOCATE is sent to subscribers until an explicit order is received for its discontinuance. All payments of arrears must be made as required by law.
7. THE LAW IS, that all subscribers to newspapers are held responsible until all arrears are paid and their paper ordered to be discontinued.
8. REMITTANCES should be made direct to this office, either by Registered Letter or Money Order, which will be at our risk. When made otherwise we cannot be responsible.
9. ALWAYS GIVE THE NAME of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done. Address—THE FARMER'S ADVOCATE, or THE WILLIAM WELD CO., LONDON, ONTARIO, CANADA.

### The "Binder" and Other Premiums.

Whether to ascribe the selection of our premiums to good judgment, good fortune, or a combination of the two, we are not prepared to say, but we do know that the very many going out are meeting with the highest approval. Our "Binder" especially has made a decided hit. Not only do we realize that it will do us good wherever it goes, but we also have the satisfaction of knowing that every man who uses it as he should will receive very many more dollars' value from his paper than the man who does not file the numbers as they are issued. Here is what two subscribers have written us regarding the Binder:

John H. Mallough, Huron Co., Ont.:—"I received the 'Binder' in first-class condition, and wish to say that I am highly delighted with it. It is something I have long wished for. I spent hours among back issues the other day looking for two articles, viz., 'The Treatment of Wounds in Farm Animals' and a receipt given by some practical farmer for destruction of ticks on sheep. Had I used the 'Binder' each year I could have found the needed articles at once.

"The subscriber who tries to economize by doing without the 'Binder' is simply 'saving at the spigot and wasting at the bung.' What an immense budget of readable, up-to-date matter for the farmer, breeder, dairyman, fruit-grower, and poulterer the whole year's issues of the FARMER'S ADVOCATE will make! What an outfit for the canvasser! What an inducement to non-subscribers to subscribe at once!!! The experience of others gives us a push up the hill of life and puts money in our pockets."

T. B. Millar, O. A. C. Dairy School, Guelph, and Instructor for the Western Ontario Butter and Cheese Association:—"The new 'Binder' for the FARMER'S ADVOCATE which you are now sending out for the securing of two new yearly subscriptions is filling a long-felt want in enabling one to save his papers, which was without it not conveniently accomplished. I have saved all the copies since becoming a subscriber many years ago, but found it difficult to preserve them in a manner easy of access.

"I believe every subscriber should read, preserve and review all agricultural papers as a means of education, and especially such an excellent journal as the FARMER'S ADVOCATE. I desire to say in closing that you deserve credit and commendation for furnishing such a convenient and durable 'Binder' for such a small service."

Our collic pups continue to find ready takers. To-day is Wednesday (January 23th), and three have been ordered this week already. We have yet to hear the first shadow of complaint regarding the collics, while almost every recipient expresses extraordinary pleasure at having received such a beauty for such a small service. We provide either male or female, from the best Scotch blood.

The Bagster Teacher's Bible and other book premiums continue to give the utmost satisfaction. We could publish pages of the most flattering testimonials, but the demands on our space are too great. The jewelry premiums too are pleasing wherever they go. The most general remark regarding them is, "Better than we expected." While it affords us extreme satisfaction to realize that the remuneration our club canvassers are receiving for their efforts is so satisfactory, we wish to thank them for the excellent work they are doing for the FARMER'S ADVOCATE and for agriculture, as wherever this paper goes it makes friends and improves the agricultural situation.

### Agriculture at the Recent Session of the Ontario Legislature.

The chief work of the recent session of the Legislature was the consideration of the estimates and the discussion of the timber policy of the Government. Other questions, of course, came in for a fair share of discussion, but these were the two questions of most importance to the country at large. There were, however, a few items of more particular interest to the agricultural classes. To these we shall briefly refer.

Extended reference has been made to the finding of the dreaded San José scale in Ontario in 1897. The danger was great and the Minister took hold of the question at once and with vigor. Some may think the legislation passed too advanced, but the fruit-growers who understand and appreciate the gravity of the situation appear to be pleased with the proposed radical treatment. The Bill gives the Minister authority to appoint inspectors to search for trees, bushes, shrubs and fruit infested with the scale. All infested stock must be destroyed at once. Compensation is provided for to the extent of one quarter of the value of all plants destroyed. All importation of infested stock is prohibited, and local fruit inspectors are required to co-operate with the Department officials. We understand that the Bill has been printed for extensive circulation, and we would advise all interested to send to the Department at Toronto for a copy.

The presence of the fakir and confidence man at our fall fairs has been notorious in many sections. It seems that in many cases the local officers have encouraged such persons by licensing them to carry on their pernicious work right within the grounds. The old Act provided for cutting off the grant in such cases; but little or no objection would be made by members and visitors. The Department got no protests. Now, however, there has been passed an Act which puts the matter in a new form. Here are the three sections of the Act:

1. No person shall carry on, or assist, or aid in carrying on any kind of gambling, or any game of chance, at an agricultural, horticultural, live stock, or industrial exhibition or fair, or within half a mile thereof.
2. Any person violating the provisions of section 1 of this Act shall be liable on summary conviction to a fine of not less than \$20 besides costs and not more than \$100 besides costs.
3. This Act shall be read with and as a part of The Agriculture and Arts Act, and shall apply to all exhibitions held by societies coming within the above mentioned classes, whether incorporated under the said Act or not.

It will be seen from the above that hereafter it will be a very risky thing to carry on gambling games at our fairs, and directors are as much interested in this matter as the confidence men themselves. The Provincial police and detectives will probably be heard from. Directors and officials from agricultural societies who have the true interest of agriculture at heart will welcome this new move toward purifying the exhibitions.

The Government has at last taken a decided step towards placing the conservation of our forests on a rational basis. The Commission on Forestry made a preliminary report, and the Government introduced a Bill providing for the establishment of forest reserves. Forestry is becoming a matter of great importance to our farmers, and it is to be hoped that the Commission will later on have something to offer in regard to the re-foresting of waste farm lands.

The following is a condensed statement of grants made by the Legislature, taken from the estimates as published:

Agricultural societies	\$76,650
Various associations	20,700
Farmers' Institute work	9,900
Reports, bulletins, etc.	15,000
Experimental fruit stations	2,800
Fruit spraying	2,500
Agricultural experiments	300
Eastern Dairy School	4,700
Western Dairy School	3,100
Pioneer Dairy Farm	1,000
Bureau of Industries	6,500
Ontario Agricultural College and Farm in all departments, including Dairy School	52,260
Repairs and maintenance	6,725
Public buildings (capital account)	1,950
Good Roads Branch	2,500
San Jose scale	7,500
Total	\$214,691

We notice that a change appears to have come over the Legislature, or at least some members of it. It is not many years since many of the agricultural grants were opposed and questioned. This year no agricultural grant was challenged. All parties appear to be more favorably inclined towards assisting the industry in a fairly liberal manner.

Renew your subscription for the "Farmer's Advocate" at once, and enable us to give a better paper than ever in 1898.

### Binder Twine and the Tariff.

By telegraphic dispatches from Ottawa we learn that an influential deputation of capitalists who have heavy interests in the binder twine industry nourished under the protective tariff have been interviewing the Government urging a restoration of duties which passed entirely out of existence on Jan. 1st, and stating that unless their demand was granted they would be unable to compete with the American twine and their factories would have to close their doors. In addition to the advantage of free raw material the duty during the past year was 10 per cent., and prior to the last session of Parliament, when the present tariff was introduced, 12½ per cent., to which the twine duty had been cut down by Sir John Thompson, who probably did not underestimate the importance of the industry, being a less rate of protection than that enjoyed by other manufacturers, but still sufficient to enable one factory to pay its shareholders a dividend of 10 per cent. on their stock besides comfortable salaries and a "nest egg" laid by. What the big cordage company's dividends on watered stock were we know not, but judging by the prodigality with which its affairs were conducted and the way in which half a dozen rival concerns were swallowed or handsomely bought up to lie idle, as they still are, they must have been such as to make the farmer "sweat." What was demanded by the deputation was a return to the palmy 25 per cent. days! We do not believe that any healthy Canadian industry needs such bolstering up to live and thrive. Upon theories of protection or free trade we have nothing to say, but in the farmers' interests we deal with conditions as they arise. The present Government took office pledged against protection, the leader declaring at the convention when the platform was adopted: "The moment the Government takes one cent from your pockets, and that cent does not go into the treasury of the country, that is robbery, to your prejudice." Without unduly disturbing important industries, the aim was said to be to obtain a revenue to properly carry on the business of the country. A revenue tariff is supposed to apply on articles in general use, not on such a commodity as binder twine, used only by the farmer. A tax on twine adds just so much to the cost of production of wheat or other grain, which reduces by that amount the farmer's return, as wheat has to be sold in the open market. The Manitoba and Northwest farmer uses proportionately far more twine than the Eastern farmer, and the employment of 300 or 400 hands in the factories (many of them girls) in Ontario and Quebec does not affect the price of his wheat one cent. Compared with other industries, twine-making employs few hands, about 65 prisoners, we are informed, being able in the season to turn out the 1,000 ton output of the Central Prison at Toronto, and 6,000 or 7,000 tons, all told, is about the extent of Canada's twine consumption. The bogey of the American twine trust, "protected by a 45 per cent. duty," is held up, but as a matter of fact the old trust does not control, large numbers of concerns being entirely outside of it, one of them alone making, perhaps, ¼ of the whole U. S. output. Considerable quantities of Canadian twine were last season actually shipped to the States, and if we are correctly advised all binder twine that does not run over 600 feet to the pound is admitted free under the new U. S. tariff, and that includes practically all but pure manilla twine, of which only a small quantity is used either in Canada or the U. S. Even if the American factories attempted to combine and send up the price, the Government prison factories at Toronto and Kingston, and the independent Farmers' Factory at Brantford, should be able to checkmate any such move. The farmer of the West feels that he got scant justice in the last tariff revision. He is a patient individual, and even though last season happened to be a good one, it will not divert his attention from the significance of this move. The reasons that led the Government a year ago to adopt the present tariff are still unchanged. If they were good then they are good still, and one cannot think that the Government can back down, thus opening the breach for a general break on behalf of barbed wire, etc., etc., even though confronted by capitalists whose pockets give them more concern than the condition of Canada's greatest interest—agriculture.

JOHN MCCLINTOCK, Norfolk Co., Ont.:—"I have just received your handsome premium Bible, and must say it exceeds expectations. Did old subscribers but know the sterling value of this premium alone the ADVOCATE should double its subscription speedily. Shall consider myself further indebted to you for this grand book."

In the FARMER'S we published an e of a United States in this journal on out to us to promo men of a worthless ter-maker," which and thorough tes tendent of the W under which it p every respect. T ceeded, however, pretentious week posture in the ADV hundreds of dolla the sale of territo well as churns, as response from gentleman in New that Province in claims put forward ance in their ci calculated to dec is the daylight le these sharks in o where under som Ontario Farmers

DEAR SIR,—I which will expla the matter befor will be floated i public should b believe it to be. who said he had was satisfactory, practical man; I his judgment; b about it, that l some \$3,000 in it ada is being hel mention my nam upon the same.

It is described "Narcross Butt greatest seller o five minutes"— from either sw "make more bu tity of cream th the market"— "a scientific d inexperienced p a grade of butte enced dairyma turn the wheel, rest"—all of wh cheeky lies are of articles said in Chicago and prices are given according to c principle of thi to be the san these columns pellar screw, speed. If the ent's letter de for all time to make an inv Separator" er ers of Canada such humbug firms. If any such schemes be sent us so Beware of no thing for not they are tryin

Wel

To the Editor F SIR,—Paro subscription mine and tw me worthy of Prof. H. H. V paper is a w Dairying is c eries being b to be combin all the milk 16,000 pound ing at 9 an weather now is better—m gold fields th ments of the

**Humbugs Still Abroad.**

In the FARMER'S ADVOCATE for August, 1897, we published an extended account of the attempt of a United States firm to obtain advertising space in this journal on the strength of a \$500 bait held out to us to promote the sale to unsuspecting dairymen of a worthless churn called the "Queen Butter-maker," which we submitted to an independent and thorough test by Mr. Sleightholm, Superintendent of the Western Ontario Dairy School, and under which it proved to be an utter failure in every respect. The promoters of the humbug succeeded, however, in getting space in at least one pretentious weekly newspaper, but the timely exposure in the ADVOCATE stopped the game, saving hundreds of dollars to our dairymen by preventing the sale of territorial and manufacturing rights as well as churns, as we learned subsequently by correspondence from different parts of Canada, one gentleman in New Brunswick being about to secure that Province in which to operate. The plausible claims put forward with the most confident assurance in their circulars and advertisements were calculated to deceive the very elect. But no sooner is the daylight let in upon the rascally methods of these sharks in one quarter, than they crop up elsewhere under some other guise. The president of an Ontario Farmers' Institute writes us as follows:

DEAR SIR,—I am enclosing a circular to you which will explain itself. I wish you would bring the matter before the Dairymen's Association. It will be floated in Canada soon, and I think the public should be warned if it is a fraud, which I believe it to be. I met a gentleman a few days ago who said he had seen its work and it was satisfactory, but as he was not a practical man, I put no confidence in his judgment; but he is so enthusiastic about it, that he thinks of sinking some \$3,000 in it, as that is what Canada is being held at. You need not mention my name. Give your opinion upon the same. Yours truly, etc.

It is described in the circular as the "Narcross Butter Separator"—"the greatest seller of the age"—"butter in five minutes"—"absolutely pure butter from either sweet or sour milk"—"make more butter from a given quantity of cream than any other churn on the market"—"the little gold mine"—"a scientific discovery"—"the most inexperienced person can make as fine a grade of butter as the most experienced dairyman in the world"—"you turn the wheel, the machine does the rest"—all of which and pages of other cheeky lies are backed up by reprints of articles said to have been published in Chicago and New York papers. The prices are given at from \$6 to \$25 each, according to capacity. The working principle of this dairy wonder appears to be the same as the one already exposed in these columns, viz., resembling that of a propeller screw, geared to run at a high rate of speed. If the party referred to in our correspondent's letter desires to "sink" \$3,000 effectually for all time to come he need not go further than to make an investment in this so-called "Butter Separator" enterprise. We again warn the farmers of Canada and elsewhere to steer clear of all such humbugs. Deal with reputable and known firms. If any reader of the ADVOCATE knows of such schemes being worked the facts should at once be sent us so that others may be warned in time. Beware of unknown parties who offer you something for nothing or make fabulous claims for what they are trying to sell.

**Welcomed in Pennsylvania.**

Silver Spring Creamery,  
Potter Co., Pa., Jan. 18th, 1898.

To the Editor FARMER'S ADVOCATE:

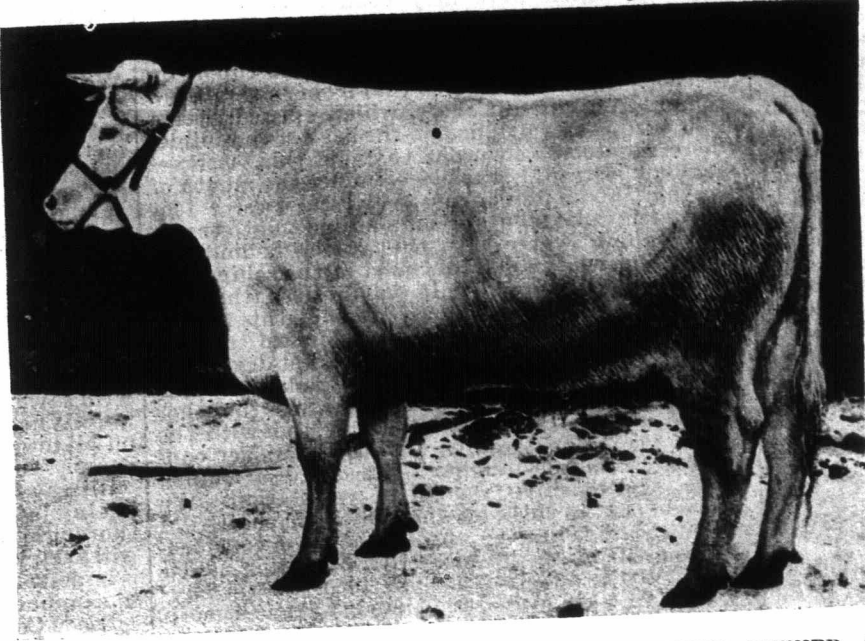
SIR,—Pardon my neglect in not sending you my subscription money before. Inclosed find \$5 for mine and two new subscribers for '98. Do you think me worthy of a premium? If so, please send me Prof. H. H. Wing's "Milk and Its Products." Your paper is a welcome guest. Others like to read it. Dairying is on the advance here, two new creameries being built for next season's trade. They are to be combined. We are milking 50 cows, selling all the milk and butter we can produce. Made 16,000 pounds of cheese this summer, most of it selling at 9 and 10 cents a pound. We have nice weather now; no sleighing. Times here seem to be better—more life, and a good many going to the gold fields this coming summer. With the compliments of the season, Yours truly, ISAAC LINTON.

**Agricultural Education in Ohio.**

Collegiate education in agriculture in Ohio dates back to 1854. The beginnings in this line were small, but the leader in this new educational movement was a man of culture, power and enthusiasm. "The Ohio Agricultural College" was planted at Oberlin. After two years of small growth it was transplanted to Cleveland. In 1870 the Ohio State University was founded at Columbus, the capital of the State, and "the Ohio Agricultural College" was retransplanted from Cleveland, to become as it now is, "The College of Agriculture" of the Ohio State University. The dedication of a new building, to be devoted exclusively to the students in agriculture, marks an epoch in agricultural education in Ohio, and the many readers of the FARMER'S ADVOCATE in Western Ontario will no doubt be interested in a brief recital of the main facts connected with this ceremony, which took place on the 12th of January.

Norton S. Townshend, M.D., was the leading spirit of four cultured men who lived at Oberlin in the fifties—men who realized that there was a science of agriculture as well as the art of agriculture, and who were imbued with the thought that the success of this art in the future depended much on the teaching of the science. Dr. Townshend, born in 1815, was the son of a well-educated, prosperous farmer in a central shire in England. He was well grounded in practical farming by close association with his father's work in England and in Ohio after the family came to America. When he reached young manhood he studied medicine, and was enabled to avail himself of the best instruction then to be had, attending lectures in Cincinnati, New York, Edinburgh, and Paris. He practiced medicine with success for several years; but it did not require the lapse of many years to make it plain that he had not turned from farming to medicine, but, as one of his colleagues said, he had added medicine to farming. His leading thought during the fifties was that farming should be taught as thoroughly as medicine was taught. He gave the first lectures on agriculture at Oberlin in 1854. On the founding of the Ohio State University in 1870 he became Professor of Agriculture, which position he retained until his death in 1895. The naming

of the new agricultural building "The Townshend Hall" was a becoming tribute to the memory of an accomplished, enthusiastic teacher. Dr. Townshend was a man of affairs—a member of Congress, a member of the Ohio State Senate, and an Abolitionist, who did business with Western Ontario by the "Underground Railway" when that was the only railway in Ohio.



PURE-BRED SHORTHORN STEER, "BRUCE," CHAMPIONSHIP WINNER AT THE ONTARIO PROVINCIAL FAT STOCK SHOW, 1897; BRED AND EXHIBITED BY H. & W. SMITH, HAY, ONT. SEE PAGE 59.

The building cost over \$100,000. Thomas F. Hunt is Professor of Agriculture; William D. Gibbs is his assistant; H. Weber is Professor of Agricultural Chemistry, and I. H. Noyes is Instructor in Cheese and Butter Making.

A luncheon was served to a large number of leading farmers and other friends of the University, after which addresses by prominent men in agricultural circles, both State and National, were presented to a large and appreciative audience, presided over by Dr. J. H. Canfield, President of the University, in the commodious and pretty chapel. The principal addresses were the dedicatory address, by Dr. I. P. Roberts, Director of the College of Agriculture in Cornell University, at Ithaca, N. Y., and an address entitled "A Tribute to Squanto," by Dr. H. W. Wiley, chief of the Division of Chemistry, United States Department of Agriculture at Washington, D. C. Dr. Roberts made a strong plea for the making of agriculture one of the leading branches of education, not only in the rural schools but in the village and city schools. He said that a training to enable children to distinguish between facts and opinions and between principles and judgments was important to people in all walks of life; and that for this purpose agriculture was greatly preferable to the mythological stories that figure so largely in the curricula of schools. His experience showed him that young people were keen to learn facts and principles regarding the life and growth of plants and animals; and that when he went into "the little red schoolhouse" in his State to talk to the children about the growth of a plant and illustrated his talk by a specimen before him, there was no lack of interest on the part of his audience. He proposed to continue these talks as opportunity offered, and to vary the subject by carrying a lamb in his arms to explain to pupils the principles of nutrition. To show that young people were inter-

ested in the study of the various branches of agriculture, he mentioned the fact that there are more students in the College of Agriculture than in all the other colleges of Cornell University put together.

Dr. Wiley's address was a most interesting account of how we may expect the 300,000,000 of people who will probably live in this country at the end of another century will be fed. He is neither a believer in the pessimistic theories of Malthus nor in the visionary suggestion that the food of the people of the future will be produced in the chemist's laboratory. He believes that the food required for the almost countless millions who will probably inhabit this planet in the future will be produced by the intelligent culture of the soil, the planting of seeds, and the proper feeding of the plants from the inexhaustible stores of plant food that Nature has laid up, and which she is every day producing. He gave the following facts to indicate the direction from which we may expect enormous increases of food supply. The average production of wheat is 12½ bushels per acre. A proper feeding of the crop increases this yield threefold. The difference between the actual yield and the possible yield of Indian corn is quite as marked as in the case of wheat. By judicious breeding and intelligent feeding pigs now give as much food for human consumption when six months old as was formerly obtained at ten or twelve months; and marked advancement has been made in this direction in the production of all kinds of meat. Advancement has also been made in the changing of the character of some food products—in causing them to have greater nutritive value than formerly. The garden beet contains from 5 to 7 per cent. of sugar. The sugar beet, developed from the former, contains from 13 to 15 per cent. of sugar. It is only of late years that it has been discovered that there is as much feeding value in the stalk of Indian corn as there is in the ears. The waste of the stalk of this plant that takes place in this country every year by burning and want of protection is sufficient to feed all the cattle in it. The corn plant contains its greatest nutritive value when the ear is passing into the glazed state. After that stage the warmth and light of the sun and moon convert a portion of the sugar in the stalk into alcohol, which is dissipated through the air. It is said that this fact accounts for the good people of Iowa being ardent prohibitionists. They imbibe a considerable quantity of alcohol in Nature's great saloon, and as they suppose freely, but really at a great cost in the waste of a valuable portion of their corn crop.

Dr. Wiley's "Tribute to Squanto" took his hearers back to the shores of Massachusetts in the early years of the settlement of this country. In 1621 an Indian named Squanto saw some of the Pilgrim Fathers planting Indian corn and barley in old ground that had been much cropped. He said to the planters that they would not get much crop from that sort of planting; that they should catch a lot of shad, of which there were shoals in the streams, and put a fish in every hill of corn. This was the beginning of fertilizing the soil for crops in this country, and we honor Squanto for pointing out the way.

The College of Agriculture of the Ohio State University, housed in Townshend Hall, has a brilliant prospect and a grand field for work. Let us hope that its mission of imparting instruction in the science of the greatest of all the arts to more students than in all the other colleges of the University combined may be speedily realized; and that in doing so it may prove an incentive to other similar colleges in this country and in your country also.

**Congratulations from Wabigoon--Rapid Settlement.**

To the Editor FARMER'S ADVOCATE: SIR,—In renewing my subscription for the year, I must congratulate you, not only upon your great Christmas Number, but also upon the great number of practical articles that are crowded into every issue. Your paper cannot help but be worth many times its cost each year to every wide-awake farmer. There is every indication that a large amount of land will be taken up in this district by settlers in the spring. The mines of this part are commanding considerable attention from English and American companies. One English company is doing development work within a mile of the town this winter.

Dryden had a fairly rapid growth last year. Two sawmills were supplying the townspeople and farmers last season, but proving inadequate to supply the demand, a third mill will be put in in about two weeks. A public library and reading-room is being established. The settlers have found remunerative work at home this winter cutting and shipping wood to Winnipeg. There is a good opening in Dryden for a bank at the present time.

A. E. ANNIS,  
Wabigoon, Ont. Manager Pioneer Farm.

A genuine boom seems to have overtaken the draft horse trade of England, as indicated by the results of Tring Park Shire sale, held on January 12th. The stock sold comprised 35 Shire mares and fillies from the stud of Lord Rothschild, 12 brood mares, 8 3-year-olds, 9 2-year-olds and 6 yearlings, which brought the notable average of £209 18s. 2d., about \$1,050 each. The highest price reached was £560 for a 4-year-old brood mare. One yearling filly, by Harold, brought £300.



of affairs and should be remedied instantly. It is not the fault of the country, but of the farmers. New Brunswick and Nova Scotia are quite capable not only of supplying the local market but of raising a good surplus for export. Another thing that should make our farmers ashamed of present methods, and at the same time encourage them to renewed effort, is the fact that while during at least five months in the year thousands of cattle from Western Canada and the United States are brought to our local ports for shipment to Great Britain, not a single home-grown beast is ever shipped to that market. The great cry here is that we cannot compete with the West, but it seems to me that even if it costs a little more to produce the same amount and quality of beef here we should be able to obtain a correspondingly greater price. When we consider that we would save the amount paid for carrying cattle such long distances by rail, and also the loss of condition which such cattle must sustain, it would seem to leave us a good margin to work upon. Think of it, brother farmers, and try if you cannot benefit yourselves and the country at large by producing the animal the market demands.

The time was when the Maritime Provinces produced enough wheat for their own demands, but with the advent of railways and easy transportation its production gradually decreased, and it is many years now since flour from home-grown wheat has been found on our markets. The Government of New Brunswick now proposes to encourage the growing of wheat again by paying a bonus upon its production, and also to establish a number of mills, equipped with the most improved machinery, throughout the Province. Whether or not this is a wise determination remains to be seen. I have no faith in any industry that has to depend upon government pay for its support; and yet it would be money well spent if by its use for a few years it could be shown that wheat-growing would be profitable for our farmers, and its production increased to some appreciable extent. I have no hesitation in saying that we can grow wheat, and that with careful cultivation it will average twenty bushels to the acre, but whether it will make flour that will compete with that from western grain I cannot say. I have always grown the wheat necessary for my own use and consider it one of my best and surest crops. It is ground in a small country grist mill and I greatly prefer the bread made from it to that from imported flour—my city friends also seem to find it a treat—but the bread is darker in color and the flour will not make good pastry. Whether modern machinery would make any difference in this or not I cannot say, but as it is at present it would not bring the same price in the market as the imported flour. Even if it be thought wise for the Government to pay a bonus on home-grown wheat, I do not think the erection of mills by the Government can be so considered. Would it not be much better to encourage private enterprise in this respect by making it certain grants or concessions and agreeing on certain conditions respecting the grinding of home-grown grain? We need grinding mills in any case, and it has long been a surprise to me that some of our capitalists have not established them. When we consider that all our flour and immense quantities of its by-products are imported, that through rates on grain are exceptionally low, that we have cheap fuel, plenty of wood for barrels, and are close to harbors for export, does it not seem that every advantage is offered that would tend to secure a good return for the investment?

**Ensilage Corn Competition.**

During the early spring months of 1897 Messrs. E. Ulrich & Sons, Springfield, Illinois, dealers in Western seed corn, advertised in the FARMER'S ADVOCATE, offering prizes for the best yields of ensilage corn grown in Canada from their Mammoth White and Giant Prolific varieties, the reports to be given under affidavit and attested by witnesses, and the awards to be made by the FARMER'S ADVOCATE. It affords us pleasure to announce that the first prize, of \$25, has been awarded to Mr. Wm. Mountain, Avonbank, Perth Co., Ontario, whose yield of the Mammoth White variety was, without the ears, 20 tons 160 lbs.; ears, 1 ton 720 lbs.; total, 21 tons 880 lbs.

Of the Giant Prolific, without ears, 18 tons; ears 2 tons 480 lbs.; total, 20 tons 480 lbs. A much larger yield was reported by Mr. J. M. Stewart, of Grimsby, Ont., who did not comply with all the conditions, and therefore failed to get the first award. His report was for 1,100th of an acre of Mammoth White, an average piece of the

crop which weighed 624 lbs., or at the rate of 31 tons 400 lbs. per acre. The names are given of four neighbors who saw the crop grow and helped to weigh it. These are certainly very satisfactory yields, and the reports must be very gratifying to Messrs. Ulrich, who make a specialty of supplying high-class varieties of seed corn.

Mr. Mountain in his report remarks in regard to the manner of cultivation, etc.: "We have tested both the Mammoth White and the red Giant Prolific, the seed being purchased from Carter, Son & Co., of St. Mary's, agents for Messrs. Ulrich's Seed Corn, and found the white a little ahead. The latter was sown May 26th, and the former May 27th, land and all conditions the same. They were both sown with the seed drill in rows 37 inches apart, scuffed three times during its growth, slightly molded to the corn with the last scuffing. It was one of the finest crops ever grown in this part of the country (which is a great corn-growing section), standing straight and strong, very regular in the rows, eleven to twelve feet high, with large and finely-formed cobs, presenting a beautiful appearance, and easily harvested by the self-binding harvester which we have used for two seasons with entire satisfaction. The corn was harvested after being caught by the frost of Sept. 21st, which reduced the weight considerably from what it would have been but for this visitation."

**Best Agricultural Paper on the Continent—Good Points for Dairymen.**

To the Editor FARMER'S ADVOCATE:

SIR,—I have been reviewing the work the FARMER'S ADVOCATE has done for this country the past 32 years. I will say that the farmers have had no one friend so faithful to watch their interests all these years as the FARMER'S ADVOCATE. It has warned them at all times to beware of those frauds



IMPORTED COTSWOLD EWES AND EWE LAMBS, PRIZE-WINNERS AT THE ROYAL ENGLISH AND LEADING CANADIAN SHOWS, 1897; PROPERTY OF A. J. WATSON, CASTLEBERG, ONT.

so many have been drawn into. It has never taken sides with either of the great political parties, and therefore has been independent of both and has so spoken. Every farmer in Canada ought to take the FARMER'S ADVOCATE, for more reasons than one. In the first place, there is not a better agricultural paper published on this continent, and it thoroughly studies the interests of the Canadian farmer. Through the ADVOCATE he gets the opinions of the best farmers on the best modes of handling all kinds of stock and how to turn them into the most money. The time has come when the farmer should know the capacity of his land and everything he has on his farm, and should make it a point to get the best out of everything. The markets of the world are now open to us, and Canada, with her great resources, should be behind no other country. As regards cheese, we are all right if we keep up the quality. But we need some training in regard to buttermaking. We need to make cheese in summer and butter in fall and winter. The most successful way is to have the cows come fresh in the middle of December and feed for butter until the first of May. The cows will in this way give a heavy flow of milk all winter, and will when turned out on good pasture give equally as good a flow of milk as cows coming in through spring for the next six months. This is not guesswork, but practical knowledge from experience. This is, I think, the way to make money out of cows. Try the plan. The feeding of hogs works in well with buttermaking in winter, the skim milk and buttermilk being among the best foods for producing the quality of bacon in demand, and calves can be more profitably raised in winter. JOHN B. STONE, Northumberland Co., Ont.

JOHN BRAY, Logoch, Man., says:—"I can't afford to do without the FARMER'S ADVOCATE. Every farmer should subscribe for it. One issue has been worth double the subscription to me. Wishing you every success."

**DAIRY.**

**The Butter and Cheese Association of Eastern Ontario.**

(SPECIALLY REPORTED FOR FARMER'S ADVOCATE.)

The annual convention of this Association was held in the town of Lindsay on the 11th, 12th and 13th of January. In point of attendance the meeting was fully up to any previous ones. The addresses were pithy and full of practical points. The principal speakers were Profs. Robertson, Saunders, and Dean; Messrs. Ruddick, Palmer, Sprague, Crandall, Dr. Connell, and John Gould, of Ohio. The last named was the only one from outside the Province. Dr. Connell, who is Professor of Pathology and Bacteriology in Queen's College, and also Bacteriologist to the Kingston Dairy School, is a new worker in the dairy field, and his addresses carry weight as coming from first hands from one who knows things as a result of his own labor and training. The points brought out at the meeting may be summarized as follows:

**Exports.**—President Derbyshire in his address showed that our exports of butter and cheese for 1897 exceeded all previous records to the extent of nearly \$4,000,000. Our butter exports were beginning to assume businesslike proportions.

**Markets for Food Products.**—Prof. Robertson and Mr. Crandall made it very clear that the possibilities for increasing our trade with Great Britain are almost unlimited, if we only furnish goods of finest quality and follow good business methods in placing them on the market. The benefits of cold storage were made plain and beyond all doubt.

**The Importance of Cleanliness.**—Dr. Connell, in his paper on "Bacteria in Dairying," brought the truth home in a very convincing manner. In describing the life and the conditions most favorable to growth and multiplication of the germs which give rise to various taints in milk and its

products, or bring about the many changes which occur in them, great stress was laid on the point that more care should be taken to have the cows and stables kept in a more sanitary condition, and also that the surroundings of factories are sometimes responsible for bad flavored cheese. Prof. Dean, Mr. Palmer and other speakers also emphasized this point.

**How Science has Helped the Makers** was the subject of addresses by Prof. Dean. Science is the light by which the practical man sees how to do his work to best advantage. Science gave us the Babcock milk tester and many other useful things. Science enables the bacteriologist to trace many of the troubles in cheese and butter making to their sources, and thus makes it easy to provide a remedy.

**Unnecessary Loss of Weight in Curing Cheese.**—Mr. Ruddick quoted some experiments carried on by him at the Kingston Dairy School, whereby he showed that a 75 lb. cheese, cured at an average temperature of 75 deg., lost 1 lb. extra in weight over other cheese of the same lot cured at 65 deg. His conclusions were that it would pay well to improve the means for controlling temperature in nearly all cheese-curing rooms.

**Corn Ensilage a Suitable and Cheap Food for Milch Cows** was the theme of John Gould's talk on the feeding question. In his own inimitable style he told his hearers how to raise, cure, and feed the corn crop to best advantage. An acre of corn could be raised for ten dollars, and it contained as much starchy food as four tons of hay.

**Selection of a Dairy Herd.**—Mr. Gould then talked upon the selection and treatment of the dairy cow. The cow increased our herds, gave us a necessary and wholesome food, enriched our soil by sending back to the land 85 per cent. of her feed, and, dying at last from the knife, gave the family beef for almost a year. Every farmer should study "cowology"—the science of the bovine motherhood. The average cow was like the average man—not of much account. She produced only about 3,000 pounds of milk per year, while his namesake of Uxbridge had cows giving 7,000 to 8,000 pounds of milk. Men knew that a draft horse was not good for racing; the Canadian boy did not go hunting birds with a brindle dog; but the Canadian farmer often tried to get a milk-producer in a cow that had all the cow possibilities shaken up and put under one hide. Mr. Gould made a strong impression on his audience as he counselled them to realize the motherhood of a cow and to respect it. The good dairyman was one who felt that he had been adopted as a calf by his cows. Real affection should be bestowed on the dairy cow. The poor milker should be got rid of. Careful selection of calves and cows would soon lift the average

*Handwritten notes:*  
get in this  
Poll  
get in  
2

yield of milk per animal by fully 2,000 pounds per annum, and there would be a good market for it all.

Butter from Pasteurized Cream.—Prof. Dean, Mr. Ruddick, and Instructor Sprague all spoke highly of the benefits to be derived from the practice of heating cream to 158° or 160° and then cooling.

Practical papers on buttermaking by Messrs. Ruddick and Sprague, with the reports of the various instructors and the discussions which followed, made the proceedings interesting and profitable to the large number of makers present.

Officers Elected.—The following were elected officers for the ensuing year: President, D. Derbyshire, Brockville; Vice-Presidents—E. J. Madden, Newburgh; John McTavish, Vancamp; Alpin Campbell, Ormond.

Cheese and Butter Convention of Western Ontario.

The Butter and Cheese Association of Western Ontario held its annual convention in London on January 19th, 20th and 21st. President Alex. McLaren, M. P., Stratford, in his address referred to the happy coincidence of the past, being our jubilee year as well as our banner year in the butter and cheese trade.

Common faults were pointed out which occur in boxing cheese, such as an absence of top and bottom scale boards, boxes not the proper depth, of bad timber, etc.

Messrs. T. B. Millar, Guelph; James Morrison, Stratford; A. F. Clark, Stratford, and Mark Sprague, Ameliasburg, gave reports upon their season's work. A summary of Mr. Morrison's report appeared in the FARMER'S ADVOCATE of December 1st, 1897, issue.

Mr. Clark classified the condition of the factories in his division as follows: Two very clean, eleven clean, nineteen fairly clean, four dirty and three as very dirty.

defects in making were discovered and pointed out, often with profit. Of milk tested seven samples were found between 1 and 2 per cent., and two between 5 and 6 per cent.

Mr. Mark Sprague, the Ontario Creameries Instructor, commenced work April 12th among cheese factories that had put in butter plants. As soon as these factories went back to cheesemaking the regular creamery inspection and instruction began.

Mr. Sprague expresses a hope that Prof. Robertson's system of cold storage would be generally adopted, as wherever he had found it in operation the best results were obtained.

A DISCUSSION upon the President's address and Instructors' reports brought out the opinion that paying for milk for cheesemaking by adding two per cent. to the fat reading was most nearly correct, as it gives the cheese value of milk.

Prof. J. W. Robertson, in an address, pointed out that while we have made great advances in dairying, more difficulties are facing us year by year. It is much easier to control flavor and fermentation in a new dairy section than in an old, for the reason that bacteria peculiar to milk increase very rapidly where milk is to any extent exposed.

things, and now is our time to take advantage. We should co-operate to have a regular supply of cheese, butter and bacon going forward to insure a steadily growing demand.

MISS ROSE, ASSISTANT INSTRUCTOR at the Guelph Dairy School, told in an interesting and vivid manner what she saw in two English dairies in 1896. Before referring to the dairies she elaborated upon the beautiful landscape of England and the happy leisure of the people.

OUR AGRICULTURAL WEALTH

was the subject of an address by Prof. C. C. James, Deputy Minister of Agriculture for Ontario. It is estimated that \$10,000,000 or \$12,000,000 will be brought out of the Klondyke in 1898, about \$2 a head of population, over which the country is going wild.

We have extraordinarily favorable fruit-growing facilities, both in soil and situation. We can grow more varieties to perfection than any other country. We have about 6,000,000 bearing apple trees, which do not exceed 50 cents per tree of return per annum, while \$2 per tree is not too much to expect if the best varieties were grown and given proper care.

MR. DANIEL DERBYSHIRE, President of the Eastern Ontario Cheese and Butter Association, said a good word for our dairy schools and agricultural college, and stated that by making more use of these our profits will increase and our lives be brightened.

BACTERIA IN THE DAIRY

was well discussed by Dr. Connell, of Queen's University. Bacteria are one-celled microscopic plants which cannot be seen with the naked eye except in colonies or clusters. The doctor stated that one billion could be contained on a five-cent piece.

The many changes that go on in milk are due to the influence of bacteria. Souring is caused by bacterial fermentation, breaking down certain products and producing lactic acid, which throws down the casein in the form of curd.

Mr. J. A. Ruddick, superintendent of Kingston Dairy School, addressed the convention on cheese-curing. He has found that the curing is influenced by moisture and temperature rather than rennet.

in values can be effected and moisture. The room is from 60 to 65 degrees, containing the proper temperature for curing room.

At this juncture medals, given as premiums to Industrial and London Salt Co., were presented to their representatives.

Prof. H. H. Dean stated that milk is formed partly by the while the milking is under of a slaughter case a cow remains give. The yellow called lactochrome, have a special power see the time when cheese or butter may only to deceive the more fat if milked twice, for the reason lates secretion. In be thrown away, and bacteria which have clean the hind quarters in the fall and trimmed off. Many in the course of the

was the subject of perimental Farm Cl of well water sent taminated. Nature free from organic gerous to their use most convenient, situation without Leaching from pri poi oning of the water, be they lo diptheria, indige frequently due to is not necessarily its distance from at least ten times as tenacious as a cass the slope of ern the location of

SUMMER AND was talked of by dres; was largely ly in the commen experience Mr. G cheese and butter conditions for ma extremely hot we usually good, and pure. Instances bad flavors in bu or the herd havin trouble from such can be traced by separately up to odors contained. traced to the pa arrive! At. In w and may be due Moldy chop fed The speaker stat made from good is supplied from long churnings a buttermaking pr followed in Cana of the tablet act every day.

A discussion pointers: Cream to 55 degrees in ripened at 68 to hours before chu temperature and better worked t

Prof. J. W. per cold storage to the Brit buy deteriorate ting. The poor than ever before grade food prod good prices only





milling a second time. Squeezed enough from curd cloth for an alkaline test, which gave .765 per cent. of acid.

The cheese was allowed to ripen for two weeks, and was then analyzed; and the germ previously found in the cheese and water from the Ashton Union Factory was discovered in large numbers. The cheese had a bad flavor and was pronounced poor by two expert judges, Mr. T. O. Bell, of Tavistock, and Mr. G. J. Brill, of Guelph. Three and a half months later the cheese was re-examined, and still found off in flavor; and from a sample recently taken I have again succeeded in isolating the original germ.

The results of the analysis of the water, etc., were briefly communicated to Mr. Publow, who condemned the well. The cheesemaker at once stopped using this water and thereafter obtained what he required from another well.

In a letter dated August 30th, 1897, Mr. Publow writes: "The cheese is all right since they stopped using the water." This completes the chain of evidence, and from it cheesemakers and others will see the importance of using pure water.

The germs may have got into the cheese in two ways: 1. From the setting of the vats. The rennet was as usual mixed with half a pailful or more of water and stirred into the milk. 2. Through infection of the vats by contaminated water. Perhaps germs from the water used in washing found lodgment in crevices and cracks of the vats, or even on the surface; and the momentary application of hot water or steam not being sufficient to destroy their life, they multiplied very rapidly when the milk was added. Further, it may be that the floors, etc., washed with the contaminated water dried and microbes rising in the currents of air were carried about and brought into contact with the milk in the vats, for germs are so small that very many find lodgment on the dust particles that we see when sunlight strikes through a semi-darkened room. In this case, however, the infection was probably due chiefly to No. 1. Another factor that should be mentioned was the high average temperature of the curing-room, which was 72 degrees Fahrenheit. This temperature gave more favorable conditions for the growth of the noxious germ, and less favorable conditions for the growth of those germs whose presence in cheese is necessary for the production of the finest flavor and quality. A temperature of 65 degrees Fahrenheit is more favorable to the latter.

Summary.—The cheese from the Ashton Union Factory was said to be "off flavor" and "not clean," an abnormal condition arising from the presence in cheese of a noxious germ. This harmful germ was found in the well-water; and the water was used in setting the vats, thus inoculating the milk with the germ. In other words, the water acted as a starter.

Currents of air or dust arising from dry surfaces which were washed with the contaminated water may have contributed something towards the seeding of the cheese with the undesirable germ; but it is likely that the trouble arose chiefly from the use of the water in washing the vats and in setting.

The high average temperature of the curing-room—72 degrees Fahrenheit—favored the growth of the undesirable germ in the cheese.

A change in the water supply caused an immediate difference in the flavor of the cheese. Since the change there has been no trouble. Hence, we may repeat what has often been said, viz., that factorymen should pay very close attention to the water supply in their factories, to see that it is clear, pure and good. Bad-smelling water should never be used for setting vats. In all doubtful cases the water should be boiled and then cooled to the required temperature.

## GARDEN AND ORCHARD

### Cultivation and Fertilization of Orchards.

BY G. C. GASTON, SIMCOE COUNTY, ONT.

There is perhaps no part of the farm that is so much neglected or so generally ill-treated as the orchard. It is the common practice to let the orchard take care of itself, while if it received the same care and attention as other branches of the farming industry it would return more profit acre for acre than any other part of the farm.

The soil is often robbed of the necessary plant food, and the young trees stunted, by trying to grow cereal crops and orchard trees on the same ground and at the same time. A young orchard should never be sown with grain or grass, except it be with clover for the purpose of plowing down for fertilizing purposes. Any kind of a hoe crop may be grown with benefit, and in this way the land will return a good profit while the young trees are growing, providing fertility is kept up. As the trees grow larger cultivation should be shallow and should be at a regular depth. It is a mistake to plow or cultivate deep at one time and shallow at another. As the roots of the trees spread out, the small fibers will be found just below the line of cultivation. These are the feeders of the tree, and if cultivation is shallow for a time, and then followed by a deep plowing, a great number of these little feeders are destroyed. As to the question, Should an orchard ever be seeded down to grass? I would say that better results will be attained if the soil is always kept in cultivation, and no hay or grass should be taken from the land. If, when an orchard has attained

bearing age, it is seeded to grass for a few years, no serious results may be noticed, and the trees may bear fairly well, providing the soil is fertile. But it would give better results if always cultivated. And a bearing orchard if seeded down to grass should be pastured with sheep or hogs, the latter preferred, as they root over the soil and pick up the wormy apples, and thus greatly aid in keeping the codling moth in check.

When an orchard has been in grass for a few years a decrease in the vigor of the trees will be noticed; the foliage will become of a pale color, and the fruit will begin to fail in quality and quantity. That is where crops of grain and hay have been taken off. Three or four years would belong enough to allow an orchard to remain in sod. It should then be plowed and cultivated as shallow as possible, as the small fibers will be found in great abundance near the surface. They are seeking for food and moisture, and should not be interfered with more than is necessary.

The fertility of an orchard may be kept up very well without the ordinary stable or barnyard manure, by plowing in clover to supply the nitrogen, which is the principal element in our stable manure, and applying hardwood ashes, about 40 bushels per acre, to supply the potash and phosphoric acid. Where the ordinary manure is not available this course should be followed, and will be found to answer the purpose all right.

So much manure is required for other purposes about the farm that the orchard seldom gets any, unless it happens to be planted to roots or some kind of hoe crop.

Now if a heavy crop of clover is plowed in and a dressing of 40 bushels of good ashes per acre applied once in two years, that would be better than most orchards receive as to fertility. And if no grain or hay crops were taken off, an orchard of bearing age would respond fairly well to this course of treatment. The clover furnishes an important element to the soil besides the nitrogen, and that is humus, or, in other words, vegetable mold, without which no soil can be in proper mechanical condition for the carrying on of nature's operations in manufacturing raw material into available plant food. If ashes cannot be got in sufficient quantity, then some other substitute should be used, such as muriate of potash and ground bone, or some commercial fertilizer made up chiefly of potash and phosphoric acid. There is enough hardwood ashes made in our own Province to keep up the fertility of our own orchards if they were kept at home. But unfortunately they are exported in immense quantities to the United States to enrich the fruit farms and gardens of rival fruit-growers. I would like just here to emphasize the importance of keeping this cheap and valuable fertilizer at home. It should never be allowed to leave the country. In addition to those made on the farm large quantities can be gathered in the villages and towns, and can be bought cheaply. If valued at the price we pay for the same elements in commercial fertilizers, they are worth to the fruit-grower 25 cents per bushel. Let us avail ourselves of this valuable material which is so essential to the production of good, thrifty fruit trees and fruit of the highest quality, a product for which our Province is already becoming famous.

### Insecticide and Fungicide Mixtures.

To the Editor FARMER'S ADVOCATE:

SIR,—Permit me to offer you my warm and sincere congratulations on the great success you achieved in bringing out the Christmas number of the good old FARMER'S ADVOCATE. Not only is it handsome and tastily gotten up, but it is filled with matter of the most interesting and valuable nature; though, as a horticulturist, I would have liked a little more bearing upon the country's fruit industry. The Christmas ADVOCATE for 1897 must have been a welcome visitor in Canadian farm homes. Speaking of fruit reminds me of my present craving for some good sound Canadian Famuse or Spies. While Ithaca is the principal town of Tompkins County, N. Y., the home of the famous King (of Tompkins Co.), it has been very difficult to purchase a peck of sound apples of this or any other variety. The immense crop of 1896 practically spoiled the market for two years. Low prices disheartened fruit-growers. Last year (1897) with a small crop of fruit and a large crop of insects and fungi the farm orchards were uncared for; the result may be seen in every grocer's window, when an average bushel of Kings will not yield a peck of absolutely sound specimens. The injury is largely due to the codling moth, whose ravages have been almost unprecedentedly severe—this, too, under the shadow of the Experiment Station, where such excellent work has been done by Mr. Slingerland in clearing up doubtful points in the life history of this insect. A bulletin on this subject by Mr. Slingerland will shortly appear, which will definitely settle what were hitherto thought to be debatable questions. Apropos of codling moth injury, it does seem strange that farmers should be so tardy in taking up and putting into practice well proved preventive remedies. In looking over some spraying experiments carried on at Ottawa last season, I note that in no case where Paris green was used did I find more than 5 per cent. of the apples injured by codling moth; where this or some other insecticide was not used the wormy apples amounted to fully 25 per cent. of the crop—this in an orchard where all had

been sprayed for four years previously. These results are merely in line with those recorded year after year in the reports of the Central Experimental Farm. The man who sprayed in 1897 will be well repaid for his labor. While on this subject of spraying I may refer to the question so often mooted by fruit-growers at Institute meetings, viz.: Is Paris green as efficacious when used with Bordeaux mixture as when it is applied in water by itself? Careful experiments carried on in 1895-6 answered the question in the affirmative. The experience of the past season corroborated that of former years. Paris green was used in both cases; that is, in Bordeaux mixture and in water alone, at the rate of 1 lb. to 100 gallons of fluid. Three applications were made. Where applied in water the third application of Paris green caused some injury to Tetofsky apple foliage. No injury was noted in the case of other varieties of trees treated three times. Of course, the danger of injury is easily obviated by adding lime in the same quantity as the Paris green. As to results, a Transcendant crab tree sprayed with Bordeaux mixture and Paris green yielded five bushels of fruit. Of these nine specimens only were wormy. One Hyslop, treated as above, yielding 3½ bushels, gave 36 wormy specimens.

Paris green and water.—One Jumbo crab tree yielding 1½ bushels gave 5 wormy specimens. One Orion crab tree yielding 1 bushel gave 14 wormy specimens. It will be noted that the proportion of wormy apples is small in both cases, and does not point to important practical differences. It is my opinion that it would not pay a fruit-grower to incur the expense involved in making a separate application of Paris green in view of the very doubtful benefit derived.

### BORDEAUX MIXTURE.

Six pounds of copper sulphate vs. four pounds.—Some horticulturists advise the use of six pounds of copper sulphate with four pounds of lime to each barrel of water in making Bordeaux mixture. This formula has in one or two instances given better results when used against potato rot than the 4:4 formula. In combating diseases of fruit trees its advantages have never been apparent to me. If four applications are made many varieties of apples will be more or less russeted by the 6:4 formula (see rep. 1896, p. 174), and during seasons of heavy precipitation the foliage may suffer injury. A careful comparison was made last year of the two formulas applied to crab trees heavily laden. With the 4:4 formula the foliage and fruit were healthy and clean throughout the season. No injury to the leaves was observed, while with the 6:4 formula all the fruit was distinctly russeted and the foliage slightly scorched or browned. In the case of a Quaker Beauty crab tree part of the fruit was rendered unsalable. As to effects against furges, the fruit was equally clean as to scab and the number of wormy specimens about the same. There does not seem to be any good reason for using against apple scab the stronger, more expensive, and sometimes dangerous formula. These thoughts are suggested by the quality of fruit I meet with when viewed from the standpoint of the consumer. I am glad to see that a liberal amount of time was devoted by the Ontario Fruit Growers' Association at its recent annual meeting to the discussion of insect and fungous pests, and pleased still more to see the stand taken by the Hon. Minister of Agriculture for the Province on the more serious question of how best to fight the San Jose scale. Wishing you and your readers a prosperous New Year, I am,

Yours faithfully,  
JOHN CRAIG,  
Tompkins Co., N. Y., January, 1898.

## VETERINARY.

### Antitoxine Serum for Hog Cholera.

A dispatch from Washington states that Dr. Salmon, of the Bureau of Animal Industry, has found an antitoxine serum possessing both a preventive and curative action for hog cholera. Tests were made in Page Co., Ia., last fall with 244 head. Of this number 88 were sick and 39 died. The per cent. of loss in the herds treated in which the disease existed was 17 per cent., while in untreated herds observed during the same time the loss was 35 per cent. Dr. Salmon believes that a better quality of serum can be prepared, and seems convinced that by the employment of this inoculation the loss need not run above 15 to 20 per cent. U. S. Secretary of Agriculture Wilson, gratified at the success attending the Iowa experiments, will ask Congress for an appropriation sufficient to enable the Department to furnish serum for at least 2,000,000 inoculations next year. It is desirable that the manufacture of the serum be exclusively in the hands of the Bureau officials; and as it takes about three to four months to put a horse or cow in condition to furnish the antitoxine, the Secretary is anxious that the appropriation be available immediately. The serum is made on the same principle as the antitoxine of diphtheria, a horse or cow being inoculated with repeated doses of the germs of the disease until a condition of high resistance to the disease is produced. The blood of an animal thus inoculated is injected under the skin of the hog, one "dose" being sufficient to produce immunity. The present cost is about 10 cents per dose, but this may be reduced.

To the Editor FARMER'S ADVOCATE:

SIR,—I most do vast distance separate from you, Ontario County, Ontario, Hopkins, and should most certainly me the honor of a afford me the of congratulating him signature in you much virility of the absolute fear must be rather officials connect Department is one accustomed generally meets of what one wish wrong half at the

As your corre for a moment you fact that the a progressive and safeguard the in ever, and I may at large, the Ho the training cha nary college can helped by judi must necessaril the contagious concerned, no either prevent naturally press Veterinary Dep adequate to c cases affecting Mr. Editor, d prove me mista way. What check hog chol intended to ed diseases, the spect these sar from sound an them to real property if yo

Your corre ion Veterinary in the hands of farce. Yes, t tell you somet of leisure, I w of to read. the report o Montreal for thing to read mistaken. found that in alone, 559 per kept in min tuberculosis one to the animals that a menace to that the ve public health have dared r

The metr of Montreal ceives its m (700) milk that be: W the source men especia pose of prot the milk le ment for y the germ c might go on contagious of anthrax not yet ext etc. But v so long as ment is lef If only new Department

You m done, at le that an E near Mon tuberculosis not such to call it accomplish vealed to barn-like bacteriol accomplish Koch, G scientists equipped likely th for our l and I be the part the idea the pat





## Miscellaneous.

## The Hambletonian Horse.

WM. ORR, Vernon, B. C.:—"Can you inform me through the ADVOCATE where the Hambletonian horse originated, and for what special purpose they are generally used?"

[The Hambletonians are not a special breed, but merely one of the several great families from which have sprung the American trotter. Among the other families to which many of the best trotters trace are the Clays, the Morgans, the Mambrinos, the Pilots, etc. Rysdyk's Hambletonian, the founder of the family, was foaled in Orange Co., New York State, in 1849. His sire was Abdallah, a son of Messenger (a Thoroughbred), who was a son of Messenger (another Thoroughbred). His dam was by (imp.) Bellfounder (a Norfolk trotter or Hackney) and his second dam had two crosses of the imported Messenger. To the Hambletonian family trace such noted strains as the Almonts, Happy Mediums, Volunteers, George Wilkes, etc. Nearly all the fast trotters of the present day trace to Hambletonian.]

## Wild Flax.

ROBT. CONWAY, Wellington Co., Ont.:—"We have a weed here called the wild flax, which is a regular pest. Can you or some of your patrons advise a means to eradicate it. It only comes in fall wheat and meadows?"

[Ordinarily wild flax (*Camelina sativa*) is classed as an annual, although it usually commences to grow in the latter portions of the year previous to that in which the seeds are matured. The seeds resemble shelled timothy, and are frequently introduced in that seed. As indicated by Mr. Conway, it particularly infests winter wheat, rye, meadows, and pasture. When found in spring-sown crops it has escaped the spring cultivation. Perhaps the greatest progress in eradication can be made by modifying the rotation by dropping, as far as possible, the crops which it infests. Instead of these crops, grow spring crops. When the ground is suitable one of these may be a well-cultivated hoed crop, following thorough autumn cultivation as the seed tends to sprout at that later season. Where practicable, grow two hoed crops in succession. On suitable land lucerne clover and orchard grass should be grown for hay, as they will be ready to cut before the seed has matured. Owing to the oily nature of the seed, the manure of fall-wheat straw infested with it should be turned during the winter season in order to destroy the seeds. While this involves a considerable loss of manure, it will pay rather than to allow the seeds to return to the land undestroyed.]

## Rape Seed Growing.

WM. DALRYMPLE, Perth Co., Ont.:—"Please publish in the ADVOCATE the way rape seed is grown, and if it will grow in this country, and if seed can be grown on rape after it has been eaten off by sheep?"

[We presume the sort of rape referred to is that grown for fodder, known as the Dwarf Essex. This, of course, is a biennial, producing seed the second year. The seed used in this country comes, so far as we have been able to learn, from England, where the plants can withstand the winter successfully, and where the long, moderate growing season suits the maturing and ripening of the seed; whereas the climate of Ontario, both in winter and summer, is too extreme to get satisfactory results. Sometimes living plants come through the winter and produce fairly good seed, but this is quite the exception to the general rule. Even when the plants live through the winter, the seed produced is generally light and poor. In England the rape grown for seed is planted well on in the season, and the plants are thinned and left over winter to produce seed the following year. Close pasturing by sheep would materially lessen the vitality of the plant. The seed can be bought from our seedsmen at so low a price it would hardly pay to undertake to raise it here. It is seldom quoted higher than ten cents per pound, and some years as low as six cents. Two pounds per acre is ample, when sown in drills twenty to twenty-four inches apart.]

## Additional Points Regarding St. Mary's Creamery.

JOHN G. HALLET, York County, Ont.:—"I was much interested in reading the description and manner of running the creamery at St. Mary's in your paper of 15th January. Will you please say in your next edition how the patrons are paid, if by the milk test or by the quantity only of milk each patron supplies the creamery; also if the 3c. per pound charged for making the butter is all the patrons have to pay. I should also like to know if the butter shipped to England went direct or through a Canadian agent of the English firm, and if so, what per cent. the Canadian agent charged. I understand the St. Mary's Creamery is an extensive concern, and by their large business dealings they can give smaller creameries, such as I am doing my best to manage profitably, some advice that will prove profitable to us. Another question, Are the patrons of St. Mary's Creamery bound under agreement to send a certain quantity of milk for the year or season?"

"Also state how the graduating can referred to is operated, where the drain from the skim milk hose empties, and the source of water supply?"

[In reply to Mr. Hallet I would say that the patrons are paid by the Babcock test, and the 3c. for making covers the cost of operating the stations, hauling the cream to the central and manufacturing the butter ready for shipment.

The patrons each haul their own milk at present, or a few combine and haul week about, but when routes are let in the spring the patrons will be charged with the cost of hauling the milk. The patrons are not bound to send any stipulated quantity of milk, the company relying upon the inducements which they have to offer to increase and hold their patronage. The butter is shipped direct to wholesale houses in London and Manchester, with whom very satisfactory arrangements have been made. Our president received a cable yesterday stating that our butter had sold for the highest price for Canadian butter, and the quality was fine, and we are now issuing our first cheques on a basis of 18c. per pound for butter-fat. The Buzzel graduating can for skim milk is operated by the maker, which is the only objection I have to it, as it takes an extra hand while separating. The drain from the skim milk hose empties into the drain which conducts the washings from the creamery. Our water supply comes from two wells, one of which may have to be increased in size so as to act as a reservoir. JAMES STONEHOUSE, Manager.]

St. Mary's, Ont.

## Balanced Ration for Cows and Pigs.

E. A. K., British Columbia:—"Would you kindly balance a ration through your columns for cows in full milk from the following feed: Clover hay, oat straw, turnips, carrots, sugar beets, mangels, oats, peas, barley, and wheat. Bran and middlings are selling for \$24 per ton. Can you also balance a ration for young pigs from the same feed. I have a good kettle for boiling pig feed. Would clover hay be good boiled for young pigs?"

[Replying to your B. C. correspondent, I regret that he does not give prices of the different kinds of grain, as it is important to have an economical as well as a well-balanced ration. Bran is such a high price that I have left it out of consideration. The following would make a very well balanced ration: Peas, 4 lbs.; oats, 2 lbs.; barley, 1 lb.; clover hay, 10 lbs.; mangels, 40 lbs.; straw *ad lib.* This ration represents amount of food per day for a cow weighing about 1,000 pounds. If it is desirable to feed wheat use one pound each of oats, barley and wheat, along with four pounds peas. Sugar beets are even better than mangels. I would not recommend turnips for fear of taint. For young pigs I do not know of anything much better than wheat middlings and skim milk. Finely ground oats with the coarsest hulls removed also make a good ration with skimmed milk, or a mixture of the oats and middlings would do very well. As the pigs get older include some barley in the mix. If skimmed milk is not available try ground cake, using one part of oil meal to three or four parts of middlings. Pigs three or four months old will relish a few roots. If the roots are pulped and mixed with the dry meal ration they will be found to give good results. Sugar beets are excellent for this purpose. Clover hay fed as described will, I think, be found better for sows than for small pigs, though no doubt a little might be fed to small pigs. Probably some other subscriber will give his experience with clover. G. E. DAY, Agriculturist.]

Ontario Agricultural College.

## Keeping Eggs for Hatching.

READER:—"How long can fertile eggs be kept without injury for hatching, and how should they be packed?"

[As a rule I do not like to put eggs older than fourteen days under a hen for hatching. I have heard of them being kept longer and successfully hatched. I have also tried fertile eggs nearly a month old under a hen in summer, but I think many of the eggs simply rotted. Results were nil. We keep our fertile eggs in a cool cupboard, small end down, either on a shelf or resting in clean, dry bran. We have had chickens from eggs laid by hens the fourth day after mating. A. G. GILBERT, Poultry Supt.]

Central Exp'l Farm, Ottawa.]

## Killing Lice and Ticks.

JOHN H. MALLOUGH, Huron Co., Ont.:—"Kindly publish the recipe for killing ticks given in the FARMER'S ADVOCATE some time last spring."

[We presume the demand is for the receipt recommended for killing lice and ticks by J. Arthur Vance in April 15th issue, page 174, which read as follows: "Take two ounces of arsenic, one-half gallon of soft soap, half gallon of soft water; mix all together and boil for about half an hour. Then add this to five gallons of water, and wash the cattle with it. For sheep, pour it along the back slowly, so as to let it run down to the skin."

NOTE.—At the end of the above recommendation, published in our April 15th issue, we drew attention to the dangerously poisonous character of any preparation containing so much arsenic. It may be perfectly safe when great care is given in its preparation and application; but we now have in remembrance an instance that gives force to our caution. A careful farmer who had prepared such a dip as is described, carefully put, the kettle in which it was boiled away out of danger, but his good

wife wanting such a vessel to heat milk for calves, hunted it up, used it, and killed a favorite calf. This is just one way in many by which bad results may follow. The modern commercial dips are cheap, safe, easily prepared, and not only destroy vermin, but cleanse the skin and cause a vigorous growth of wool.—ED. F. A.]

## Hydraulic Ram.

W. E. L., Elgin County, Ont.:—"How many gallons per hour would a stream need to flow to run a hydraulic ram. Will you kindly answer in your next issue of ADVOCATE?"

[It is estimated that the smaller sizes of hydraulic rams can be operated successfully by a stream yielding from 250 to 500 gallons per hour. This is quite a small stream. A ram is supposed to elevate about one-seventh of the water that runs through them 10 feet high for every foot of fall in the drive pipe.]

## Ashes as a Fertilizer.

W. A., Kent Co., Ont.:—"1. For what crops are wood ashes most valuable as a fertilizer? 2. Would it be a good plan to broadcast them on a field containing a young orchard and which we intend to seed to oats in the spring? 3. When would be the proper time to apply them, and at what rate per acre? 4. What should first-class unleached ashes be bought for, and which is the better, hard or soft wood ashes? I would like to hear from some of your subscribers who have had some experience in this line."

[1. Wood ashes are valuable to all farm crops, but particularly to small fruits, orchards and potatoes. 2 and 3. In another column we publish an article on the cultivation and fertilizing of orchards, which answers questions 2 and 3. We would add that the early spring would be a suitable time to make the application. The ashes will do the oats good. Good unleached ashes are valued at 25 cents per bushel, but are frequently sold at little more than half that price. The wood ashes richest in potash are elm and ash. Maple and beech ashes are very much lower in potash, although even these are claimed to be worth the price named. Ashes should not be mixed with stable manure in the pile, as their effect is to liberate nitrogen in a volatile form.]

## Fertilizer for Potatoes.

J. C., Pontiac Co., Que.:—"State what is a good fertilizer for potatoes; also where it can be had and at what price, and state if sown all over the ground or if just put in the hills after the holes are made, before putting in the seed?"

[We take it from the nature of the inquiry that J. C. refers to commercial fertilizers. If the potatoes are to be grown on a clover sod, which is the best place for them, we would recommend the addition of from 40 to 50 bushels of unleached ashes per acre, spread broadcast and harrowed in just before the potatoes are planted. Our fertilizer advertisers supply special potato manures, principally of potash. An ideal potato fertilizer consists of phosphoric acid, 7 per cent.; nitrogen, 3 per cent., and potash, 10 per cent., and should be used at the rate of 700 lbs. per acre. Our fertilizer advertisers will be pleased to quote prices. If potatoes are to be planted by the old-fashioned method, by means of a hoe, the results may be most directly felt by sprinkling it in the bottom of the hills, although if the land is loamy and open, so that the rootlets can easily penetrate the soil, the fertilizer will be largely appropriated if sown broadcast.]

## Lambs Dying Suddenly.

SUBSCRIBER, Wright Co., Que.:—"In September while in the fields my lambs took some disease, the nature of which I could not learn from stock or veterinary books. I could notice no disease till they died. In the morning they would seem all right, and before going an acre one was dead, and in six hours the carcass was in such a state I could not open it, and the wool was loose. I changed them to another field, but of no avail."

[If the pasture was very fresh and the lambs fattening rapidly the trouble may have been from fulness of blood, resulting in apoplexy. We could only suggest keeping salt within reach so that the lambs could get it at pleasure, and changing to poorer pasture for a week or two. Some poisonous herb in the pasture may have been the cause.]

## Land Drainage.

ALEX. PEERS, N. Westminster, B. C.:—"We have some excellent land, but it needs draining. Would you please state through your paper what work on draining we can get which will give the latest knowledge as to drains, their position, and the materials to use?"

[Most practical agricultural works have a chapter devoted to land drainage, but the best information on that subject in our library is a chapter contained in "The Soil, Its Nature, Relations, and Fundamental Principles of Management," by F. H. King, Professor of Agricultural Physics, Wisconsin College of Agriculture. This book is offered as one of our premiums for the securing of two new yearly subscribers at \$1 each, or we can supply the book for 75 cents.]

By renewing your subscription promptly, you will confer a favor on the "Farmer's Advocate."





## "Too Late."

Too late is the irate father to prevent his daughter becoming the wife of the man she loves. The expression on the old man's face is stern and forbidding as he stands and addresses the young couple in angry tones, accusing his daughter of disobedience and deception and her husband of cowardice and trickery. The face of the latter flushes a fiery red at the terms applied to him, and involuntarily clenching his hand he moves forward, then stops abruptly, remembering that it is the father of the fair young bride whom he has just promised to love and to cherish who is uttering the scornful words. The solemnity of that service in which she gave her troth to the brave young lover at her side has left its impress on the face of the fair young bride, who stands with bowed head, sorrowfully listening to the words of reproach uttered by her father. Not far from them is the groom holding his master's horse, and in the background is the chaise in which the delinquents would have driven beyond the reach of pursuit had they not been so unexpectedly intercepted.

## THE CHILDREN'S CORNER.

## The Griffin and the Minor Canon.

(Continued from page 40.)

The next day the Griffin came again to the little square before the church, and remained there until evening, steadfastly regarding the stone Griffin over the door. Nobody went to the church, but the people came to the Minor Canon's house and anxiously asked him how long the Griffin was going to stay.

"I do not know," he answered, "but I think he will soon be satisfied with regarding his stone image, and then he will go away."

But the Griffin did not go away. Morning after morning he came to the church, but after a time he did not stay there all day. He seemed to have taken a great fancy to the Minor Canon, and followed him about. He would wait for him at the side door of the church, for the Minor Canon held services every day, morning and evening, though nobody came now. "If any one should come," he said to himself, "I must be found at my post." When the young man came out the Griffin would accompany him in his visits to the sick and the poor, and would often look in at the windows of the schoolhouse where the Minor Canon was teaching his unruly scholars. All the other schools were closed, but the parents of the Minor Canon's scholars forced them to go to school because they were so bad they could not endure them all day at home—Griffin or no Griffin. But it must be said they generally behaved very well when that great monster sat up on his tail and looked in at the schoolroom window.

When it was perceived that the Griffin showed no sign of going away all the people who were able to do so left town. After some days the others ventured to go about and attend to their business, for if they did not work they would starve. They were getting a little used to seeing the Griffin, and having been told that he did not eat between equinoxes they did not feel so much afraid of him as before.

Day by day the Griffin became more and more attached to the Minor Canon. He kept near him a great part of the time. Thus the summer went on and drew toward its close. And now the people of the town began to be very much troubled again.

"It will not be long," they said, "before the autumnal equinox is here, and then that monster will want to eat. He will devour all our dear children. What is to be done?"

After talking over the matter a great deal a crowd of the people went to the Minor Canon at a time when the Griffin was not with him.

"It is all your fault," they said, "that that monster is among us. You brought him here, and you ought to see that he goes away. If you were not here he would not stay. It is your duty to go away and then he will follow you and we shall be free from the danger which hangs over us. You must go to the dreadful wilds, and then the Griffin will follow you and stay there."

They did not say whether they expected the Minor Canon to stay there also, and he did not ask them anything about it. He bowed his head and went into his house to get ready. That evening he packed a leather bag full of bread and meat, and

early next morning he set out on his journey to the dreadful wilds.

When the Griffin found that the Minor Canon had left the town he seemed sorry, but showed no disposition to go after him. One morning he looked into the schoolhouse, which was always empty now, and thought that it was a shame that everything should suffer on account of the young man's absence.

"It does not matter so much about the church," he said, "for nobody went there; but it is a pity about the school. I think I will teach it myself until he returns."

It was the hour for opening the school, and the Griffin went inside and rang the bell. Some of the children ran in to see what it meant.

"Go tell the other scholars," said the monster, "that school is about to open, and if they are not all here in ten minutes I shall come after them."

In seven minutes every child was in place. Never was seen such an orderly school. Not a boy or girl moved or uttered a whisper. The Griffin climbed into the master's seat, his wide wings spread on each side of him, because he could not lean back in his chair while they stuck out behind, and his great tail coiled around in front of the desk, the barbed point sticking up ready to tap any child who might misbehave. They were so afraid of the Griffin that they all recited as they had never recited before. One of the boys, far down in his class, answered so well that the Griffin was astonished.

"I should think you would be at the head," said he. "I am sure you have never been in the habit of reciting so well. Why is this?"

"Because I did not take the trouble," said the boy, trembling in his boots. He felt obliged to tell the truth, for all the children thought that the



"TOO LATE."

great eyes of the Griffin could see right through them, and that he knew when they told a falsehood. "You ought to be ashamed of yourself," said the Griffin. "Go down to the very tail of the class, and if you are not at the head in two days I shall know the reason why."

The next afternoon this boy was number one. It was astonishing how much these children learned. The Griffin used no severity towards them, but there was a look about him which made them unwilling to go to bed until they were sure they knew their lessons for the next day.

The Griffin now thought that he ought to visit the sick and the poor, and he began to go about the town for this purpose. The effect upon the sick was miraculous. All, except those who were very ill indeed, jumped from their beds when they heard he was coming and declared themselves quite well. As for the poor, they seemed to have utterly disappeared.

[TO BE CONTINUED.]

## "Play Well Thy Part."

Boys in the street will refuse to join in games, saying, "I shall not play unless I am captain, or have the big drum." And there are not wanting Christian men who lay down like conditions. "Play well thy part," whatever it is. Never mind the honor. Do the duty God appoints, and He that has the two mites of the widow in His treasury will never forget any of our works, and at the right time will tell them out before His Father, and before the holy angels.

Attend to your "Farmer's Advocate" subscription early, and avoid regrets for oversight.

## UNCLE TOM'S DEPARTMENT.

MY DEAR NEPHEWS AND NIECES,—

I regret that (owing to the very large number of papers contributed) I am unable to announce in this issue the result of our second Memory Gem contest. It is very gratifying to note the widespread interest manifested in this competition by our readers all over the Dominion. Why, I have nephews and nieces I never even heard of before; but now they have come with the New Year's gifts I hope they will remain with us, and I shall try, like a genial host, to give all a hearty welcome. The task of choosing from among so many excellent selections is a difficult one, but I shall not keep our contributors long in suspense. I shall certainly publish prize-winners' names in February 15th issue.

In the meantime, why could not the greater number of you join our puzzle corner, which is always open? There we have room for all—the more the merrier, and prizes are awarded every three months. Let us hear from the bright ones.

What charming weather we have been having, so clear and crisp, and yet not too cold—just the sort for the lively country urchins, whose cheery faces bring memories of summer and June roses, as quick eyes and steady hands dexterously guide their swift steeds (hand sleighs) down the steep hill, while the air resounds with echoes of clear, ringing voices. There are other faces, too, almost hidden beneath warm hoods that vainly try to outvie them in color. Not to the boys do these belong, yet their owners are none the less ready to join in the glorious sport of coasting. Funny, is it not, how the boys do not seem to mind hauling up the sleds for the other boys' sisters? Well, well, it's characteristic of the boy and future man.

Did not his father do the same when mother was young? Perhaps they may make the down journey together, and what ampler guerdon could a gallant knight desire! I have known the journey here begun to lengthen indefinitely, and who knows what is passing through those busy brains, for "the thoughts of youth are long, long thoughts."

Alack-a-day! I was once young myself, and enjoyed coasting as well as the liveliest. Your auntie was—but "that's another story."

I have been reading one of Dr. Drummond's poems (in "Habitant" dialect), which are now so justly popular as character sketches, and cannot refrain from giving you a few extracts:

De place I got born me is up on the reover,  
Near foot of de rapids dat's call Cheval Blanc,  
Beeg mountain behin' it, so high you can't climb it,  
An' whole place she's mebbe two hunder arpent.

All de sam dere is someth' dey got ev'ry boddy  
Dat's plaintee good healt' wat de monney can't gees;  
So I'm workin' away dere, an' happy for stay dere,  
On farm by de reover so long I was leev.

Philomene—dat's de o'ldes—is sit on de winder  
An' kip jus' so quiet lak wan leetle mouse;  
She say de more finer moon never was shiner,  
Dat's fanny, for moon not dat side de house.

Ha! ha! Philomene! dat was smart trick you play us,  
Come help de young feller tak' snow from his neck;  
Dere's nothin' for hinder you come off the winder,  
W'en moon you was look for is come, I expect.

I s'pose dey be talkin' beag lot on de kitchen,  
'Bout all de nice moon dey was see on de sky,  
For Philomene takin' long tam got awaken,  
Nex' day she's so sleepy on bote of de eye.

Dat's wan of dem t'ings ev'ry tam on de fashion,  
An' 'bout nice t'ing dat was never be seen,  
Got nothin' for say me, I spark if sam way me,  
W'en I go see de moder ma girl Philomene.

But I tole you, dat's true, I don't go on de city,  
If you geev de fine house an' beaucoup d'argent;  
I rader be stay me, an' spen' de las' day me,  
On farm by de rapide dat's call "Cheval Blanc."

UNCLE TOM.

I received the premium, one pair cuff links, and I am very much pleased with them. I think them well worth the trouble. LUTHER ROSS. Brierwood, Man.

We all like the ADVOCATE. The Christmas number is fine. W. C. CARRUTHERS. Carberry, Man.

All matter  
Ada Armand,  
original puzzle  
only of paper.

My 1, 2, 3  
" 4, 5, 6  
" 9, 10,  
" 13, 14,  
" 15, 16,  
" 22, 23,  
" 25, 26,  
" 31, 32,  
" 33, 34,  
" who

My  
" "  
" "

While loo  
on the south  
direction, I  
woman to fo

M  
M  
M  
M

My  
My  
My  
My  
My  
My

1—Are y  
2—Count  
3—He let  
4—He sa  
5—I ren  
6—Oh, o

A

T A L  
A D C  
L O  
E  
6—

## Glyde

On Feb.  
miles nor  
dale stall  
C. S. B., a  
sides a B  
fills of C  
PRINCIP  
little whi  
Prestonki  
Graham F  
stud cons  
seasons o  
GRAND  
markings  
town. On  
(imp.) 367  
(imp.); w  
and sure  
All farm  
as farm is  
TERMS  
12 month  
credit on  
count for  
evening  
or wiring

-0



ADVE

Puzzles.

All matter for this department should be addressed to Miss Ada Armand, Pakenham, Ontario.

1—NUMERICAL ENIGMA.

- My 1, 2, 3 is a definite article. "4, 5, 6, 7, 8 is a concretion of the earth."

2—WOOD SQUARE.

- My first is a fertile spot. "second is like an Araby."

3—TRANSPPOSITION.

While looking over a farm I noticed a field of ONE, hedged on the south by a row of TWO, trees, looking in another direction, I saw a man coming to THREE the ONE and a woman to FOUR the TWO.

4—NUMERICAL.

- My 13, 5, 15, 16, 17, 18 is to leave. My 12, 8, 11, 9, 10 is what some girls are.

5—

- I am composed of thirteen letters. My 6, 5, 11, 4 are small animals. My 7, 8, 10 is expressed in color.

6—

- My first is in night but not in day. My second is in yeast but not in dough.

7—HIDDEN NAMES.

- 1—Are you going with your uncle to-morrow? 2—Count a day lost in which no good deed is done.

Answers to Jan. 1st Puzzles.

- 1—HOME ODE 2—Omen. LANE 3—Ash, elder, bass, bay. ANO elm, plane, box, sandal. NO plum, pear, beech, yew (you), cedar (seeder), butternut, locust, fr (fur). BE 4—Yosemite. 5—Soft words with nothing in them make a song. TALE 7—The Mariner's Compass. ADO 9—Aside—side—die—I. E D I M L Y F L A S K S H Y L Y R E P A Y C L O S E S U L K Y B E E C H

COUSINLY CHAT. "Lulu."—Another new cousin and a clever one. Glad to hear from you, come often. You were in good time.

SOLVERS TO JAN. 1ST PUZZLES. Maggie Scott, "Kit," Pearl Corrigan, "Lulu," Mabel Ross; also, Mabel Ross for Dec. 15th puzzles.

COUSINLY CHAT.

"Pearl."—Your answers are very good. Certainly send some puzzles. "Lulu."—Another new cousin and a clever one. Glad to hear from you, come often. You were in good time.

MISCELLANEOUS.

Bone Manure--Milk Separation--Salt for Stock, etc.

G. H. A., Queen's Co., P. E. I.:—"I have been a subscriber only for a few months, but I think it is money well invested. Every issue is full of valuable information."

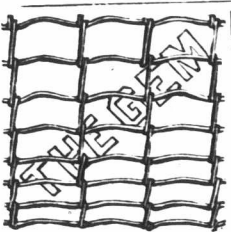
"1. I have about half a ton of old bones. What is the best way to turn them into fertilizer? 2. What are oyster shells worth per barrel and what is the best way to apply them?"

[1. It is difficult to reduce bones to a form suitable to apply to soil without grinding them, and even then they should be treated with sulphuric acid or some other dissolvent. The following has been commended as good practice: Pour 50 lbs. of sulphuric acid into an equal volume of water, stirring the water meanwhile with a stick.

Clydesdales at Auction!

On Feb. 16th, 1898, at "Brinkburn" Farm, 10 miles north of Newmarket, Ont., the Clydesdale stallions Prince of Lothian (imp.) 8159, B. C. S. B., and Grand Salute 2277, C. C. S. B., besides a number of prize-winning mares and fillies of Clydesdale and Carriage breeds.

H. G. BOAG, QUEENSVILLE, ONT.



FENCE MACHINE Will weave your fence of any kind of wire, 40 to 50 rods per day. Price saved in one day's work. Agents Wanted. Write for particulars. MCGREGOR, BANWELL & CO., Windsor, Ont.

ADVERTISE IN THE ADVOCATE

GOSSIP.

A. C. Culp, Jordan, Ont., breeder of Improved Chester White pigs, places an advertisement in this issue to which we call attention. The annual convention of the Nova Scotia Farmers' Association will be held at Truro, on Feb. 9 and 10. Good programme and single fares on the railways.

H. & W. Smith, Hay, Ont., in ordering a change in their advertisement of Shorthorn cattle for sale, write as follows:—In the lot of young bulls we are offering is a very thick, sappy, roan bull, Lord Gloster, of Crutickshank's Duchess of Gloster family, that has produced so many good ones; he was got by Abbotford 1946, dam Gaiety by Prince Albert 3669.

Prof. Jas. W. Robertson is announced to speak at the annual convention of the Wisconsin Dairymen's Association, Manitowoc, Feb. 9-11, where he stops en route from Ottawa to Manitoba.

See Wm. Thorn's (Lyndoch, Ont.) change of advertisement in this issue. It will interest all who desire settings of eggs of various fowls and breeds, and those wanting Ayrshire bulls.

Clydesdales are keenly in demand and good ones are hard to get. Robt. Davies' stud at Thorncliffe Stock Farm, Toronto, contains the best of blood, and their showing career shows that individual excellence is not wanting. See Mr. Davies' advertisement.

We learn with pleasure that the honor of knighthood has been conferred by Her Majesty the Queen upon Mr. Ernest Clark, Secretary of the Royal Agricultural Society, in recognition of his valuable services during his tenure of office.

The New Year's honor list also contains the name of Prof. George T. Brown, C. B., honorary consulting veterinary adviser to the Board of Agriculture, who was for many years Principal of the Royal Veterinary College.

Mr. D. W. McIvor, of box 1872, Winnipeg, Man., offers for sale in this issue a 160-acre farm in first-class mixed farming district, 20 miles east of Winnipeg; partly cultivated, and near church and school.

Mr. Wm. Harvey, 210 Portage Ave., Winnipeg, Man., in his advertisement elsewhere publishes a lengthy table of farm lands which his Company offer for sale on terms to suit purchaser. A great proportion of this property is surrounding and not far distant from the city of Winnipeg, and should offer splendid advantages to progressive incoming settlers.

FOR SALE AN IMPORTED COACH STALLION, 5 years old; a good stock getter. Will be sold cheap. W. T. WHALE, Goldstone P.O., Wellington Co.

IT PAYS TO ADVERTISE

FARMER'S ADVOCATE

HOME MAGAZINE.



# Premiums!

COMMENCE  
CANVASSING  
TO-DAY.



OUR NEW  
**Self-binder.**

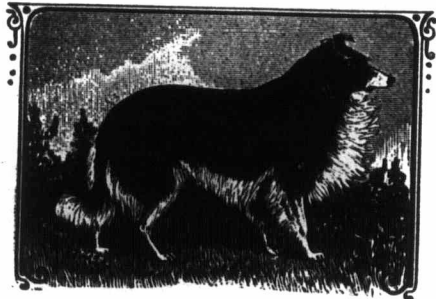
WE have for a long time been in search of a suitable binder for the FARMER'S ADVOCATE, and have at last secured what is wanted. It is handy, neat, handsome, strong and durable; black duck back, and cloth sides, with gold lettering. Each copy of the paper, as it is received by the reader, can be securely fastened within the binder, presenting the appearance of a fine cloth-bound book. In this way the paper can be preserved for reference, thus doubling its value. The files of the FARMER'S ADVOCATE constitute a volume of practical high-class agricultural matter, thoroughly up-to-date, such as can be got in no other way. We answer hundreds of important questions during the year. In order that all our friends may secure it we make two propositions:

We will send this splendid and useful premium, post prepaid, to any one sending us two new yearly subscriptions.

We will sell the binders at 75 cents each.

HOW TO GET A

## First-class Collie



TO any subscriber sending us the names of 10 new yearly paid-up subscribers we offer a young Collie, six weeks old or over, eligible for registration, and bred by Mr. R. McKwen, Byron, Ont., whose stock has been so successful in the leading shows in Canada and the United States.

## Bagster's NEW COMPREHENSIVE Teacher's Bible

Containing the Old and New Testaments, according to the authorized version, together with new and revised helps to Bible study—a new Concordance and an indexed Bible Atlas, WITH SIXTEEN FULL-PAGE ILLUSTRATIONS, PRINTED IN GOLD AND COLOR.

### Binding—

Strong, durable, flexible American Seal (best material) improved circuit cover, round corners, red-under-gold edge.

### Paper, Type, Etc.—

Of superior quality, clear and distinct, easy to read.

### Maps (with index)—

Revised and brought down to January, 1896.

### Helps—

Covering nearly 2,000 subjects—contain all features so popular in the past, and an endless amount of fresh matter, including concordance on new and improved plan, dictionary of proper names and places, with pronunciation and meaning. Size 8½ x 5½ inches (closed).

### How to obtain this Handsome and Valuable Bible

(Which ordinarily would retail at from \$4 to \$5): We will send (carefully packed, post prepaid) this Bible to anyone sending us the names of THREE NEW SUBSCRIBERS to the FARMER'S ADVOCATE at \$1 each.

XMAS NUMBER FOR 1897 **\$1.**  
AND ALL OF 1898 FOR

## Handsome Rings

WARRANTED TEN KARAT GOLD.

To find the size of ring required, take a narrow strip of paper that will draw tightly around the finger, forward same to us, and we will assure you a perfect fit.

CHILDREN'S OR MISSES' REAL STONE SETTING.



No. 1—Price, \$1.25.  
1 Pearl, 2 Garnets.  
2 New Subscribers.



No. 2—Price, \$1.25.  
1 Garnet.  
2 New Subscribers.



No. 3—Price, \$1.50.  
3 Pearls.  
3 New Subscribers.



No. 4—Price, \$2.00.  
1 Pearl, 2 Garnets or Coral.  
3 New Subscribers.

LADIES' REAL STONE SETTING.



No. 5—Price, \$3.50.  
2 Pearls, 3 Garnets.  
5 New Subscribers.



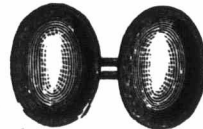
No. 6—Price, \$3.50.  
2 Garnets, 5 Pearls.  
5 New Subscribers.



No. 7—Price, \$3.50.  
1 Garnet, 2 Pearls.  
5 New Subscribers.



No. 8—Price, \$2.00.  
3 New Subscribers.

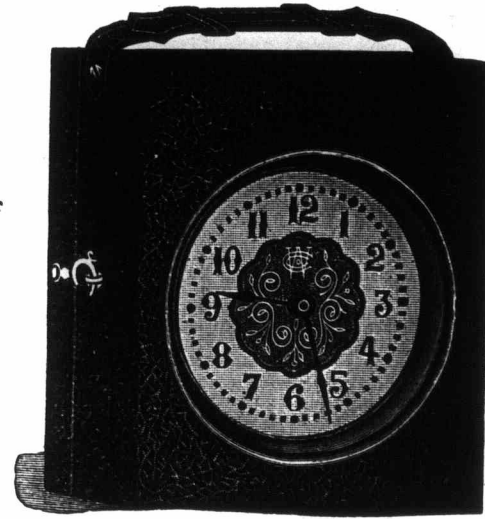


Gent's Gold Filled Cuff Links,  
warranted for 20 years,  
for 3 new names.

In Sterling Silver for 1 New Subscriber



Sterling Silver Canoe  
Scarf Pin, can also  
be used as lady's  
stick pin, 1 New  
Subscriber.



Fine Gold-finished Clock, handsomely decorated  
dial; fitted in Maroon Seal Leather Case.  
4 New Subscribers.



## Spray Pump!

OUR readers know the importance of having a good Spray Pump, and we are pleased to state we have made arrangements with the Spramotor

Co., of this City, whereby we can supply the Spramotor Jr. to anyone sending Ten New Subscribers accompanied by \$10 in cash. It will be found a great success for spraying all kinds of fruit trees, painting your barns and fences and rough surfaces, whitewashing, disinfecting stables, poultry houses and cellars. It is built very carefully. The mechanical agitator, strainer, base casting, plunger tube, air chamber and hose couplings are in brass.

OUR HANDSOME LIVE STOCK ENGRAVINGS:

“Canada's Glory,”

“Canada's Pride,”

“Canada's Columbian Victors.”

All three may be obtained by any subscriber sending us the name of one new yearly subscriber, or for 50 cents cash.

12 MONTHS  
FREE!

Any subscriber may have his own subscription credited 12 months for sending two new subscribers at \$1.00 each.

FOR CANVASSING OUTFIT ADDRESS:

The Wm. Weld Co., Limited,  
LONDON, ONT.

Clydesd



1 Three-year-old  
out of imp.  
1 Three-year-old  
Millfield,  
of Wales  
1 Four-year-old  
imp. Can.  
3 Imp. two-year  
2 Two-year-old  
out of imp.  
Also several tv  
These animals  
and sound TO

Thorncroft St

Arthur

Greenwood



FIFTEEN S

Cows

As good

Berksh

Send for C  
ness, no harm  
R., or Picken

Spring



Grove. Sto  
sale. Apply  
on

Short

Nominee,  
bred by us  
Leicesters b  
continue to

E. G.

Lucknow S

FOR

SALE!

two years  
lings an  
calves out  
ed and ho  
cows, and  
ed bulls, R  
hor and  
Robin. Co  
them, or w  
want some

Station on

W. G.

Telegr

BREEDERS

OF . . .

Ten choi

extra good

A choice

imp. ram)

Also eight

and a few

Farms o

Burling

4 \$1

Bulls an

having g

pedigrees

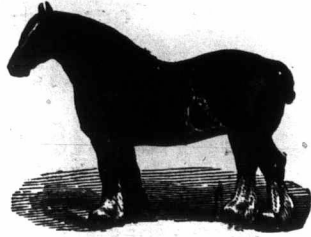
superior

G. A.

Bethesda

ADVER

Clydesdales for Sale.



1 Three-year-old stallion by imp. Queen's Own, out of imp. Candour, by Macgregor.
1 Three-year-old (imp.) stallion by Prince of Millfield, out of Connie Naira, by Prince of Wales.

1 Four-year-old stallion by King's Own, out of imp. Candour, by Macgregor.
3 Imp. two-year-old stallions by Macgregor.
2 Two-year-old stallions by Prince of Quality, out of imported dams.

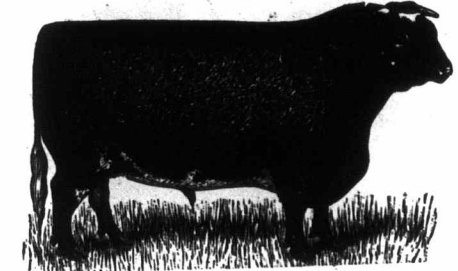
Also several two-year-old fillies. These animals are all large size, good quality and sound. Terms reasonable.

ROBERT DAVIES,

Thorncliffe Stock Farm, TORONTO, ONT.

Arthur Johnston,

Greenwood P. O. and Telegraph Office,



OFFERS FOR SALE

FIFTEEN SPLENDID YOUNG BULLS.

Also Cows and Heifers, As good as the old bull ever left.

Berkshires OF CHOICEST BREEDING AND QUALITY FOR SALE

Send for Catalogue and prices. "No business, no harm," is our motto. Claremont C. P. R., or Pickering G. T. R.

Spring Grove Stock Farm

Shorthorn Cattle and Lincoln Sheep. The noted sires, Golden Robe = 20396 = and Nominee = 19628 =, at the head of the herd. Re presentatives of this herd won two silver medals and the herd prize at Industrial Fair, Toronto, 1897. Prize-winning Lincoln Sheep are also bred at Spring Grove. Stock of all ages and both sexes for sale. Apply T. E. ROBSON, Iderton, Ont.

Shorthorns and Leicesters

Nominee, sweepstakes bull at Toronto, 1897, bred by us. We also won first prize on pen Leicesters bred and owned by exhibitor. We continue to breed the best.

YOUNG STOCK FOR SALE.

E. Gaunt & Sons, ST. HELEN'S, ONT. Lucknow Station, G. T. R., 3 miles. om

FOR SALE! Good Young Cows

two years old, yearlings and heifer calves out of imported and home-bred cows, and the imported bulls, Royal Member and Rantin Robin. Come and see them, or write, if you want something special.



H. CARGILL & SON, Station on the farm. Cargill Sta. & P.O., Ont.

W. G. Pettit & Son, FREEMAN, ONTARIO.

Telegraph office, Burlington Station, G. T. R., BREEDERS Shorthorns, Shropshires, and Berkshires OF

Ten choice young bulls from 9 to 12 months, extra good quality, got by "Indian Statesman." A choice lot of yearling ewes (served by an imp. ram), due to lamb in March and April. Also eight young sows, due to farrow in March, and a few boars from four to six months old. Farms one-half mile and one and one-half from Burlington Station, G. T. R.

SHORTHORNS

Bulls and heifers, having gilt-edge pedigrees, and of superior quality.



C. A. BRODIE, Bethesda P. O., Ont.

ADVERTISE IN THE ADVOCATE

BARGAINS FARM LANDS

Notwithstanding the demand for farm lands, particularly in the eastern half of the Province, and the consequent advance in prices, I have resolved to offer the land in the annexed list at the old reduced figures, and in some instances at prices lower than they have yet been offered at. I desire to sell quickly and cheaply, and on terms that will suit anyone, namely, one-tenth cash, balance in nine equal annual payments, interest at six per cent. Where preferred I shall also sell on the crop payment plan. Write me, or call when in the city.

WILLIAM HARVEY, 210 Portage Avenue (Cor. Main Street), WINNIPEG.

If you do not want a farm, kindly hand this list to one who does.

Table with columns: ST. ANNE'S, PLYMPTON, AND LORETTE DISTRICTS. Includes lots 1-8 with descriptions and prices.

Table with columns: STONEWALL AND BALMORAL DISTRICTS. Includes lots 9-18 with descriptions and prices.

Table with columns: HEADINGLY, OAKVILLE, AND HIGH BLUFF. Includes lots 19-24 with descriptions and prices.

Table with columns: PORTAGE LA PRAIRIE AND MARQUETTE. Includes lots 25-26 with descriptions and prices.

Table with columns: RED RIVER LOTS. Includes lots 27-40 with descriptions and prices.

Table with columns: LETELLIER AND ROSENFELD DISTRICTS. Includes lots 41-43 with descriptions and prices.

Table with columns: MORDEN DISTRICT. Includes lots 44-46 with descriptions and prices.

Table with columns: DOMINION CITY AND ST. MALO. Includes lots 47-56 with descriptions and prices.

(CONTINUED ON NEXT PAGE.)

OAK PARK STOCK FARM'S SHORTHORN HERD

Your choice from 50 head, including cows and heifers having the most approved pedigrees. Half a dozen young bulls equally well bred. Registered Shropshire sheep and Berkshire swine.



CAPT. D. MILLOY, Paris, Brant Co., Ont.

Shorthorn Cattle for Sale

FOUR first-class young bulls, two of them by our well-known Cruickshank bull, Abbottsford 1946, and half a dozen heifers also by Abbottsford, the sire of the champion steer Bruce.

H. SMITH, Exeter, G. T. R., 1/2 mile. HAY P. O.

Shore Bros., WHITE OAK, ONT.

Offer 6 young Shorthorn bulls of the low, easy-feeding sort which the present trade demands. Could also spare a few heifers.

WE HAVE Shorthorn Bulls FOR SALE. One ten months old, got by (imp.) Royal George, dam by (imp.) Warfare; the other, four years old, by (imp.) Warfare, dam (imp.) Charlotte; sure and kind; both red. Write for prices or come and see.

A. & D. BROWN, Iona, Ont.

Hawthorn Herd of Deep-Milking Shorthorns

For Sale! FOUR young bulls and several heifers of the choicest breeding and good quality. Prices right.

WM. GRAINGER & SON, London, Ont.

JOHN SRIGLEY, Allandale, Ont., Breeder of Shorthorns and Herefords, Shropshire sheep, Berkshire and Yorkshire pigs. A choice bunch of Shropshires, also a few Shorthorn and Hereford females now for sale.

MILLER & SIBLEY'S

Jerseys

BIG COWS HEAVY MILKERS RICH PEDIGREES SOUND COWS GREAT BUTTERMAKERS FULL FOREUDDERS LARGE, WELL-PLACED TREATS. Championship yearly milk record in Jersey breed for two-year-olds, as well as mature cows, held by this herd.

187 187

First Prize and Sweepstakes won by this herd at 18 State or greater fairs. First prize herd in 1897 wherever shown, viz.: at New York State Fair, Victorian Era Exposition, Toronto; Western Fair, London, Canada; Central Canada Exposition, Ottawa. In previous years, first prize herd at New York, Pennsylvania, Ohio, West Virginia, Indiana, Illinois, and Missouri State Fairs, and Cotton States Exposition and Live Stock Show of America, etc.

Every animal over one year old has been tuberculin tested. Our animals are not cheap. They are worth what we ask for them. In general, no bull, heifer or cow for less than \$500. If you want our kind of Jerseys, come and see our herd. If you can't come, write for what you want. No trades. No Catalogue.

MILLER & SIBLEY, FRANKLIN, Venango Co., Pa.

ONE FIRST PRIZE BULL

A. J. C. C. Sire King of Highfield, winner of 1st prize over all Canada; dam St. Lambert's Kathleen, made 21 lbs. 34 ozs. of butter in 7 days; dam of King of Highfield. Signal Rosa May (22 lbs. 4 ozs. of butter in 7 days, and 1st prize over all Canada 4 times); also dam of Unoma May (26 lbs. 4 ozs. of butter in 7 days, and 64 lbs. of milk a day).

J. H. SMITH & SON, Highfield, Ont.

5 JERSEY BULLS 5

AND A NUMBER OF BERKSHIRE BOARS

For Sale at Low Prices.

THE BOW PARK CO., LIMITED, BRANTFORD, ONT.

BRAMPTON JERSEY HERD

Offering high-class A. J. C. C. cows and heifers in calf, and heifer calves; 9 choice young bulls. High-grade cows in calf; and Berkshires.



B. H. BULL & SON, Brampton

BARGAINS IN FARM LANDS—(Continued.)

Table with columns for location, description, acres, and price. Includes sections for Manitou and Somerset, Baldur and Cartwright, Oak Lake, Virde, Elkhorn, and Beulah, Minnedosa and Rapid City, and Arden and Neepawa districts.

Great Clearing Sale ON WEDNESDAY, MARCH 9th, 1898.

The property of JAMES HUNTER, Alma, Ont., consisting of Clydesdale Stallions

Master Lyndoch (imp.) (1537) (8637) 7346; King of Sunnyside (232) sire Master L/7/13th, dan Jess (238) 7376. FOUR REGISTERED CLYDESDALE MAIRES. Forty-five Head of Shorthorn Cattle, about Fifty Registered Shropshire Sheep, Five Berkshire Sows and One Boar.

Positively no reserve, as the farm is rented. Catalogues on application. Terms of Sale—9 months credit on approved joint notes; 5 per cent. discount for cash. JAMES HUNTER, ALMA, ONTARIO.

AUCTION SALE OF Imported Shorthorn Bulls

The undersigned will offer at Public Auction at his farm, 1 1/2 miles from Markham Village, on or about March 10th, 1898, eleven bulls recently imported from the herds of Messrs. Campbell, Duthie, and Marr, Aberdeenshire, Scotland. Also a number of Canadian-bred bulls and females. Farm 20 miles north of Toronto. JOHN ISAAC, Markham, Ont.

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.

IMPORTANT TO BREEDERS AND HORSEMEN. Eureka Veterinary Caustic Balsam. A reliable and speedy remedy for Cuts, Splints, Sprains, Swellings, etc., etc., in Horses, and Lump Jaw in Cattle. See pamphlet which accompanies every bottle, giving scientific treatment in the various diseases. It can be used in every case of veterinary practice where stimulating applications and blisters are prescribed. It has no superior. Every bottle sold is guaranteed to give satisfaction. Price 25c. per bottle. Sold by all Druggists. Prepared by THE EUREKA VETERINARY MEDICINE COMPANY, London, Ont.

LIVE STOCK AUCTION SALES. Conducted in all parts of the country. Pedigree stock a specialty. Write for terms. References: J. C. Snell, Edmonton; John I. Hobson, Guelph; Hon. M. H. Cochrane, Compton, P. Q.; or this office. 112-y-o JOHN SMITH, Brampton.

ADVERTISE IN ADVOCATE

GOSSIP.

Mr. R. E. A. Leech, of Brandon, Man., who has been on a few months' visit to Ontario, paid the FARMER'S ADVOCATE office a short call a few days ago. Shorthorns are good property and likely to be better. The same may be said of Herefords. March 9th is the date fixed for the auction sale of John Strigley's (Almadale, Ont.) herd of 23 Shorthorns and 13 Herefords. See advertisement in this issue. The young bull, Ida's Rioter of Highfield, recently purchased from Miller & Sibley, Franklin, Pa., is a dandy; average test of dam and sire's dam, 29 lbs 10 oz. of butter in 7 days; average milk record of same, 65 1/2 lbs. a day. He is large and is very stylish, and is the picture of his grand sire, Ida's Rioter of St. Lambert, 1866. He is now testing from 14 lbs. 10 oz. to 25 lbs. 51 oz., and averaging 20 lbs. 2 1/2 oz. a piece of butter in 7 days. Grandam Ben Pogis of Prospect 87045, test 19 lbs. 1 1/2 oz.; gave 61 lbs. of milk a day, and 11.183 in one year; full sister to Gipsy Ben of Prospect; 48 1/2 lbs. of milk a day as a three-year old. Orders are coming in fast, and we think that this will be a better year than ever for the butter queen. We like the ADVOCATE very much, and would not be without it. It must have a very wide circulation, as our ad. in it is bringing us orders from all parts. Wishing your paper every success, we are, J. H. SMITH & SON, Highfield, Ont. P. S.—The bull we are advertising for sale is a dandy.

DAIRY INSTRUCTION. The demand for dairy instruction goes on apace with the development of the dairy industry. We are informed by J. A. Ruddick, superintendent of the Kingston Dairy School, that the attendance of students this year is nearly 50 per cent. ahead of any previous year, and applications for admission indicate that this ratio will hold out for the whole term, there being 135 applications by Jan. 15th, against 80 at that date in 1897, and 114 for the entire course. Cheesemaking demands most attention, as indicated by last year's record, when 56 took cheese work only, 20 took butter only and 12 took both butter and cheese. There have been no applications from ladies to attend the Kingston Dairy School. The Guelph Dairy School opened 10 days earlier this year than usual. At a recent date 100 students were in attendance, and more were expected. The instructors are the same as those of last year, with the exception that Miss Laura Rose is lady assistant in the Home Dairy. There are seven young women in attendance at this branch of the school. The Western Dairy School at Stratford had by Jan. 15th 15 students, all gentlemen. A number of applications have been received for the following opening dates. Most of the students at this school desire and receive buttermaking instruction.

A NOTABLE SALE OF SHORTHORNS. H. Cargill & Son, Cargill, Ont., write: "We have recently sold to Mr. A. J. McArthur, of Paisley, Ont., for shipment to Calgary, N. W. T., the following splendid lot of Shorthorns, and would strongly recommend intending purchasers to examine this lot individually, as well as their breeding, before buying elsewhere. We are convinced that this is the best lot of cattle which has gone West, the property of any one person: H. litroppe, the calved August 5th, 1887; a beautiful red cow, large size, full of quality, as evidenced by her prize-ring record, when she was only in very moderate condition, she winning 2nd in a strong class at Toronto, and 1st at London in 1894, and has never been beaten at local shows; sired by Sir Lewis—45614—(imp.) dam Ham-troppe (imp.) Lovely Lena, calved October 2nd, 1890; a magnificent cow, red with some white, grand character, stylish carriage, full of substance and of large size; sired by imp. Baron Camperdown—4728—dam Lovely 19th, sired by Millionaire—31917— a regular breeder, having had 5 calves, and due to leave again in a short time; served by Rantin Robin (again in the herd of her owner; sired by Rantin Robin (imp.) dam Diamond 18th (imp.), the highest priced and conceded to be the best cow owned by D. D. Wilson at the time of his sale in May, 1895 Bull, Bruce Royal (twin), calved January 29th, 1897, is a deer, a very fine specimen of a sappy, though only in fair condition; sired by the grand imported bull, Royal Member—17107—(6474), and out of the beautiful imported Bruce cow, Rosalind—21208—; he is twin brother to the calf recently sold to Mr. Arthur Johnston, of Greenwood, for use in his herd. Ladore, red and white, calved Nov. 5, 1894, sired by Basil—18368— dam Isabella 4th, Snowflake, white calved July 8, 1895, sired by Royal Member (imp.) dam Maude—12472— by Daisy Duke—1580—, a massive heifer of good form and quality. Royal Susan, red, calved Sept. 19, 1896, sired by Royal Member (imp.) dam Susan—11122— by British Duke—4325—, a splendid heifer in quality and character. Rose of Strathmore—25050—; g. d. Rose of Strathmore—25050—, out of Rose of Strathmore (the Fry Duchess 2nd, red and white, calved Dec. 13, 1896, sired by Lovely Victor—22170—, dam Fry Duchess—25051—, Josephine, roan, calved April 28, 1897, sired by Royal Member (imp.) dam Josephine Victor—18275—, Genoa 2nd, roan, May 16, 1897, by Royal Member (imp.) dam Genoa—16825—, above mentioned Isabella 9th, red, Dec. 8, 1896, by Earl 2nd, red, Dec. 27, 1896, by Rantin Robin (imp.) dam Edna Earl—18821— by Bert Victor (imp.) Larder, bull, red and white, March 17, 1897, by Rantin Robin (imp.) dam Isabella 1st—18745— this bull is thin, but is of good form, and being out of a grand cow and sired by a very fine bull, should make a good one; he is a very fine fellow. Bull, Royal Joseph, red, March 30, 1897, by Royal Member (imp.) dam Josephine S—22329— This is one of the low-down, thick sort. His dam is a great milker. He should develop into an extra bull.

Horse Owners! Use

Caustic Balsam. GOMBAULT'S. A Safe Speedy and Positive Cure. The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., TORONTO, CAN.

You might as well go GUN hunting without a SPRAMOTOR. As try to grow much fruit without a SPRAMOTOR. Awarded Ten Diplomas, Three Medals, and the Government Contest within a year.



CERTIFICATE OF OFFICIAL AWARD. This is to certify that at the contest of spraying apparatus, held at Grimsby, on April 2nd and 3rd, 1898, under the auspices of the Board of Control of the Fruit Experimental Stations of Ontario, in which there were eleven contestants, the SPRAMOTOR made by the Spramotor Co., of London, Ont., was awarded FIRST PLACE.

Agents wanted. Send three cent stamp for 68-page catalogue. Spramotor Co., 357 Richmond Street, LONDON, ONT.

4 JERSEY BULLS FOR SALE 4. My stock bull, Earl of Orgrave (31413), A. J. C. C., and 3 grand young animals—2 got by the Earl of Orgrave, and out of such dams as Eye of Hillhurst (imported) and Spot Cash's Ella. For prices and particulars write JOHN O'BRIEN, 2nd con. London, on LONDON WEST, ONT.

GLEN ROUGE JERSEYS. WILLIAM ROLPH, Markham, Ont., offers twelve Jersey Bulls and Heifers (pure St. Lambert), out of tested cows. Grand individuals. Prices right. 22-y-o

A. J. C. C. JERSEYS FOR SALE.—Bulls fit for service. Bull calves, heifer calves, and young cows from tested dams. Baron Hugo heads the herd. Prices right. H. E. WILLIAMS, Sunny Lea Farm, KNOWLTON, P. Q.

GLENGARRY STOCK FARM John A. McDonald, Jr., WILLIAMSTOWN, ONTARIO, BREEDER OF High-Class Ayrshires. Three fine young bulls rising 2 years old for sale; also young calves of both sexes at reasonable prices. Write or come and see them. Lancaster Station, G. T. Railway. —o

Maple Hill Holstein-Friesians SPECIAL OFFERING. Three bull calves, sired by Sir Pietertje Josephine Mechthilde, whose five nearest female ancestors average over 23 pounds butter per week, and out of the great cows, Cornelia Tensen, Lady Akkrum 2nd, and Inka Rose Pietertje De Kol. If you want a bull to head your herd why not get the best? 11-y-o G. W. CLEMONS, St. George, Ont.

FOR SALE AT ONCE. Two registered Holstein cows in calf, or will exchange for young Shorthorn bulls or heifers. Also Harrison's bearded wheat at \$1.25 per bu. J. FRED DAVIDSON, PETERBORO, ONT. Box 903.

Brookbank Holsteins. Champion milk and butter herd. Can sell a limited number of bulls and heifers one month old and up; some nice ones from our show herd. First come first served. Quality unsurpassed. Prices right. Write or come and see. A. S. O. RICE, Oxford Co., Ont. —om CURRIE'S CROSSING.

"Gem" STOCK FARM. We only Holstein choice of some old best dair one or more terms. HILLIS

Shipping Station. SPRING BR. Choice Tamwo by the prize-win Write at once for A New D

Inglesid UP-TO OF CA

TAMWO Orders for Pairs not Address— E. D 17-y-o

GUE This is the Dal Large, vigorous rich milk. Seve very reasonable spared. Add 17-y-o

Choice

Farm close to St. A 3 Young From two mon Morton's Rob Eggs from 13 \$1.50 per 13. 11. Orders book W.M. Norfolk Co.

W.M. WY Breeder of h class AYRSH Young stock al for sale; bred f the choicest str procurable. Bring stock sel from the most f ionable strains prize-winning st at Howick. Que

AYRSH 6 Importe Bulls, FIT FOR SERVI From the b milking str Terms reasona

Robt. Davie Thorncliffe Sto FAIRVIE Ayrshire C Traveller of while my herd chased of Mr. I type, and are o Write for price DAVID LEITCH Stations—Corn

AYRSE The bull T Brown and heifer White F winners of w stakes at Wo Fair, were b from this h Young stock sale. Also Le ter Sheep and I DAVI Glenhurst F

"Gem Holstein Herd." STOCK FOR SALE! We only keep and breed registered Holstein-Friesian...

ELLIS BROTHERS, BEDFORD PARK P.O., ONT. Shipping Station, Toronto. 7-y-om

Ingleside Herefords. UP-TO-DATE HERD OF CANADA! TAMWORTH SWINE.

H. D. SMITH, Compton, Que. 17-y-om

GUERNSEYS. This is the Dairy breed for ordinary farmers. Large, vigorous and hardy...

Sydney Fisher, Alva Farm, Knowlton, P.Q. 17-y-o

Choice AYRSHIRES. R. REFORD, Breeder and Importer.

3 Young Ayrshire Bulls 3. From two months to one year old, sired by Morton's Rob Brown of Barmorehill (1940).

WM. THORN, Norfolk Co., LYNEDOCH, ONT.

WM. WYLIE, Breeder of high-class AYRSHIRES.

AYRSHIRES FOR SALE. 6 Imported Bulls, FIT FOR SERVICE.

Robt. Davies, Thorncliffe Stock Farm, TORONTO, ONT.

FAIRVIEW STOCK FARM. Ayrshire Cattle and Berkshire Pigs.

DAVID LEITCH, Grant's Corners, Ontario.

AYRSHIRE CATTLE. The bull TOM BROWN and the heifer WHITE FLOES, winners of sweepstakes at World's Fair...

AYRSHIRE BULLS!

TWO yearlings, one whose dam and sire are both imported. The other's dam is a full sister to above-mentioned bull.

THOS. BALLANTYNE & SON, Neidpath Stock Farm, STRATFORD, ONT.

AYRSHIRES AND RED TAMWORTH SWINE. Still a few choice young bulls for sale, and a grand lot of Tamworth boars ready for service.

Stock Imported!

MR. F. S. PEER, Mt. Morris, N. Y., sells for England, Jan. 29th, and will be pleased to correspond with any reliable breeders or farmers wishing to import high-class show or breeding stock.

Silver-Gray Dorkings

COCKERELS AND PULLETS. ALSO Eggs for Hatching. WRITE FOR PRICES.

T. HARDY SHORE, GLANWORTH, ONT.

Geo. Hindmarsh, AILSA CRAIG, ONT.

SHROPSHIRE SHEEP

the blood of which was obtained from the noted flocks of both England and Canada. Ram lambs of the choicest breeding for sale.

Shropshire Sheep, Bronze and White Holland Turkeys, Chester White Hogs.

W. E. WRIGHT, GLANWORTH, ONTARIO. SHEEP BREEDERS' ASSOCIATIONS.

HERMANVILLE IMP. YORKSHIRES

Tamworths (red), Duroc-Jersey Pigs, AND NONE BETTER. SPRING PIGS.

HERMANVILLE FARM, P.O. on the farm, om HERMANVILLE, P. E. I.

OAK LODGE HERD OF YORKSHIRES

Extra choice young sows in pig. Boars and sows, two to four months, choicely bred, quality guaranteed.

J. E. BRETHOUR, BURLFORD, BRANT CO. 1898 OFFERING FOR 1898

TWO extra good Berkshire boars fit for service, and a number of young sows in pig to show boars. Also a fine lot of 3-months pigs.

GOSSIP.

Mr. R. Elliot, Hespeler, Ontario, has sold to Howard C. Dunlap, Stewiacke, N. S., his fine two-year-old Shorthorn bull, Robert The Bruce =22635=...

Mr. George Crawford, Cherry Grove Farm, Oro Station, Simcoe County, has purchased from A. McFiggart & Sons, of Appin, the fine Clydesdale filly, Moss Bank, sired by Farmer's Pride (imp.) #364...

Mr. Adam Earl, of Lafayette, Indiana, one of the foremost of American Hereford breeders, died on January 15th at the age of 75 years.

Mr. William H. Caldwell, Secretary of the American Guernsey Cattle Club, Peterboro, N. H., has recently issued a circular letter calling attention to the spread and progress of the breed in America.

James Tolton, Walkerton, Ont., writes us: "I beg to report the following sales of stock during the fall and beginning of the present winter."

Wm. E. Wright, Glanworth, Ont., reports that the trade in Shropshire sheep has been very good. He has made the following sales in the last few months:

Vegetables

can be raised at a profit, and the yield enlarged, if properly fertilized. Most fertilizers do not contain enough

Potash.

Vegetables need plenty of potash—at least 10%—besides the phosphoric acid and nitrogen.

Write for our books which tell all about fertilizers. They are free.

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

J. H. Lloyd, ST. LIN, QUE.

Breeder and Importer of IMP. YORKSHIRES and LARGE BERKSHIRES.

Pigs of all ages for sale, at prices to suit the times. My Berkshires are of Baron Lee and other noted strains.

LARGE ENGLISH BERKSHIRES. Sows in pig. Young boars fit for service.

English Berkshires. Herd headed by three first-prize boars. Large size, strong bone, fine quality, and a choice lot of breeding sows.

CHRIS. FAHNER, CREDITON, ONT. Importer, Breeder and Shipper of Berkshire, Chester White, Victoria, Tamworth, Duroc-Jersey, Poland-China Hogs.

HEAD-QUARTERS FOR DUROC-JERSEY SWINE. Our herd secured nine of the first prizes out of the eleven exhibited at Toronto Exhibition...

JAMES CHRISTIE, WINCHESTER, ONT., Breeder of Chester White pigs, the foundation of which was selected with the greatest care...

F. BIRDSALL & SON, Birdsall, Ontario. Improved Chester White Swine.

HURON HERDS OF POLAND-CHINA, DUROC-JERSEY and TAMWORTH HOGS.

Will offer the following No. 1 stock at cut-down prices for 30 days only: Two Tamworth boars (one of them King of Duke 648, the 3rd prize winner at London this fall)...

American Chester-White Record Association held its fourteenth annual meeting on January 12th, at Columbus, Ohio. The attendance was larger than ever before.

Balance in treasury \$ 433 35 The election of officers resulted as follows: President, S. H. Todd, Wakarusa, Ohio; Vice-President, F. A. Branch, Medina, Ohio...

**Consumption Cured.**

An old physician, retired from practice, having had placed in his hands by an East India 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, after having tested its wonderful curative powers in thousands of cases, has felt it his duty to make it known to his suffering fellows. Actuated by this motive and a desire to relieve human suffering, I will send free of charge, to all who desire 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, 380 Powers' Block, Rochester, N. Y.

**J. F. McKAY,**  
PARKHILL, ONT.  
Poland-China Swine.  
I have a choice stock of all ages and sex for sale. Bronze turkeys, B. P. Rocks, Rouen Ducks, etc. Write for particulars. Farm 3 miles east of Parkhill. —om

**Oxford Herd of Winning Poland-Chinas.**  
Having won the herd prizes at Toronto, London, Ottawa, and Brantford Fat Stock Show, we feel justified in stating that we are in a position to offer you what you may ask for from gilt-edge prize-winning stock. **W. & H. JONES,**  
OXFORD CO. MT. ELGIN.

**P. R. Hoover & Sons,**  
GREEN RIVER, ONT.  
BREEDERS OF CHOICE TAMWORTHS.  
Young boars and sows ready for breeding purposes at prices which should sell them. St. Locust Hill, C. P. R.; Markham, G. T. R. Correspondence solicited. 9-17-om

**TAMWORTH BOARS**  
three months old, for spring service, and sows same age, not skin. Also sows to farrow in March and April. We are booking orders for Chester White and Tamworth spring pigs from prize-winning stock, having again won the sweepstakes at all the large exhibitions throughout Canada in 1897. Write for prices.  
**H. GEORGE & SONS, CHAMPTON, ONT.**

**OAK HILL HERD OF TAMWORTHS.**  
FOR SALE.—Boars and sows ready to ship, and one aged boar; also Barred Rocks, Rouen Ducks, Toulouse Geese, and Bronze Turkeys. Prices reasonable. **E. J. & A. LAURIE,**  
Wolverton, Ont.

**Pedlar Patent Steel Shingle**  
IS THE PROPER COVERING FOR BARN AND HOUSES.  
"IT STANDS THE TEST."  
  
OUR shingle is right up to date, and embraces all the desirable points found in all metal shingles. Catalogue sent on request.  
**THE PEDLAR METAL ROOFING CO.,**  
OSHAWA, ONT.  
Larger and more progressive than all others combined. —om

**SHOEMAKER'S STOCK WINS!**  
In the hands of his customers it wins and keeps winning every year in stock. Never beaten! Always Victorious. We lead in quality and low prices. Largest and best stock. **OUR POULTRY ANNUAL & ALMANAC FOR 1906** is a booklet, 100 pages, best paper. It tells all about everything in the poultry line. Is fully illustrated with best engravings. It should be in every library. Price only 10c. Money refunded if not satisfactory.  
Address: **C. G. SHOEMAKER, FREEPORT, ILL., U. S. A.**

**Toronto Incubators**  
Best hatching machine built. Awarded silver and bronze medals. For circular, address: **T. A. WILLIAMS, 511 Dundas St., Toronto, Ont.**

On trial \$5.75 up. —om  
100 and 200 eggs from \$12.50 and \$20.00 respectively.  
Mrs. Eliza J. Prince, 10 Acres Mass. South U. S. 92 catalogue. Buckeye Incubator Co., Springfield, O.

**GOSSIP.**

**Mr. C. W. Hartman, Clarksburg, Ont.,** has purchased eight head of Aberdeen-Angus cattle from the famous herd of Hay & Paton, New L'well, Ont., as the nucleus of a herd of this breed of useful cattle. We congratulate Mr. Hartman on his enterprise, and tender our best wishes for the success of his venture.

**THE BREEDERS' MEETINGS.**  
Following are the dates of meetings of breeders' associations in Toronto in February: On the 5th at 11 a.m., the Shire Horse breeders; at 3 p.m. same day, the Clydesdale breeders; at 8 p.m. same day, Directors of Shorthorn Association; on the 9th at 11 a.m., the annual meeting of the Shorthorn Breeders' Association; at 8 p.m. same day, the annual meeting of Horse Breeders' Association; on the 10th at 8 p.m., the annual meeting of the Yorkshire Breeders' Association.

**THE FARMER'S ADVOCATE SELLS THEM.**  
Mr. Robert Hunter, farm manager for Mr. W. W. Ogilvie, Lachine Rapids, Quebec, who recently advertised in the FARMER'S ADVOCATE his herd of fourteen head of Polled Angus cattle for sale, writes us:—"Please discontinue our advertisement of Polled Angus cattle, as we have sold the whole herd to Mr. A. E. Kauffman, Agr. Ont., at satisfactory prices, and letters of inquiry are pouring in from all parts of the Dominion."

**CLEARING SALE OF CLYDESDALES, SHORTHORNS, SHROPSHIRE, AND BERKSHIRES.**

**James Hunter, Alma, Ont.,** announces in our advertising columns in this issue that, having rented a farm, he will sell on March 9th his entire herd of 45 head of Shorthorn cattle, 2 Clydesdale stallions, including imported Lyndook, 4 registered Clydesdale mares, 50 registered Shropshire sheep 5 Berkshire sows and one boar. This herd of Shorthorns is one of long-standing, being founded on high-class importations, and maintained by the use of good sires, and has produced many prize-winning animals at the leading exhibitions in the Province. The active demand and improved prices prevailing for good cattle, horses, sheep, and pigs make this sale an event of interest to stockmen and farmers generally. Catalogues will be sent on application to the owner.

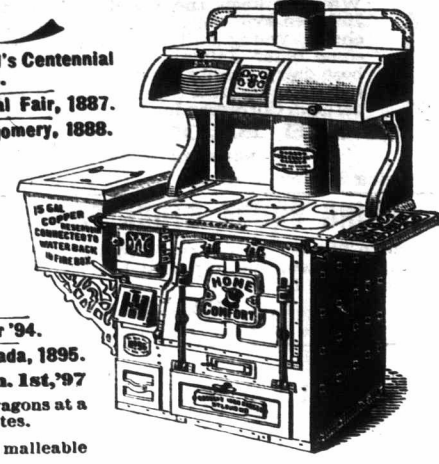
**TAMWORTH RECORD ASSOCIATION.**  
The American Tamworth Record Association has received word from the United States Department of Agriculture that the herd book of this Association would be accepted by the United States Treasury Department, allowing free entry for breeding purposes of animals recorded therein under the provisions of paragraph 473 of the Act of Congress, approved July 24th, 1897. This Association has the complete records of Great Britain as well as those of the Registrar of Live Stock for Canada, and now have the only record for Tamworths in the United States, and the selection of this Association by the Department of Agriculture makes it the recognized official record of America. The officers are: President, B. F. Miller; First Vice-President, Mr. Geo. G. Winans; Secretary, Edwin O. Wood; Treasurer, John J. Carton. Board of Directors—Edwin O. Wood, Flint; P. Smith; B. F. Miller; F. H. Rankin, jr.; John J. Carton.

**SOME JERSEY TESTS.**  
Miller & Sibley, Franklin, Pa., report the following recent tests of some of their cows:—"The heifer, Metaphysics 106974, gave for the seven days ending December 28th, 1897, 256 pounds of milk; which yielded 23 pounds 21 ounces of butter, salted 1 ounce to the pound, well-worked and ready for market. Metaphysics's best day for milk was 40 pounds. She is three years one month old. Her weight is 1,068 pounds. Her sire is Ida's Rioter of St. L. 13636, and her dam was Lady Anna Fogis 52734, she by Leo Fogis 10785. Pomona of Prospect 123426, for the same period as Metaphysics, gave 215 pounds of milk, which yielded 20 pounds 61 ounces of butter ready for market. Her best day for milk during the test was 32 pounds. She was 2 years 6 months old, and weighed 936 pounds at the time of test, and weighed 1,050 pounds. Her dam is High Tea 65577, and sire Ida's Rioter of St. L. 13636. This makes 21 daughters of Ida's Rioter of St. L. to have full weekly butter tests. The average is 20 pounds 24 48 ounces apiece a week."

**SILVER MEDALS FOR HACKNEYS.**  
The Council of English Hackney Society has adopted the following scheme for the offer of silver medals to sired and fillies: (A) For the best Hackney mare or filly registered in the English Hackney Stud Book or entered for the subsequent volume; or, the following alternative scheme: (B) For the best Hackney mare or filly by an imported sire and out of an imported dam, both registered in the English Hackney Stud Book. The society applying for the medal may select the scheme (either A or B) under which the competition shall be held. Application cannot be made for both schemes. Where not less than £25 (\$125) are offered in classes for Hackney stallions, or entire colts, the Council will give a second silver medal. (C) For the best Hackney stallion or entire colt, registered in the English Hackney Stud Book, or entered for the subsequent volume; or, the following alternative scheme: (D) For the best Hackney stallion or entire colt, by an imported sire and out of an imported dam, both registered in the English Hackney Stud Book. The society applying for the medal may select the scheme (either C or D) under which the competition shall be held. Application cannot be made for both schemes. No animal can take more than one medal during any one year. Affiliated societies pay an annual subscription of one guinea, and receive a silver medal or medals, a free copy of the Stud Book annually (for the use of members and for the preparation of catalogue), and all printed matter relating to the Society's work, as published. A reserve to the winner of the medal should be selected in every case.

**HOME COMFORT VICTORIES.**  
FOUR MEDALS—3 Gold and 1 Silver, World's Centennial Cotton Exposition, New Orleans, 1884.  
HIGHEST AWARDS—Nebraska Agricultural Fair, 1887.  
DIPLOMA—Alabama Agr' Society, Montgomery, 1888.

AWARD—Chattahoochee Valley Exposition, Columbus, Ga., 1888.  
HIGHEST AWARDS—St. Louis Agricultural and Mechanical Association, 1889.  
GOLD MEDALS and 6 DIPLOMAS—World's Columbian Exposition, Chicago, 1893.  
HIGHEST AWARDS—Western Fair Association, London, Canada, 1893.  
SIX GOLD MEDALS and Diplomas—Cal. Midwinter Fair '94.  
SILVER MEDAL—Industrial Exposition, Toronto, Canada, 1895.  
345,584 Home Comfort Ranges Sold to Jan. 1st, '97  
Range illustrated is sold only from our own wagons at a uniform price throughout Canada and the United States.  
Made of open hearth, cold rolled steel-plate and malleable iron—will last a life-time with ordinary care.




**WROUGHT IRON RANGE CO.,**  
Founded 1864. Paid-up Capital \$1,000,000.  
Factories, Salesrooms and Offices: **TORONTO, CANADA, and ST. LOUIS, MO.**  
Western Salesrooms and offices: **DENVER, COLO.**  
We manufacture and carry a complete stock of Hotel Ranges and Kitchen goods; also the unequalled **HOME COMFORT STEEL FURNACES.** Write for catalogue and prices.



The Page fencing is so popular mainly because it is a perfect barrier against all kinds of stock, requires few posts, will not be affected by extremes of temperature or snowbanks; and it is cheap. For free illustrated advertising matter, address the Page Fence Company, Walkerville, Ont., or their Northwest Agents, The Rathbun Company, Winnipeg. —om

**Champion Hackney Stallion . . .**  
  
**Royal Standard**  
We have a number of first-class mares and fillies of this breed in foal to the above stallion.  
We also have for sale a number of other choice stallions—Clydesdale, Standard-bred, Thoroughbred.  
**GRAHAM BROS.,**  
Claremont, Ontario.  
25 miles east of Toronto, on C. P. R. 4-17-om

**Isaleigh Grange Stock Farm, DANVILLE, QUEBEC.**  
Ayrshire AND Guernsey Cattle, Imp. Yorkshire Swine AND Shropshire Sheep.  
  
Ayrshire herd headed by the noted bull, Matchless 7560; sire Imp. Glencairn, dam Nellie Osborne. We are offering a choice lot of young stock, of both sexes, in both Ayrshire and Guerneys, at very low figures. Also bargains in sheep and pigs for the next month.  
Particulars furnished on application to—  
**J. N. GREENSHIELDS, Prop. 9 yom T. D. M'CALLUM, Mgr.**

**PLANTING PAYS**  
The better you do it, the better it pays. The Gardener who uses the "Planet Jr." No. 5 Hill Dropping Seeder gets most for his labor, because he can do the most work with the least labor. With one of these seed drills the work of two days is accomplished in one. The seed is planted better, grows better, produces most. This drill works automatically, dropping the seed continuously or in hills, covering, rolling down and marking the next row.  
All you have to do is to guide the machine, and a boy can do that. There are many other "Planet Jr." Machines for many other uses.  
If you would know all about them, send for the "Planet Jr." Book for 1898.  
S. L. Allen & Co., 1107 Market St. Phila.  


**\* AGRIC**  
VOL. XXXI  
Agr  
It is calculated that the Dominion of Canada has brought out of our Yukon country more than 100,000 head of stock gone wild over the mountains and into the great north. But supposing that all this stock were realized, what would be the result? With what is now the Dominion of Canada, the Dominion of Canada is a perpetual source of revenue and security and faithful husbandry alone on its grain-growing lands and fifty million moderate estimates of the Dominion of Canada last year nearly as large as the Dominion of Canada. What all the other products of the Dominion of Canada are to say, were the Dominion of Canada in prospect for the Dominion of Canada. That it is in the Dominion of Canada, under the Dominion of Canada, to increase the Dominion of Canada, to twenty-five per cent. selected seed of the Dominion of Canada in this issue give the Dominion of Canada. Farm experience in the Dominion of Canada. Industry of Ontario in bushels of the Dominion of Canada, wheat, 25; spring wheat, 18; and the Dominion of Canada. Does this show the Dominion of Canada, occupying the Dominion of Canada, are living on the Dominion of Canada. Is it not reasonable to suppose that the Dominion of Canada, of farm crops, sowing only the Dominion of Canada, and another Dominion of Canada, making the Dominion of Canada. Ontario returns the Dominion of Canada. value? Multiple of all the other Dominion of Canada. sum total will be the Dominion of Canada. dreams of the Dominion of Canada. million bearing the Dominion of Canada. varieties and in the Dominion of Canada. of fifty cents per Dominion of Canada. varieties and species of the Dominion of Canada. life and fungous Dominion of Canada. tree, an average Dominion of Canada. reached. By the Dominion of Canada. ods to grain-growing the Dominion of Canada. raising the return Dominion of Canada. might be increased Dominion of Canada. double the amount Dominion of Canada. Klondyke gold.  
The value of the Dominion of Canada, at a moderate rate, turns of the Dominion of Canada. hundred million of the Dominion of Canada. these animals and scarcely pay for the Dominion of Canada. introduction of the Dominion of Canada. sires, the value of the Dominion of Canada. increased by two-thirds of the Dominion of Canada. lation, and the Dominion of Canada. and selection is