# PAGES MISSING

Vol. XXXIII.

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

### 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 break-

ing 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.

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 firstclass, 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

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 dairyman 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 with the marketable articles—wheat, barley, oats,

largest quantity of the best quality of milk and 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 96), 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 themshow-places for tourthese farms is not to make themshow-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 farmera 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 mahybridizing of grain or berries, but the great ma-

cattle, sheep, hogs, and horses. Cannot more attention be given these lines, and less to the orna-mental 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 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 ment ment 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 where some 17,000 stockers were 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, everyday, 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

ada. 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 nut together. Exportation is being do 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, 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

# 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 Yours respectfully, reader of your paper.

JOHN I. HOBSON.

Guelph, Ont., January 3rd, 1898.

If the possible output of these productions were sake of his country, including himself, of the will "keep" quality of the goods placed upon the market. This injunction 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 THE LEADING AGRICULTURAL JOURNAL IN THE DOMINION.

THE WILLIAM WELD COMPANY (LIMITED), ON, ONTAREO, AND WENN JOHN WELD, MANAGER.

THE PARMER'S ADVOCATE is published on the first of each month. lie Fatamento.

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8. ADVERTISING RATES—Single it rates furnished on application DISCONTINUANCES,—Remember that the publis letter or post-card when a subscriber wishes h arrearages must be paid. Returning your pap

for its discontinuance. Al

ALWAYS GIVE THE NAME of the Post Office to WILLIAM WELD CO. LONDON, UNTARIO, 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's 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 ceived 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

'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, 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 collie pups continue to find ready takers. To-day is Wednesday (January 26th), and three have been ordered this week already. We have yet to hear the first shadow of complaint regarding the collies, 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. a better paper than ever in 1898.

#### 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

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

copy.

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 Actshall be liable on summary conviction to a fine of not less than \$20 besides costs and not more than \$100 besides

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:

naces de pasitonea :	
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
Apicultural 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	52,269
Repairs and maintenance	6,725
Public buildings (capital account)	1,950
Good Roads Branch	2,500
San Jose scale	7,500
_	

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 agri-cultural 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

Renew your subscription for the "Farmer's Advocate" at once, and enable us to give

#### 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, 121 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, 1 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." FEBRUARY 1, 1898

Humb In the FARME we published an e of a United States in this journal on out to us to promo men of a worthles ter-maker," which and thorough tes tendent of the W under which it 1 every respect. T ceeded, however, pretentious week posure in the AD hundreds of dolla the sale of territo well as churns, as respondence from gentleman in Nev that Province in claims put forwa 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 public should be believe it to be. who said he had was satisfactory practical man, his judgment; bu about it, that some \$3,000 in it ada is being he mention my nan 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 inexperienced p a grade of butte enced dairyma turn the wheel, rest"—all of wl cheeky lies are of articles said in Chicago and prices are giver 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" en ers of Canada such humbug firms. If any such schemes be sent us so Beware of ur thing for not they are tryin

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To the Editor F SIR,-Par subscription mine and two me worthy o Prof. H. H. V paper is a w Dairying is eries being b all the milk 16,000 pound ing at 9 an weather nov he 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 in a brief recital of the main facts connected with this cere pretentious weekly newspaper, but the timely exposure in the ADVOCATE stopped the game, saving the sale of territorial and manufacturing rights as well as churns, as we learned subsequently by corgentleman 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 else. where under some other guise. The president of an

was satisfactory, but as he was not a practical man, I put no confidence in his judgment; but he is so enthusias ic 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

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 itselling 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 54. The beginnings in this line we e small, but the leader in this new educational movement was a man of culture, power and enthusiasm. "The Ohio Agricultural was planted at Oberlin. After two years of small 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 re-transpanted 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 elucation in Ohio, and the many readers of the FARMER'S ADVOCATE in Western Ontario will no doubt be interested mony, 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 hundreds of dollars to our dairymen by preventing four cultured men who lived at Oberlin in the littles—men hundreds of dollars to our dairymen by preventing who realized that there was a science of ag iculture as well who realized that there was a science of ag iculture as well who realized that there was a science of ag iculture as well as the science of agriculture as well as the science of agriculture as the as the art of agriculture, and who were imbued with the thought that the success of this art in the future depended respondence from different parts of Canada, one 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 practical fa ming by close association with his father's work in Eugland and in Ohio after the family came to America. Wh n 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

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. 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 Ontario Farmers institute writes us as ioliows:

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 will be floated in Canada soon, and I think the public should be warned if it is a fraud, which I position ho retained until his death in 1895. The naming 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 medicine, but, as one of his colleagues said, he had added during the medicine, but, as one of his colleagues said, he had added during the medicine to farming. His leading thought during the stalks of Indian corn as there is in the ears. The waste of this plant that takes place in this country feed all the cattle in it. The corn plant contains its greatest nutritive value when the ear is passing into the greatest nutritive value when the ear is passing into the greatest nutritive value when the ear is passing into the glazed state and moon convert a portion of the sugar satisfactory, but as he was not a

mentioned the fact that there are more students in the

College of Agriculture than in all the other colleges of

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 Ma'thus nor in the visionary suggestion that the food of the people of the future will be produced in the

Cornell University put together.

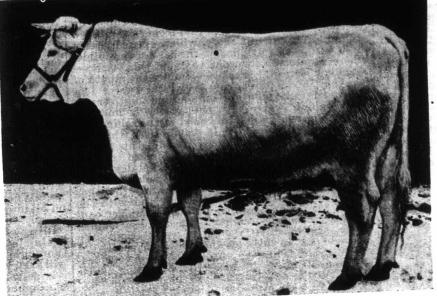
counts for the good people of lowa being ardent prohibitionists. They imbibe a considerable quantity of alcohol in Nature's great saloon, and as they suppose freely, but really at a great cost in the waste of a valuable

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 162! 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 shosls in the streams, and put a fish in every hill of corn. This was the beginning of fertilizing the so I for crops in this country, and we honor Squanto for pointing out the

The College of Agriculture of the Ohio State University, housed in Townshend Hall, has a brilliant p-ospect 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 rea'ized; and that in doing so it may prove an incentive to other similar colleges in this country

and in your country also Columbus, 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.

to be the same as the one already exposed in of the new agricultural building "The Townshend Hall" these columns, viz., resembling that of a propellar screw, geared to run at a high rate of speed. If the party referred to it may be a propellar screw, geared to run at a high rate of speed. by the "Underground Railway" when that was the only

railway in Ohio. 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 la ge and appreciative audience, presided over by Dr. J. H. Canfield, Presided dent of the University, in the commodious and pretty chapel. The principal addresses were the dedicatory address, by Dr. 1. 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 preterable 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 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 purposed 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-

#### Congratulations from Wabigoon--Rapid Settlement.

To the Editor FARMER'S ADVOCATE:
SIR,—In renewing my subscription for the yare,
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 issue, its cost each year to every wide-awake farmer. 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 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.

#### STOCK.

#### Wintering Sheep.

To the Editor FARMER'S ADVOCATE:

To the Editor FARMER'S ADVOCATE:
SIR,—As you invite discussion upon your article
on Sheep Wintering that appeared in Jan. 1st
issue, I have the following to say: My plan of
feeding roots to pregnant ewes at this time of the
year is to feed five pounds each cut in strips in the
morning and three or four pounds at night until
five or six weeks before lambing. I then feed about
two-thirds as much roots until the lambs come. I
find that for many roots cause the lambs to come find that too many roots cause the lambs to come

I feed my breeding ewes pea straw twice a day until two weeks before lambing, when I commence to feed clover hay and a few oats once a day. This makes a greater flow of milk after lambing. It is a good practice to mix pine tar with salt for sheep and keep it constantly before them in a box. The

and keep it constantly before them in a box. The tar helps to keep them healthy.

My plan of keeping sheep free from ticks is to dip them just after shearing in a trough made for the purpose, which I stand them in and pour it on. The lambs I lay in the trough and soak them in the dip. Again in the fall before cold weather comes I dip them, parting the wool at intervals and pouring on the dip from a dish of some kind.

We usually clean our sheep pens three times in the winter, which I think is quite often enough. The pea straw that is left from feeding I use for bedding, which keeps them clean and dry, which I think is very important. My flock of Shropshires have free access to roomy yards, where they get all the exercise needed. Some feed whole roots, thinking it will give the sheep more exercise to scoop their own roots. I do not think this is a wise practice, as sometimes odd turnips get frozen and when eaten are apt to cause colic and abortion.

I am glad to see you have taken up the dog question, and hope it will be discussed by every shepherd. A great many people keep dogs that are neither useful nor ornamental. In 1883 our choice flock of Shropshires was almost ruined by dogs, which was a very heavy loss, only two-thirds of their value being paid for sheep that were killed, and those that were not killed were so badly frightened that they did us very little good aftermed. I think the best dog most approximent is wards. I think the best dog-proof arrangement is

wards. I think the best dog-proof arrangement is higher taxes and a double-barrelled gun.

As soon as my lambs begin to eat I divide off part of the pen with hurdles, leaving a hole large enough for the lambs to go through, but narrow enough to keep the dams back. I constantly keep before the lambs fresh clover hay, which I change every day, and give them a mixture of bran, nutted oil cake, and cracked oats and peas and a few pulped turnips. They soon look for their feed and will go into their pen as soon as fed.

ROBT. SPENCER.

ROBT. SPENCER. "Dorset Farm," Ontario Co., Ont.

#### Sheep Wintering Down by the Sea.

To the Editor FARMER'S ADVOCATE:

SIR,—As you invite criticism of your article in January 1st Advocate, I will reply by giving my usual practice in keeping a flock of about 30 sheep (not pure-breds), but kept for the money they return in wool, mutton, and butchers' lambs, and I turn in wool, m think they pay better than any other stock on the

1. Feeding Roots.-We have wintered our sheep very well on oat straw and turnips, without any bad results from the turnips, which we feed once a day, at the rate of about a bushel to 20 sheep. We prefer good, early-cut clover hay to anything else for wintering sheep, and consider it a pretty complete feed, and not requiring to be supplemented. plete feed, and not requiring to be supplemented with anything except perhaps a few roots, until just before lambing time, when some oats might be

2. Watering.—Sheep should always have access to water. Compelling them to eat snow to quench their thirst is cruel.

3.—We have no experience with pea straw as sheep feed, but should prefer clover hay, which, with wheat bran fed sloppy, is an excellent feed after lambing, if lambs come in winter.

5. Salting.—Besides giving salt, which we think

should always be within reach, we have always made a practice of placing pine and spruce boughs where the sheep can visit them at intervals of two or three days. They relish them very much, and I

or three days. They relish them very much, and I think them fully as good as the pine tar.

6. Dipping.—We have never practiced dipping our old sheep, but dip the lambs about three or four.

The ticks will then our old sheep, but dip the lambs about three or four days after the sheep are shorn. The ticks will then all be on the lambs. If lambs are dipped every year at this time there will be very little trouble with ticks on the sheep. We have dressed with a solution of arsenic and soap in the winter, pouring it on from a tin dish made for the purpose. But we refer one of the purposes sheep dips used the prefer one of the non-poisonous sheep dips used the same way.

7. Cleaning Pens -We do not clean out pens during the winter if they are roomy and there is plenty of straw for litter. Sheep manure will not heat readily till it is moved, so we rather prefer to use plenty of litter under them for the sake of the

manure it makes. 8 -Our sheep stay in the fields most of the day in the fall till the snow comes and pick up a good deal of their living. At night they are penned and fed a little sheaf oats. Have never had any loss

from dogs, but some near neighbors have suffered loss that way. Some farmers put a loud-sounding bell on about every sixth or seventh sheep, and claim that dogs will not bother them.

9.—Never used creep-pens, as we do not have the lambs come till there is grass (say about May 1st), and we find they do well and are ready for market the middle of August, single lambs dressing 35 to the middle of August, single lambs dressing 35 to WALTER SIMPSON. 40 pounds of meat. Queen's Co., P. E. I.

Ventilation of Stables.

There is probably no question in connection with the care of stock at present of greater importance than that of proper ventilation of the stables in which cattle are kept. Pure, fresh air in plentiful supply is essential to the health of the animals, and will go far towards the prevention of diseases by maintaining a vigorous state of health. diseases by maintaining a vigorous state of health, which enables them to resist the action of microbes and to throw off any incipient attacks to which they may be subjected. The general use of basement stabling throughout the country, and the custom of keeping a large number of animals under one roof, which is becoming more common, renders it of wital importance that provision should be it of vital importance that provision should be made for a sufficient supply of pure air, and also of abundance of light, since these are the principal factors in preserving a healty condition. Approved methods of ventilation have been given in several numbers of the FARMER'S ADVOCATE during the past year; but as these may not be suitable to every condition, and may involve more expense than some are disposed to assume, we venture a description of a simple device for ventilation which came under the observation of one of our staff on the occasion of a visit to a well-known herd of Ayrshires in the Province of Quebec a few weeks ago, and which seemed to be effectual at least in carryand which seems to act and preventing the ac-cumulation of moisture on the walls of the stable in which were fifty head of cattle. The discovery of its efficacy was made accidentally. An ordinary 10 inch square ventilator shaft ran An ordinary 10 inch square ventilator shalt ran from the ceiling of the cow stable to the cupola on the roof. It was discovered that from the moisture accumulating in this shaft, which opened over a bull's stall, water dripped on the back of the animal where he stood. In order to avoid this, a three-sided box or trough was placed under the mouth of the shaft about ten inches wide and twelve feet long, with three inches of a fall at one end to throw the dripping water into the gutter behind the cows. This was nailed to a joist of the ceiling and left open at both ends. It was noticed that the draft of the ventilator shaft was by this means very much increased, straws being drawn towards it, and the walls of the stable being kept dry, while formerly they were covered with moisture. The same appliance was adopted in the case of the other ventilating shafts in the buildings, and with the same satisfactory results, and the manager congratulates himself on having secured a simple, cheap, and effective system of ventilation. may add that in this case the ventilator shafts did not run straight to the cupolas, but at a considerable angle from the beams in the loft, being nailed to the rafters and thus out of the way of a hayfork car, and the manager claimed that the bend in the shaft was helpful rather than a hindrance to effectual draft. We do not undertake to vouch for this system on our own account, as we cannot ex-plain on what principle it is based, but we give it for what it is worth, and with the commendation of the discoverer.

Watering Cows in Stable.

SIR,-I have been much delighted with your ex cellent paper during the last year. I think you have fully complied with your promised improvements. The first of December number contained some excellent articles on watering and feeding cattle, and as you invited others to give their ex perience, I thought that mine might be helpful to some of my brother farmers. Until five years ago I had to water my cattle at the house pump, no matter how cold and stormy it might be, and it was no small thing to water thirty head of cattle in that way. Then I would leave them in the harn-yard for a few hours and would feed them there; but when I learned that the cows did not need such rough exercise, I resolved to dig a well near the stable, no matter what it should cost, so I dug a large well eighty five feet from the stable, and laid a two-inch iron pipe two feet under ground, and put a common pump in the stable. I had it made with a long tap, so that the spout is four feet from the floor, and I made long water troughs on top of the nanger each side the feed passage; and I put a spout from the pump to the troughs, so there is fall enough to run the water down so that eighteen cows can drink at once, nine on each side. A boy ten years old can work that pump with ease; it will fill a pail at four strokes, so now my cows stay in stable all winter. I put lids on the water troughs, so I close them when feeding. The cows are The cows are both healthy and happy; they have plenty to eat and drink, warmth and light. I have had no trouble with sickness since I adopted this plan, and they milk far better. I feed corn ensilage twice a day, clover hay once, and hay made of peas and oats cut green. I have fifteen cows milking now. I ship my butter to Toronto every week, labelled "Silven I have some thoroughbred Holstein cows and a bull, and a lot of good grades, so that I am improving my stock as fast as I can. Ontario Co., Ont. M. CLIPSHAM.

Feeding of Cows.

To the Editor FARMER'S ADVOCATE: SIR,—I give you my methods of feeding and car-

ng for cows in winter: Fodder.—About 25 pounds of ensilage in the morning, a small feed of clover hay at noon, and in the evening a good feed of rye hay and oat straw cut and well mixed; all they will eat up clean (fed

dry).

Meal.—I prefer peas, oats and barley in equal parts, ground fine; about four quarts for the average cow, fed dry in two feeds per day on cut fodder, and when I have bran I mix morning and evening, and when I have bran I mix it about one to four. I might state here that I never buy any feed or bran as long as I can grow oats and barley on the farm. I don't think it pays. However, we usually have bran, as we grow considerable wheat and avalance it all for here. siderable wheat and exchange it all for bran and dour, as we are in a position to sell our flour advan-

Ventilation.—We never had any trouble in keepventilation.— We never had any trouble in Reeping our stable ventilated, it being well supplied with windows and doors, which can be adjusted to suit the temperature. The doors are hung so as to leave a large crack at the bottom, which can be easily stopped with chaff or sweepings if necessary. Stanchions.—We use the stanchion or bail, and

at one end of the stable the floor of stall is 4 feet and at the other end it is 5 feet. We then place the cows to suit the various-sized stalls. The drop is 6 inches deep and twelve inches wide, but should be

16 or 17 in width; very seldom we have a dirty cow.

Manure Gutter.—The drop is built perfectly
water-tight. The manure is wheeled into a shed, as is also the horse manure, and becomes mixed. Have had no experience with cement floors, but from what I know of them think it is the proper floor to put in a cow stable. Have had no experience with dehorned cattle, but as it has been practiced to a large extent in this locality I would be safe in saying the practice is to be recommended. We store ice and find it a great advantage, as we are able to keep our Saturday night's milk pure and sweet for delivery to cheese factory on Monday. We never make butter at home. I am unable to give the cost of our ice house, because it is only a portion of another building. The building is 12x24 feet, with 8-foot studs, one end a dairy room, and placed directly over the well. The other end is used for storing ice. The stude are 2 x 6, sided on the outside, boards on the inside, the space filled with sawdust. The dairy room and ice house are the same size, divided by a strong partition. The foundation of ice house is well drained with a liberal coat of fine gravel. On this is placed 6 inches of good sawdust. The ice is cut in cakes about 15 inches square. The bottom tier is placed within 6 or 8 inches of the wall all round. This space is filled with sawdust. All cakes are placed with snow side up. When the tier is filled take an adze and chop off all humps and fill all openings with ice chips or snow. Then place tier No. 2, pack around the edge with sawdust as before, and level with the adze again, being very particular to fill all openings thoroughly. If this is done with each tier the ice will keep with a very light covering of sawdust. It is important that the sawdust be tramped frequently in summer to exclude the air. Leeds Co., Ont.

M. W. STEACY.

#### FARM.

#### Maritime Notes.

A little new life seem to have been given the movement of pure-bred stock in Nova Scotia. Mr. F. E. Page, of Amherst, recently shipped eight head of Holstein cattle to parties in Jamaica. We head of Holstein cattle to parties in Jamaica. are glad to see that Mr. Page has made a good sale, but wish the animals could have been retained

in the Province where they are so much needed.
Mr. Oscar Chase, of Port Williams, an old
O. A. C. boy, recently returned home from Ontario, bringing with him a lot of fine cattle which will make a good addition to the present herd. We wish Mr. Chase success with his new importation, but would impress upon him the necessity of keeping his herd prominently before the public by advertising. One of the causes which, in my opinion, has prevented the more general use of pure bred animals is the fact that little is known of our home herds outside their immediate vicinity. Probable buyers at a little distance know nothing of them, and being afraid of the expense of bringing animals from a great distance, they naturally go without. Advertisements in local papers are not of much use; they must appear in many and are therefore expensive. The best medium is a paper devoted to agricultural and stock matters, and which of necessity must have a large circulation among farmers.

Mr. W. W. Black, of Amherst, is now among the Herefords of Quebec, and will probably make some purchases before he returns. Mr. Black's present herd was, I think, founded in 1882 by animals imported from Ontario.

It is always welcome news to hear of the new importation of pure-bred stock, and it is to be hoped our farmers will do more in the way of using pure-bred sires than they have formerly done. Surely no better object lesson, showing the benefits to be derived from their use, could be given than to see our butchers going all the way to Ontario to buy beef cattle for our city markets because they cannot secure a sufficient supply of the right stamp at home. This is a very bad state

of affairs and sl not the fault o New Brunswick not only of su raising a good that should ma methods, and at renewed effort, least five mont from Western brought to our Britain, not a shipped to that we cannot com me that even if same amount a able to obtain When we consi paid for carryin and also the l must sustain, margin to wor ers, and try if the country at

market demand The time wa

duced enough

FEBRUARY 1, 1

with the adver tion its produc many years n wheat has be Government o encourage the bonus upon its number of mil machinery, thi not this is a seen. I have depend upon g yet it would be few years it would be profi duction inci some appreciatent. I have tation in say we can grow w vation it wil twenty bushe acre, but whet make flour t compete with western grain say. I have grown the wh sary for my ov consider it or best and sures is ground in country grist greatly prefer made from i from importe my city fri seem to find i but the bread in color and will not make try. Whether machinery w any difference not I cannot it is at preser not bring the ported flour. Government I do not thir ment can be better to ence by making it ing on certa of home-gro any case, an that some o them. Whe immense qu ported, that ally low, the for barrels. does it not that would investment

E During t E. Ulrich & Western s ADVOCATE, ensilage co moth Whi ports to be witnessas. FARMER'S announce awarded to Co., Ontari

variet**v w**a 1 ton 720 lb Of the 2 tons 480 larger yiel Grimsby, the condit first awai

acre of M

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 pap 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 pro-duction 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 flourmy 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

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 certaingrants 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 ports 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 Prolife, without care, 18 tong, care

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 Mammeth White an average piece of the acre of Mammoth White, an average piece of the every success."

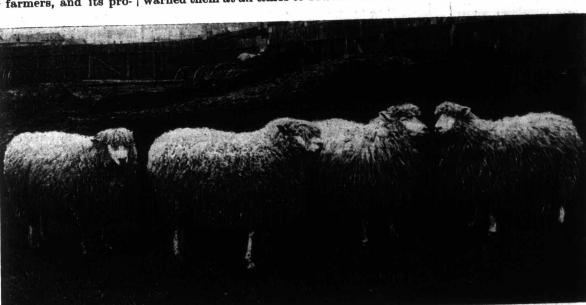
crop which weighed 624 lbs., or at the rate of 31 tons 400 lbs. per acre. The names are given of four neighbors who saw the crop grow and helped to weigh it. These are certainly very satisfactory yields, and the reports must be very gratifying to lessrs. Ulrich, who make a specialty of supplying nigh-class 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 Proific, 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, scuffled three times during its growth, slightly molded to the corn with the last scuffling. It was one of the finest crops ever grown in this part of the country (which is a great corngrowing 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 a deadthful appearance, and easily narvested 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 FARM ER'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, CASTLEDERG, ONT.

so many have been drawn into. It has never taken | thus makes it easy to provide a remedy. 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 mar-kets 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 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 now 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 butter-milk being among the best foods for producing the quality of bacon in demand, and calves can be more quality of bacon in demand, and calves can be more JOHN B. STONE. profitably raised in winter.

Northumberland Co., Ont.

JOHN BRAY, Logoch, Man., says:-"I can't afford

#### 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 form 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.

ning 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.

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

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

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 has conding back to the land 25 per cent. of her 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 fo 8.000 sake 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 hinds mith a beindle down but the 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 yield of milk per animal by fully 2,000 pounds per annum, and there would be a good market for it all. The great competitor of the Canadian dairy-

all. The great competitor of the Uanadian dairyman was not his own township neighbor, but the man at the other side of the globe.

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. Bad flavors are driven off to some extent, and by the use of a proper "starter" the buttermaker by the use of a proper "starter" the buttermaker afterwards has the development of the desirable

flavor very much under control.

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. The interest

the large number of makers present. The interest was continued up to the very last, and everybody went home feeling that the convention was in all respects one of the best yet held by the Association.

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. Directors—Division No. 2. E. Kidd, North Gower; Division No. 3, J. R. Dargavel, Elgin; Division No. 4, Jas. Whitten, Wellman's Corners; Division No. 5, T. B Caslow, Warkworth; Division No. 6, Henry Wade, Toronto. Auditors— Division No. 6, Henry Wade, Toronto. Auditors-Morden Bird, Stirling; F. Brenton, Belleville.

#### 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. This Association represents both the cheese and butter industry, not only in name, because many of our cheese factories have introduced winter buttermaking. This is a step in the right direction, and needs combination makers in order to preserve the dairy industry in its highest form. He regretted that many joint stock companies have not asked the assistance of the cheese instructors, but shouldered off the entire responsibilty of turning out the best product upon the makers. It was recommended that more inspectors be employed in order that the system be made more uniform and modern, so that the name Canadian will stand for excellence and uniform We must not be satisfied with past successes, but continue to improve by means of our dairy schools, agricultural papers, etc. The Babcock tester and weighscales were also pointed out as valuable educators when applied to the selection and maintaining of the animals in our herds.

Mr. McLaren pointed out that education has enabled many to make as much out of one cow and one acre as was made out of two cows and two acres twenty years ago. have room for advance in our cow-keeping, care of milk and in many other ways. Farmers should go and learn the methods of those who are making more money than themselves. Many stables need more light, ventilation and comfort, which will as soon as introduced increase our

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. Every maker should demand a gool equipment. Members of ioint stock companies were advised to take an interest in the details of the factory, its surroundings and appearance. INSTRUCTORS' REPORTS.

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 burg, 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. Millar's territory was that part of Western Ontario north of the main line of the Grand Trunk from Sarnia to Toronto, and as far north as Georgian Bay—enough for three instructors, there being in that district 155 factories. One hundred and twenty-eight visits were made, and devoted chiefly to instructions in cheesemaking and in testing milk. The richest sample found tested 4.6% butter fat, and the poorest 1.2—the bulk containing between 3% and 4% fat. F.ve factories pay for milk according to qua ity, the patrons of which were generally well satisfied with the method. Eight patrons were fined for tampering with milk. Out of 82 thermometers tested only 36 were correct. Each factory should have one correct one to test others by. Fourteen factories fed whey at the factories, and twenty returned it in the milk cans to the patrons. This latter practice was referred to as the great evil of the cheese business to-day. Many whey tanks are kept positively dirty. They should be cleaned once a week. Almost every factory has some dirty patrons who do not strain the milk before sending it to the factory. Makers must demand that all milk received be clean and of good flavor. The sanitary condition of many factories was alarmingly bad, poor floors, no drainage, and poo's of rotten whey under the floors. Sanitary inspectors should be appointed and given power to close such factories till made right The heating of curing rooms by furnace was advised. Both temperature and degree of moisture were found wrong in many instances. Mr. Millar recommended the appointment of more instructors, and that some experimental work in cheese factories be carried on. 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. The curing rooms of these factories corresponded in condition with the factories, and the condition and appearance of the cheese much the same. Instruction with these dirty, careless fellows seems useless. A naturally dirty, untidy fellow should have no place in a cheese factory. A number of

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. About two-thirds of the samples tested between 3 and 4 per cent. fat. Twelve patrons were fined for tampering with milk. Too few keep a diary of their work, which would prove a valuable educator.

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. Twenty-five out of thirty-two were cream-gathering and seven were milk-gathering creameries. The daily make of these creameries at the time of first visit was 19,875 lbs., put up chiefly in suitable packages for export. The milk and cream from 6,244 different farms was used and paid for by test—gathered cream by oil test and milk by Bab-cock test. Each creamery had left with it the opinion of the Inspector as to condition of the cream room and vats, work room and appliances, storage, drainage, and sugges-tions on making and packing butter. The general condition of most of the creameries and equipments were good, although a few were in a bad state.

Mr. Sprague express a hope that Prof. Robertson's system of cold storage would be generally adopted, as where-ever he had found it in operation the best results were ob-tained. The practice of holding June butter till October is still in vogue in too many creameries, but there is a growing tendency to ship weekly to the Old Country market by the cold storage system. Deep setting of milk is the main method of separation. By test it has been found that much fat is being lost in skim milk thus found that much fat is being lost in skim milk thus skimmed. By public meetings and otherwise it is hoped that patrons will learn how to increase their profits. A DISCUSSION

upon the President's address and Instructors' reports brought out the opinion that paying for milk for cheese making by adding two per cent. to the fat reading was most nearly correct, as it gives the cheese value of milk. The whey question received considerable attention. The most generally favorable plan was to feed the whey at the factory, having the pig pen 200 yards from the factory, preferably to the north east, so that bad odors are not carried into the factory. Every factory was recommended to own waggon cloths to cover cheese while being hauled to the station. Oiled or painted cotton was recommended, which will keep off dust and also rain. The use of dirty waggons for hauling the cheese was strongly condemned There was a vigorous protestation against the use of inferior cheese boxes. Boxes should be made of good material, have strong hoops at the bottom, should have double scale boards top and bottom, and fit the cheese perfectly. This is an important perfectly. This is an important matter, as it has much to do with the condition of the cheese when it reaches the English market. The cause of moldy cheese was given as too much moisture in the cheese or in the curing room, and too little ventilation and light. The subjects of milk separation and pasteurization came up, when members separation and pasteurization came up, when memcers claimed they got closer skimming at the pasteurizing temperature of 158 degrees. This was objected to because it would injure the grain of the butter. Others claimed that no such results would follow if the cream were quickly cooled down to 50 degrees after separation. Starters were claimed to be necessary in winter creamery work, especially when the cream is pasteurized. Starters should be made from clean flavored pasteurized milk to which has been added a quantity of previous day's starter. It should be prepared in a clean can, closely covered. Mottled butter was said to be due to three causes: uneven distribution of was sait, working when too cold, and by the incorporation of specks of curdy matter. The first was discribed as mottled, the second as streaked, and the third as specked. Discoloration of cheese is due to ferments and an excess of mois-

Prof. J. W. Robertson, in an address, pointed out that while we have made great advances in dairying, more diffi-culties 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 In new dairy sections, in Manitoba, for instance, milk will remain sweet for several days, even when the weather is warm. Therefore, the older dairy sections require greater care and cleanliness. In Sweden, where a superior dairy product is made, the milkers always wear a long linen garment, entirely covering the body, while at work, and the cows' sides, hips and udders are carefully brushed or wiped with a damp cloth. Referring to the Agricultural Department, Prof. Robertson pointed out that it was to help those who help themse'ves. We have land, cows and markets, and the desire of the Agricultural D-partment is to assist in getting the most out of these. In this age mental clearness counts for more than muscular labor. We need more co operation in order to collectively take advantage of the Government's efforts in our behalf. Each man cannot provide cold storage in which to convey his products to England, but he can by co-operation appropriate the Government's efforts along this line. Each man can, however, by exper ments find out the best cows, best foods, best stables, The Department has taught much by the travelling dairy, travelling sprayer, and in many other ways. dentally the curing of cheese was mentioned, and the Professor pointed out that he had seen Canadian cheese sold in London, Eng., for 42 shi'lings per cwt., while Scotch Cheddars were selling just across the way at 60 shillings, the difference being due to a heated flavor in the Canadian product. New cheese has no flavor, but contains the germs that produce it, which cannot work at certain temperatures. About 65 degrees is best for the curing of cheese. Butter should go into cold storage as soon as made. In the Northwest May butter has been held in good condition till October. He argued strong y in favor of having "Canadian" stamped on all cheese, the stamp being deeply impressed into the cheese. The English people follow fashion, and just now it is fashionable to have Canadian

things, and now is our time to take advantage. 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 intertaining and vivid manner what she saw in two English dairies in 1896. Before referring to the dairies she elaborat d upon the beautiful landscape of England and the happy leisure of the people. The first dairy described was built of stone, and had a thatched roof, which acts at a temperature modifier. The milk is strained into leads 5 feet by 21 feet, by 3 inches deep. It is skimmed four times at regular intervals of twe ve hours each after milking. The butter was churned by horse power, and came in one large lump. A few handfuls of salt were added, which was worked in by hand, no attempt being made to preserve the grain. Finally, the hands were dipped into warm water and the butter was rolled into Oxford prints, the only form sold in the local market. The pigpen was disgustingly near the dairy in many instances. The second dairy described made use of an Alexandra separator. The walls and floors were of blue and white tile, the latter having gutters of running water. The tab'es were of marble, and everything was scrupulous y

OUR AGRICULTURAL WEALTH

was the subject of an address by Prof. C. C. James, Deputy Minister of Agriculture for Ontario. It is estinated 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. In 1897 the value of the grain crops of Ontario from eight and a half million acres of land was estimated at \$40,000,000. If by better seed and better farming the yield could be increased one bushel per acre we would have a gain of \$8,500,000. At the Ontario acre we would have a gain of \$8,500,000. At the Ontario Experimental Farm selected seed produced of wheat 18.4 bushe's per acre, against 14.7 bushels per acre from ordinary seed; of oats, 50½ bushels, against 44; of peas, 38 bushels, against 26 grown under similar conditions. A little special effort in the direction of better selection from the best varieties would increase our '98 grain value by \$10,000,000.

our '98 grain value by \$10,000,000. our so grain value by \$10,000,000.

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 we have an annual Klondyke in it. In 1897 our 60,000 cheese factory patrons received an average of \$200 each. By better cows and better methods there is room for a great increase. A little development all along dairy lines would mean millions of dollars increase to the Canadian people. Prof. James showed that a very little better work on the part of each and every producer would bring to Canada and distribute among our people quite \$20,000,000 increase over 1897—a Klondyke indeed, in which no sacrifice of life need occur.

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. We need not fear an overproduction so long as we continue to improve. Education is our great hope, as there is always prove. room at the top.

BACTERIA IN THE DAIRY

was well discussed by Dr. Connell, of Queen's University. Bacteria are one-celled microse seen with the naked eye except in colonies or clusters. The doctor stated that one billion could be contained on a fivecent piece. There are many species, and found everywhere. They multiply very rapidly under favorable conditions. The presence of organic matter, moisture and a suitable temperature are necessary conditions for growth. Different forms require different temperatures; e.g., disease microl es do best at 98° or 99°—the heat of the body; others 65 to 80, and those common in the dairy from 50 to 60. At 45 degress their growth almost ceases. At the freezing point microbes lie dormant, but frost does not kill them. begin to die, however, at 130 to 140 degrees, and at 158 degrees most species are killed, hence the value of pasteuriza-tion. Sunlight too is an important destroying factor, it is therefore well to admit plenty of light into the stables and into the dairy.

The many changes that go on in milk are due to the influence of bacteria. Souring is caused by bacterial fermenta-tion, breaking down certain products and producing lactic acid, which throws down the casein in the form of curd. In the ripening of milk or cream for cheese or butter making, by proper temperatures, cleanliness and treatment the desirable forms are given the field, whereas much trouble may be caused by the admission of filth, etc. Good bacteria are always present, and find in milk a suitable field for development. Bad sorts or propagated in uncleanliness in the stable, whey tanks, improperly washed cens, etc. The sort that causes pin holes and floating curds originate in the manure of cows, and when these become dry they float everywhere, hence the importance of keeping mi k covered, not only in the stable but on the road to the factory. The cause of discoloration in cheese was found to be a reddish slime existing in a factory gutter. When the gutter was thoroughly cleaned the trouble ceased. Factories in which slimy tanks, floors, sinks, sink cloths, gutters or other places exist will continue to have difficulty in avoiding trouble. The same principles hold good in buttermaking. CURING CHEESE.

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. A well-made cheese can easily be ruined in a poor curing room. Very material changes

in values can be effects and moisture. The room is from 60 to 65 c taining the proper ten curing room. The bes sulated walls and floor six ply of building pa strips of wood and a d an underground dust opening into the atm the ground. This she wing, is kept facing t should have a cement

FEBRUARY 1, 1898

PRESENT At this juncture medals, given as prem Industrial and Lond sor Salt Co., were pre their representatives. ter and two for crea Windsor salt. The w Marion Burk, Bowm grave, the latter a gr medal for the creame P. Bearmion, Desbor was not pr sented o rightful ownership. TH

Prof. H. H. Dear stated that milk is formed part y by th while the milking i while the milking is udder of a slaughter ease a cow remains give. The yellow of called lactochrome, have a special pow see the time when cheese or butter ma only to deceive the more fat if milked twice, for the reason lates secretion. In be thrown away, bacteria which have elean the hind quar pers in the fall an trimmed off. Man in the course of the

was the subject of perimental Farm C of well water sent taminated. Natur free from organic gerous to their use most convenient, situation without Leaching from pri poi oning of the water, be they lo diphtheria, indige frequently due to is not necessarily its distance from least ten times as tenacious clay a case the slope of ern the location o SUMMER AND

was talked of by dress was largely ly in the commer experience Mr. C cheese and butter conditions for ma extremely hot we usually good, and pure. Instances bad flavors in be or the herd havin trouble from suc can be traced b separately up t odors contained. traced to the pa arrivel at. In v and may be due Moldy chop fee The speaker sta made from good is supplied from long churnings buttermaking pr followed in Cana of the tablet ac every day. A discussion pointers: Crean

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in values can be effected by close attention to temperature and moisture. The correct temperature for the curing room is from 60 to 65 degrees Fah. Ice is useless for maintaining the proper temperature in summer in the ordinary curing room. The best results can be secured only with insulated walls and floors. An insulated wall should have sulated waits and noors. An insulated wait should have six ply of building paper, separat d by two ply of lumber, strips of wood and a dead air space. The best ventilator is an underground dust leading out for some distance and opening into the atmosphere some six or eight feet above the ground. This should have a wide mouth, which, by a wing, is kept facing the wind. A basement curing-room should have a cement floor.

PRESENTATION OF GOLD MEDALS.

At this juncture in the programme four beautiful gold medals, given as premiums in butter classes at the Toronto Industrial and London Western exhibitions by the Windsor Salt 33., were presented to the successful competitors or their representatives. Two were for exhibits of dairy but ter and two for creamery, each having been salted with Windsor salt. The winners in the dairy classes were Mrs. Marion Burk, Bowmanville, and Mr. Albert Orchard, Seagrave, the latter a graduate of Guelph Dairy School. The medal for the creamery exhibit at London was won by R. P. Bearmion, Desboro, while the Toronto creamery medal was not pr sented owing to a misunderstanding as to its rightful ownership.

THE SECRETION OF MILK.

Prof. H. H. Dean, Guelph Dairy School, in an address stated that milk is partly filtered from the blood, and is formed part y by the breaking down of ce ls in the udder while the milking is in progress. Milk is largely made while the milking is in progress, as the most ever found in the while the milking is in progress, as the most ever found in the udder of a slaughtered cow was four quarts. The more at ease a cow remains while being milked the more she will give. The yellow color of milk is due to a substance called lactochrome, which some cows and breeds of cows have a special power to secrete. The Professor hop s to see the time when no coloring matter will be used in cheese or butter making, as it is of no value and is added only to deceive the consumer. Cows give more milk and more fat if milked three or four times a day than if milked twice, for the reason that the process of milking stimulates secretion. In milking, the first few streams should be thrown away, as it has very little fat and contains bacteria which have worked up the teat duct. To keep cows elean the hind quarters should be clipped with horse clippers in the fall and the long hairs of the udder should be trimmed off. Many valuable suggestions were thrown out in the course of the address.

#### PURE WATER SUPPLY

was the subject of an address by Prof. Shutt, Central Experimental Farm Chemist. Over 50 percent. of the samples of well water sent him for examination he found b dly contaminated. Natural streams, lakes, etc., are practically free from organic contamination, but many wells are dangerous to their users. Too often a well is put down where most convenient, near a barnyard or other objectionable situation without making provision for proper drainage.

Leaching from privy sinks or barnyard into water causes poi oning of the system and disease in those using the water, be they lower or higher animals. Typhoid fever, diphtheria, indigest on, diarrhea, sick headache, etc., are frequently due to this cause. Cool, clear, sparkling water is distance for the course of the cou its distance from any source of contamination should be at least ten times as far away as the well is deep. In heavy, tenacious clay a less distance will answer, but in either case the slope of the surface and under strata should gov ern the location of the well.

SUMMER AND WINTER CREAMERY BUTTERMAKING

was talked of by H. B. Gurler, De Kalb, Ill. This address was largely a review of difficulties met with, especially in the commencement of creamery practice. In his own experience Mr. Gur er found the transition stage between cheese and butter making the most trying. In summer the conditions for making go d butter are favorable, except in extremely hot weather. The food is suitable, the water is usually good, and as the cows are usually outside, the air is pure. Instances were cited which had caused much loss by bad flavors in butter, as a dead carcass near the pasture, or the herd having to pass a dead skunk each day. When trouble from such a cause is encountered the guilty patron can be traced by heating a sample of each patron's milk separately up to dors contained. When the trouble has in this way been traced to the patron he can investigate till the source is arrivel at. In winter decayed ensilage may cause trouble, and may be due to leaving too much silo surface exposed. Moldy chop fed will give trouble to the buttermaker. The speaker stated that the best flavored butter is often made from good ensilage. His Chicago invalid milk trade is supplied from cows fed on ensilage. Tallowy butter and long churnings are usually due to strippers. Mr. Gurler's buttermaking practice as reviewed differs little from that buttermaking practice as reviewed differs little from that followed in Canadian creameries. He recommended the use of the tablet acid test, and that a fresh starter be made every day.

A discussion upon this address brought out the following pointers: Cream, after separation, should be quickly cooled to 55 degrees in order to harden the fat. It should be ripened at 68 to 70 degrees and cooled down again several hours before churning. Rich cream enables a low churning temperature and more exhaustive churning. The butter is

better worked twice. COLD STORAGE,

Prof. J. W. Robertson showed clearly the need of proper cold storage at the farm, the factory and from the factory to the British market. The British people will not buy deteriorated food products. They are very discriminating. ting. The poor people of England are being better fed now than ever before because of the enormous amount of second grade food products going to that market. We can get good prices only by improved preserving facilities. An ideal

system was outlined, much the same as we have frequently given in our columns. Reports from creameries using Prof. Roberston's cold storage system prove its excellence. Full instructions and p ans of constructing co.d storage at creameries and cheese factories will be sent to any who apply to the Agricultural Department at Ottawa.

#### BUTTERMAKING

was discussed by J. A. Ruddick, of Kingston Dairy School. Butter to be first-class must score high in flavor, body or grain, color, salt, and finish. These are of importance in the grain, color, sait, and inish. These are of importance in the order named. Flavor is influenced by the health and surroundings of the cow, quality and condition of the food, peroid of lactation and the care of the milk and the processing of the health and the processing of the process ess of making the butter. The body or grain of the butter is influenced largely by the temperatures of the cream before churning, during churning and the working, packing, etc. The flavor from pasteurized cream is largely governed by the flavor of the starter used. Mr. Ruddick highly recommended pasteurization in winter creameries. If the cream is held at 140 degrees for thirty minutes good results may be obtained, but it should be cooled below 50 degrees as soon as possible afterwards. The practice of pasteuriza-tion and the use of starters should be entered upon with care, as experience is the best teacher. To get a desirable bard, to butter the wash water should be about 50 or 52 degrees, so that the grains will adhere readily and not be too soft. If butter is too hard the worker will crush the grain, and if too soft it will become greasy. Marbled butter is due to uneven soft it will become greasy. Marbled butter is due to uneven soft it will become greasy. specked butter contains specks of curds, due to overripening the cream. For local trade little working is necessary but for the English market twice working is necessary to secure uniformity and firmness. It should drip well before first working and stand four or five hours before second working, which should be done at 50 degrees. It should be worked till it will bend a little more than half over before it breaks.

UNIMPROVED OPPORTUNITIES IN DAIRYING

was the subject of H. B. Gurler's second address. Our dairy herds are the foundation of our business, and in these there is great room for improvement. Some herds average 400 lbs. of butter per cow annually, others 300 lbs., and many others much less. Two hundred pounds per cow was claimed as necessary to make her owner a profit. Why do men keep unprofitable cows? The scale and Babcock test will easily find them. When Mr. Gurler first tested his herd in the old way, with the churn, his cows were each giving 150 bs. per year. In two years he hadraised their average to 266 lbs., and in 1897 his cows over four years averaged 329 lbs. of butter for the year. Heifers should calve at two years old, and only good bulls should be used. The food, feeding and care were all elaborated upon. A quarter-yearly return is secured from a fall calved cow, besides a better raised calf. claimed as necessary to make her owner a profit. Why do better raised calf.

GOOD ROADS

were recommended and described by Commissioner A. W Campbell, C. E. After pointing out the importance of good roads to the dairy industry by cheapening haulage, it was shown how much better roads can be made at less cost than the present system of statute labor under local pathmasters the present system of statute labor under focal parhimasters involves. On an average the cost of milk haulage is 12 cents per cwt., and for manufacture 3 cent per cwt of milk. By the present system 100 pathmasters will make about 100 sorts of roads, and each year undo last year's work. Some want one width, some another, some one slope and some a different angle. The laxy sections demand meney from the council to get as good roads as the working sections. By the present unsatisfactory system 1,000,000 days are spent annually, besides \$3,500,000, and little is accomplished. This in ten years would macadamize all the roads in Ontario if properly directed. Mr. Campbell recommended that beats be made at least five miles long and be overseen by a com-petent road builder. Drainage is most important beneath the center and on either side. It should be graded one inch to the foot from the crown to the ditches. The roadbed should be rolled very hard with a nine-ton roller. The top of roadbed should be slightly scooped out and clean gravel or crushed stone should be put on and rolled perfectly firm.
The ditches should be 24 feet apart, and the gravelled road-The ditches should be 24 reet apart, and the gravelled road-bed 8 feet wide and 10 inches deep. A case was instanced in Eastern Ontario where by properly directed statute labor 13 miles of permanent road, such as the above, was built, cost-ing the council not more than \$75. This was done by willing workers properly directed. The same people did five miles in two years in the same manner.

#### DAIRY LEGISLATION.

Prof. J. W. Robertson, after reviewing the various acts that have been passed regarding the dairy industry, pointed out the advantages that would result from the passage of the bill introduced into Parliament last year by Mr. Parmalee to prevent the selling of cheese for future delivery. Its function is to prevent speculation in cheese before it is manufactured. When a speculator contracts in June to deliver September cheese at a certain price his efforts will be from that date to bear down the market price, but when a dealer holds cheese already made for a rise his effort will be to raise the market value, hence the advantage of the latter sort of speculation over the former. The bill as introduced does not prevent a factory-man representing a certain number of patrons owning cows to contract his season's make, but simp y to prevent the middleman, who never owns anything, from gambling a living out of the business to the loss of the dairy producers.

The address led to a lively discussion, mostly in favor of

the bill, there being just two cheese buyers opposing it. The following day, however, the committee on resolutions recommended that in the opinion of the meeting the law referred to should not be enacted until such time as the dairymen's boards of trade in Canada shall have had ample opportunity for considering and expressing their views upon the same. The motion slid through without discussion and

2nd Vice-President, Aaron Wenger, Ayton; 3rd Vice-President, James Connolly, Porter Hill.

Directors—J. N. Paget, Canboro; Andrew Pattullo, Woodstock; Geo. Barr, Sebringville; J. A. James, Nilestown; Robert Johnston, Bright.

Auditors—J. A. Nelles, London; J. C. Hegler, Ingersoll

Representatives to fair boards—Toronto, Harold Eagle; London, J. S. Pearce and R. Robertson; Fat Stock Dairy Show, R. M. Ballantyne and J. N. Paget.

Bad Flavor in Cheese Caused by Undesirable Bacteria in Water Used

## in Factory.

BY F. C. HARRISON, BACTERIOLOGIST ONTARIO AGRICULTURAL COLLEGE.

During the past two years I have made a large number of analyses of Canadian Cheddar cheese, and one of the samples sent this year by Mr. Puband one of the samples sent this year by Mr. Publow, Instructor in Cheesemaking for Eastern Ontario, had very bad flavor. Mr. Publow, writing to me on August 1st, 1897, says: "I send you by this mail a sample of cheese from the Ashton Union Factory. I find all their cheese has a bad flavor, and in testing the wilk it all appeared to be of your and in testing the milk it all appeared to be of very good flavor. The cheesemaker is a good maker, and has his factory in first-class condition. Every-

and has his factory in first-class condition. Everything is very clean, but the water he is using stinks, and I think is the cause of the bad flavor. I am having them send you a bottle of water."

Later, I received more cheese, together with Mr. Publow's report on the factory, which reads as follows: "Factory visited on July 31st, 1897. The condition of the factory, milk vate, presses, sinks and utensils was clean and in good condition. The making-room's appearance and condition was clean and tidy. The curing-room's appearance and conand tidy. The curing-room's appearance and condition was clean and tidy; the drainage good.

General appearance first-class."

Report on the cheese: "Number of cheese made

each day—Ten. Flavor—Not clean, off flavor.
Body—Close and firm. Texture—Fine. Color— Bright and uniform. Appearance and finish—Neat, well finished. Remarks and recommendations— The cheese are well made and have a fine appearance, but off flavor."

The water from the Ashton Union Factory was received in a large Winchester bottle, in good condition, but it was not packed in ice; and as a considerable interval had elapsed between the collecsiderable interval had elapsed between the collection of the sample and its examination, the number of bacteria present when collected must have undergone extensive multiplication. For example, Kruger found that the bacteria in samples of water Kruger found that the bacteria in samples of water examined by him and kept for twenty hours at 52 degrees Fahrenheit, increased 5.3 times. This fact may account in part for the very large number of germs present in the sample sent from the Ashton factory, viz., an average of 271,000 per cubic centimeter (about twenty drops).

There were five different species of germs present; each was grown in pure culture, and sterilized milk was inoculated with each species. The chemical analysis of the water showed that it was below second-class, and consequently should be regarded

second-class, and consequently should be regarded

as suspicious. The bacteriological analysis of the cheese was as follows: Average total number of germs, 11,404,-800 per gram (1-29th of an ounce); species present, 4; percentage of lactic acid germs present, 94; percentage of other germs present, 6.

The germs isolated from the milk and cheese

were compared, and two of the species found in the water were discovered to be identical with two of the species in the cheese. One kind was, however, in such small numbers in the cheese that its presence was disregarded altogether; and the biological characters of the remaining germ were carefully studied, in order to be sure that the species found in the water and that found in the cheese were

identical.

A starter made from a culture of this germ in milk (pasteurized for twenty minutes on two consecutive days) was used in a vat of milk for making cheese at the College dairy on August 18th. The following are the particulars of making, as reported by Mr. Stratton, the College cheesemaker:

- 1	000	
1	Pounds of milk	
	Amount of coloring used 2 drams.	
	Rennet test for ripeness	
	Temperature set	
	The set	
	Rennet test for ripeness 22 seconds.  Temperature set 88° F2' higher than usual.  Time set 11:55 a. m.  Amount of rennet used 3} oz. per 1,000 lbs. of milk.	
	Amount of rennet used	
,	Time cut  Minutes in curdling  33 minutes.  Minutes true for cooking  96.	
3	Minutes in vertice for cooking 98°.	
	Minutes in curdling	
ï	Hot role test when all your 3 p. m.	
L	Time dipped	
B	Time from setting to dipplies	
	Per cent. of fat in whey	
	Hot iron test when introduced to m.	
	Time milled	
8	Time saited	
r	Time salted	
_	Hours from dipping to salting 15 hours.  Hours from dipping to salting	
10	Temperature when put to prosent 18 25 lbs.	
	Temperature when put of 18.25 lbs. Weight of green cheese	
4	Weight of cured cheese	

Remarks.—Milk was about three hours ripening from time of adding starter. The flavor was rank; curd the same. Have had lots of curds with more gas; but this one was so harsh and stiff at 8:30 p. m. that I decided to leave it over night before salt-Left hot water in vat and covered well.

ing. Left hot water in vat and covered went.
In the morning, water was at 96 degrees; curd.
85 degrees; more gassy than on the night before.
Milled at 5:15 a. m. and aired until salted. It was
Milled at 5:15 a. m. and aired until salted. the same. The motion and through without discussion and a very sim show of hands.

Officers elected: President, Harold Eagle, Attercliffe Station; 1st Vice-President, R. M. Ballantyne, Stratford; so dry that no drippings would run from it after

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. C. 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 orig inal 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 evi dence, 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 on steam not being sufficient to destroy their 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 temper-ature 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, 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. CASTON, SIMCOR 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 up. As the trees grow larger cultivation should be shallow and should be at a regular depth. 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 teeders 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 destroy ed. 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 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 on four years would have been taken off. Three or four years would be long 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. 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 suppy the potash and phosphoric acid. Where the ordinary manure is 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 purpose 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 and a dressing of 40 business of good ashes per acte 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 planet to the soil besides the nitrogen portant element to the soil besides the nitrogen and that is humus, or, in other words, vege table mold, without which no soil can be in prop er mechanical condition for the carrying on of nature's operations in manufacturing raw material into available plant food. If ashes can not 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 fruitgrower 25 cents per bushel. Let us avail our-selves 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,—Permitme 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 reme In looking over some spraying experiments carried on at Oftawa last season. I note that in no case where Paris green was used did I find more than 8 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 Bor-Is raris green as emcacious 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 160 gallons of fluid. Three appli-cations were made. Where applied in water the cations were made. 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 speci-

Paris green and water .- One Jumbo crab tree 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 plication 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 in jury. 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 furgus, 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 some-times 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 José 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 241 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 longress 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 antite xine, 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 epeated doses of the germs of the disease until & 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

FEBRUARY 1, 189 Veterinary I

To the Editor FARM SIR,—I most d vast distance sep ton County, Ont Hopkins, and the should most cert me the honor of a afford me theo gratulating him signature in you much virility of the absolute fear must be rather u officials connecte Department is one accustomed generally meets of what one wis wrong haif at th As your corre

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progressive and safeguard the in ever, and I may at large, the Ho the training th nary college car helped by jud must neces the contagious concerned, no either prevent naturally pres Veterinary Der adequate to co eases affecting Mr. Editor, d prove me mist way. What What radical check hog cho intended to ed diseases, their peet these sai from sound ar them to real property if yo

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

The metr

of Montreal

ceives its m (700) milkm that be: W the source men especia pose of prot the milk le ment for the germ might go of contagious of anthra not yet extetc. But so long as ment is le If only ne Departme You m

done, at le that an E near Mon tuberculo to call it accompliance vealed to barn-like bacteriol accompli Koch, G scientist equipped likely th and I be the part the pat

#### Veterinary Inspection from a Montreal Point of View.

To the Editor FARMER'S ADVOCATE:

SIR,—I most deeply regret the fact that such a vast distance separates the home of your Wellington County, Ontario, correspondent, Mr. A. G. Hopkins, and the City of Montreal, otherwise I should most certainly have requested him to grant me the honor of shaking hands with him and thus afford me the opportunity and pleasure of congratulating him on the article published over his signature in your issue of the first ultimo. So much virility of language is seldom exhibited, and the absolute fearlessness with which he utters what must be rather unwelcome truths to some of the must be rather unwercome truths to some of the officials connected with the Dominion Veterinary Department is actually refreshing, especially to one accustomed to the diplomatic language one generally meets with, and which tells only one-half of what one wishes or should say, and often the wrong haif at that.

As your correspondent so justly remarks, no one for a moment wisnes to deny the well-established fact that the actual Minister of Agriculture is a progressive and energetic man, ever anxious to safeguard the interests confided to his care. However, and I may say unfortunately for the country at large, the Hon. Sidney Fisher has not received at large, the Hon. Sinney risher has not received the training that only a proper course at a veteri-nary college can give, and consequently unless he is helped by judicious and competent advisors he must necessarily be at sea, so far as wrestling with the contagious diseases of our domestic animals is concerned, no matter how anxious he may be to either prevent or eradicate them. The question naturally presents itself here: Is the Dominion Veterinary Department, as at present constituted veterinary Department, as at present constituted, adequate to cope with the several infectious diseases affecting our herds? Your correspondent, Mr. Editor, doubts it, and I follow suit, and I would thank any one who would be kind enough to prove me mistaken and point out the errors of my What is being done to stay tuberculosis What radical measures have been adopted to check hog cholera? Where are the publications intended to educate the stock-owners about these diseases, their worst enemies? How can you ex-pect these same stock-owners to detect diseased from sound animals? I say, how can you expect them to realize the exact condition of their property if you allow them to remain in ignorance?

Your correspondent adds, that either the Domin-Your correspondent adds, that either the Dominion Veterinary Department is a huge farce or else in the hands of incompetent men. I repeat it is a farce. Yes, the saddest possible farce. Let me tell you something. The other day, in a moment of leisure, I was looking over my shelves for something to read. Accidentally I picked up a copy of the report. On the sanitary state of the City of thing to read. Accidentally I picked up a copy of the report on the sanitary state of the City of Montreal for the year 1895. Not a very interesting thing to read, you will say. That is where you are mistaken. I found it interesting, awfully so. I found that in that one year, in the City of Montreal alone, 559 persons had died of phthisis, and it being them, in mind that human phthisis and animal kept in mind that human phthisis and animal tuberculosis are identical and contagious from one to the other, and that its existence in the animals that maintain the meat and milk supply is a menace to public health, and when you consider that the veterinarian must be the guardian of public health in this respect, can you wonder that have dared raise my voice in a note of warning?

The metropolis of the Dominion, this large City of Montreal, of which we are so justly proud, receives its milk supply from some seven hundred (700) milkmen, and right here I ask the authorities that be: Where are the inspectors to examine into the source of this milk supply? Where are the the source of this milk supply? Where are the men especially trained and employed for the purpose of protecting public health by seeing to it that the milk left at your door, as a means of nourishment for your children, does not contain filth or the germ of this dread disease, consumption? I might go on almost indefinitely and speak of other contagious and loathsome diseases, of hog cholera, of anthrax, of glanders (which, unfortunately, is not yet extinct in our country), of actinomycosis, etc. But what is the use? Nothing will be done so long as the direction of the Veterinary Depart ment is left in the hands of unprogressive fossils. If only new blood, new ideas, were infused into the Department, something might be done; but alas!

You might tell me that something is being done, at least so far as tuberculosis is concerned, that an Experimental Station has been established near Montreal to solve all problems concerning tuberculosis. I am aware of that, and if this was not such a serious matter I should be tempted to call it another farce. Yea gods! what will be accomplished there! What marvels will be revealed to an expectant public! Is it likely that in a vealed to an expectant public! Is it likely that in a barn-like structure, without a properly-appointed bacteriological laboratory, that wonders will be accomplished? When such men as Pasteur. Koch, Galtier, Nocard and a host of other eminent scientists have travelled the same road fully scientists have travelled the same road, fully equipped for scientific researches, I say is it likely that these, our masters, have left anything for our local scientists to find? It is not likely, and I believe it to be the acme of presumption on the part of these latter to have even entertained the idea of attempting to revolutionize or add to the pathology of tuberculosis. The experiments

which will be made there are ridiculously superfluous, and the problems to be solved there have already been solved elsewhere, and I hold the solutions of these same problems right here before me within the covers of my authors, and would be me within the covers of my authors, and would be glad of the opportunity of publishing them at large for the benefit of the stock-owners and the public generally, without, for all that, laying my claim to any particular merit for doing so.

Pardon me, Mr. Editor, for monopolizing so much of your valuable space, but the subject is one of such momentous interest to us all that I have allowed my words to multiply more than I

have allowed my words to multiply more than had first intended. I presume some of my state-ments will be found rather unpalatable. To those who may find them so I have this to say, that I have never nor do I now seek popularity at the

expense of truth. Trusting I have not abused your courtesy,
beg permission to subscribe myself,
Your obedient servant,
M. A. Pichk, D. V. S.

Montreal, Jan. 22nd, 1898.

[Note.—The sound health of Canadian herds and flocks generally is proverbial, but one very important point brought out in the above rather breezy letter deserves attention, viz., the need for more rigid local inspection of the sources of city milk supply, not alone from fear of tuber-cular infection, which has its chief danger in the associations of human individuals, but for many weighty reasons as well. A campaign through the press generally, such as this journal has conducted on behalf of intelligent sanitation for animals (as well as individuals), coupled with efficient machinery to deal promptly with any cases of contagious diseases that may arise, will; we believe, do more good than any other policy, and with less cost, and that Hon. Mr. Fisher is equal to the occasion we doubt not.

#### Renovating a Broken-down Horse.

BY J. A. MACDONALD, P. E. I.

It was in November and the ground frozen away back, let me see, in '81, I was driving the horses to the brook for water. The old mare was lagging in the rear, though not very old for all that; she was foaled in the spring of 1869, that would make her rising 13 years—a pivotal point in the life of a horse.

"Are you going to winter that old mare? The speaker was a neighbor and a dealer in horses.
"Don't know; I think so."

"I'll give you \$10 for her, and risk her."
"Not much," I said. The mare had been a good one, and the dealer knew it. She was part Thoroughbred on the sire's side, he being by imported Saladin, probably the best horse ever imported to Prince Edward Island, and the dam was a big mare of the "Island breed," and one of the best mares in the county in her day. So there was some good material in this broken-down mare. some good material in this broken-down mare. She certainly looked pretty downcast that November morning—her head hanging down, the hair standing straight out, and every rib easily noticeable. I determined that very moment to try what I could do in building up the mare. I had no previous experience in such work. Dick's powders were begun to be advertised first about that time in some of the Montreal papers, and are, I notice, yet advertised in the ADVOCATE. None I notice, yet advertised in the ADVOCATE. None could be got in the Island then, so I at once enclosed a dollar to Dick & Co., Montreal, for two boxes of the powders, and began boiling barley with a few potatoes for the mare. The powders arrived in due course—six doses in each box. I began feeding them according to directions, one powder every other day in a mess of scalded bran and flaxseed prepared in this way: A cupful—half pint—flaxseed was placed in a pail, over this two quarts of oats, and over this a quart of bran; two quarts of oats, and over this a quart of bran; this at nights, and scalding water was poured over the mixture and the pail covered with an old cloth. In the morning the mess was stirred and well mixed, and into it was placed the condition powder, and at once given to the mare. This was continued till two boxes of the powders were given. About midday three quarts of barley, boiled with a few potatoes, were given, and but little grain, only about two or three quarts twice little grain, only about two or three quarts twice little grain, only about two or three quarts twice a day after water. Hay was fed during the day, and straw at night. This ration was continued for a month when the powders were all given. At the end of the month very little improvement was noticeable in the mare. About this time I noticed that she was covered with vermin. I tell you she was a very now, a hard-looking piece of horseflesh. was, even now, a hard-looking piece of horseflesh. l took the kerosene can to the stable, and poured its contents over the back and over every point of her body. I cared little whether it would kill the mare, the lice, or both. I, of course, blanketed her well. In a few days the hair came nearly all out from the effects of the kerosene bath, and the only covering she had on her skin was a thick coat of scurf. I continued the flaxseed oats - bran mixture, giving it every morning, even after the powders were exhausted; also the boiled barley and potatoes. When I finished the powders I was looking over McLure's Horse, Cattle and Sheep looking over the look in Nove Guelph I was bred the boiled barley feed daily. After a medicine in the boiled barley feed daily. After a week or two, on exercising the mare, I found her week or two, on exercising the mare, I found her was bred har looks. The hair began growing deceived her looks. The hair began growing strong, and I gave her a thorough currying, and in 1897. ture, giving it every morning, even after the pow

had her skin made quite clean. At the end of two months, about Feb. 1st, the improvement in the months, about Feb. 1st, the improvement in the mare was quite discouraging, my only hope being her improved spirits. I then began bathing her with soap and water twice a week until I had her with soap and water twice a week until I had her skin quite clean. She now (the middle of Februskin quite clean. She now (the middle of Februskin quite clean. She now (the middle of Februskin quite clean. This was encouraging, and I increased the oat ration by building a box in the manger, holding about three bushels, with a cover, so that the mare could eat her oats at will. The soft food was continued daily, and in it the nux vomica, without a stop. The morning at will. The soft food was continued daily, and in it the nux vomica, without a stop. The morning mash, now at the end of February, was withheld, for the mare was improving grandly, though yet for the mare was improving grandly, though yet thin in flesh; she was now well filled out, and shedding the hair abundantly. Her improvement during March was every day noticeable. She was in fine spirits and eager for the road. About this time, in the middle of March, the ice was pretty good on the Gulf of St. Lawrence, and I began jogging her each evening. I found that she could go pretty well. After a week or two of this jogging pretty well. After a week or two of this jogging pretty well. After a week or two of this jogging pretty well. I found that it did not bother the mare much to go a mile on the glib ice inside three minutes. Well, at last, the middle of March, the job was done, the mare was renovated; but after three and half months' persistent care, feeding and tonics. The ration was continued right along; the oats before her all the time, the daily mess of boiled barley and potatoes, with the tincture nux vomica, barley and potatoes, with the tincture nux vomica, hay in day time, and straw at night, an occasional turnip and a few raw potatoes; blanketed, and daily groomed, with occasional bathing of soap and water; watered twice a day, and a daily jog. By the end of March she began to be talked about by the community. The sleigh-roads remained good very late that spring of 82, and the mare had an opportunity of showing herself to good advantage on the roads with a light sled behind her. She was easily the Nancy Hanks of the countryside that spring, and I refused \$160 for her. I considered her worth \$200, and I did not her. I considered her worth \$200, and I did not want to sell her; nor did I. She became a pet, and there was a value to her that no money could buy.

Ontario Veterinary Association.

According to a belated official report which recently reached us of the last annual meeting of Ontario Veterinary Association, Mr. Martin, V. S., of Toronto, read a paper on the operation of cuneotenotomy in spavin lameness. He had found it to be more beneficial than the actual cautery. He apbe more beneficial than the actual cautery. He approved of using cocaine and adopting antiseptic precautions. He also recommended not merely division of the tendon, but excision of a part of it. He reported very favorable results. Of twelve cases—in eight the lameness was removed, two were improved, and one or two were failures. In the discussion that followed, in which Messrs. W. Wilson, J. D. O'Neil, O. Graham and others took part, Mr. Martin said he considered that the operation, gave next to the hones of the articulation. part, Mr. Martin said ne considered that the opera-tion gave rest to the bones of the articulation; also the foot must be levelled, so as to take pressure off the internal side of the hock, the internal side of the wall being often much the longer. An anior the wan being of the intact the state of the relative

mated discussion was continued as to the relative benefits of "firing" and "tenotomy."

Prof. Sisson, V. S., read a paper on "Topographical Anatomy" of the thoracic and abdominal viscera of the horse, and Mr. Hopkins, V. S., of Green River, one on "Laminitis."

Mr. W. Wilson introduced a proposed bill to be brought before the Dominion Parliament in respect to cruelty to animals.

to cruelty to animals.

Moved by Mr. Gibb, seconded by Mr.W. Wilson, and carried, "That the bill should have the strong support of the members of this Association and the

profession at large."

The election of officers then took place, with the The election of officers then took place, with the following result: Mr. S. Sisson, Pres.: Mr. W. Wilson, 1st Vice-Pres.; Mr. Blackall, 2nd Vice-Pres.; Mr. C. H. Sweetapple, Sec'y-Treasurer. Directors: Messrs. Steele, Coulter, H. S. Wende, W. Cowan, O. Graham, W. Gibb, J. Wagner, and F. Daley. Delegates to Western Fair Association: Messrs. J. H. Wilson, sr., and J. D. O'Neil. Delegates to Industrial Fair, Toronto: Prof. A. Smith and S. Sisson. Auditors: Messrs. C. Elliott and and S. Sisson. Auditors: Messrs. C. Elliott and

The following members volunteered to read J. D. O'Neil. papers at the next meeting: Messrs. Shillinglaw, W. Wilson, H. S. Wende, O. Graham, C. L. Smith,

Discussion took place regarding the tuberculin Discussion took place regarding the tuberculin test, an operation requiring professional skill and experience, and a memorial to the Government was drawn up deprecating the authorization of any person to give instructions in its use to stock owners. son to give instructions in its use to stock owners, as being liable to bring the test into disrepute, and create needless alarm concerning the health of the cattle of Ontario.

The Champion Steer, Bruce -21774-.

The Shorthorn steer, Bruce =21774=, illustrated on page 53, besides winning the Ontario Provincial Fat Stock Show championship at Brantford, beating the Hereford steer, Jack, who won the American championship at Chicago Fat Stock Show, held in November, 1897, also won first premium at can championship at Chicago Fat Stock Snow, held in November, 1897, also won first premium at Guelph Fat Stock Show in 1896 as a yearling. He was bred and exhibited by Messrs. H. & W. Smith, Hay, Ont. His dam is Bonnie Brae = 27620, = and his sire Abbotsford = 19146=, the sire of Frieda II., the 2nd prize two-year-old heifer at the Toronto Industrial and 1st at the London Western Exhibition in 1807 o make this department as useful as possible, as stamped envelopes will receive answers by there early replies appear to us advisable; all a of general interest, will be published in next se, if received at this office in sufficient time. It in all cases attach their name and address not necessarily for publication.]

#### Veterinary.

#### Ailing Pigs.

OLD SUBSCRIBER, Glengarry, Ont.: — "I have a litter of young Yorkshire pigs four months old. They did well until six weeks ago. There is a kind of swelling or lump in their throats on each side of the windpipe, which affects them so that they can hardly equal, and when they are lying down for rest it makes a noise in their throat. They have hard time breathing, and it keeps them from feed-ing well. They remain stunted and do not grow at all. Is there any semedy for it, or do you think it is in the blood of the sire and dam? Their feed consists of wheat, bran and shorts mixed half and half, and skim milk, and a few roots now and then, and plenty of exercise. I give them charcoal and ashes about once a week?"

[The probability is that these pigs, as a result of heavy feeding of the dam while nursing them, be-came very fat, and that the enlargement in the throat is from accumulation of fat owing to lack of sufficient exercise in the first weeks of their life, which is essential to healthy growth. We would which is essential to healthy growth. We would recommend letting them run in the barnyard an hour or two each day, and longer time on sunny days, scattering a few peas or other grain on the ground to keep them working. We would try giving the feed dry in one trough, and the drink separately in another trough and warmed, keeping the charcoal and ashes within reach. If they can be kept up till the days get warmer and induced to take plenty of exercise, they may get over their trouble and go on well in the spring.

#### Treatment of Wounds.

JOHN H. MALLOUGH, Huron County, Ont.:—
"Kindly publish a brief treatise on the treatment

of wounds of farm animals?"
[This question is well suggested, as there seems to be a great lack of proper knowledge as to what the healing of wounds involves. Very often an animal has to endure much unnecessary suffering because of neglect or the application of some flery liniment. Not only that, but when healing is delayed from want of attention or wrong applications. so frequently used, a cure is rendered much more difficult, which, of course, tends to leave an unsightly scar which very materially detracts from the selling value of the animal.

If a wound is simply kept clean nature will soon effect a cure by sending out a glutinous substance, called plastic lymph, which first forms a scab, protecting the bare surface, which readily heals, provided the animal's blood is in healthy condition.

The line of action to pursue is readily arrived at after a brief consideration of the situation. Nature is trying to cover the wound with plastic lymph. It is therefore necessary to first remove any foreign substance, such as dirt, etc., which is easily done by carefully bathing with lukewarm water. To keep out dirt and germs is the next consideration, and this is accomplished by careng it up in a clean. bandage. The only necessary medicine is an anti-septic dressing, such as pure white pulverized sugar sprinkled on white cotton batting laid on the sore. Then bind on one or two thicknesses of bandage wet with camphor. The alcohol in the camphor is antiseptic, and the camphor itself is an anodyne and will remove the soreness. This should be left unmolested for two days, then remove and apply a little cotton saturated with carbolized oil—one part carbolic acid to 12 parts linseed oil. Wrap up again, using a clean bandage, and each day until the wound has healed apply this carbolized oil treatment, which simply serves to keep the part clean. Use no water at all except matter has formed, which may be removed that the warm water and a clean ray. This by a little warm water and a clean rag. This treatment will soon heal ordinary surface flesh wounds, except the parts have been severely mangled, when the services of a competent veteri nary surgeon would be required.

Punctured wounds are more treacherous to treat for the reason that thorough cleansing is more difficult to accomplish. The shoulder, breast or thigh are frequent seats of such wounds, and often the foot suffers by stepping on nails or other pointed articles, or is calked by himself or mate. With a body or foot wound first remove all foreign substance. If a stick has caused the puncture be sure to remove all splinters. First stop excessive bleeding, if it exists, by an application of chloride of iron applied with a syringe. Leave it alone for 24 hours, and syringe out with simple warm water. When all clotted blood is removed inject a solution of one teaspoonful of carbolic acid to a half-nint of coff water. Unjust this make it is a solution of one teaspoonful of carbolic acid to a half-nint of coff water. pint of soft water. Inject this carbolized solution daily until the wound heals from the bottom.

The common practice of filling the puncture with tar or pouring in some hot liniment is be-gotten of ignorance, and does more harm than good. The healing at the bottom first is very important, so that the outside may not heal over first and cause deep seated abscesses, which may cause serious trouble in a fistulous wound, or perhaps death from blood poisoning.

What is termed "calking" just inside the top of wall of the hoof should after thorough cleaning be filled with an ointment made of pine tar and melted butter, half of each. The animal should be rested in a roomy, clean, comfortable box stall. When lameness is caused by the puncture of a nail in the sole of the foot the sole should be pared away around the wound so that matter may not be formed to destroy the tissues, separating the sole from the attachment until a most serious condition prevails. The blood and dirt should be allowed to escape and into the hole a piece of cotton saturated with carbolized oil should be inserted. This should be replaced daily until the wound heals from the bottom. The bottom of the wound must be reached with the antiseptic preparation, so that all matter will be removed, which is necessary before sound hoof can form. When beneath the sole considerable surface has become festered all the dead horn should be removed and the sole washed with a carbolized solution composed of carbolic acid one part to fifty of soft water, and then apply a dressing composed of carbolized oil made by mixing one part of carbolic acid in ten parts of olive oil and two parts of oil of tar. This will keep the parts clean, and stimulate nature in quickly forming new horn.

#### Lump on Heifer's Knee.

W. W., Bruce Co., Ont :- "I have a heifer two ears old. There came a lump on her fore leg, right on the knee, last summer. I opened it; there came out blood and water. It healed up in a day or two and gathered again about the size of a man's fist. I have opened it three different times and it is as large as ever now. She is not lame; appears to be sore when it is touched. What is the ause and cure?"

We can assign no cause unless it be from lying upon plank or stone floor. Cutting into the knee is a risky operation, as there is danger of setting up troublesome inflammation in the joint. As there was no matter in the lump, it could probably have been reduced by applying iodine ointment. If that failed we would try a blister. We have known lancing resulted in a cure, but there was matter in the lump and opening it in that case gave the needed relief. a case where the lump was loose and soft and

#### Lame Pigs.

J. C., Wright Co., Que.:—"A six months pig this fall got lame on hind legs. Lumps grew on the point just like spavin on a horse. Seemed healthy, ate fairly well, and fattened. Some of a neighbor's pigs became weak across the loins and were not able to stand up to eat. What is the cause and the remedy?

[The cause may have been feeding strong food and insufficient exercise, heating the blood, in which case the disorder is apt to lodge in the joints and loins. Prevention is better than cure, and prevention consists in feeding mixed grains and bran, keeping the bowels regular, having access to a mixture of salt and wood ashes, giving room for exercise, compelling it if necessary, and if constipated giving oil or greasy food of some sort.

#### Splints-Wind Galls-Enlargements.

HORSEMAM, Wellington Co, Oat :- "Would you please answer the following questions through your valuable paper? (1) What will cure splints? (2) What will cure wind galls? (3) What will cure enlargements caused by horse interfering? The skin seems to be thickened."

[Splints appear as small bony enlargements a short distance below the knee, usually on the inside of the leg. They sometimes cause very decided lameness, which is shown when the animal trots on a hard road. When it affects both sides of the leg it is called a double splint. Good treatment is to keep the horse from work as much as possible, and if in summer bathe the part with cold water several times a day and apply the following liniment to remove the soreness: Half-pint water, two ounces of spirits of turpentine, one hen egg, two ounces of spirits of alcohol, two ounces of liquor ammonia, shaken thoroughly after the introduction of each ingredient. To this add enough water to make a quart. After the soreness has been removed blister with the following: Vaseline, I ounce; biniodide of mercury, I dram, and powdered cantharides, I dram. Mix thoroughly and apply by vigorous friction after the hair has been clipped off. Tie the animal for six hours so that he cannot reach the part with his mouth. After 48 hours apply vaseline or lard, and after two or three weeks blister again. (2) Wind galls are most successfully treated by vigorous rubbing several times a day for two or three weeks and bandaging. (3) Treatment as a rule is unsatisfactory, although a thorough blistering with cantharides, 2 drams, and vaseline or lard, ounce, will sometimes act beneficially.

#### Lame Mare.

R. P., Newdale, Man:—"I have a mare 3 years old, weighs about 1,200 lbs., gets lame when driven faster than a walk on right hind leg; mare seems weak when drawing a load, continually stopping. She is very dry in the hair, and dull and lazy; her appetite is good; gets good hav and oats and spring water. Have another mare 7 years old, weighs about 1,400 lbs.; never fails to do her work, nor never lame, but stocks up on right hind leg this last three winters. Whether worked or not is always in good spirits."

Il am unable from your limited description of ten days.

the case to give a reliable opinion as to the cause of your mare's lameness. I would advise you to give the following constitutional treatment: Prepare the mare for a purgative by feeding exclusively on bran mash diet for at least sixteen hours, and then give the following made into a ball: Barbadoes aloes, one ounce; ground ginger, two drams; soft soap, a sufficient quantity. When the physic has ceased to operate give the following in food, morning and night, for ten days: Bicarbonate of soda, two drams; salicylate of soda, one dram; gentian, two drams. For your other mare very little can be done medically. When not working feed lightly. W. A. DUNBAR, V. S., Winnipeg.]

#### Sore Back.

SUBSCRIBER, Calgary:—"Please prescribe for horse's sore back; cause, a saddle gall which turned to a running sore. First treated with bluestone, and afterwards with biniodide of mercury."

Open the sore well to the bottom and dress the wound twice daily with the following lotion: Creolin, one ounce; water, one and a half pint. W. A. DUNBAR, V. S., Winnipeg.]

#### Swelled Legs.

J. A. C., Foxwarren:—"Would you kindly enlighten me on the following subject: My horse when left standing in the stable swells up in his hind legs. What can I do to stop it?"

| Without some information as to the breed, age, condition, etc., of the horse, I am not in a position to throw any light on the subject.
W. A. DUNBAR, V. S., Winnipeg.]

#### Knuckling Foal.

H. R. S., Kildonan, Man .:- "I have a foal about nine months old whose dam died when foal was three and a half months old. It did not thrive very well for some time after; is now thin, but in fairly good spirits. Lately he knuckles over on hind fetlocks when standing in stable. Is this caused by weakness, or has the condition of foal anything to do with it? What would you recommend as treatment?"

[Turn the foal loose in a roomy, well-littered box stall. Feed one quart crushed oats and one quart of bran three times a day; feed also a moderate quantity of good hay. When the weather is fine let the animal have a run outdoors. Apply the following liniment to the fetlock joints: Soap liniment, Gile's liniment, and spirits of camphor, of each two ounces. Mix and apply twice daily.

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

### Probably Pernicious Anemia.

W. H. B, Treberne, Man.: "I have a horse 10 years old, about 1 250 pounds, which about three months ago had a slight cough and was weak in the hind legs, but seemed to get better for about two weeks, then he became the same again. His hind legs are very weak. I lead him to water twice a day with rug on when cold. He has hard work to turn around. He is swelled on his sheath; seems to void water all right. drinks well, and looks bright and healthy about

the eyes?"
[Your horse is probably suffering from a disease called pernicious anemia, and if such is the case it is probably too far advanced for successful treatment. Examine the inner surface of the eyelide, and notice if it is of a pale color; also take tempera-ture and pulse, and write again.

#### V. S., W. A. DUNBAR,

Sore Leg. W. P., Alcester, Man. :- "A two-year-old colt had a year ago a hook run through her hind leg about six inches below the knee, in front of the bone and between the cords. We dressed it with carbolic acid, and it healed up. There has always been an enlargement, and this fall she knocked it on something, and it does not heal up. Some recommend a blister. Would it do good? Please advise through the FARMER'S ADVOCATE. She does not go lame. Do you think it will hurt her for driving?

|Apply the following blister: Biniodide of mercury, one dram; cantharides, two drams; vaseline, two ounces. Rub in well with your fingers, let it remain for forty-eight hours, wash off and apply vaseline to the blistered surface. Repeat in three weeks if necessary.
W. A. DUNBAR, V. S., Winnipeg.]

#### Uninary Trouble.

ADVOCATE, Calgary:-"Have a gelding colt three years old last spring. He was broken last summer, and worked during fall plowing. When first driven every time he was stopped he would try to make water. When driven 20 rods in the mornto make water. When driven 20 rods in the morning and stopped he will strain and pass a little water, which is generally clear, sometimes discolored (dark) at the last. Also when standing in stable is almost continually stamping his hind feet. Will be pleased to have any information you can give me?"

[The symptoms you have mentioned are indicative of some bladder trouble. Probably there may be a calculus (stone) in the badder, but without a personal examination I am unable to give a decided opinion as to the cause of the ailment. I would advise you to give the horse a purgative consisting of from one to two pints of raw linseed oil, and after the physic has ceased to operate, give three times daily one teaspoonful of muriatic acid in a pail of water. Continue the treatment for ten days. W. A. DUNBAR, V. S., Winnipeg.]

The Ha

FEBRUARY 1, 1898

WM. ORR, Verr through the ADVO horse originated, a are generally used [The Hambleton

merely one of the have sprung the other families to trace are the Clay the Pilots, etc. founder of the fa New York State, a son of Mambrin son of Messenger was by (imp.) Belli ney) and his secon ported Messenge trace such noted Mediums, Volunt all the fast trotte bletonian.

ROBT. CONWA have a weed her regular pest. ( advise a means fall wheat and n Ordinarily

classed as an a mences to grow previous to that The seeds resen quently introdu Mr. Conway, it rye, meadows, a sown crops it h Perhaps the gr be made by mod far as possible, of these crops ground is suit cultivated hoed cultivation as the season. Where in succession. orchard grass s be ready to cut wheat straw in ing the winter While this invo will pay rather the land undes

> WM. DALR publish in the grown, and if seed can be gr off by sheep?

[We presun grown for fodd of course, is a year. The se as we have bee the plants car and where the the maturing climate of On too extreme to living plants fairly good se the general ru the winter, t and poor. In planted well thinned and following yea terially lesses can be bough it would har It is seldom pound, and a pounds per twenty to tw Additional

> JOHN G. much intere manner of ru your paper o in your nex if by the m milk each the  $3\frac{1}{2}$ c. per is all the pat to know if direct or thr firm, and if charged. I is an extens ness dealing quch as I an some advic Another que quantity of

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#### 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 trace are the Ciays, 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 Mambrino (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 imperior of th ney) and his second dam had two crosses of the imney) 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 bletonian.

#### 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 com-mences to grow in the latter portions of the year mences 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 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 wellcultivated 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 t) the oily nature of the seed, the manure of fall wheat straw infested with it should be turned dur ing 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 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 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 3te per pound charged for making the butter milk each patron supplies the creamery; also if the 3½c. 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 charged. I understand the St. Mary's Creamery is an extensive concern and by their large busiis 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 sends certain Creamery bound under agreement to senda 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 3½c. 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 pres ent, or a few combine and haul week about, but ent, 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 arrangedirect 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 18½c. per pound for butterfat. 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 have to be increased in size so as to act as JAMES STONEHOUSE, reservoir.

#### 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 coarsest and middlings would do your male ture of the oats and middlings would do very well. As the pigs get older include some barley in the mix ture. If skimmed milk is not available try ground oil 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 nearly. 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, think, be found better for sown and the think, be found better for sown the fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs though no doubt a little might be fed to small pigs the fed to small pig perience with clover.

Ontario Agricultural College. Agriculturist.]

### 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 month old under a nen 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 here the fourth day effort mating. 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 recommeded 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 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. 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 asbes? I would like to hear from some of your subscribers who have had some experience in

[1. Wood ashes are valuable to all farm crops, but particularly to small fruits, orchards and po-tatoes. 2 and 3. In another column we publish an tatoes. 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. Maple and beech ashes 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. It the pota-toes are to be grown on a clover sod, which is the toes 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 advertizers 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 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 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 appoplexy. 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 bark in the pasture may have been the cause.] 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. book for 75 cents.]

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

#### POULTRY.

Money in Eggs and How to Get Them. BY CHARLES BONNICK, YORK CO., ONT.

[One of two essays between which the first prize of \$10 was divided by the Ontario Poultry Association.]

In the first place, if we go into poultry-keeping for eggs we must look for a variety of fowl that are the best egg producers, and in my judgment they will be found among what we call the American classes, such as Leghorns, Hamburgs, Minorcas, etc. My choice would be Leghorns. In this breed we have four varieties which are bred pretty generally, namely, White, Black, Brown and Buff. In the Whites and Brown we have the single comb, and also the rose comb, which is closer to the head and also the rose comb, which is closer to the head and not in so much danger of being frozen. Now, settling on a variety, the first thing is the procuring of the stock. Of course the Leghorns are not a breed of fowl that you can rely on to hatch, and if an incubator is not used you must procure other hens to do the hatching. In having the idea in view of keeping hens for production of eggs I first would buy from some good reliable dealer seven or eight pullets and a cockerel. Give them a good run, lots of fresh air, and see that they have lots of gravel and grit, such as old mortar, crushed oyster shells, broken china, etc., and then pick out all the best shaped and largest eggs for hatching, say about March 15th or April 1st. If you have an incubator you will have full directions with it. If you use hens as hatchers see that they have comfortable nests—soft straw or hay; a sod scooped out for the bottom is an excellent plan; or when the weather is warm enough set them on the ground, put some powdered sulphur among the straw, and also dust your hen with insect powder to kill any lice that she may have. Many a good nest of eggs has been spoiled on account of having a long when. This done see that your hears are fed a lousy hen. This done, see that your hens are fed every day. I generally take mine off every morning, give them whole corn and clean water, and let them dust themselves in powdered earth; then if they do not go on when 1 think it is time I put them on and close them up until next morning. Do this carefully every morning. If the nest gets fouled, wash the eggs with warm water and put in fresh straw, and in three weeks you will be amply repaid for your trouble by a nice nest of downy chicks. Now chicks are out, give them nothing to eat for the first 24 hours but a hard-boiled egg chopped up fine, a little bread soaked in milk, and gradually more and more, until you will find they will take wheat screenings, and soon wheat itself a little chopped meat once a week; if you have ground bone, a little of that, and vary their food as much as possible. Use common sense and do not mind a little trouble and your birds will soon come on well and develop rapidly. A common mistake that is made by most breeders, and especially farmers, is that when the chicks are young they allow the old hen to drag them all over the yards and fields, and very often at night she will come home with one chicken less, it having to lie down and die, not being able to keep up the same pace as its mother, or may have been dragged through wet grass or marshy places and not strong enough to stand it. I found the best plan is to put both mother and chicks in a place say ten feet square, having a box or something in one corner for shell Cover the top over with wire or laths, to keep the old hen in and cats, etc., out; have lots of litter inside for them to scratch round, and feed them a little at a time and often and they will do better ititle at a time and often and they will do better than in any other way. A great many breeders adopt the same principal as they use in raising pheasants in the Old Country They get a piece of meat flesh of some kind and put it in a pan and place it up in some high place so that any smell arising from it may ascend, and they leave it until it becomes fairly alive with maggots. Then they bring it down every morning or so and give some of the maggots to the different lots of chicks which they have in their yards, and you have no idea how eager they are for them. Now your chicks are doing well, the old hen has left them, and they are growing fine and paddling their own canoe; see that they are in their house every night and well taken care of. Soon the years of the preceding of the maggots to the different lots of chicks will begin to be precocious and bother he poung pullets. If you can so arrange it, have two separate runs and keep the cockerels in one pullets in the other, and if your cockerels have done well and are hatched early you ought to be able to sell them all off, unless you wish to keep one or two over; but it is eggs you have in view, and I would recommend selling off all the cockerels and in the winter pick up a good cock or cockerels more offices which is the other, and if your cockerels more offices which is the pick up a good cock or cockerels and in the winter pick up a good cock or cockerels and in the winter pick up a good cock or cockerels and in the winter pick up a good cock or cockerels and in the winter pick up a good cock or cockerels and in the winter pick up a good cock or cockerels and in the winter pick up a good cock or cockerels and in the winter pick up a good cock or cockerels and in the winter pick up a good cock or cockerels and in the winter pick up a good cock or cockerels will be good and vig. The pick up a good cock or cockerels will be good and vig. The pick up a good cock or cockerels will be good and vig. The pick up a good cock or cockerels will be good and vig. The pic than in any other way. A great many breeders adopt the same principal as they use in raising pheasants in the Old Country. They get a piece of meat flesh of some kind and put it in a pan and

to itself and it warm enough without artificial heat that the coldest night the water in their drinking vessels will not freeze solid. Breeders have different modes of constructing their houses. It matters little how they are built as long as you get warmth and light. My house is facing the south, with a good-sized window in front. I arrange to let each bird have sight account. let each bird have eight square feet, as before stated. I have my roosting-place as far from the window as possible. My roost is a long 2x4 scantling with edges made smooth, fitting each end in slats so that I can take this out any time. Below this about twelve or fourteen inches I have some this about twelve or fourteen inches I have some boards about two feet wide to catch their droppings, made of tongued and grooved sheeting per fectly smooth and tight. Every morning I go in and with an old tin pan and hoe scrape this off clean. Over this perch about two feet I have a ceiling of same material as drop-board, which I use for a ceiling for roosting place and also for a floor of a pen which I use for odd birds at different times. To the ceiling of this roosting pen I have an old carpet tacked along; this is rolled up all day and tied with tape like we did our window blinds before the corrier relies of the corrier rollers. blinds before the spring rollers came into use; and at night, when it is cold, this is let down, and the fowls are all closed in snug and never in danger of frost Some breeders use rag carpet or some-thing that is not too stiff; they string this up on a wire, and they pull it to one end in the daytime, which is very simple. The great mistake many breeders make is that the roosting place for the fowls at night is not warm enough; in fact, it is often colder than when they run about in the day [TO BE CONTINUED]

#### MARKETS.

#### Chatty Stock Letter from Chicago. (BY OUR SPECIAL CORRESPONDENT.)

Following are the current and co

various grades of live stock :—	LETIAG	prices i	or the
CATTLE TWO	Top	prices-	
1500 lbs. up.	ago.	1896,	1895.
1350 @ 1500	\$5 50	<b>\$</b> 5 50	
1350 @ 1500	5 40	5 25	<b>84</b> 75
1200 @ 1350	5 40	5 25	4 90
1050 @ 1200. 3 90 to 5 25 \$00 @ 1050. 3 85 to 5 15	5 00		4 65
#00 @ 1050	4 85	4 80	4 40
Fed Westerns 3 80 to 4 80 Stockers and feeders 3 90 to 5 00		4 50	4 30
Stockers and feeders 3 90 to 5 00 Fat cows and heifers 3 00 to 4 50	4 05	4 85	4 50
Fat cows and heifers 3 00 to 4 50 Canners 3 30 to 4 40	4 25	4 10	3 85
Canners	4 60	4 70	4 Ou
Bulls	2 60	2 30	2 40
Calves	4 35	4 10	3 65
Texas C. & R	6 60	6 00	6 50
Texas C. & B	4 65	4 25	4 25
Corn-fed Texas 2 55 to 3 50	3 80	3 75	3 25
Corn-fed Texas	4 70	4 20	
		= 40	
Mixed 3 50 to 3 771	3 724	9.00	
Heavy 3 50 to 3 77½ Light 3 45 to 3 77½	9 70	3 60	4 20
Light	3 724	3 52	4 20
	3 70	3 50	4 20
SHREP. 3 20 to 3 65	3 60	3 60	4 10
Natives 2 60 to 4 60			- 40
Western	4 85	4 25	3 75
	4 50	3 80	9 6: 1
The Standard Cattle C. 4 20 to 5 90	5 90	5 25	4 Oz
The Standard Cattle Company of Nebra	aka en	1d 40 b	4 85

The Standard Cattle Company of Nebraska sold 40 head of 1,313 lb. Western heifers at \$4.20, and 57 steers at \$4.50.

There is unusual activity in the South among cattle-men. A report from San Antonio says: "It is estimated the cattle transactions consummated here during the last two days will aggregate over \$2,000,000 in value." A majority of cattle-men seem to think there is a big shortage in the aggregate number of cattle feeding. There are a good many localities where the number is very short, while not a few large counties have a cattle on feed is far below the average. Stock and feeding cattle are in moderate supply and good demand; they are selling at higher prices than for some time past. A good marketed except at a loss, owing to the high cost when put on cattle.

The situation in the hog market is strong.

#### Toronto Markets.

The markets are much improved, the supply of cattle be ing scarcely equal to the demand; brisk business cleared up the pens by noon. There is no doubt of the success of the abattoir; the influence is already a factor on our market; three carloads of cattle on Monday is a record. Over 400 cattle slaughtered last week, and regular shipment will take place from this time of two carloads of dressed meat to Montreal. There was a heavy run; cattle 744, sheep 500, calves 29, hogs 2,500.

place from this time of two carloads of dressed meat to Montreal. There was a heavy run; cattle 744, sheep 500, close 2500.

Export Cattle—Some few lots of export cattle sold at \$3.75 to \$4.25 for top price. Messrs. Ironsides bought 3 steers, weighing 1,350 lbs each, at \$4.37½.

Butchers' Cattle—Choice butchers' cattle in good demand and prices firmer. A few extra choice lots on hand at \$3.70 to \$3.75 per cwt.; good loads, \$3.40 to \$3.65; medium, \$3.25 to \$3.40. There was a marked decline in the price towards noon, and many loads sold down to 2½ to 3c per lb. E. Maybee bought one load of mixed cattle, 1,000 lbs. average, at \$3.75 per cwt.; W. Levack bought 120 cattle at prices ranging from \$3.15 to \$3.75; S. Halligan bought two carloads for Montreal at \$3.50, average 1,060 lbs. each. Messrs. Rowntree & Wilson purchased 10 loads this week, paying \$3.60 to \$3.75 per cwt., two loads averaging 1,160 lbs. each, at \$4. all for slaughtering at the new abattoir of Messrs. Harris Bros. They also shipped two carloads of dressed meat to the Falls and four to Montreal.

Bulls—A few bulls in for export at \$2.85 to \$3.60. W. H. Patterson, of Agincourt, sold one load at \$29 per head.

Stockers—Slockers for the Buffalo market wanted. Mr. Crealock purchased 35 at prices ranging from \$3.0 \$5.40 per cwt.; average 800 lbs each. One load, 1,100 lbs. average, \$4.12. Sheep and Lambs—Market dull and prices unchanged, ewes selling at \$3.50 \$3.25; bucks at \$2.50. Lambs at \$4.75, or from \$3.10 \$5 per head.

Calves—Have improved somewhat, still the supply is short; prices are firm. Choice veals sell on sight at \$6.0 \$18 per head; \$4 for medium. Good calves wanted.

Milk Cows—About 25 on offer; t ade brisk. Good dairy cows in demand; prices are firmly held at \$25 to \$45 per head. In one case \$50 was paid for a very choice cow.

Hogs—In good demand and wanted; prices steady and advancing. Choice selections of bacon hogs at \$5.37½. Thick fat and light hogs are quoted at \$4.87½; stores at \$4.25. Dressed hogs, demand good; fair deliveries in f

all on offer.

Hay -Steady, 25 loads per day selling at \$7 to \$9 per ton.

Straw - Easier in price, 10 loads selling at \$6 50 to \$7.

Grain Market - About 5.000 bushels delivered - about 1.500 in farmers' loads at \$4c to 88c, choice white; red at 87c, and goose at 77c per bushel.

Peas—Advanced 10c per bushel; 500 bushels sold at 56c to

Peas—Advanced 10c per bushel; 500 bushels sold at 56c to 58c per bushel.

Barley—Receipts larger; 1,200 delivered in farmers'loads; selling at 32c to 34c per bushel.

Oats—Advanced, 3,500 bushels selling at 28c to 30c per

busnes.

Eyys—Heavier receipts of fresh-laid caused an easiertone on the St. Lawrence market to-day. New-laid are quoted at 25c per dozen. Limed are quoted at 14c to 15c per dozen.

Butter—The market is cull; receipts fair. Dairy rolls, 20c

per in the market is quiet. There is no demand for ex-Cheese—The market is quiet. There is no demand for ex-Oncese—The market is quiet. There is no demand for caport. Sales made in the ordinary way, at 90 to 9½ c per lb.

Geese—Fair supply; prices averaged 70 to 8c per lb.

Turkeys—Liberal supply; quality good; average 10c to 12c per lb.

12c per ib.

Chickens—Scarce; for good birds, 60c to 80c per pair.

Toronto, January 26th, 1898.

#### Montreal Markets.

Cattle.—Since our last writing this market has seen quite a few changes. First receipts of cattle fell off from the usual weekly numbers of between 1,000 and 1,300 head to just about half that number, with the natural results that buy ers were filled with fears of a dearth of cattle, a fear the drovers did their best to encourage—and profit by; the strong upward tone of the market was, however, too much for the drovers who had let up on shipping in for a space, and who saw the probable chance of coining money, but unfortunately for them, others seemed to be dominated by the same impulse and the last two markets have seen cattle begging for buyers, with a number carried over from each market to the next. The exception to the general rule has been real choice beeves, which, owing to the few in, were held firmly for better rates, and with a fair prospect of obtaining them. Good beeves are scarce and hard to get. One buyer on Monday, with a select lot of steers, was asking only a shade under 5c. per pound for his bunch, but we did not hear whether he had been able to cash them or not. Common to medium cattle—those selling from 2½c. to 3½c. per lb—are a diag on the market, too many of them being offered, and drovers would be willing to cut not a little under quotations in order to for once force a clearance. Good and choice beeves sold from 3½c. to ¼c. and ½c. per lb.; medium to fair all the way from that down to 2c. per lb. There being practically no export demand, there is none offered.

Sheep and Lambs.—This market is a direct contrast to the cattle market; the offerings being very limited and not at all up to the requirements of the trade, consequently drovers are getting their own price for anything at all suitable; lambs ranging in value from 4½c. to 4½c. and for anything very fancy 5c. is being paid. Sheep are sirong and in good demand for export at 3½c. to 3½c. per lb. Calves from \$2 to \$10 each.

Dressed Meats.—This market has kept pretty well in touch with the live cattle market, the demand at all times be

Hogs, light and bright		
Hogs, light and bright, in cars\$6 00 ( light and bright, small lots\$6 50 ( light, heavy, small lots\$6 50 (	o \$6 15	per cv
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Lambs 6 00 t	0 6 25	6.6
MULTON	o 7c	per lb
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fronts 5lot	o 71c	66
fronts 51c t Poultry, turkeys 31c t geese 81c t	0 41c	44
geese 8tc t		44
ducks 7c t		66
ducks 7c t chickens. 7c t	0 80	66
50 1	0 00	46

### The British Markets.

Cable advices from London on Monday, Jan. 24th, denoted an improvement on the sales of a week ago, the market can cattle at 11½c. per lb, for the latter, and 10½c. for the former. Sheep declined ½c., to 11½c, per lb, for choice

Argentines.
Liverpool advices were also stronger, but the advance only to on last week's prices, choice States cattle selling at advance, choice making 124°. Sheep strong at last week's are all for dressed meat, sinking the offal.

Jan. 27th, 1898.

E. F. DORBYN, Melita, Man., writes:-"The FARMER'S ADVOCATE has first place in our home. Would not be without it for ten times its cost."

FEBRUAR

Yes, I m
invented by
You see
since we be
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her off.
You kno door-spring in quite a li his spare tit I laughed, s Well, th automatic

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that and the but there the little open a fell down and swept up, as to allow for t



AN AUTOMATIC MAID OF ALL WORK.

BY WYNNE WINTERS

Yes, I mean what I say, an automatic maid-of-all-work, invented by my husband, John Matheson.
You see it was this way, the old story of servants, ever since we began housekeeping. We've had every kind, and if we did get a good one, something would come along to take her off.

her off.
You know John has invented lots of things. There's that door-spring now, not much when you look at it, but it brings in quite a little income. He used to say that he was spending his spare time on an automatic maid-of-all-work. Of course I laughed, said I wished he would, and thought no more of

his spare time on an automatic maid-of-all-work. Of course I laughed, said I wished he would, and thought no more of it.

Well, the day the last girl left, John announced that the automatic maid-of-all-work was completed, and that he would stay at home next day and show me how to work it. Of course I didn't believe in it.

It was a queer-looking thing, with its long arms, for all the world like one of those old-fashioned windmills you see in pictures of foreign countries. It had a face like one of those tweaty-four hour clocks, only there were no hands; each number was a sort of electric button. It was run by electricity, you know. The battery was inside. I didn't understand it very well; I never could see into anything in the way of machinery; I never pretend to listen when John tells me about his inventions. The figures, as I said, were buttons, and you just had to connect th.m with some wires inside. There were a lot of wires, each for some kind of work which would be done at the hour indicated by the button you connec.ed it with. This was handy, so that we would not have to get up in the morning till breakfast-time, and would be handy in lots of ways.

"Now look, Fanny," said John, "do try and understand how it works. You see this wire now; I'll connect it with button numbersix, and at that hour the maid will light the fire, sweep the kitchen and then the dining-room. Now this button, number seven, will be the one to set the alarm to. It will sound for about ten minutes (I'd sound it now only it makes a fearful noise); then the maid will go upstairs to turn down the beds—a convenient arrangement in many ways. Then it will go downstairs, lay the cloth for breakfast, make the tea and toast, bring in the things, and ring the breakfast bell. You'll have to leave all the breakfast things on one shelf, of course, and measure the oatmeal and tea also. We wan't set any mare buttons to-night. It's just as well to be around at first to see that all goes right. There may be some adjustment necessary."

We went to bed

In their night-dresses, and after them the automatic maid-or-all-work.

By this time I was out of bed, but John sleeps very soundly. He started as the maid jerked the bed-clothes down and laid them over the foot-board, but he wasn't quick epough. It took nim under the arm. It had an awful grip, too—and laid him across the foot-board, after giving him a thump or two, as I do the pillows. (John had watched me do it and had the thing to perfection. He didn't suppose it would be tried on him, though.) He didn't seem quite pre-pared for such a performance, for he flounced around so that he and the bed-clothes, pillows and all, landed in a heap on the floor.

be floor.

By this time the boys had got over their fright, having been treated in the same manner, and we all laughed. John can't bear to be laughed at. However, we proceeded to dress after the maid had gone downstairs. I could see John was a little nervous, but he didn't want to show it, so he waited till I was ready. The boys got down first, and we could hear them laughing.

little nervous, but he didn't want to show it, so he waited till I was ready. The boys got down first, and we could hear them laughing.

"I daresay you'll have to arrange the table a little, Fanny," said John, as he went down, "but that won't be much to do when all the things are on."

Well, we went into the dining-room, and sure enough, the table was set, and pretty well, too, only that the butter dish, with the butter, was upside down on the table, and the coal scuttle was set at John's place, instead of the oatmeal dish. That was because John had left it standing on the back of the stove after putting the coal ready for the morning fire. The porridge was standing cooked on the stove. We had got an arrangement with a white earthen bowl set into a settle, and the bowl had just to be removed and carried in. However, the coal scuttle had stood in the way, and John had to carry it out and bring in the porridge. The toast was scorched a little, but the eggs were boiled just to perfection, and we enjoyed it all immensely.

Meanwhile, the maid was upstairs making the beds, and such beds you never saw. You'd think they'd been cast in a mold. The maid came downstairs just as we were through, and then John pulled another wire. After doing so he acted rather strangely. He didn't seem to be able to let go the wire for a minute. It gave him a shock, you know. After that he handled the wires more carefully.

Then the maid proceeded to clear the table.

Here was a sight complication, however, for the maid washed everything, and though we had eaten up nearly all, still there was some butter in the dish, a bowl of sugar, and the salt-cellar. However, as there was lots of good hot water, the dishes after they were wiped were as clean as they could be; but John suggested that for the present, until he could make some improvements, the eatables had better be removed first, for "of course," he said, "there will be some imperfections."

"Now, Fanny, I suppose you want to wash, don't you?

he could make some improvements, the eatables had better be removed first, for "of course," he said, "there will be some imperfections."

"Now, Fanny, I suppose you want to wash, don't you? You have the clothes ready, I see."

"Yes, but it seems to me the dining room is not swept very clean. Anyway the crumbs ought to be swept up."

"Exactly," returned John, "only, you see, I fixed it so that it would just run around the table once before breakfast, then afterwards you can have all the furniture moved out and the whole room swept every day."

Well, the maid proceeded to remove the furniture. It went to the middle of the room, then began to circle around, removing everything it came in contact with, and setting things out in the hall. John dropped the leaves of the table, and all went well till it came to the stove and attempted to remove that also; but something was amiss, and it veered off to one side. John started forward to turn it off the track, but it promptly pick him up and removed him. I forgot to say that a revolving brush in the bottom was sweeping all this time, and now the thing was making the last circuit as I thought, for it touched the wall on three sides, and I was wondering how it would get into the corners, while John watched the stove, and wondered if it could pass between that and the wall without coming in contact with the stove, but there the passage was not wide enough, and the stove, a little open grate, was picked up and removed. The pipes fell down and made a lot of dirt, but that was pretty well swept up, as the maid had to make two or three more circles to allow for the corners. John replaced the furniture, as he

had not provided for that part of the work. The stove we had not provided for that part of the work. The stove we decided to carry out for the season, but in the meantime he had started the maid at the washing. You see there was no time lost between things; and I tell you those clothes were washed, and so was John's coat, which, being a good one, he had taken off and laid on the bench. Then we had the kitchen scrubbed, the same apparatus which did the sweeping doing that also. John adjusted it so that the furniture was merely pushed aside. The worst of the thing was that you could not stop the maid when it got going till it had run down, and what was more, if you interfered with it had run down, and what was more, if you interfered with it had run down, and what was more, if you interfered with
the wires when it was going, you were apt to get a shock
from the battery. This was inconvenient sometimes; for
instance, after the kitchen was all scrubbed, the thing still
ran around the walls scrubbing as hard as ever. John said
the only thing was to pull another wire and set it to work at
something else; it would run till after the tea dishes were
washed, anyway, and probably we could find something
harmless to keep it employed. Just then John was called
out to speak to a man about some coal, and I undertook to
head the thing across the middle of the room. Unfortunated
ly, it rushed straight into the dining-room, water-pail and

out to speak to a man about some coal, and I undertook to head the thing across the middle of the room. Unfortunately, it rushed straight into the dining-room, water-pail and all. I didn't care much. I wanted a new carpet for that room, anyway, and I knew that sooty spot would never come out. The water in the pail was very dirty by this time. John had not thought of its having to be changed.

Presently John returned, and we got into the kitchen again. There was another funny thing about it. Whenever anyone got going ahead of it in the same direction it was sure to follow, and the only way to get out of its road was to double back on your own track and dodge it. It was the current of air it followed. John said he had a reason for making it that way. While sweeping the kitchen it got after one of the boys once, and it dodged around tables and chairs just as he did, till John told him to turn and go back. It got after Bruno when we got it out of the dining-room into the kitchen. He had just come in from the barn to get something to eat. He turned tail and howled, but he could not get out of the way till he jumped out of the window. The cat fared worse than Bruno, though, for she was picked up along with the wiping cloth and rubbed over the floor for about three yards before she managed to get free. There was quite a hole in the window, and we have not seen the cat since.

John said there was a fine arrangement for answering

cat since.

John said there was a fine arrangement for answering the door. Of course, in some instances, we would have to go ourselves, especially if any old lady or timid person, who had not made the acquaintance of the maid, were expected, but if the postman or parcel delivery it would be all right. Anyone could send in a card, too, you see. But the best of all was the arrangement for putting tramps off the premises. John was just explaining how this was done when Fred exclaimed: the do

exclaimed:

"There's an old fellow now; I wonder if he's coming here!"

Yes, sure enough; he turned in at the gate and presently there was a ring at the door-bell. Beggars are so impudent, and this was an old offender, so I didn't say anything when John pressed the wire. We all followed to the door to see the effect, John remarking that it wouldn't hurt him. The door was opened quite quietly, but closed with a bang after the maid. At first upon re-opening the door, we thought it had missed fire, for the tramp, looking somewhat scarca, stood at one side of the doorway, but the maid was scuttling down the path with some limp figure in its arms. I was sorry to recognize an uncle of John's from whom John had expectations. I knew his bald head. The maid had him by the middle and his feet and head hung down, so that his hat dropped off. He was too much surprised to attempt resistance, and the maid deposited him in a heap in the gutter, and then returned. We were so bothered by the turn affairs had taken, that we forgot to get out of the way. Fred received a slap which sent him sprawling. John was lifted bodily, after the manner of his uncle, and laid upon the table, while I, my skirts being caught, was forced to run backwards in a very undignified manner, till, by grasping a door-knob, I wrenched myself free at the expense of a width of my skirt. I stood hanging on to that door-knob, as if I expected momentarily to be snatched up and thrown out of the window, when my eyes happened to fall upon Tommy. He was lying upon his back on the floor, his legs slowly waving in the air. He made not a sound. The expression of his face gave me such a start that I relaxed my hold on the door-knob, thinking that he was injured internally. But he raised his hand, and feebly waved me aside. He was simply too tired to laugh any more, and was obliged to lie down and wave his legs to express his feelings. Fred had begun to withmer after picking himself up, but, catching sight of Tommy, laughed instead, until something in their father's e There's an old fellow now; I wonder if he's coming

begun to whimper after picking himself up, but, catching sight of Tommy, laughed instead, until something in their father's eye caused both of the boys to take themselves out of doors. However, they perched upon the fence, just outside of a window and looked in.

"You see, Fanny, we must expect some complications at first," said John, "but after awhile we'll get used to running it better." This he said, as the maid started out of the front door again after having buzzed around the hall for a minute; for, as I told you, it was necessary to start it at some new work in order to stop what it was doing, and, in the meantime, while we were recovering our breath, it was making trips through the hall to the front gate, and hence to the gutter and back again. John was explaining that we could arrange the length of the trip as we pleased, and it need ordinarily be only to the front door. Just then, however, we heard most awful screams, and we rushed to the door to see what was the matter. It seems that the maid had encountered at the gate the form of a stout, elderly female, with a basket and an umbrella, and of course had proceeded to removed, and they were having a lively time of it. A crowd was beginning to collect, and a policeman appeared around the corner. He interfered in behalf of the stout female, and attempted to arrest the maid. The maid, however, made short work of him. It did not succeed, it's true, in depositing him in the ditch, but it spoiled his hat, and caused him to beat a hasty retreat; then, having removed all obstacles, traversed the remainder of the limit and returned to the house, followed by another angry policeman, who, after considerable persuasion, was induced to depart.

After the door closed upon the policeman, John looked at me and I at him. The maid had accomplished several revolutions around the dining-room and was about to return. "Mercy, Fanny, you're always talking how much there is to do: can't you think of something I'm not supposed to know." "No," I answered grimly, but an idea str

the handle of the axe into the attachment at the end of one of the arms. Here was something out of the ordinary way, and John brightened up considerably as the axe began to move up and down with a regular, double motion, reached forward, struck a stick at random with the axe blade so as to catch the stick, drew it forward into position and struck it, splitting it in the center, and threw the pieces with two other arms, into the corner, and so till the pile began to get low. Any sticks that were not split fine enough, John threw back.

back.

All proceeded well enough till the last stick was split.

Then the maid started to buzz around in search of more. It attacked the sawhorse and demolished it, ran into a tub and reduced it to kindling wood, ripped up a barrel of ashes and raised a terrible dust which completely drove John into the house. All this time he was trying to get near enough to start it off on another track, but it wheeled around and flung the axe so menacingly, that John got excited and lost his head.

When the dust had subsided sufficiently we went out again. By this time the maid had anchored beside the new

wood pile and was splitting it over. This would not have mattered much; we didn't mind the wood being reduced to matches, but it was close to the shed window and the sticks were being flung through, carrying broken glass with them into the street. John did not care for another visit from the policeman, but he was completely nonplussed. Just then he heard a stifled chuckle and looking over his shoulder he saw several boys perched on the fence, and among them our own, who immediately dropped down. But what maddened John was the sight of a newspaper reporter also, who was evidently sketching the scene, Then the air began to be filled with missiles, which John threw at the maid, till, by some lucky hit, some of the machinery was jarred and the maid rushed wildly around the shed, the axe now slashing about with a motion evidently intended for some other office than wood-chopping. John ran to shut the door in the face of the reporter, who was filling sheets with sketches. The maid, however, started after him. John stopped, tried to dodge, hesitated, then ran out of the back gate and down the road, the maid thrashing at him with the axe. This was serious. I ran to the gate and anxiously looked after them, while the boys and reporter followed in the wake of the maid. I very much feared the maid would run into something and do some damage, but I soon saw that, as, of course, John avoided all obstacles, so did the maid and simply followed him. I wondered why he did not reverse and pass the maid, thus putting it off the track. Presently, however, John returned alone looking somewhat travel-stained. He pushed past me and went upstairs to the bathroom. I did not dare to follow to ask questions, but Fred and Tommy also returned soon and told me what happened after I lost sight of them.

It seems that, first of all, the axe flew off the handle, and chopped a rooster, which was scurrying out of the way, almost in two. Then they caught up with a cow. It was quite a bit out of the town, and she started to run in the same directi

#### THE QUIET HOUR.

The Morning.

Upon the battle field the soldier rests
When evening closes iu,
But he rejoices when the morning comes,
To see the fight begin.

The night is good that brings us sweet repose, And calm and peaceful rest, But, tell me, soldier of a heavenly King, Is not the morning best?

For in the night we cannot work for Christ, We cannot lift our sword, You would not rather rest and sleep, than fight A battle for your Lord?

No, fellow soldier, we have work to do, And though the night is blest, We love the day when we can fight for God, We love the morning best.

#### Manliness.

There is nothing in Christianity incompatible with the highest and truest manliness. This needs to be emphasized, for there is an opposite idea quite prevalent which keeps many out of the king-dom. One can fully carry out all the precepts of Christ when they are properly understood with-out being a weak, colorless, inoffensive, insignifi-cant sort of a stick who submits to be trodden upon and kicked about without limit.

There is no call for us to abdicate our common sense in seeking to become wholly consecrated. Reason need not be sacrificed at the shrine of superstition. A true Christian is not a "worm," but the noblest style of a man. There is nothing mean, or fawning, or cringing, or crawling, about him. He is the child of the King. He stands up straight. He has plenty of backbone. He gives his opinion, if called for, with emphasis. He has pluck in abundance, and plenty of spirit. He can flame forth against wrong, and blast it with the hot lightning of his hate.

Manliness does not at all consist in touchiness, or sensitiveness to a slight, or inability to bear a gibe. It is not the same as hotheadedness. Still less has it any connection with obstinacy, or bravado, or haughty insolence and superciliousness. These things are elements of cowardice, not bravery. The bully is never a hero. True Christian manliness enables a man to be

firm without being mulish, to respect himself and yet be free from pride, to be temperate in all things, to speak the truth, to be strong and independent. It endows him with that moral courage so shamefully lacking in most of those who take their ideal of manliness from worldly sources alone. devout, the godly, fortified against all temptation by established Christian principle, is the only one who can properly lay claim to genuine manliness.

#### Battles.

Nay, not for place, but for the Right,
To make this fair world fairer still—
Or lowly lily of a night,
Or sun-topped tower of a hill,
Or high or low, or near or far,
Or dull or keen, or bright or dim,
Or blade of grass, or brightest star—
All, all are but the same to Him.

O. pity of the strife for place!
O. pity of the strife for power!
How scarred, how marred a mountain's face!
How fair the fair face of a flower!
The blade of grass beneath your feet
The bravest sword—aye, braver far
To do and die in mute defeat

Than bravest conquerer of war!

When I am dead say this, but this:

"He grasped at no man's blade or shied,
Or banner bore, but helmetless,
Alone, unknown, he held the field.
He held the field with sabre drawn,
Where God had set him in the fight!
He held the field, fought on and on!
And so fall fighting for the Right."

And so fell, fighting for the Right. Joaquin Miller.

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 flery 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 utter-ing 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 inter-

#### 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

image, and then he will go away."

with regarding hisstone

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 beld 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 Griffi 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 scripti packed a leather bag full of bread and meat, and sight.

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

until he returns.

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

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.

about the school. I think I will teach it myself

"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



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 empty now, and thought that it was a shame that spread 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

In the meantime, why could not the greater number of you join our puzzle corner, which is always open? Inere 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 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 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 guer-don could a gallant knight desire! I have known the journey here begun to lengthen indefinitely, and who knows what is passing through those busy averinds, for "the 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

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 get born me is up on the reever. on the reever,
Near foot of de rapids dat's
call Cheval Blanc,
Been manual Beeg mountain behin' it, so high you can't climb it, An' whole place she's mebbe two honder arpent.



"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 them well worth the trouble. the holy angels.

Attend to your "Farmer's Advocate" subscription early, and avoid regrets for overAll de sam dere is somet'ing 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 reever so long I was leev.

Philomene - dat's de o'des - 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 fonny, for moon not dat side de house.

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

I s'pose dey be talkin' beeg lot on de kitchen, 'Bout all de nice moon dey was see on de sky, For Philomene takin' long tam get 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 nices' t'ing dat was never be seen, Got not'ing for say me, I spark it 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 aa' 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 LUTHER Ross. Brierwood, Man.

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

All matter Ada Armand, original puzzl only of paper.

FEBRUARY

While loo on the south direction, I woman to Fo

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Graham I stud con seasons o GRANI markings town, On (imp.) 36 (imp.); w and sure All farmi as farm i 12 month credit on count fo evening or wiring

[1. It is difficult to reduce bones to a form suit-

able to apply to soil without grinding them, and

of sulphuric acid into an equal volume of water, stirring the water meanwhile with a stick. Pour this diluted acid upon 100 lbs. of bone meal that is

contained in a wooden trough, and stir the meal

contained in a wooden trough, and stir the meal slowly with a hoe. This should be mixed with dry earth. In this way, however, considerable risk and expense would be involved. A cheaper way would be to dig a hole and bury the bone meal mixed with lime for several months. It will then he in a fit condition to apply. A third when is to

be in a fit condition to apply. A third plan is to mix barnyard liquor with bone meal in the proportion of 500 lbs. of bone to 100 lbs. of liquor, and

incorporate the whole thoroughly with 1,000 lbs. of earth. 2. We have not been able to ascertain

below 45 degrees and the cows are moderately

fresh. After a cow has been long in milk it is well to add warm water to the milk to the amount of

one quarter the bulk of milk just before setting in ice water. The gain that can be made by using the separator cannot be definitely stated, as the results depend upon the manipulation of either method. Generally speaking, however, the average dairy-

man will, we believe, throughout the year gain by the use of a separator from 15 to 40 lbs. of butter from 8,000 lbs. of average milk. Besides this, he

will be able to feed the skim milk warm and save

work in the house. 5. A cow is the only correct judge of the quantity of salt she should have, and either less or more than her own appetite demands will affect the appropriation of her food adversely.

but would allow it to take it as desired from a box

in the pen. More than the calf would take from a box is positively injurious. 7. Gas lime, as it comes from the gas works is fatal to vegetation; in fact, it is used under board walks to prevent grass

etc., from growing. If exposed to the atmosphere for some months it loses most of its destructive

properties, and becomes more like slaked rock lime

in its value and effects upon land. 8. Wash the legs thoroughly with soap and water, and apply coal oil and lard, half and half, heneath the scales as much as possible, with, a feather. 9. The symptoms

mentioned indicate vertigo, caused by pressure of blood on the brain. It usually occurs with overfed

fowls or those which are too fat. A good remedy would be to give salts in the proportion of a table-spoonful to a gallon of food or gallon of water; then give coarser food, such as coarse shorts or

bran, and whatever whole grain is given they should be made to scratch for it in straw or chaff.

#### Puzzles.

All matter for this department should be addressed to Miss Ada Armand, Pakenham, Ontario. Answers must accompany original puzzles, which should be written with ink on one side original puzzles.

1-NUMERICAL ENIGMA.

1—NUMERICAL ENIGMA.

1, 2, 3 is a definite article.
4, 5, 6, 7, 8 : a concretion of the earth.
9, 10, 11, 12 is a word of designation.

13, 14 is to exist.

15, 16, 17, 18, 19, 20, 21 is turning.
22, 23, 24 is to be able.
25, 26, 27, 28, 29, 30 is to collect.

31, 32 is not any.
33, 34, 35, 36 is a vegetable growing on trees.
whole is a saying most perfect and true,
Applied I hope only to a very few.

M. E.

2-WOOD SQUARE.

My first is a fertile spot.

second is like an Araby.

third is more secure.

fourth is the Genitive case of a stream.

fifth is a country. MURIEL E. DAY.

3 -TRANSPOSITION. While looking over a farm I noticed a field of one, hedged on the south by a row of Two, trees, looking in another on the south by a man coming to Three the one and a direction, I saw a man coming to Three the one and a direction. I saw a man coming to Maggie Scott.

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.
My 1, 2, 3, 7, 8 is a subject.
My 4, 5, 6 is a distance.

My 4, 5, 6 is a distance. My 1 to 18 is something to be valued. Maggie Scott.

Jam composed of thirteen letters.

My 6, 5, 11, 4 are small animals.

My 7, 8, 10 is expressed in color.

My 10, 13, 11, 2, 12, 10 is property.

My 1, 2, 9, 13 is a church service.

My 7, 8, 11, 3 are small houses.

My whole is a State in North America.

"HAZEL."

My first is in night but not in day.
My second is in yeast but not in dough.
My third is in long but not in short.
My fourth is in soon but not in noon.
My fifth is in short but not in tall.
My sixth is in ocean but not in lake.
My whole is the name of an English admiral.
"HAZEL."

7-HIDDEN NAMES.

-Are you going with your uncle to-morrow?
-Count a day lost in which no good deed is done.
-He lent me a book of poems.
-He saves the rest of his salary.
-I renew my good resolutions.
-Oh, open the door quickly.

ETHEL MC ETHEL McCREA.

HOME ODE ME 3-Ash, elder, bass, bay, LANE elm, plane, box, sandal AGO NO BABE cust, fir (fur). ATE

A D O LO D I M L Y

REPAY

CLOSE

A. C. Culp, Jordan, Ont., breeder of Improved Chester White pigs, places an advertisement in this issue to which we call attention.

Mr. John O'Brien, London West, Ont., offers his stock bull Earl of Orgrove (31413), A. J. C. C., as well as some good young Jersey males, in this issue. Mr. O'Brien has a profitable working dainy, containing a number of

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

sin 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.

Clydesdalea are keenly in demand and good ones are hard to get. Robt. Davies' stud at Thorneliffe Stock Farm, Toronto, contains the best of blood, and their showring 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 Cueen 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 contsins the name of Prof. George T. Brown, C. B., honorary consulting veterinary adviser to the Beard of Agriculture, who was for many years Principal of the Royal Veterinary College.

An exhaustive and modern treatise on Maple Sugar Making has recently been issued in pamphlet form by A. J. Cook, Agricultural College, Michigan. It deals with varieties of maple, structure of the wood, insects that a'tack the maple, the sugar bush, tapping, gathering, evacorating, refining, marketing, etc. The pamphlet contains it pages, besides an appendix, and is sold for 40c., postage paid. It is published by A. I. Root, Medina, Ohio.

There has recently been published by authority of the Minister of the Interior an official handbook of information relating to the Dominion of Canada. While it is commended to the attention of people in other countries, it is of peculiar interest, to our own population in the various Provinces, as it dea's with Canada in its varied, general interest by pen and illustration. Its 115 pages of first-class paper are liberally illustrated by clear views representing the various Provinces and interests. inces and interests.

Allow plenty of liberty.] Mr. D. W. McIvor, of box 1372, 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, 2nd near church and school. The price asked affords a good opportunity for any one desirous of locating near the City of Winnipeg.

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. We have known farmers who have purchased farm property near Winnipeg when times were not as bright as they are now, and by steady, hard pushing have succeeded in paying for the farm, and have improved it in every way, and now own comfortable homes. Mr. Harvey would like all to read over his list, and then either correspond or call on him. FARM PROPERTY.

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

1--:--:--: IN THE:--:--1--1

# **FARMER'S ADVOCATE**

- AND -

HOME MAGAZINE.

COUSINLYCHAT even then they should be treated with sulphuric acid or some other dissolvent. The following has been commended as good practice: Pour 50 lbs. N ELIN 0 M O

T O E

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

A

 $\mathbf{R}$ 

COUSINLY CHAT.

THERUSSIANKING

"Pearl."-Your answers are very good. Certainly send

the worth of oyster shells at the sea coast. Their treatment and application would be about the same as for ground bones. Will some Maritime authority answer this question. 3. An average weight would be from 1,200 to 1,300 lbs., according to condition, and 1,400 may in some cases be reached at two months but it does not follow. at two years and two months, but it does not fol-low that the heaviest bull is the best. The heavy, beefy form is not desirable in any of the dairy breeds. 4. It is possible to get practically all the fat out of milk by the use of deep-setting cans, provided the temperature of the milk is held down or

some puzzles.

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

"Mai."—You dreadful girl! No, not personally, nor with any of the cousins except one of the girls, a wee one. Perhaps I'll send one address if you are real good. I could give you the introduction if you come here some time.

"Margareta."—I should be sorry to know that any one would do as you suppose. I hope it's all right. It is better to send answers to all puzzles in case any should be mislaid. The contributors have just as good a chance of winning as those who do not, because if they answer as large a percentage of the total (minus their own) they will receive a prize, Don't you understand? I hope your "Gems" may appear in print. We had some of that storm, too, but I did not see the lightning.

Don't you understood that storm, too, one print. We had some of that storm, too, one lightning.

"Kit."—I think it was all right—it might, however, have been turned the other way. I miss your good puzzles; come back, little girl. and write a nice long letter.

"Essex."—Where are you? Practising archery, teaching young ideas, etc.?

#### MISCELLANEOUS.

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

G. H. A., Queen's Co., P. E. I.:-" I have been a ubscriber only for a few months, but I think it is money well invested. Every issue is full of valuable information. I wish to ask several questions on different subjects:

will affect the appropriation of her food adversely. A very little salt in the grain should do no harm, but she should have access to a box of loose salt or a lump of rock salt. 6. The same principle applies to salting the calf as the cows. Too much salt stimulates the kidneys, causing a great waste of valuable flesh-forming material, known as circulatory protein, by way of the kidneys. We would not consider it wise to add salt to a calf's drink, but would allow it to take it as desired from a box "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? 3. What is considered a good weight for a pure-bred Ayrshire bull two years and two months old, and what a heavy weight? 4. How many more pounds of butter would you get from say 8,000 lbs. of milk by using a cream separator instead of deep-setting cans with ice, milk to be an average test? 5 Is it best to give cows salt in their crushed grain, or is it enough for them to have a box of it in the yard? 6. We have a calf, six months old, that is very fond of a quantity of salt in its drink morning and evening.
Is it good for it, and how much could you give it without doing it harm? The drink it gets is crushed oats and barley scalded, with a little boiled flaxseed and cold water added. 7. How does gas lime compare in value with rock lime? 8. What is good for hens with scaly legs? 9. We had two roosters last fall that would hold their heads up and go round and round. After some weeks they got better. What was the cause and what the got better.

Answers to Jan. 1st Puzzles.

 $\mathbf{B}$ nothing in them make a song. TALE 7-The Mariner's Compass.

> FLASK S H Y L Y Maypole.

plum, pear, beech, yew (you), cedar (seeder), butternut, lo-4-Yosemite. 5-Soft words with

9-Aside-side-die-I.

S U L K Y

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.

PRINCE OF LOTHIAN: dark bay with little white; bred by A. J. Balfour, M. P., Prestonkirk, Scotland; imported 1889 by Graham Bros., Claremont; weighs 1900 lbs. in stud condition; sure and capital sire; six seasons on one route.

stud condition; sure and capital sire; six seasons on one route.

GRAND SALUTE: bright bay with white markings; bred by Wm. Coleman, Cookstown, Ont.; foaled in 1890; sire Grand Times (imp.) 3670, dam Topsy 2319, by Lochnagar (imp.); weighs 1.700 lbs.; good mover, good and sure sire. First prize at London, 1897.

All farm stock and implements will be sold, as farm is rented.

TERMS: For stallions, half cash and half 12 months credit. All other stock 8 months credit on good security. Seven per cent. discount for cash. Trains met at Newmarket evening before and morning of sale by writing or wiring proprietor,

H. G. BOAG,

QUEENSVILLE, ONT. FENCE MACKINE 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.

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.

The advertisement of H. G. Boag's (Queens-ville, Ont.) Clydesdales to be sold at auction on Feb. 16th should interest many of our read-ers who are looking for Clydesdale stallions or merce.

At the annual meeting of the Dorset Horn Sheep Breeders' Association, held at Cleveland, Ohio, Jan. 18th, Mr. John A. McGillivray, Q. C., Toronto, Ont., was elected President of the Association. M. A. Cooper, Washington, Pa., is the Secretary and Treasurer.

c., as well as some good youngs a profitable in this issue. Mr. O'Brien has a profitable working dairy containing a number of fancy-bred St. Lambert cows, which he never inbreeds, hence the offering of Earl of Orgrove, an excellent and sure sire, and successful prize winner.

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, roam bull, Lord Gloster, of Cruick-shank's Duchess of Gloster family, that has produced so many good one; he was got by Abbotsford 1946. dam Gaiety by Prince Albert 3669. Another very promising youngster is the roam calf "Strathmore." by Abbotsford, dam the old show cow Miss Ross of Strathmore, by (imp.) Vice-Consul (60112). As we intend retaining Abbotsford at the head of our herd, we have decided to offer for sale our entire lot of heifers by him to avoid keeping two bulls.

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

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 un-to-date, such as can be got in no cultural 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



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. McEwen, Byron, Ont., whose stock has been so successful in the leading shows in Canada and the United

# 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  $8\frac{1}{2} \times 5\frac{1}{2}$  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 AND ALL OF 1898 FOR

# Handsome

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.



1 Garnet. 2 New Subscribers.

1 Pearl, 2 Garnets or Coral, 8 New Subscribers, 8 Pearls. 8 New Subscribers.

LADIES' REAL STONE SETTING.











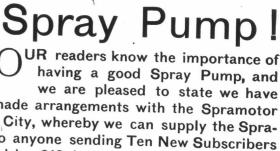
warranted for 20 years, In Sterling Silver for 1 New Subscriber



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.



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

Any subscriber may have his own subscription credited 122 months for sending two new subscribers at \$1.00

FOR CANVASSING OUTFIT ADDRESS:

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

FEBRUARY 1 Clydeso

of Wales 1 Four-year-ol imp. Can 3 Imp. two-ye

2 Two-year-old out of im Also several to These anima and sound T

Thorncliffe St Arthu



Berksh

Send for C ness, no har R., or Picke Spring

Short bred by us Leicesters

E. G Lucknow 8 FOR SALE!

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

W. G. Telegr BREEDERS OF . . Ten cho imp. ram) Also eight and a few

Bulls an having g pedigrees

> superior Bethesda

# 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 Nairn, by Prince

Millfield, out of Connic Natin, by Trinco
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.

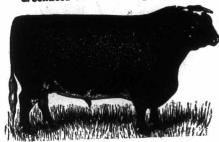
2 Two-year-old stallions by Prince of Quality,
out of imported dams.

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

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



# Shorthorns M Leicesters

Nominee, sweepstakes bull at Torono, loss, 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.

## 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 specis



want something special.

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

#### W. G. Pettit & Son, FREEMAN, ONTARIO. Telegraph office, Burlington Station, G. T. R.,

BREEDERS Shorthorns, Shropshires, and Berkshires 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.

# \*BARGAINS\*\*

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 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 have yet been offered at. I desire to sell quickly and cheaply, and on terms that will suit have yet been offered at shall also sell on the crop payment plan.

Write me, or call when in the city.

210 Portage Avenue (Cor. Main Street), WINNIPEG. If you do not want a farm, 210 P kindly hand this list to one who dees.

#### TON AND LORETTE DISTRICTS.

ST. ANNE'S, PLYMPTON, AND LORETTE DISTRICTS.							
ACRES. PRICE.							
1—S E 1 18, 10, 6 E	80 acres under cultivation, house and stable, near Plympton	160	\$1,000				
2-S W 1 24, 7, 7 E	Log buildings and large cultivation, near	160	<b>500</b>				
3-Lot 5, Lorette	Improved farm, cheap; superior buildings,	177	1,300				
4—Lots 20 and 21, Lorette	Inner and outer two miles, comfortable build	352	2,000				
5-Lot 66, St. Anne's	House and large cultivation, close to village		900				
	Unimproved, on the Seine River, near Giroux.	160	700				
6—S W 1 27, 7, 7 E	Partly improved, valuable farm, near notecos.	200	800				
8-N W 1 13, and S 1 of N E 14, 10, 4 E	Winning		1,100				
STONEWALL AND BALMORAL DISTRICTS.							

8-N W 1 13, and S 1 of N E	Partly improved, ten miles east of Winnipeg.	240	1,100
STONEW	ALL AND BALMORAL DISTRICTS.		
	and designing near Argyle P.O.	160	800
10-N + 30, 14, 1 W	Excellent buildings and large cultivation, as	320	1,200
11-N E 1 28, 14, 1 W	Concrete house and partly improved, near	160	350
	Comfortable buildings, twelve acres curi-	160	500
	Comfortable buildings, 12 acres cultivated,	160	500
11 0 - 4 - 7	Unimproved, good wheat land, five miles north of Balmoral	160	600
	Unimproved, good wheat land, ten miles north-	240	1,000
1 34 19 9 K	Unimproved, good wheat land, close to Stony	240	
17—8 W \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Mountain(Offers invited)  Improved, north of Balmoral in good locality.	240 140	350
	LY OAKVILLE, AND HIGH BLUFF.		

HEADING	LY, OAKVILLE, AND HIGH BLUFF.		
19-Lot 211. St. Francois	- leastion	203	800
Xavier 20—Lots 47 & 48, Headingly	Buildings and largely cultivated, farm is next to Village of Headingly	180	2,000
21-8 W 1 10 and N 1 of N W 1 3, 11, 5 W	Wild land, 2½ miles from Oakville, cheap	240	700
22-N W 1 and W 1 of N E 1 23.9.1 W	Wild land, level prairie, 6 miles east Starbuck Unimproved, fine prairie, close to St. Eustache	240 320	600 1,200
23-W 1 20, 11, 5 24-N E 1 and E 1 of N W 4, 9, 2 E	Unimproved, fine prairie, near LaSalle Stn	235	800
DODE 4	CE LA PRAIRIE AND MARQUETTE.		

PORTAGE LA PRAIRIE AND MARQUETTE.		
25—S E ½ 7, 11, 7 W	160 480	500 1,000
RED RIVER LOTS.		
1 - 1 -	100	1 100

RED RIVER LOTS.			
27-Lot 4, St. Andrews 28-Lot 29, St. Andrews	Ten miles north of Winnipeg, a bargain  Outer two miles only, unimproved	188 44	1,100 250
29—Lots 72, 73, 74, St. Norbert	Winnipeg. (Will Sell these lots singly of	865	7,500
30-Lot 14, St. Norbert	At Glenlea P.O., 15 miles south of Williams.	154	2,000
31-Lot 613, St. Agathe	Sixteen miles south of winnipeg, improved,	155	1,600
32-Lot 559, St. Agathe	At Village of St. Agathe, unimproved, A 1 farm and location	160 160	1,200 900
33-Lot 232, St. Agathe 34-Lot 234, St. Agathe	Will sell sepa- rately or en bloc,	160 160	900 900
35—Lot 236, St. Agathe	Opposite St. Agathe village, wild land	240	1,500
37—Lots 290, 292, St. Agathe.	4 miles south of Morris on east side	240	1,800
38-Lot 180, St. Agathe	of river, improved, good buildings on east side	107	1,000
39-Lot 202, St. Agathe	of river, improved Jean, valuable prop	131½ 123	2,20
40-Lot 233, St. Agathe	erty, improved	120	2,20

#### LETELLIER AND ROSENFELD DISTRICTS.

۱	Improved, buildings and cultivation	160	1,400
۱	41—S E 1 32, 2, 1 E. Improved, buildings and currently Unimproved, good stock farm	160 160	1,100 1,000
I	42 S E 2 30, 2 1 W Improved, buildings, cultivation and renorms.	100	-,
I	MORDEN DISTRICT.		
	44 S W 136, 1, 6 W. Unimproved, south of Morden. Improved, south of Morden.	-	<b>6</b> 00
	45—NE 12 and SE 1 12, 4, 46—NE 1 and SE 2 12, 4, 6 W		4,000

	j	ust broken, 225 acres in all under cultiva- tion, one mile from Nelson	320	4,000
		NION CITY AND ST. MALO.		
	48—R ½ 36, 1, 4 E	cellent half-section, improved by cultiva- cion, near Ridgeville P. O od stock farm, hay abundant g building 3 and cultivation, 12 miles east of Emerson improvements near Ridgville P. O. improvements improve	320 320 160 160 160 160 240 240 240	1,500 800 600 400 400 500 500 500
•	ON NEVT PAGE			

[CONTINUED ON NEXT PAGE.]

OAK PARK STOCK FARM'S SHORTHORN HERD

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



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

# Shorthorn Cattle for Sale

POUR 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

H. SMITH,

Exeter, G. T. R., 3 mile.

HAY P. O.

# Shore Bros.,

WHITE OAK, ONT., Offer6 young Shorthorn bulls of the low, easy-feeding sort which the present trade de-mands. Could also spare a few heifers. -om

WE HAVE Shorthorn Bulls BALE 

Hawthorn Kerd of Deep- Shorthorns For Sale! FOUR young bulls and several heifers of the choicest breeding and good quality. Prices right. om wm. GRAINGER & SON. Londesboro. Ont.

JOHN SRIGLEY, Allandale, Ont., Breeder of Shorthorns and Herefords, Shrop

shire sheep, Berkshire and Yorkshire pigs. A choice bunch of Shropshires, also a few Shorthorn and Hereford females now for sale: -om

# MILLER & SIBLEY'S

	Jers	sey	S
		**** A 3737	MILK

HEAVY MIL BIG COWS RICH PEDIGREES SOUND COWS GREAT BUTTERMAKERS

FULL FOREUDDERS

LARGE, WELL-PLACED TRATS. Championship yearly milk record in Jersey breed for two year-olds, as well as mature cows, held by this herd.

MILLER & SIBLEY

FRANKLIN. Venango Co., Pa.

### ONE FIRST PRIZE BULL



A. J. O. O. Sire King of Highfield, winner of 1st prize over all Canada; dam, St. Lambert's Eathleen, made 2i lbs. 3; 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.

JERSEY BULLS

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 heifercalves; 9 choice young bulls. High-grade cows in calf; and Berkshires. B.H. BULL & SON, Brampton

# BARGAINS IN FARM LANDS—(Continued.)

MAN	TOU AND SOMERSET DISTRICTS.		
57-S W 1 36, 2, 9 W	Five miles south of Manitou, unimproved —		PRICE.
58-W 1 36, 4, 9 W	cheap farm Excellent stock farm, near St. Leon	160 320	\$ 500
59-8 1 13, 6, 10 W	Improved, north of Somerset, near Beacons-	320	1,000
	field :	320	1,300
	R AND CARTWRIGHT DISTRICTS.		
60-S E \ 20, 4, 13 W	A large cultivation, log buildings, near Pasa-	1	
61-All 13, 4, 14 W	dena P. O Excellent section, unimproved, 5 miles south	160	790
ot-211 10, 2, 12 W	of Baldur; a bargain	649	3 000
OAK LAKE, VIE	RDEN, ELKHORN, AND BEULAH DIST	RICTS.	
62-E 1 28, 15, 27 W	Slightly improved, beautiful situation on	1	
	Bird-tail Creek, near Reulah	320	1,000
63-8 W 1 16, 7, 21 W	Improved, large summer-fallow ready, near Findlay	160	450
61-S E 1 20, 7, 21 W	Improved, large summer-fallow ready, near	100	100
	Findlay	160	300
65—S ½ 18, 9, 28 W	Large cultivation and small house, south of Elkhorn	320	1 000
66-N W 1 10, 9, 26 W	House and large cultivation, near Virden	160	1,000 600
67-NE 1 19, 8, 23 W	Small cultivation, near Oak Lake	160	500
68 -8 E 1 28, 8, 27 W	Unimproved, good farm, near Resign	160	450
	OSA AND RAPID CITY DISTRICTS.		
69 -N W 1 13, 11, 19 W	Unimproved, good quarter, at Riverdale St'n.	160	500
70 — W 1 of N W 1 18, 16, 22 W	Near Strathclair, unimproved	80 320	200 80J
71 — E ½ 22, 14, 21 W	Good stock farm, unimproved	160	400
73—8 ½ 1, .4, 21 W	Fine place for mixed farming	320	1 000
ARD	EN AND NEEPAWA DISTRICTS.		
74 – S W ‡ 16, 15, 13 W	Three miles east of Arden, buildings and cul tivation	160	9)0
	CITY OF WINNIPEG.		
75 – Lot 125, Morio Avenue	Fort Rouge, large frame house on stone		
76-Lot 5 in block 10, Mc-	foundation, being street No. 375		2,500
William Street	No. 440, frame house on lot 28 x 112 to a lane		1,000
77—Lots 1 and 2, block 12, W side Main Street	Oriental Hotel and stores, opposite C. P. R.		
side Main Duot	depot; Al site		14.000
78 -Lats 165 and 166, block 3,			
H. B. Reserve	No. 271 Broadway, fine residence and grounds		8,000
Reserve	Corner of York and Carlton streets; will yield		
200210	10% net on investment; A1 residential prop	and the same	
	orty	Offersin	vited.

Great Clearing

WM. HARVEY,

210 Portage Ave. (Cor. Main Street), WINNIPEG.



For further particulars apply to



GOSSIP.

Mr. R. E. A. Leech, of Brandon., Man., who has been on a few months' visit to Ontariopoint, 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 Srigley's (Allandale, Oat.) herd of 23 Shorthorns and 13 Herefords. See advertisement in this issue.

The young bull Ida's Rioter of Highfield.

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 10½ oz. of butter in 7 days; average milk record of same, 65½ lbs. a day. He is large and is very stylish, and is the picture of his grandsire, Ida's Rioter of St. Lambert, 12656. sire of 21 cows testing from 14 lbs. 10½ oz. to 26 lbs. 5½ oz. and averaging 20 lbs. 2½ oz. apiece of butter in 7 days. Grandam Ben Pogis of Prospect 87045, test £9 lbs. 1½ oz.; gave 64 lbs. of milk a day, and 11.183½ in one year; full sister to Gipsv Ben of Prospect; test 22 lbs. 10½ oz. as a three-year old, gave 48½ lb². 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.

DARRY INSTRUCTION.

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 125 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 as istant in the Home Dairy. There are seven young women in attendance at this branch of the school.

The Western Dairy School at Strathroy had by Jan. 14th 15 students, all gentlemen. A number of other applications have been received for the following opening dates. Most of the students at this school desire and received for the following opening dates. Most of the students at this school desire and received for the School. Cargill & Son. Cargill Ont., write:—"We DAIRY INSTRUCTION.

ON WEDNESDAY, MARCH 9th, 1898.

The property of Consisting Of Consistence Of Cons

Horse Owners! Use

Caustic

The Safest, Best BLISTER ever used. Takes the place of all iniments 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 warrauted to give satisfaction Price \$1.50 per bottle. Sold by druggists, or sent by express, charges pald, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., TORONTO, CAN

You might as well go GUN As try to grow much fruit without a

SPRAMOTOR Awarded Ten Diplomas, Three Mcdals, and the Government Contest within a

year.

It's all very well to be a good second or third in a contest, but the Winner's the thing, especially when it costs less han the rest. Secure a Spramotor and spray your trees and pour trees and plants, and reduce the cost of production One Half.
You'resafe with a Spramotor. It will paint your barns and white.

CERTIFICATE OF OFFICIAL AWARD.

This is to certify that at the contest of spraying apparatus, held at Grimsby, on April 2nd and 3rd, 1886, under the aus, iccs of the Board of Control of the Fruit Experimental Stations of Ontario, in which there were leven contestants, the SPRAMOTOR made by the Spranotor Cc., of London, Ont., was awarded FIRST PLACE.



Spramotor Co.,

357 Richmond Street, LONDON, ONT. Agents wanted. Send three cent stamp for 68-page t eatise.

4 JERSEY BULLS FOR SALE 4 My stock bull, Earl of Orgrove (31413), A. J. C. C., and 3 grand young animal: —2 got by the Earl of Orgrove, 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. om London West, Ont.

#### GLEN ROUGE JERSEYS.

WILLIAM ROLPH, Markham, Ont., offers twelve Jersey Bulls and Heifers (pure St. Lamuerts), out of tested cows. Grand individuals. Prices right. 22-3-om

A. J. C. C. JERSEYS FOR SALE.—Bulls fit for A. 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, - .

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.

Maple Hill Holstein-Friesians SPECIAL OFFERING.

Three bull calves, sired by Sir Pietertje Josephine Mechthilde, whose five nearest female ancestors average over 28 pounds butter per week. and out of the great cows, Cornelia Tensen, Lady Akkrum 2nd, and Inka Rose Pietertje DeKol. If you want a bull to head your herd why not get the best? 11-y-om G. W. CLEMONS, St. George, Ont.

FOR SALE AT ONCE.

Two registered Holstein cows in calf, or will excharge for young Shorthorn bulls or heifers. Also Herrison's bearded wheat at \$1 25 per bu. J. FRED DAVIDSON, PETERBORO, ONT.

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.

Oxford Co., Ont. om CURRIE'S CROSSING.

Shipping Station SPRING BE

FEBRUARY 1,

"Gen

TOCK FO

Choice Tamwor by the prize-win Write at once for New I

Inglesid **UP-TO** 

OF CA TAMWO

This is the Dai Large, vigorous rich milk. Seve very reasonable spared.

Choice

3 Young

Eggs from per 13 sl.50 per 13. R WN

Norfolk Co.

WM. WY Breeder of h for sale; bred in the choicest str procurable. Bu ing stock sele from the most i prize-winning s at Howick, Que

**AYRSH** Import OBulls, FIT FOR SERVE

From the b milking stra Terms reasona Robt. Davie

Thorncliffe Sto **FAIRVIE** Ayrshire C Traveller of while my herd chased of Mr. I

DAVID LEITC Stations-Corn

AYRSI The bull! BROWN and heifer White F winners of sw stakes at Wo Fair, were b from this h Young stock sale. Also Le ter Sheep and! ter Sheep and I

DAVI Glenhurst F

#### "Gem Holstein Herd." TOCK FOR SALE!

We only keep and breed registered Holstein-Friesians. We have now some choice young bulls and heifers, also some older animals, all of the very best dairy quality, that we will sell, one or more at a time, on reasonable terms. Correspondence solicited. ELLIS BROTHERS.

Shipping Station. Toronto.

SPRING BROOK STOCK FARM. Choice Tamworth pigs ready to wean, sired by the prize-winning imported boar, Nimrod, Write at once for prices.

A. C. HALLMAN, New Dundee, Waterloo Co., Ont.

# Ingleside Herefords.

**UP-TO-DATE HERD** OF CANADA!

\_\_\_ALSO \_\_\_

#### TAMWORTH SWINE

Orders booked for spring pigs. Pairs not akin.

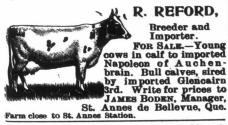
H.D. SMITH,

Compton, Que

This is the Dairy breed for ordinary farmers. Large, vigorous and hardy, giving plenty of rick milk. Several fine young bulls for sale at very reasonable prices. A few heifers can be

Address: SYDNEY FISHER, Alva Farm, Knowlton, P.Q.

#### Choice AYRSHIRES k, R. REFORD.



Breeder and Importer. FOR SALE.—Young

### 3 Young Ayrshire Bulls 3

From two months to one year old, sired by Morton's Rob Brown of Barmcorhill (1940). Eggs from Buff Cochins, B. P. Rocke, \$1 per 13. P. Minorca and L. Brahma, \$1.50 per 13. Rouen and Pekin Ducks, \$1 per 11. Orders booked in rotatior.

WM. THORN,

LYNEDOCH, ONT. Norfolk Co. WM. WYLIE, 228 Bleury St., MONTREAL or Howick, P.Q.,

Breeder of high-class Ayrshires. for sale; bred from the choicest strains procurable. Breed-ing stock selected from the most fash ionable strains and



prize-winning stock of the day. Farm located at Howick, Que. 5-1-y-o

# **AYRSHIRES FOR SALE**

Imported & OBulls,

FIT FOR SERVICE. From the best milking strains. Terms reasonable.

Robt. Davies,



Traveller of Parkhill at the head of herd, while my herd is descended from cows purchased of Mr. David Benning; are modern in type, and are of the choicest milking strains Write for prices of young bulls and heifers.

Ayrshire Cattle and Berkshire Pigs.

DAVID LEITCH, Grant's Corners, Ontario. Stations-Cornwall, G.T.R.; Apple Hill, C.P.R

AYRSHIRE CATTLE

The bull Tom Brown and the heifer White Floss, winners of sweep-stakes at World's Fair, were bred from this herd. Young stock for sale. Also Leices-ter Sheep and Raylei



ter Sheep and Berkshire Swine. DAVID BENNING

Glenhurst Farm, WILLIAMSTOWN, ONT.

### AYRSHIRE BULLS!

TWO yearlings, one whose dam and sire are both imported. The other's dam is a full sister to above mentioned bull. Also 3 August calves, the dams of two of them being daughters of imported Daisy 1st of Auchenbrain, the 2nd prize cow at Toronto in 1897 (illustrated in Sept. 15th, 1897, issue). All are by imp. Craigielea, 1st prize two-year-old at Toronto, 1897. We have also two November calves, the dam of one of them being imported, and an extra heavy milker.

THOS. BALLANTYNE & SON. STRATFORD, ONT Neidpath Stock Farm, Farm adjoins city, main line G. T. Ry.

#### YRSHIRES AND RED TAMWORTH SWINE

Still a few choice young bulls for sale, and a grand lot of Tamworth boars ready for Write us now and secure one. CALDWELL BROS., Briery Bank Farm, Orchard, Ont

## Stock Imported!

MR F. S. PEER, Mr. Morris, N. Y., sails 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

T. HARDY SHORE,

GLANWORTH, ONT.

Geo. Hindmarsh, 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.

American Shropshire Registry Association, the largest live stock organization in the world. Hon. John Dryden, President. Toronto, Canada. Address correspondence to MORTIMER LEVERING. Sec., Lafayette, Indiana. 3-1-y-om

#### HERMANVILLE IMP. YORKSHIRES Tamworths (red),



Duroc-Jersey Pigs, AND NONE BETTER.

SPRING PIGS. One to two months

pressed anywhere after Liay 1st, \$4 to \$5. Necessary papers furnished Write now and have your

HERMANVILLE FARM,

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

# OAK LODGE HERD OF YORKSHIRES

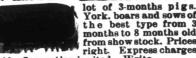
Extra choice young sows in pig. Boars and ows, two to four months, choicely bred, uality guaranteed. I am now booking orders quality guaranteed. I am now booking orders for spring pigs. Write for prices. I am breed for spring pigs. Write for prices. ing the correct type of bacon hogs.

J. E. BRETHOUR, BURFORD, 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





he best type from 3 nonths to 8 months old

right. Express charges prepaid. Inspection invited. Write H. J. DAVIS, Box 290, Woodstock, Ont.

#### GOSSIP.

W. R. Elliot, Hespeler, Ontario, has sold to Howard C. Dunlap, Stewiacke, N. S., his fine two-year-old Shorthorn bull, Robert The Bruce =22635=, by King James (46219) (imp.), dam Mimosa (imp.).

Among the numerous Christmas numbers issued we have not received a more elaborately, prepared journal than the Otago Witness, published at Denedin, New Zealand. It is a monster paper, full of fascinating stories and beautiful illustrations.

Mr. George Crawford, Cherry Grove Farm, Oro Station, Simcoe County, has purchased from A. McTaggart & Sons, of Appin, the fine Clydesdale filly, Moss Bank, sired by Farmer's Pride (imp.) 4564, and has for her dam the noted prize-winning mare, Bess of Oro Station.

Mr. Adam Earl, of Lafayette, Indiana, one of the foremost of American Hereford breeders, died on January 15th at the age of 75 years. He had also been long and actively connected with railway, banking, and other enterprises. His farm, "Shadeland," covered some 1,600 acres.

Capt. T. E. Robson, Ilderton, Ont., has recently sold to W. R. Elliot, Hespeler, Ont., an exceedingly good yearling Shorthorn bull. He is Prince Liucoln, by Golden Robe = 25718=, by imported Knight of St. John, dam Lady Zoe 2nd = 25980=. He is said to be a thick-fieshed, blocky bull of fine quality.

H. Bennett & Son, St. Williams, Ont., write:

"Our Berkshires are in full bloom. The
advancing price of pork is bringing more
orders from all over the country for choice
breeding stock. Parties wishing to improve
their poultry cannot go astray in ordering a
setting of our B. P. Rock eggs, as they are
choice and our price is very reasonable."

choice and our price is very reasonable."

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. At the present time there are 15,300 entered on the register of the A. G. C. C. During 1897 more animals were entered and more sales made than for any previous year in the Club's history. There have been 161 certificates of membership issued, and several applications are now in. Provision has been made for encouraging yearly home tests of cows, which it is believed will go far to prove the excellent capabilities of the breed to do good work and make profitable returns for the food consumed.

James Tolton, Walkerton, Ont., writes us:—

of the breed to do good work and make profitable returns for the food consumed.

James Tolton, Walkerton, Ont., writes us:—
"I beg to report the following sales of stock during the fall and beginning of the present winter: To A. J. McArthur, Paisley, Ont., for shipment in the spring to Calgary, Northwest, I two-year-old Shorthorn heifer, 2 yearling Shorthorn heifers, and I bull calf; to Wm. Cruickshank, Cruickshank P.O., Ont., I shearling Oxford Down ram; and one ram lamb each to the following parties: John Brillenger, Maple Hill, Ont.; Lary Parkinson, Greencock P.O.; James L. Tolton, Walkerton, Ont.; L. Love, Port Sandfield, Musk.; S. A. Lyon, Kingston, Ont.; two ram lambs to Peter Arkell, Toeswater; three aged rams and four ram lambs to John Myers, Colorado, U.S.; one shearling ram and three shearling ewes to Daniel Strange, Grand Ledge, Mich.; six ram lambs to Geo. McKerrow, Susecx, Wis.; and to the same gentleman a carload of Oxfords purchased from the various breeders in this vicinity. I have also to report that the demand for both Shorthorns and Oxford sheep was much brisker and at better prices than it was a year ago; in fact, I have had many enquiries for Oxford sheep, both from Ontario and the United States, that I could not fill. Shorthorn bulls, good ones and that are fit for service, are simply out of sight." are fit for service, are simply out of sight.

not fill. Shorthorn bulls, good ones and that are fit for service, are simply out of sight."

Wm. E. Wright, Glan worth, Ont., reports that the trade in Shropshire sheep has been very good. He has made the following sales in the last few months: Eight ram lambs and twenty-three ewe lambs to W. S. Hawkshaw, of Glanworth; eight yearling rams and twelve yearling ewes to Maryland dealers; one aged ram, one shearling ram, two ram lambs, and one ewe lamb to W. J. Boynton, Rochester, Minn:, four shearling ewes to W. H. Beattie, Wilton Grove; three breeding ewes to F. C. Ecrington, Glanworth; two ewe lambs to J. Ballard, Georgia, Vermont; one aged ram to James Watkins, Port Talbot; one ram lamb to Joseph Phillips, Maidetone Cross P. O., Ont; one ram lamb to John Haskett, London; one shearling ram to W. Lucar, Innisfail, Alberta; one ram lamb to Henry Best, Corinth, Ont; one ram lamb to Mr. Pollard, Wallacetown, Ont.; one ram lamb to Mr. Pollard, Wallacetown, Ont.; one ram lamb to P. Currie, Glanworth, Ont.; one ram lamb to T. Blashnell Delaware, Ont.; one shearling ewe to N. P. McNeil, Lansdowne, Ont.; one shearling ram to Mr. e. Ont.; one shearling ewe to N. P. McNeil, sdowne. Ont.; one shearling ram to Mr. nter, Verschovle. Ont.; three shearling ams to George Harding & Sons, Waukesha

The American Chester-White Record Association held its fourteenth annual meeting on January 12th, at Columbus, Ohio. The attendance was larger than ever before. After roll call the minutes of the former meeting were read by the Secretary. Report of Secretary-Treasurer Freigaushowed:

Balance in treasury ...... \$ 433 35 

# Vegetables

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

# Potash.

Vegetables need plenty of potash — at least 10% — besides the phosphoric acid and nitro-

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. Correspondence solicited.

LARGE ENGLISH

BERKSHIRES Sows in pig. Young boars fit for service.
Orders booked for young pigs sired by Baron Lee IV. and Victor XII. For prizes won by us, see Toronto Industrial and Guelph Fat Stock Show of 1896 and 1896. Write for prices, or come and see us. J. G. SNELL, Snelgrove, Ont. Station: Brampton, C. P. R. and G. T. R. - om

LARGE ENGLISH BERKSHIRES.

Choice stock of all ages for sale. Write for

H, BENNETT & SON, St. Williams, Ont. Norfolk County.

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

GEORGE GREEN, Fairview P.U., Ontario.

Stratford Station and Telegraph Office

CHRIS. FAHNER, CREDITON, ONT.

Importer, Breeder and Ship per of Berkshire, Chester White, Victoria, Tamworth, Duroc-Jersey, Poland-China Hogs.

Also high-class Poultry. Write for particulars to Chris. Fahner, Creditor, Ont.

#### HEADQUARTERS FOR **DUROC-JERSEY SWINE**

Our herd secured nine of the first prizes



nine of the first prizee out of the eleven ofered at Toronto Exhibition, and a similar portion at London and Ottawa. We are justified in saying we have the best herd in Canada. First-class stock of all kinds for sale at all times. Address—TAPE BROS.,

RIDERTOWN, ONT.

JAMES CHRISTIE, WINCHESTER, ONT.,

Breeder of Chester White pigs, the foundation of which was selected with the greatest care and from only the most noted breeders in Canada.

WISHING ALL OUR CUSTOMERS a prosperous and happy New Year, we offer (hester White Pigs, eight weeks old, registered, at \$5 each.

F. BIRDSALL & SON, Birdsall, Ontario.

Improved Chester White Swine. Now on hand four young sows due to farrow middle of April. Pedigrees furnished. For prices, write—
omJORDAN. ONT.

HURON HERDS OF POLAND-CHINA. **DUROC-JERSEY** and

TAMWORTH HOGS. Will offer the following No. 1 stock at cutdown prices for 30 days only: Two Tamworth
boars (one of them King of Duke 648, the 3rd
prize winner at London this fall); two DurocJersey boars, six months (one the winner of 2nd
at London this fall); one sged Duroc-Jersey
sow, never been beaten in Huron county.
Write, if you want a snap.

WESLEY W. FISHER, Benmiller, Ont.

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 threat 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 hissuffering 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, 890 Powers' Block, Rochester, N. Y.

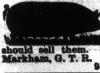
J. F. McKAY, ARKHILL, ONT. Poland-China Swine I have a choice stock of all ages and sex for sale. Bronze turkeys, B. P. Rocks, Rouen Ducks. Write for particulars. Farm 3 miles east of Parkhill. —om

Oxford Herd of Winning Poland-Chinas.

Having won the herd prizes at Toronto, London, Ottawa, and Brantford Fat Stock Show, we feel Brantford Fat Stock Show, we rees justified in stating that we are in a position to offer you what you may ask for from gilt-edge prise-win-ning stock. W. & H. JONES,

OXFORD CO.

R. Hoover & Sons, GREEN RIVER, ONT.,



Young boars and sowe ready for breeding purposes at prices which tham, G. T. R. Correspondence solicited.

MYVO E

TAMWORTH BOARS



three months old, for spring service, and sows same age, not akin. 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 sweep-stakes at all the large exhibitions throughout Canada in 1897. Write for prices. H. GEORGE & SONS, CRAMPTON, ONT.

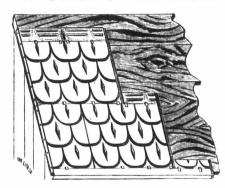
#### OAK HILL HERD OF TAMWORTHS.

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

# Pedlar Patent Steel Shingle

IS THE PROPER COVERING FOR BARNS 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

#### THE PEDLAR METAL ROOFING CO.,

OSHAWA, ONT. 

SHOEMAKER'S STOCK WINS! ANNUAL & ALMANAC FOR 1898 is a corker 100 pages best paper. It tells all about every Address, C. C. SHOEMAKER, FREEPORT, ILL., U. S. A

### Toronto Incubators Best hatching machine built. Awarded silver and bronze medals. For circular, address-T. A. WILLITTS, 514 Dundas St., Toronto, Ont.

On trial \$5.75 up. "My loveer Buckey harded by

GOSSIP.

Mr. C. W. Hartman, Clarksburg, Ont., has purchased eight head of Aberdeen-Angus cattle from the famous herd of Hay & Paton, New Lawell, 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 8th at 11 a.m., the Shire Horse breeders; at 2 p.m. same day, the Clydesdale breeders; at 8 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 2 p.m., the annual meeting of the Ayrshire 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, Ayr, Ont., at satisfactory prices, and letters of erquiry are pouring in from all parts of the Dominion."

CLEARING SALE OF CLY DESDALES, SHORTHORNS SHROPSHIRES, AND BERKSHIRES.

SHROPSHIRES, AND BERKEHIRES.

James Hunter, Alma, Ont., announces in our advertising columns in this issue that, having rented his farm, he will sell on March 9th his entire herd of 45 head of Shorthorn cattle. 2 Clydeedale stallions, including imported Lyndook, 4 registered Clydeedale mares, 50 registered Shropehire 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 stres, 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 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 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, Maj. Geo. G. Winans; Secretary, Edwin O. Wood; Treasurer, John J. Carton. Bard of Directors—Edwin O. Wood, Flint; P. Smith; B. F. Miller; F. H. Rankin, jr.; John J. Carton.

SOME JERSEY TESTS

SOME JERSEY TESTS.

Miller & Sibley, Franklin, Pa., report the following recent tests of some of their cows:—
"The heifer, Metaphysics 100974, 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. Metaphysic'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. 13656, and her dam was Lady Anna Pogis 52734, she by Leo Pogis 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 61 months old, and weighed 936 pounds at time of test. Her sire is Ida's Rioter of St. L. 13656, and her dam was Gipsy's Berry Duchess 86124. Both the above tests were made with first calf. Fancy Work 116422, for the same period as the others, gave 168 pounds of milk, which yielded 18 pounds 2 ounces of butter ready for market. She was 4 years 1 month old at the time of test, and weighed 1,050 pounds. Her dam is High Tea 65577, and sire Ida's Rioter of St. L. 13656. This makes 21 daughters of Ida's Rioter of St. L. to have full weekly butter tests. The average is 20 pounds 2 47-48 ounces apiece a week."

SILVER MEDALS FOR HACKNEYS.

SILVER MEDALS FOR HACKNEYS.

The Council of English Hackney Society has adopted the following scheme for the offer of silver medals to a filliated societies: (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 subsection of the subsecti 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 ruinea, 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.



#### 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;

nequaled 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.

## Champion Hackney Royal Standard Stallion . . .



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.

# RAHAM

Claremont, Ontario. 25 miles east of Toronto, on C. P. R.

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 Guernseys, at very low figures. Also bargains in sheep and pigs for the next monen.

Particulars furnished on application to





Vol. XXX

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It is calcula brought out of our Yukon cou gone wild over in the mad rus to the great n But supposing realized, what with what is w the Dominion perpetuity as revolve and see and faithful h tario alone on i grain-growing l and fifty milli moderate estim Manitoba last nearly as larg what all the ot total of proba live stock and li and butter, in l and the value of products was to say, were prospect for th records will be products have a That it is it country, unde

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