

J. H. Girdale Exp Farm dec 15, 00

THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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

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VOL. XXXV. LONDON, ONTARIO. MAY 15, 1900. WINNIPEG, MANITOBA. No. 502

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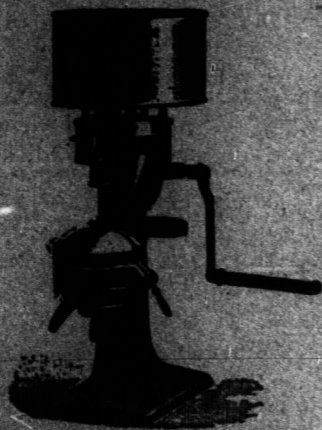
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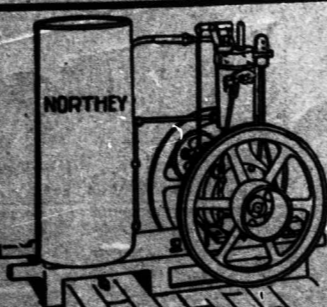
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Surplus for security of policy-holders.....\$ 1,200,000
Assets.....\$ 1,200,000
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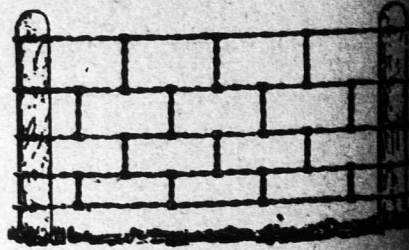
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FARMER'S ADVOCATE

AND HOME MAGAZINE

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

VOL. XXXV.

LONDON, ONT., AND WINNIPEG, MAN., MAY 15, 1900.

No. 502

EDITORIAL.

The Turnip Crop.

To thoughtful stock-raisers, the tendency in many parts of Canada to abandon the growing of turnips and other root crops, or at least to reduce the area devoted to those crops, is a regrettable circumstance. With many stock-farmers, and especially dairymen, in late years corn ensilage has largely been adopted as a substitute for roots; but while it provides an abundant and cheap succulent food, it certainly does not, and never will, take the place of roots as a wholesome and growth-producing portion of the winter rations for properly developing young stock or producing the largest possible flow of milk. Ensilage from well-matured corn makes a cheap and valuable food for stock, and from experience and observation we feel safe in recommending those who have not adopted it to do so, and the sooner the better; but we are confident that to the growing and feeding of roots more than to any other factor in the treatment of our stock, Great Britain and Canada owe their pre-eminence in the production of high-class cattle and sheep, and we are fully persuaded that to abandon their use would be to retrograde in the production of healthy, vigorous and prepotent breeding stock carrying the best quality of flesh. If, then, it be desirable that Canada continue to hold her place of precedence on this continent as a stock-breeding country, it is important that our breeders stand by the root crop.

We are aware it is not so easy to secure a good crop of turnips on the average farm, and especially on clay lands, in old Canada as it was in the former days when the land was newer and full of vegetable matter, but the fact that some men yet make a success of the crop in almost every district proves that it is possible for others, if not for all farmers, to do likewise, and that it is more a matter of management than of conditions of climate or soil or location. The writer, from an experience of over 30 years on a clay farm, can recall only three years in that time in which a fair crop was not secured, and in several seasons as high as 1,000 to 1,200 bushels of turnips per acre were harvested, though 600 to 800 bushels is considered a fair crop. While the maximum yield depends upon a rich and well-fertilized soil, a good average crop may be counted on from a fairly fertile field, the crop depending largely upon frequent and judicious tillage. Much depends upon a good start for the plants, and in order to secure this the seed-bed must be made exceedingly fine by repeated use of cultivator, roller and harrows. Early sowing, as a rule, is not to be recommended, as even if a good start is made, the early-sown crop is more liable to suffer from plant lice in a dry time, and quickly-grown roots are generally of better quality; while early-sown turnips are also more likely to be taken by the fly, which seldom proves troublesome after the 20th of June. About the middle of June is the favorite time for sowing with the majority of turnip-growers in Ontario.

A correspondent in an article on this subject in another column of this issue recommends flat culture to ensure a catch and success in growing the crop. While that is the general practice in England, where turnip-growing is most generally successful, and while in our own experience some of our best crops were obtained by that method, we are inclined to the opinion that, as a rule, the extra labor in cleaning and thinning the crop will more than offset the advantages. We are of opinion that a compromise method might advantageously be adopted by raising the ridges less than is done in common practice, so as to give the advantage of a slight depression between the rows, into which the plants cut out in thinning and any weeds which may be present may be drawn. There is this, however, to be said in favor of flat culture, that where the land has been manured and plowed the previous autumn, spring plowing is not really necessary, but

by frequent surface cultivation the land may be kept clean and the moisture in the soil retained, so that rapid germination and growth would be most certain if the season prove dry. Much depends upon sowing while there is moisture in the soil, and upon early cultivation when the plants are young, with a wheel hoe or similar implement, to break the crust to admit the air and to destroy weeds while in their incipient stage, as well as to conserve moisture in the soil and hasten the growth of the crop from the first so that it may never get checked. The subsequent tillage necessary to success is two or three hand hoeings and frequent use of the horse hoe, especially soon after each rain, and weekly, if possible, even in the driest weather.

The Dairymen's Outlook.

The Canadian farmers who make a specialty of dairying have had an exceptionally good season during the last six months, and especially so in those districts in which the supply of home-grown stock food was abundant. In those sections which suffered from drought last summer, necessitating early drafts upon the supply of winter fodder and the use of purchased foods to a considerable extent, dairymen failed to reap as great a benefit from the steady run of good prices for butter and cheese, but on the whole the situation has been favorable, and the prospects for continued strong prices are certainly encouraging. Cheese continues to rule high as the result of a short supply with a strong demand, and the outlook for that product has not for years been more roseate. The market for good butter has maintained a steady run at fairly good prices, and though for a few weeks during the flush of the pastures it may be expected that values will decline to some extent, yet the experience of buttermakers in the last few years has shown that as a rule the flush is for but a short period, and that the cheese factories and the city trade absorb so large a proportion of the milk supply that good butter seldom goes begging for buyers at a fair price even in the summer months. The unusual buoyancy of the cheese market the present season will naturally react in favor of the buttermakers, and a survey of the whole field would appear to justify dairymen in putting on full sail in anticipation of a good time coming.

The breeders of cattle of the dairy breeds are finding an active demand for good stock, and report numerous sales at satisfactory prices, while the increased attention being given to the character and quality of the cows kept, as well as to the best methods of feeding with a view to economy of cost and development of capacity for producing milk and butter at a profit, is, we believe, steadily raising the standard of the dairy cows of the country. It is true there is yet much room for improvement in this regard, both by weeding out unprofitable cows and by better feeding, as well as by breeding from selected sires of approved type, descended from proved stock of superior capacity. There is no more intelligent or progressive class of stockmen in the country than the breeders of dairy cattle of the various breeds, and none who are doing a safer or more profitable business. They have, as a rule, set their ideals high, and are working with a steady purpose towards improvement, in which they are making steady progress. Breeders are coming to a more general agreement as to the ideal type of dairy conformation in that class of cattle, a type in which utility and beauty may be happily combined with a strong constitution, which goes far towards ensuring capacity for profitable production. We confidently anticipate a distinct revival in the demand for good bulls of all the dairy breeds the present season, and an advance in values of the better class of both males and females. The present number of the *ADVOCATE* presents an unusually interesting bill of fare for dairy farmers

in the many excellent articles on various phases of the industry, in the stock and dairy departments, to which attention is invited.

Grow More Corn.

The partial failure of the clover crop in many parts of Ontario, owing to the severe drought after harvest last year, and in some districts from the frost this spring, will leave many farmers short of that valuable winter fodder for stock, and they will need to consider what is the best substitute that can be provided. We are firmly of the opinion that corn offers the readiest and most economical solution of the problem. It is one of the surest crops that can be sown, and produces the greatest bulk and weight of palatable and nutritious food for cattle especially, while it is also suitable to some extent for other stock as well, and requires no particular skill in its cultivation or care. The farmer who has a good supply of cured corn or ensilage in store may smile at the most inclement winter weather, and with the addition of roots and well-saved straw and a little bran and meal can produce meat and milk profitably, and make manure to maintain the fertility of the farm. The farmer who has not a silo or cannot see his way to build one should not allow that excuse to prevent him from growing corn the present season, as thousands of farmers throughout the country have for years proved it profitable and economical to store the cured corn in their barns, and cut it up during the winter months for stock food. The silo is, however, the ideal means of storing and keeping corn, as a few days' work and one handling secures it ready for feeding and convenient to the stock, where it is safe, even if more is stored than is required for the winter, and can be drawn upon in a time of summer drought when pastures fail. With a little good management, a silo can be built at very moderate cost, and we feel safe in advising all who can at all see their way to it to count on having a silo before another winter comes, and in the meantime to plant corn and attend to it well. The crop will delight you and give you satisfaction.

The Winter Fair Building Site Chosen.

The Winter Fair Committee on the selection of the site for the proposed building at Guelph for the holding of the Provincial Fat Stock, Dairy and Poultry Show met in that city recently, and decided in favor of the Haymarket site, lying between the City Hall and Wilson street. The City Council, we learn from the *Mercury*, at a special meeting on the afternoon of the same day, adopted the clause of its special committee recommending the Haymarket site.

The building proposed will be in the shape of a T, with the top along Wilson street, and the stem stretching to the City Hall. It will be about 100 feet wide, with a length in all of 400 feet. It is proposed to make the part across to the City Hall of two stories, the poultry exhibit to take the upper story. The site chosen is an ideal one, a switch siding from the railway to the building having been provided for; and we are sure exhibitors and the public will be highly pleased with the choice, which could not have been better for the convenience of all concerned. As the building can be used by the city for market or exhibition purposes, or may be let for the holding of public sales or meetings at any time during the year except the week of the Winter Fair, and as the site is a prominent one, it will be in the interest of the city to erect a building creditable in appearance as well as substantial and suitable for the several purposes indicated.

We Lead.

There is no agricultural paper published in America the equal in amount of general information of a practical character with that of the *FARMER'S ADVOCATE*, published at London, Canada. — *The Dorset Courier, Washington, Pa.*

THE FARMER'S ADVOCATE
AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

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THE WILLIAM WELD COMPANY (LIMITED).

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1. THE FARMER'S ADVOCATE is published on the first and fifteenth of each month. It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical, and reliable information for farmers, dairymen, gardeners, and stockmen, of any publication in Canada.
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14. ALL COMMUNICATIONS in reference to any matter connected with this paper should be addressed as below, and not to any individual connected with the paper.

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

Branding Canadian Bacon.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—In the FARMER'S ADVOCATE of May 1st we saw an editorial, under the title of "Stealing Canada's Good Name," referring to a letter from Mr. D. C. Flatt, Wentworth County, Ont.

There is no doubt about the gentleman's good intentions about having all Canadian bacon marked "Canadian," but if he looks at it from another point he will find it is not quite correct. Of course, the law in England requires the brand of the name of the country where produced when branded with English or Irish names; thus American bacon branded with Canadian names must also bear the U. S. brand; but if the Government should compel all pork-packers to brand all Canadian bacon "Canadian Produce" on each side it would be detrimental to the Canadian trade, because there is only about one-third really choice, prime Canadian, and the packers no doubt all take good care to have those sides branded with their trade-mark and sold as Canadian bacon; but lots of soft and fat bacon that is grown in Canada is sold in England as half brand—or, in other words, without any brand on—and this surely is a benefit for Canadian reputation. We can hardly believe that any American bacon is branded Canadian; if so, the High Commissioner or any representative can only lay information against the dealer and he will be fined heavily and his name published. Similar cases in Danish butter occur daily; some retailers palm off butter mixtures for Danish butter, and even when they sell margarine or butter mixture without distinctly marking "Margarin" on the wrapper they are fined for not doing so. We believe that the high standard of the Canadian bacon is mainly due to the private packers in this country who have all tried to cure it in first-rate manner and have selected it strictly and only branded the very choicest of the bacon and shipped the remainder over as half brand.

THE CANADIAN PACKING CO.
Per John H. Ginge.

The Work of the Recent Session of the Ontario Legislature.

We give below a brief summary of the enactments of the recent session of the Ontario Legislature affecting the farming community, and in doing this we have taken up the various acts in the order in which they will appear upon the statute book.

The Provincial Drainage Aid Act comes first. From time to time various drainage acts have been passed, as the preamble states, "for the purpose of enabling municipalities to provide drainage acts by local assessment for the removal of surface water from wet, marsh, and low-lying lands." It has been found, however, that sufficient outlets have not always been made; that if made, the cost would be too heavy upon the lands that would have to bear the cost, and that without these sufficient outlets a great deal of benefit is lost to larger areas. This Act provides for an appeal to the Government, who, upon an expert examination, may direct certain outlets and other improvements to be made, and may bear the cost of the same. In other words, it enables the Government to step in and assist in carrying to a profitable conclusion drainage work that would otherwise be incomplete, or that if properly done would be too heavy a tax upon a few farmers.

Drainage Amendment Act.—The principal amendment to *The Municipal Drainage Act* is contained in the following section, which provides for keeping drains clean:

"71a. It shall be lawful for the council of any municipality to pass a by-law or by-laws providing that it shall be the duty of the owner of every lot or part of a lot assessed for benefit to clean out the drain and keep the same free from obstructions which may hinder or impede the free flow of the water, and to remove therefrom all weeds and brushwood and to keep the banks of the drain in order to the extent and in manner or proportion and for the distance determined by the engineer in his report, and in case any such owner makes default in so doing for thirty days after notice in writing from the council of the municipality the work may be done by the said council or by any officer appointed by them for the purposes of the said drain and the cost thereof after notice of the same to the person so making default and liable therefor shall be placed on the collector's roll against the lands of such owner and shall be chargeable against the said lands and be collected in the same manner as other municipal or drainage assessments."

Cold Storage.—Two acts were passed dealing with the encouragement of this work. Municipal councils are empowered, by by-law, to purchase land, erect buildings, and control or operate the same. The fees to be charged are to be controlled by the Government. The buildings having been approved of by a Government inspector, money assistance is provided for as follows:

"The Lieutenant-Governor-in-Council may by Order-in-Council direct that out of any moneys that may be voted by the Legislative Assembly for that purpose there shall be paid to any municipality or municipalities which have heretofore erected or may hereafter erect buildings for cold storage purposes as hereinbefore mentioned a sum not exceeding one-fifth of the cost of the construction and equipment of such cold storage buildings, provided that no such grant shall in any case exceed the sum of \$500; and provided further that any cold storage buildings erected under this Act shall be distant not less than five miles from any other cold storage buildings erected by private capital or erected under any other Act of this Legislature."

Another Act, introduced by the Minister of Agriculture, provides for an easy and economical method of organizing co-operative cold-storage associations. The method is the same as for organizing co-operative dairy associations. Five or more persons may draw up an agreement in form prescribed and register the same at the local registry office, paying therefor fifty cents. The association has power to buy land, erect buildings, and carry on business. Where other than members are allowed to use the buildings, the fees must be approved by the Minister of Agriculture. The Government grant is to be the same as in the case of the municipal cold-storage buildings above quoted, but remains a lien for five years, so that the buildings may not be diverted to other uses. Co-operative cheese and butter companies may also take advantage of this Act and receive aid for providing cold storage without further special incorporation.

Dairy Associations.—When the three associations were condensed to two, the name "Cheese and Butter" was adopted instead of "Dairy." The old name now comes back, and the present statutory titles are "The Dairymen's Association of Eastern Ontario" and "The Dairymen's Association of Western Ontario."

Cheese and Butter Companies.—The Act respecting cheese and butter manufacturing associations or companies has been amended so as to make it clear and definite that they have power to buy and sell land for the purpose of their incorporation.

Traction Engines on Highways.—The driver of a traction engine must turn to the right and give half the road to a vehicle drawn by a horse or horses or to a mounted horse-man, and must stop till the vehicle or horse-man has safely passed, and if requested, the engine driver must assist the other driver or rider. The engine driver "shall stop when at a distance of not less than one chain from such vehicle or horse-man." Noises must not be made when a horse is passing or about to pass.

Lights must be carried ahead of the engine "between sunset and sunrise," and on the engine itself travelling at night there must be a red light in front and a green light in the rear.

San Jose Scale.—The Act dealing with this insect has been amended so as to permit of "treatment of infested plants by spraying, washing, fumigation," according to regulations. These regulations have been published since the Act passed, according to which the Government agrees to bear one half the cost of whale-oil soap to be used in spraying, under the direction of the Inspector. The spraying has to be done just before the buds open, so that it will have been completed by this time. Nearly four carloads of soap have been used in the main infested sections.

Noxious Insects.—The Ontario Fruit Growers' Association petitioned the Minister to provide local option legislation whereby municipal councils could compel owners of trees to band them in order to check the spread and ravages of the codling moth. The Minister thought it advisable to bring in a more general Act. According to this Act, regulations dealing with any noxious insect may be adopted by the Lieut.-Governor in Council. Any municipal council may adopt the Act by by-law and appoint inspectors to enforce the same. If the owners neglect to do the work required by the regulations, the local inspectors shall do it, and report the cost of same to the council, who may then add it to the owner's tax bill. Regulations dealing with the codling moth will probably first be issued.

Barberry Bushes.—The effect of this bush or shrub upon the spread of wheat rust has long been discussed. It received the attention of a special committee of the House. This committee summoned Prof. Lochhead, Entomologist at the Agricultural College, and Prof. Dearnness, of the Normal School, London. The opinions were not in all cases conclusive, but sufficient seemed to be made out against the barberry to warrant an Act, of which the following is the main clause:

"No person shall plant the shrub known as the barberry shrub upon any lands used for farming purposes in the Province of Ontario, nor upon any land situate within one hundred yards of any lands used for farming purposes, and every person guilty of the violation of this section shall be liable, on summary conviction thereof before a justice of the peace, to a penalty not exceeding \$10, besides the costs of conviction, to be recovered as provided by *The Ontario Summary Convictions Act.*"

The council may direct barberry bushes to be destroyed when growing on farm lands and may allow compensation. If the owner or occupant refuses or neglects to obey, the council may have them removed without compensation to the owner.

Wolf Bounty.—The bounty on wolves to be paid by the county is increased from \$10 to \$15, and the contribution towards this amount from the Province to the county is increased from \$4 to \$6.

Bills That Failed.—As lengthy discussions took place and extensive newspaper reference was made to three other bills, it is well to note here that the bills regarding sheep-killing by dogs, increasing the tax on dogs, and the remuneration for sheep killed, also the bill to regulate the width of tires, did not pass the Legislature.

GRANTS FOR AGRICULTURAL PURPOSES.

| | 1899 | 1900 |
|---|-----------|-----------|
| Agricultural and Horticultural Societies..... | \$76,650 | \$76,650 |
| Fruit Growers' Association..... | 1,800 | 1,800 |
| Entomological Society..... | 1,000 | 1,000 |
| Dairy Associations..... | 6,500 | 8,000 |
| Horse Breeders' Association..... | 2,000 | 2,000 |
| Live Stock Associations..... | 4,500 | 5,500 |
| Registrar Live Stock..... | 1,500 | 1,500 |
| Experimental Union..... | 1,200 | 1,200 |
| Poultry Association..... | 1,650 | 1,650 |
| Beekeepers' Association..... | 1,100 | 1,100 |
| Farmers' Institutes..... | 9,900 | 9,900 |
| San Jose Scale..... | 20,000 | 10,000 |
| Experimental Fruit Stations..... | 2,800 | 2,800 |
| Spraying..... | 2,500 | |
| Apiculture Experiments..... | 300 | |
| Algoma Pioneer Farm..... | 1,000 | 1,000 |
| Eastern Dairy School..... | 4,700 | 4,700 |
| Western Dairy School..... | 2,600 | 2,600 |
| Sugar-beet Testing..... | | 2,000 |
| Cold Storage Inspection..... | | 1,300 |
| Shipments of Grapes..... | | 1,000 |
| Fat Stock Show Equipment..... | | 1,500 |
| Bureau of Industries..... | 6,500 | 6,500 |
| Reports, Bulletins, etc..... | 15,150 | 15,150 |
| Agri. College and Exp'l Farm..... | 51,267 | 53,275 |
| Total..... | \$214,617 | \$212,025 |

From the above statement it will be seen that fruit spraying and experiments in agriculture are dropped this year, and four new items appear, viz., testing of sugar beets, inspection of cold-storage buildings, experimental shipments of grapes to Great Britain, and fitting up of the permanent buildings at Guelph for the Fat Stock Show. This show also accounts for the increased grants to two of the live-stock associations; \$750 is allowed to each of the dairy associations "additional for instruction." The vote for San Jose scale has been cut in two. The increase of \$2,000 in the Agricultural College is accounted for by a few small increases in salaries of members of the staff, increased allowance for expenses owing to increased number of students, and a special vote of \$500 for library books. There are no new buildings provided for at the College; one item may be noted—"model of cold storage for farmers' use, \$200."

Provision is made also for new brooders for the poultry department, for additional apparatus in the various laboratories, and for a new boiler for the propagating house. It will be seen that the total appropriation for agriculture this year is \$2,502 less than in 1899.

STOCK.

Our Scottish Letter.

THE SPRING SHOWS.

Since I last wrote, the chief business here has been shows, of which, on a large scale, we have had three, namely, at Kilmarnock, Glasgow, and Ayr, respectively. All three were held in grounds recently acquired and specially laid out for the purpose, and all three have been attended with a large measure of success. The Ayr Show is the most distinctly agricultural fixture of the kind which we have in the west country. It depends on agriculture pure and simple, and favored with fine weather this week, it drew on the two days £905 of gate money. Glasgow had a three days' event in its new showground at Scotstown, to the west of the city, the third day being devoted to a military tournament, and its drawings



HACKNEY STALLION, SQUIRE RICKELL.
First prize and sweepstakes at Canadian Horse Show.
OWNED BY R. BEITH, M. P., BOWMANVILLE, ONT.

for the three were £903, nearly one-half of the total having been drawn on the third day (Saturday), which was given over to sports and the tournament, as mentioned. Kilmarnock was not so fortunate in respect of weather, the days being bitterly cold, but there was a good attendance on the Saturday afternoon, which was again given over to horse-leaping and various kinds of quasi-sports. I do not know how you run shows in Canada, but I have an idea that Ayr stands unrivalled as a purely agricultural event. One great point in its favor is that its show has been held on the same date, the Tuesday preceding the last Wednesday, and the last Wednesday of April, for something like fifty years, and there has grown up around this date a vast number of local holidays in the towns and villages of Ayrshire, while the Wednesday is also a general country holiday in the surrounding neighborhood. Canadian visitors anxious to see a genuine country gathering could not do better than visit Ayr Show. It is an enjoyable function, and this year the leading features of the event were the Ayrshire cattle, Blackface sheep, Clydesdale horses and Driving horses. Glasgow maintains its pre-eminence as the best all-round show of Clydesdales, and Kilmarnock makes a good second in that respect, while this year it had the best show of pedigree Hackneys. The driving classes at all shows have this year been unusually good.

Ayrshires still hold their place as first favorites amongst cattle in the west and south-west of Scotland. The highest honor in the breed is the leadership of the Ayr Derby for three-year-old heifers. The animals are entered for this event when calves, and it is always a sign of good judgment when those thus selected take a good place in the Derby. It is an illustration of the sound judgment prevailing amongst breeders of Ayrshires that very seldom does a three-year-old quey appear which is able to beat the Derby winner. Similar competitions are held at Castle Douglas, Kilmarnock, and Glasgow, and also at nearly all the county and parish shows in the West. This year the winner of the Ayr Derby comes from the extreme south of Scotland, from the famous Gretna, where in other days runaway couples from England were wont to be joined in matrimony by an accommodating blacksmith, and his performance of the ceremony held good. The nominators of the Derby winner, "Senorita," were her breeders, Messrs. A. & W. Kerr, Old Graitney, Gretna. The senior member of this firm, Mr. Abram Kerr, was formerly tenant of Castlehill, Durrisdeer, which he left in 1893. He had a splendid outgoing sale, the quality of his Ayrshires being first-class. His stock bull, Peter of Whitehill, was retained and hired from season to season until Mr. Kerr found another farm, which he very soon did, and assuming his son William as partner, they have been gradually building up a good herd once more. "Senorita of Old Graitney" is a capital example of an Ayrshire dairy cow. She has a good vessel and first-rate teats, is a well-bodied cow, and carries herself well. Possibly ultra-critics might like her vessel to be carried more evenly forward, but for practical purposes she is an ideal

dairy cow, and was a popular winner. She also secured the female championship of the show, carrying all before her. The second quey in the Ayr Derby was the winner of the Glasgow Derby, Mr. James Lawrie's Beauty IV., from West Newton, Strathavon. This is a cow of different caliber from Senorita. She lacks the substance of the winner, and yet she excels her in the formation of her fore-vessel, as it is called. She has a smarter head and carries her neck better, but when these things have been mentioned the points wherein she excels have been declared. She has a typical vessel of the fashionable order, and her teats are not so well planted or so long and well shaped as those of the winner. She is, however, a smart cow, and her dam, Beauty I., was the champion female at the H. & A. S. Show at Dumfries in 1895.

A very interesting department at Ayr is that for groups of Ayrshire cattle. Messrs. Kerr had no other forward but Senorita, and hence were not in these competitions. First prize for group of three, bred and owned by exhibitor, went to Mr. Alexander Cross, of Knockdon, who has a fine herd and had several in the Derby. Mr. John Drennan, Hillhouse, Galston, had second. He owns the champion cow at Kilmarnock, and she also stood reserve champion at Ayr, where she was first in the class for aged cows in milk. Mr. Drennan has well-framed cattle, with good vessels, but their teats are just to the small side, which breeders in this country are trying to get rid of. Mr. T. C. Lindsay, Aitkenbrae, Monkton, was third, and Mr. Sloan, Treesmax, Ochiltree, was fourth. A most interesting competition is that for the best five cows out of any one parish. It is called the parish competition. Mr. Drennan led in this competition, being followed by Messrs. R. & J. McAlister, Mid-Ascog, Rothesay, who have a splendid herd of dairy cattle in Bute, and Mr. Cross was third. In the male section, the leading aged bulls (that is, 3 years old and over) this year are Mr. Robert Osborne's Gigantic Stunner, which won the male championship at Kilmarnock and Ayr, and Mr. John McKean's Douglasdale, from Dam of Aber, Kilmarnock, which won the same trophy. Unfortunately, these bulls have not met, and they will not meet now, as Mr. Hunter, from Canada, has bought Douglasdale, along with several choice cows and heifers, some of which have been winning at these shows.

Clydesdales are this year very good. Amongst the younger stock, the produce of Messrs. Montgomery's Baron's Pride 9122 are making a clean sweep at all the shows, and, so far, the best female of the season is the 3-year-old Jeanie Deans, from Mr. Thomas Smith's stud at Blaen Point, Chester. She has taken champion honors at Castle Douglas, Kilmarnock, and Ayr, and is improving as the season advances. The brood mares at Glasgow and Kilmarnock were led by daughters of Sir Everard, the sire of Baron's Pride, Mr. Holmes' Lady Raffan, a fine type of mare, which has won first four times at Glasgow, being the former, and Mr. Guild's Lady Margaret, a right good mare, the latter. At Ayr, the first brood mare was Mr. William Park's Sunray, from Portobello, a daughter of Prince Alexander 8800. The Marquis of Londonderry is showing a fine mare by Sir Everard, named Essence 13007. She was first at Kilmarnock, and second at Glasgow and Ayr, being beaten on the former occasion by Montrave Rowena, which stood first at the Highland last year, and on the latter by Mr. Sinclair Scott's Scottish Peeress, a handsome big daughter of Baron's Pride, which stood second at Kilmarnock. Mr. Scott has a very bonnie yearling filly, named Scottish Grace, by the same sire, which stood first at Ayr and second at Castle Douglas and Kilmarnock.

Amongst horses, the leading championships have gone to Mr. John Pollock's great horse, Hiawatha, the dual winner of the Cawdor Cup in previous years, and this year champion of all male Clydesdales at Glasgow and Ayr. The best 3-year-old stallion of the spring shows is Mr. Herbert Webster's Baron Kitchener, a lovely horse, by Baron's Pride, which stood second at the Highland last year. He was reserve champion at Glasgow and Ayr, and on the latter occasion beat his successful opponent of last year, Mr. Thomas Smith's Drumflower 10537, a horse of great substance and size, got by Macgregor. The best 2-year-old colt of the season is Mr. William Dunlop's Sylvander 10633, which won first at Kilmarnock, Glasgow, and Ayr. He is a son of Montrave Mac, the son in his turn of the celebrated Macgregor and Montrave Maud, and his own dam was the champion mare, Mary Kerr, which has, unfortunately, died within the past few days. Two-year-old fillies have been the least uniform class of the season, and no one of them has been able to walk supreme. At Castle Douglas and Kilmarnock Mr. Picken's led the way; at Glasgow, Mr. Webster's Lady Florence was first, and at Ayr, Mr. Guild's Topsy Pride, the unbeaten yearling of 1899, was first. We put our money on the last as the best.

A splendid sale of Hackneys was held at Gowanbank, Darvel, Mr. Alexander Morton's stud farm, on Thursday. Trade was brisk, and the horses were a truly grand lot. Sixteen ponies made an average of £59 14s. 4d., one of them, a perfect gem, named Fiona 10018, making no less than £204, and another, Snapshot, a 5-year-old gelding, making £168. Thirty-two harness horses and mares made an average of £57 4s. 5d. each, the highest figure being £315 paid for the 10-year-old mare, Cicely 5133, a former champion winner at London; while other single animals made £210, £131 5s., £126, £127 1s., £110 5s., and £105. Eleven brood mares were sold at

an average of £80 5s. 6d., the highest prices being £157 10s., and £147. Altogether the 59 horses sold made an average of £78 9s. 4d. If such prices as these could always be obtained, Hackney breeding in Scotland would pay. "SCOTLAND YET."

The Embargo on Argentine Cattle.

According to the official statement of Hon. Mr. Long, chairman of the British Board of Agriculture, 154 head of cattle were certified to be affected with foot and mouth disease, out of the 244 brought to Deptford from Buenos Ayres by the steamer Ethelhilda. It was upon the foregoing that the order of the British Board of Agriculture, forbidding the landing of live cattle from the Argentine Republic after May 1st, was issued. Commenting thereon, the English Live Stock Journal says:

"It will be regretted by breeders that such a step is necessary in the case of the Argentine Republic, which has during the past few years proved such a good customer for our pedigree cattle and sheep. The trade in cattle and sheep from the Argentine to this country is large, and had been steadily growing until last year, when we received 85,365 oxen and 382,080 sheep, these figures showing a diminution in both classes as compared with 1898; still, even the lower figures represent about 1,700 cattle and 76,000 sheep weekly, constituting a very considerable contribution to the food supply. The value of the importations in 1899 was £1,392,599 for cattle, and £508,436 for sheep, making a total of nearly two million pounds sterling, and the loss of this will be a heavy blow to the Argentine, and for some time will appreciably affect the supplies in our markets. It will not, however, be lost, because there will, no doubt, be a rapid development of the dead-meat trade. Last year the Argentine sent 1,141,208 cwt. of fresh mutton of the value of £1,490,106, and, under the new regulations, this trade is likely to be largely increased, for even while the animals could be landed for slaughter, it has doubled in extent in about four years. Similar arrangements will be, no doubt, made for the shipment of beef. Nor should the temporary prohibition affect the demand for pedigree stock, as the quality must be maintained; and the Argentine will have everything to gain in steadily improving her flocks and herds, so as to compete, as has been done in the past, with the imports from North America."

The Review of the River Platte, Buenos Ayres, concedes the existence of the disease in the following editorial paragraph: "It is to be hoped that the energetic measures which have been taken by the authorities of the nation and the Province of Buenos Ayres will lead to the early extirpation of foot and mouth disease. Fortunately there is not the same reason to fear it as if our animals were stall-fed; but none the less is the outbreak a serious thing for our trade. The disease must have been imported from some other country; but this will not prevent that country from declining to receive animals from here, until such time as the disease is thoroughly stamped out."

Good Grooming Pays.

Though many horse owners do not seem to appreciate it, the grooming which an animal receives when properly kept plays almost as important a



THOROUGHBRED STALLION, VERSATILE.
First prize and sweepstakes at Canadian Horse Show.
OWNED BY WM. HENDRIE, HAMILTON, ONT.

part in the maintenance of the health of an animal as the food which it gets. There is nothing more conducive to the maintenance of the good health of an animal than a vigorous application of the curry-comb and brush from day to day. Such treatment helps to open the pores of the skin, and thus facilitates the getting rid-through perspiration—of certain waste matters, which, if allowed to remain in the system, would prove distinctly injurious. Just as in certain human ailments, much benefit is derived from the production of a vigorous perspiration, which enables certain materials to be removed from the tissues of the body, so, also, in the case of horses, the maintenance of the healthy condition of the skin facilitates the removal of certain substances which are known to be conducive to various diseases.

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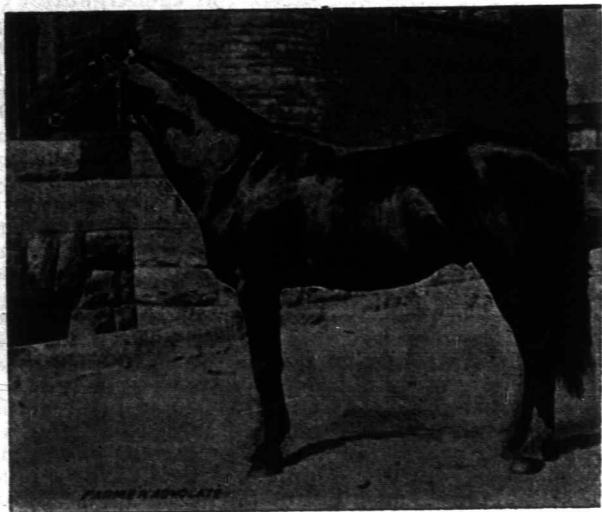
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Breeding and Feeding the Bacon Curer's Pig.

The journal of the British Dairy Farmers' Association contains an extensive paper on the above subject, by J. M. Harris, of Calne, Wiltshire, Eng., in which he favors the large white Yorkshire, either pure or crossed with the Berkshire, giving pigs which feed well, mature quickly, are very prolific, are not thick in the shoulder, are thin in the skin, not too thick in the back, and which yield a side thick in the streaky or belly part. Pure-bred sires—not crosses or mongrels—should be used, otherwise the farrows will not be so large and the individual pigs will often be dwarfed, there will be two or three small ones in every farrow, and all the offspring will be thin in the belly or flank. Is there any other animal used for the food of man so prolific, so easily housed, fed with so little labor and at so small a cost, and which is worth so much at the same age?



THOROUGH-BRED STALLION, WYNDHAM.

First prize at Canadian Horse Show in class for stallions to improve the breed of Saddle Horses and Hunters. OWNED BY S. B. FULLER, WOODSTOCK, ONT.

A pig for profit should at six or seven months of age weigh from 130 to 170 lbs. dressed weight, this being the size that obtains the price. If the feeder has a pig well bred, and feeds properly, he can easily bring him up to his weight within the stated time, and he should then be worth from £3 to £4.

Mr. Harris describes an extended series of experiments started three years ago in Calne under direction of a committee of farmers and others interested in the economical production of high-class bacon. Four styes were erected, and in their construction special attention was bestowed on ventilation and cleanliness, for it is a great fallacy to assume that pigs thrive well in filthy and unhealthy surroundings. Each of the styes accommodated ten pigs, and every experiment commenced with 40 pigs fed, as a rule, on four different diets. The animals received three meals per diem, as much as they could clean up each time. The dry food, meal, bran, etc., was soaked over night in water, in the proportion of one peck of the former to five gallons of the latter, except when milk was used, when it replaced its own volume of water in the mixture. The potatoes were boiled and the mangels sliced. Care should be taken not to make the food of pigs too sloppy.

Up to the present there were carried out 64 experiments, involving 24 diets, on a total of 640 pigs. The principal foods used so far are: Barley meal, corn meal, separated milk, bran, potatoes, pea meal, bean meal, crushed oats, wheat meal, and corn germs. The average weight of the pigs at the commencement of fattening varied from 83 lbs. in one experiment to 141 lbs. in another, and the duration of fattening varied from seven to fourteen weeks. The pigs fed were not especially selected for breed, etc., but were purchased in the same manner as a farmer usually employs. All the food supplied during the experiments was weighed, and the weight of each of the pens of pigs was, as a rule, taken weekly and recorded.

Careful observation of these records confirms the statement made some years ago by the great Rothamsted investigators that the quantity of food required to produce a given increase in live weight becomes greater as the period of fattening progresses. It was also observed that after a pig attained a weight of about 170 lbs. the weekly increase was, as a rule, less than during the earlier stages of the fattening. These facts are of importance in view of the lighter weight of pigs now required for bacon than was formerly the case. To those who buy their store pigs it may be well to point out that these experiments go to show that, other conditions being similar, the younger pig may be reasonably expected to yield the greater weekly profit. This remark applies to pigs ranging between 83 lbs. and 141 lbs.

In these experiments the highest weekly gain in weight was obtained with a diet of barley meal, separated milk (one gallon), and potatoes (three pounds) per diem; the second in order of merit being barley meal and one gallon separated milk per diem; whilst the lowest two results were obtained with corn meal. Barley meal always gave a greater weekly increase than corn meal, both when

used alone and when used in conjunction with other foods. The addition of separated milk to either corn meal or barley meal produced a considerable increase in the weekly gain, as did also the addition of either pea meal or bean meal. The addition of bean to either barley or corn lowered the weekly gain considerably.

Referring to loss on killing and dressing, the least loss was on pigs fed on corn meal alone (22.9 per cent.), and on corn meal and separated milk (23.2 per cent.); whilst the greatest was with pigs fed on barley meal and bran (27.9 per cent.), and barley meal alone (25.6 per cent.). Corn-fed pigs lost less on killing and dressing than barley-fed ones. The addition of separated milk to either barley or corn caused the loss on killing and dressing to be slightly less. The addition of bran, peas or beans to either corn or barley caused a much greater loss on killing. Referring to the suitability of the flesh obtained for the production of the best bacon, the following table gives the foods, in order of merit, commencing with the best. The best quality is taken as 1,000 points:

| | Maximum Points |
|--|----------------|
| (1) Barley meal and bran | 990 |
| (2) Barley meal and separated milk | 988 |
| (3) Barley meal | 974 |
| (4) Barley meal, separated milk and potatoes | 967 |
| (5) Corn meal and bran | 964 |
| (6) Corn meal and bean meal | 951 |
| (7) Corn meal and separated milk | 945 |
| (8) Corn meal | 939 |
| (9) Corn meal and pea meal | 908 |

The comparatively low value assigned to pigs fed on corn meal and pea meal is due to a large proportion of the pigs so fed increasing very slowly and being sold when too small to come within the scales shown above. The quality of those which did well—i. e., gave a good increase—was about equal to those which had been fed on corn meal and bran. The addition of either bean meal or pea meal to maize gave far better results in cold than in hot weather, and both kinds of pulse varied very much in efficiency with different individual pigs. Some pigs did very poorly with these diets, whilst others did exceptionally well, so that special care is necessary in their use. Excess of fat was the general failing of corn-fed pigs, but was less pronounced in pigs which had been fed on a mixture of corn with either separated milk, bran, bean meal or pea meal. A larger proportion of best pigs for bacon was obtained with barley than with corn feeding. The addition of either milk or bran, but especially the latter, to either barley or corn raised the best proportion of pigs.

Docking and Castrating Lambs.

In our last issue appeared a paragraph calling attention to the necessity and importance of attending to the matter of tailing and castrating lambs in the spring while they are yet young. Heavy loss is occasioned to owners of lambs and to dealers every year by the neglect of these operations, as ram lambs come upon the markets in October and November in large numbers, and are sold at very much lower prices than wether or ewe lambs, for the reason that their flesh is strong in the breeding season, and that they fail to put on flesh by worrying themselves and the other sheep they are with, and are for this reason a great nuisance. By all means let all lambs intended for the butcher be docked, as it improves their appearance and tends to cleanliness, and let the ram lambs be castrated early. The ideal time for both operations is at two weeks old, but if it has not been attended to at that age, let it be done at any time up to 6 or 8 weeks. At this age a little more care and attention is required, as they are more liable to bleed unduly; but if they seem to be bleeding too freely or continuing to drop blood for more than an hour, a piece of binder twine or other soft cord tied moderately tight around the stump will stop it. This should be cut away in a few hours after. We have docked lambs safely at six months old, and by cording in this way there is very little risk. Of course, if done in fly time, some carbolic oil or sheep dip should be applied to prevent maggots. Docking young lambs is done simply by placing the knife at the second or third joint of the tail and cutting upward against the thumb. There is little or no danger of cutting the thumb, but if one is nervous, a glove may be worn, or a rag wound round the thumb. Some shepherds have the attendant hold the lamb between the knees, back down, while the operator cuts downward and thus details the lamb at one cut. When the two operations are performed at the same time, as they generally are, castration should be first attended to, as the spurting of blood from the docking would be unpleasant to the operator.

Inexperienced operators are liable to be nervous in performing castration, but with a little practice and confidence there is very little risk in it. Mr. Henry Arkell, of Teeswater, Ont., an old and experienced sheep-breeder, in an article in this paper nearly a year ago (June 15th issue, 1899, page 355), stated that he had operated on thousands without a single loss, and gave very plain instructions for performing this operation, which in a few words may be summarized thus: Cut off the end of the scrotum, or sack, place the thumb and forefinger of the left hand close to the body of the lamb, and force the testicles forward, seize them one at a time with the teeth or a pair of forceps and gently draw them out, casings and all, keeping the thumb and finger moderately tight together close to the body of the lamb. That is really all there is to it. Many

American shepherds write that it is entirely safe when the lambs are a week or ten days old to clip the scrotum with its contents clean off with the shears, not too close to the body. We have not seen this done, and therefore do not vouch for it, but it has been so often repeated in American stock papers without refutation that one is led to consider it worth a trial on a limited scale, as it is so simple; but if the former plan is as safe, the lamb will sell a little better, as a rule, for having some show of scrotum.

Stall Fed vs. Feeding Loose.

To the Editor FARMER'S ADVOCATE:

SIR,—In reply to "Stall Fed," in May 1st issue, page 256, re "Enquiries on Loose Feeding," I would say regarding the statement made in "Successful Farming," pages 229 and 230, that "steers dehorned and fed loose will gain more in five months than those tied will gain in six, and on the same feed." The above is based on two experiments made at the Ontario Agricultural College, first in the winter of 1897-98 (see Annual Report of 1898, pages 188 and 189). Fifteen steers tied made an average gain of 201 in six months, while six steers loose made an average gain of 339 in five months. The second experiment was made in winter of 1898-99. Eleven steers tied made an average gain of 288 in five months, while nine steers loose made an average gain of 311 in four months. As the writer left the College before the Report for 1899 was compiled, this second experiment was not published. Ordinary box stalls were used for the loose feeding, 14x15 feet, three steers in each, which was more space than necessary.

For feeding and watering cattle I would refer to "Successful Farming," pages 194-196 and 197. The cattle stand in rows three feet apart, without stalls, tail to tail. All animals are better loose, except when eating and drinking. By using the stanchions illustrated on page 196, all can be opened or closed by one operation at feeding time. Each animal puts its head in one of the openings. When all commence feeding, the stanchions are closed for about one and a half hours until all are through, when the rod is drawn and the animals are again allowed their freedom. The feed troughs and water basins are in the front passage, as illustrated; the passage is raised 12 inches to form back of trough. Temporary partitions may be put across so that there will not be more than eight or ten animals in each compartment when loose, and those should be as near equal in size as possible. The gutters behind the cattle (when tied) should be two feet wide and fifteen inches deep; the passage between the gutters should be eleven feet wide, so that a waggon or cart can be backed in and loaded out of the gutters; the floor should slope to the gutters. Very little bedding is necessary, if the droppings are thrown into the gutters say twice each day when the cattle are feeding; the gutters should be cleaned out as soon as filled.

Toronto, May 9, 1900.

WM. RENNIE, SR.

Barley Meal as a Pig Food.

As a food for pigs, more especially where the aim is, as it always should be, the production of the very best quality of bacon, barley meal has no superior, and many of our most successful pig breeders doubt



JOY BELL, 16 HANDS.

First prize at Canadian Horse Show as combination Saddle and Harness Horse.

OWNED BY LLEWELLYN MEREDITH, LONDON, ONT.

if it has any equal. One of the great points in its favor is that it may be given with safety to pigs of the most tender age. Scalded with warm water, and then worked into a sloppy mash with skim milk, it forms one of the best of all foods for pigs just after being weaned. It "goes" very well with potatoes, and is very largely used in this way in different parts of Ireland where hundreds of pigs are reared every year upon a mixture consisting of barley meal, maize meal, and cooked potatoes, all worked into a common mash. Where the production of bacon of the highest quality is being aimed at, the allowance of potatoes and Indian meal should not be overdone on account of the tendency both have to produce over-fat bacon. Bacon obtained from pigs largely fed on Indian meal possess comparatively poor keeping qualities.

Utility and Beauty Combined.

BY VALANCEY E. FULLER.

So much has appeared from able pens on the true "type" of the Jersey cow in the ADVOCATE, I think Jersey breeders will be interested in the facts herein set out.

In communications addressed to the American stock papers some time ago I contended that beauty and utility could be combined in one and the same cow; that while ability at the pail and churn must be the first consideration, the trend of the public market showed an increasing demand for both in combination. By "beauty" I do not mean merely a beautiful head, eye and pair of horns, and slim, delicate legs; but rather the true type of the dairy cow—long, straight of back, with good loins, long and straight from hip bone to setting-on of tail, wedge-shaped body, with flat, open ribs; a deep, large paunch; large and capacious udder, with a



GENERAL, 16 HANDS HIGH, 5 YEARS OLD.
First prize at Canadian Horse Show in class for cavalry purposes, bred and owned in Canada.
OWNED BY CHAS. HEAD, GUELPH, ONT.

full front; good-sized and well-placed teats, accompanied by evidence of good lung power and constitution.

The question that has often arisen in my mind is, have we, as breeders, in our effort to add to the size and constitution of our American and Canadian bred Jerseys, departed too far from the Island type, and if so, has such departure resulted in benefit to the breed as producers at the pail and churn, as compared with the Island-bred of to-day?

It is only in comparatively recent years that the Islanders have been encouraging public butter tests at their fairs. Their great fair is held in May each year, under the auspices of the Royal Jersey Agricultural and Horticultural Society. I have before me the reports of the butter tests for the years of 1897 and 1898 (I have not seen that for 1899), and quote the records made by the cows entered in these two competitions. The yield of milk and butter is for 24 hours. The cows were milked out 12 hours before the test; the cream was separated by a "separator," the night of the test, and was churned early next morning.

At the show held at St. Helier's, Jersey, May 13th, 1897, there were 38 competitors, 11 of whom made from 2 pounds of butter up to 3 lbs. 2½ ozs. in 24 hours, the quantities given being: 3 lbs. 2½ ozs.; 2 lbs. 5½ ozs.; 2 lbs. 4½ ozs.; 2 lbs. 3½ ozs.; 2 lbs. 2½ ozs.; 2 lbs. 1½ ozs.; 2 lbs. 1 oz.; and three giving exactly 2 lbs. The quantity of milk given in 24 hours was as follows, by those milking the highest: First, 50 lbs. 8 ozs.; 2nd, 46 lbs. 2 ozs.; 3rd, 43 lbs. 12 ozs.; 4th, 43 lbs. 6 ozs.; 5th, 42 lbs. 14 ozs.; 6th, 42 lbs. 4 ozs.; 7th, 40 lbs. 12 ozs.; 8th, 40 lbs. 6 ozs.; 9th, 40 lbs. Three medals were awarded, and thirteen certificates of merit. Of the 16 prize-takers and certificate-winners, the average per cow was: Milk, 37 lbs. 14 ozs.; butter, 2 lbs. 11 ozs. Of the 38 cows competing, the average per head was: Milk, 33 lbs. 15½ ozs.; butter, 1 lb. 12 ozs.

In the May, 1898, show 42 competed. Eight gave over 40 lbs. of milk in 24 hours, as follows: First, 55 lbs. 14 ozs.; 2nd, 46 lbs. 6 ozs.; 3rd, 44 lbs. 14 ozs.; 4th and 5th, a tie, 43 lbs. 8 ozs.; 6th, 43 lbs. 6 ozs.; 7th, 41 lbs. 12 ozs.; 8th, 40 lbs. 8 ozs. Twelve cows out of the 42 competing made from 2 lbs. of butter in 24 hours up to 2 lbs. 10½ ozs.; 2nd highest, 2 lbs. 8½ ozs.; 3rd, 2 lbs. 6½ ozs.; 4th, 2 lbs. 6½ ozs.; 5th, 2 lbs. 5 ozs.; 6th, 2 lbs. 4½ ozs.; 7th, 2 lbs. 4½ ozs.; 8th, 2 lbs. 3½ ozs.; 9th, 2 lbs. 3½ ozs.; 10th, 2 lbs. 2 ozs. The average for these 24 head in 24 hours was: Milk, 35 lbs. 10½ ozs.; butter, 2 lbs. The average for the whole 42 was: Milk, 33 lbs. 4½ ozs.; butter, 1 lb. 12½ ozs.

Those familiar with the records of American and Canadian Jerseys at the public fairs will know that the above tests are most creditable. In making comparisons, however, it must be borne in mind that the Island being so small, the show is available to all, and the cows have but a short way to go to attend it, and grass is at its flush at that time. On the other hand, most people familiar with testing will say that the cows being milked on Wednesday, the cream separated that night, and the churning beginning at a quarter to seven the following morning, the cream did not have sufficient time to ripen, and consequently did not produce so great a quantity as if it had been ripened.

I am aware that one swallow does not make a summer, but these public records are the only means we have of forming any correct opinion, and they show that the Island-bred Jerseys possess ability at the pail and churn of no mean order, and if, as is

generally conceded, they possess "beauty" as I have defined it, the Island breeders have gone a long way towards solving the problem of combining beauty and utility.

It will, I hope, be of some interest to your readers to learn something of the records made by the English Jerseys in these public tests. I will take as examples one held in the spring of the year and another later in the season. With the exception of the "Tring" 1899 report, the latest available to me are those of 1897.

The "Royal Counties Show" was held at Reading, June 7th, 1897. At this show there was no division into classes by live weight. There were 13 Jerseys competing.

The highest yields are: Milk, 56 lbs. 12 ozs.; 52 lbs. 8 ozs.; 51 lbs. 4 ozs.; 47 lbs. 12 ozs., and as low as 19 lbs. 12 ozs. The highest butter records were: 2 lbs. 12½ ozs.; 2 lbs. 12½ ozs.; 3 lbs. 6½ ozs.; 2 lbs. 3½ ozs.; 2 lbs. 3 ozs., and as low as 1 lb. 3 ozs. The average for the eight Jersey prize or certificate winners was: Milk, 45 lbs. 11½ ozs.; butter, 2 lbs. 3½ ozs. The average of the whole thirteen Jerseys was: Milk, 39 lbs. 5½ ozs.; butter, 1 lb. 14½ ozs.

Through the courtesy of a friend, who has kindly loaned me his report, I am enabled to quote the "Tring" butter tests and milking trials held August 10th, 1899, at Tring. At this show more cows are entered in the contest than at any other fair or show in the world. It is open to all breeds and to grades (in England, called "cross-bred"). No fewer than 72 cows competed, consisting of 45 Jerseys, 19 Shorthorns, 7 "Cross-bred," and 1 "Dutch." The competition was divided into two classes: 1, cows exceeding 900 lbs. live weight; 2, cows not exceeding 900 lbs. live weight. I have examined the records of a great many public tests or trials, but I never saw one in which the cows in class 1, as a whole, gave such an enormous flow of milk, the average of the whole 40 cows entered therein being in excess of 46 lbs. per head. The milkings of the Shorthorns were the highest, one giving 62 lbs. 5 ozs., and two others over 60 lbs. The highest milkings of the Jerseys in class 1 (of which there were fourteen entered) were as follows: 51 lbs. 11 ozs.; 47 lbs. 15 ozs.; 45 lbs. 6 ozs.; 43 lbs. 2 ozs.; 42 lbs. 14 ozs. Notwithstanding the variance in milk between the Shorthorns and the Jerseys, when the butter-making quality of the milk is reached, the ever-superiority of the Jersey milk demonstrates itself, as the Jerseys captured all four prizes or medals awarded in the butter tests. In the milk tests the Shorthorns took three prizes and the "Cross-breds" one.

The greatest quantity of butter made by the Jerseys was: 3 lbs. 6½ ozs.; 2 lbs. 15½ ozs.; 2 lbs. 5½ ozs.; 2 lbs. 4 ozs.; 2 lbs. 2 ozs.; 2 lbs. 2 ozs.; 2 lbs. 1½ ozs., and 2 lbs. 1½ ozs.

In other words, out of 14 Jerseys competing, eight made more than two pounds a day each, and an average of 2 lbs. 6½ ozs. each; the total average of the 14 Jerseys was 1 lb. 15 ozs.

At the same show, in class 2 (cows of less than 900 lbs. live weight), all of the 32 competing were Jerseys, with the exception of 1 "Cross-bred." There were eight Jerseys which gave 40 lbs. or more in 24 hours, in the following order:

Fifty-four pounds 8 ozs.; 48 lbs. 13 ozs.; 45 lbs. 12 ozs.; 43 lbs. 15 ozs.; 43 lbs. 8 ozs.; 41 lbs. 6 ozs.; 41 lbs. 3 ozs., and 41 lbs. 1 oz. Eleven made two pounds of butter or more in 24 hours, as follows: 3 lbs. 4½ ozs.; 2 lbs. 6½ ozs.; 2 lbs. 5½ ozs.; 2 lbs. 4½ ozs.; 2 lbs. 3½ ozs.; 3 lbs. 2 ozs.; 2 lbs. 2 ozs.; 2 lbs. 1 oz.; 2 lbs. 1 oz.; 2 lbs. 1 oz.

Without actually analyzing the figures, what strikes me from examining the various records between the cows of 900 lbs. or over and those under 900 lbs. is that the cows in the first class give as a rule a larger flow of milk than those in class 2; but, as is usually the case, the milk of the cows giving the smaller quantity of milk is richer in butter than the milk of the cows of the heavier class. Another deduction that cannot fail to be drawn by a careful examination of these figures is that the cows show great capacity at the pail and churn. If it be true that the English breeders have kept, as a rule, to the Island type, usually through the constant introduction of Island-bred bulls, these public tests tend to demonstrate that in England, as on the Island, the Island type can be combined with great ability at the pail and churn.

It is impossible to quote the public tests made in this country, as the fairs are so far apart, and there has been no especial effort made on the part of our breeders to enter their cows in public tests, which I think is to be regretted. The Jersey cow is par excellence the butter cow, and consequently the cheese cow. She has of late years become a very deep milker. If we, as breeders, demonstrate her unquestionable ability at the pail and churn by public records (as we have done by private ones), we will give a great impetus to the Jersey interest. As evidence of this fact, we have only to point to the greatly increased demand for Jerseys that followed the World's Fair dairy tests. We cannot conceal the fact that a majority of the dairy farmers who have never handled Jerseys, and who consequently are unaware of their great capacity at the pail and churn, are sceptical of our private tests. Breeders must look to the dairy farmers to absorb their surplus stock. We have the material wherewith to gain the confidence of the dairy farmers, so much desired. I know of no means that will so much tend to that end as public tests. We can force such unbelief into absolute confidence. "The doubt-such unbelief," once convinced against his will, becomes an enthusiast and does missionary work among his former brother-sceptics. The interest of breeders demands that efforts be made to enter our best cows in dairy tests, provided the rules governing such tests are fair to the Jerseys.

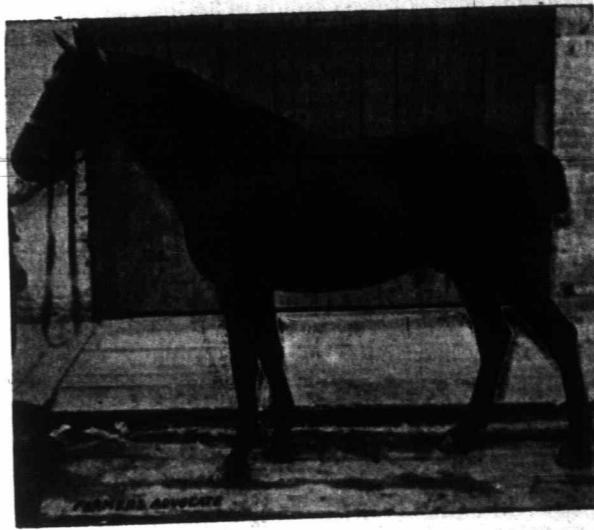
Type of Animal to Breed To.

To the Editor FARMER'S ADVOCATE:

SIR,—If the majority of the farmers in this country, when breeding their cows, would ask themselves the question, What can I expect from this mating? I think there would be fewer scrub bulls used and less indiscriminate breeding done. It is really surprising in this enlightened age to notice how some farmers will pass by a thoroughbred bull of the correct type, held at a service fee of \$1 cash, to go to a scrub bull held at 50 cents any time you like. It seems almost impossible to get them wakened up to the great mistake they are making in patronizing such bulls. If they were not patronized, they would not be kept. A great deal has been written about getting the Legislature to remedy this evil. No doubt a tax on scrub sires would prove a good act, but it is not necessary to do that; the farmers have themselves to blame, and have the remedy in their own hands. It is not alone necessary to breed to a thoroughbred animal, but it is also necessary that it be of the same type as that you wish to breed, or as nearly that as possible. In this section of the country a number of years ago the farmers bred principally to Holstein bulls, then Jerseys became all the rage, and now they want Shorthorns. What can be expected from such a mixture as that—neither dairy nor beef cattle—simply cattle, and poor ones at that! In horses it is just the same. I knew of one instance last spring where a Clydesdale stallion and a Standard-bred trotter were kept in the same stable and handled by the same groom. A farmer came in one day with a good stamp of a Clydesdale mare, and rather surprised the groom by saying he wished to breed to the trotter. The groom advised him to breed to the Clydesdale, but it was no use, he wanted a driver for his boy, and this was his idea how to get one. If so many farmers will persist in this way of breeding, there will always be a large number of unsalable horses in the country. I think I am within the mark when I say that even with the good prices that good horses are bringing at present, there are not more than 25 per cent. of salable horses to be found, and the unsalable class have cost as much to raise as those that sell at good prices. There is no excuse for breeding to a poor sire. A cheap service fee is poor economy.
Wentworth Co., Ont. FARMER.

Draft Stallions on the Road.

The prospects are that good stallions will have a heavy season and should therefore have the very best attention. A good horse on the road requires to be well and carefully fed, and should never be disturbed in any way when at meals. If there is grooming to be done, let it be done with an empty manger, as disturbed mastication frequently ends in internal maladies. The application of the brush to the coat should be done in a soothing and, as far as possible, non-irritating manner, and the feather should be combed out freely night and morning, the feet at the same time being attended to. On the road the greatest care should be taken not to heat the horse, the walk being from two miles to four



HERO, 15½ HANDS, 5 YEARS.
First prize at Canadian Horse Show in class for horses suitable for mounted infantry, owned and bred in Canada.
OWNED BY CHAS. HEAD, GUELPH, ONT.

and a half, according to the temperature of the weather. If cycle-frequented tracks can be avoided, so much the better, as the plunging from fright or scare is likely at one time or other to lead to accidents. In regard to the number of mares to be served per day, a judicious groom may be allowed to use his discretion, though with notorious non-stock-getters the rule is "all and everything that comes." Sometimes the same policy is pursued with 3-year-olds which the owner means to sell, the result being most likely the spoiling of a good stock horse for the remainder of his career. In cold, wet seasons the greatest care must be taken of the horse, a chill when in high condition often causing inflammation of the intestines and death. All through, indeed, the stallion on the road is a cause of continual anxiety and care.

FOUNDED 1896

is entirely safe days old to clip clean off with the We have not not vouch for it, American stock is led to con-scale, as it is so safe, the lamb for having some

Loose.

in May 1st issue, "feeding," I would e in "Successful steers dehorned five months than the same feed." ents made at the in the winter of pages 188 and 189), e gain of 2014 in made an average cond experiment eleven steers tied ve months, while gain of 311 in four ollege before the cond experiment stalls were used ree steers in each, ary.

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M. RENNIE, SR.

g Food.

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ND.

combination Saddle

LONDON, ONT.

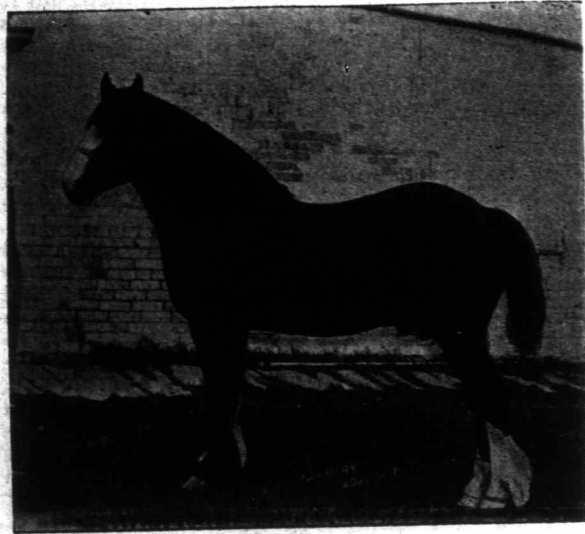
great points in its safety to pigs of with warm water, mash with skim of all foods for "goes" very well used in this way hundreds of pigs ture consisting of sked potatoes, all Where the produc- ty is being aimed ndian meal should the tendency both Bacon obtained meal possess com-

Dairy or Beef---Which?

Mr. J. W. Scott, in the *Mower County* (Minn.) *Transcript*, brings out some very interesting facts and experiments to show the wonderful superiority of the dairy cow over the bullock in the power to produce available human food from a given amount of feed.

No living machine on earth is equal to the cow in this respect. Then follows the effort of the breeder to increase the wonderful power. Mr. Scott says:

It is a fact worthy of mention that the dairy cow excels in the power to eat food and convert it into that which is suitable for man's sustenance. Take, for instance, the Ayrshire cow, Duchess of Smithfield, H. R. No. 4256, weight 1,128 lbs.; has yielded in one year 10,748 lbs. of milk, which is nine times her own weight in food product. Again, Lady Fox, Ayrshire, H. R. No. 9069, weight 900 lbs., yielded in one year 12,290 lbs. of milk, containing 535 lbs. of butter-fat. The milk contained 13.5 per



CLYDESDALE STALLION, PRINCE OF KINELLAR
(2475).
Winner of second prize as a 3-year-old at the Canadian Horse Show in 1899, where he was owned and exhibited by John Davidson, Ashburn, Ont. (See Gossip, page 308.)

cent. total solids, making 1,600 lbs. solids for the year, or 4.55 lbs. per day. A steer would have to gain 10.21 lbs. live weight per day to produce 4.55 lbs. bone-free dressed meat; but the 4.55 of milk solids is also water-free, and is about 98 per cent. digestible, while the bone-free meat contains about 56 per cent. water, and is only 75 per cent. digestible; so, upon a basis of bone-free and water-free product, a steer would have to gain 21.41 lbs. live weight to equal the daily food product from this cow.

Further, take our own State Experiment Station reports of the Holstein-Friesian called Bess: a yield of 10,067 lbs. of milk in one year, containing 12.75 per cent. total solids, making an annual yield of water-free milk solids of 1,236 lbs., being an average product of milk solids of 3.3 lbs. per day. A steer would have to gain 8.07 lbs. live weight to produce 3.3 lbs. bone-free and water-free meat.

Again, from the same Station reports, we note the Guernsey cow, Sweet Briar, whose annual yield of milk was 6,364.6 lbs., containing 14.70 per cent. solids, making an annual yield of 935.6 lbs. of milk solids, or an average of 2.56 lbs. per day. A steer would have to gain 5.44 lbs. live weight to produce 2.56 lbs. bone-free and water-free dressed meat.

If these figures are not satisfactory, then let us take another comparison. Prof. Henry, in his work, "Feeds and Feeding," says a beef animal should make 3 lbs. of beef on the same food on which a cow makes 1 lb. of butter. Now I will not refer to any particular cow, for I have certified records of several of different breeds that yielded 74 lbs. of milk in one day, containing 4.8 per cent. of fat, or 3.55 lbs. of butter-fat, equal to 4.25 lbs. of butter. So a beef animal should make 12.75 lbs. or over 18 lbs. live weight per day to equal said production.

Now, in contrast with these few illustrations, let us refer to a few Experiment Station reports as to the daily gain in steers:

| 1ST. ONTARIO AGRICULTURAL COLLEGE. | |
|---|-------|
| Average weight of steers fed on roots and barley. | 1,061 |
| Daily gain. | 2.14 |
| 2ND. SAME STATION. | |
| Average weight of steers fed on roots and corn. | 1,106 |
| Daily gain. | 2.31 |
| 3RD. KANSAS EXPERIMENT STATION. | |
| Average weight of steers fed on balanced ration. | 1,083 |
| Daily gain. | 2.4 |
| 4TH. SAME STATION. | |
| Average weight of steers fed on corn and stover. | 1,211 |
| Daily gain. | 1.7 |
| 5TH. TEXAS EXPERIMENT STATION. | |
| Average weight of steers fed on corn and cotton seed. | 576 |
| Daily gain. | 1.9 |

Further, we may see what may be accomplished by early maturity, by taking the results obtained by Mr. W. A. Harris, of Linwood, Kansas. Mr. Harris fed pure-bred and grade Shorthorn calves, coming in December, January and February, until the following December, at which time they averaged 11 months old. These calves received

most of their dam's milk until 6 or 7 months old. He calculates that they consumed:

| | |
|----------------------------|----------|
| 20 bushels ear corn, worth | \$ 5.00 |
| 1,000 lbs. bran, worth | 6.00 |
| 300 lbs. oil meal, worth | 3.00 |
| Total cost of grain | \$ 14.00 |

Add to this what pasture they could eat and hay at \$4, also the milk from the dam, during the 6 to 7 months. These calves weighed from 910 to 920 lbs. each at 11 months, and sold for from \$3.80 to \$5 per cwt. When the short time for the capital invested is considered, it would seem a satisfactory return.

No Room for Poor Cows.

There is just one good use for poor dairy cows—their hides make elegant blacksmiths' aprons. The country has a surfeit of them, many of which are in good homes and ought to have their "pictures turned toward the wall." Poor cows are not altogether a question of breed, but like plugged coins are likely to turn up in any denomination. Then, like bad money again, they are either "passed" on to the next fellow or kept at home because they appear to represent something. They are counterfeits, nuisances, gold-bricks—anything that represents a swindle. They have no claim to sympathy—nor feed.

Cut out the poor kind and pay more attention to good cows, good feed and correct methods. The cow you want is one that will return good, honest products in paying quantities without the aid of artificials. She is the cow there is always room for—a money-maker. She may not be just the "type" you want, but if she pays her board and "lays by" a little, she has "type" enough to justify her stall allowance and daily ration. Look out for the good cow and corral every one you can. If she makes gilt-edge dairy goods in paying quantities you can afford the room for her, no matter what breed. Even if she don't happen to be of the breed you like best, and you are after money in the dairy, the good cow will do to keep—until she fails you. But there is no room in the dairy for poor cows—whether they are poor in quantity or quality.—*Jersey Bulletin*.

U. S. Live Stock Outlook.

And why, pray, should not the stockmen of the United States be for the new order of things? Less than ten years ago your range horses were selling at from \$5 to \$25 on the market. To-day they bring from \$20 to \$50, while your high-class saddle and coach horses are selling at their highest figure, even to \$1,000 each. Less than ten years ago your cattle down here in Texas were sold at \$8 for a cow, with calf thrown in; while to-day the cow is worth from \$15 up, and the calf at least \$10 more.

Less than a decade has passed since wool went "wool gathering" at 8 cents per pound on the range, while next year's crop is now being contracted by the big buyers at 20 cents on the ranch; while your sheep, which wandered aimlessly over the cactus plains, and sage brush flats, could find no buyer at \$1.50 and \$2, whereas now anything with wool on its back is being searched for with great diligence at from \$2.50 to \$4 each.

Yes, and not to overlook the American hog: Years ago he squealed for takers at \$2.75 per cwt., while now \$4.75 and \$5 is paid without the squeal being thrown in at all.

Is it any wonder, my friends, when you look the facts squarely in the face, that the live stock industry of the United States is to be found harnessed to the chariot of progress?—*John G. Springer, President of the National Live Stock Association, at the Ft. Worth meeting.*

How to Feed Pigs.

Owing to the fact that both horses and pigs have only single compartments in their stomachs, and that these organs are of very small size in comparison with the immense four-chambered stomachs possessed by cattle and sheep, the motto of the pig breeder, as well as of the horse owner, should be to "feed often and feed in small quantities." Horses should be fed at least three times a day, and pigs just as often.

One of the reasons why pigs kept by our small farmers thrive so well and keep in such excellent condition, from the time they are bought as weanlings till they are sold as baconers, is because they are continually running about the cottages and picking up bits and scraps of food at almost all hours of the day. Such treatment is much more conducive to their good health and satisfactory progress than that under which they are given large feeds at a time, but given these feeds only at long intervals. And as with pigs, so with horses.

Many fatal cases of colic and other ailments among horses are directly due to giving the animals large feeds of corn after long fasts. Owing to the great hunger from which animals are suffering, they are tempted to overload their stomachs with the food given them, and the inevitable result is that the digestive organs become over-burdened and unable to perform their proper functions.—*Farmers' Gazette*.

Buying Breeding Stock.

THE CHEAPEST NOT ALWAYS THE BEST.

There seems to be such a general misunderstanding in regard to the values of pure-bred live stock, says a writer in *The Farmer and Stockbreeder*, that I would like a few lines in regard to the matter. I shall speak chiefly of pure-bred cattle, but the statements are generally applicable to all classes of pure-bred stock.

A fair sample of a great many letters received by persons in the pure-bred cattle business is something like this: "Please send me the very lowest price which you will take for one bull and three heifers, all one year old." Now that is a very difficult inquiry to answer. This inquiry means to the breeder, "What will you take for the four poorest and meanest yearlings you have in your herd?" but he very well knows that is not what the prospective buyer wants to know. The inquirer has plainly shown that he is not posted in the pure-blood stock business, and the seller must begin a course of education. It may seem strange, but it is nevertheless true, that a great many persons do not seem to know that all pure-bred animals of the same breed and same age are not of the same value. They seem to think that when they have written to different breeders and obtained prices for animals of the same age, then they have nothing to do but pick the cheapest and go into business. They then wait for a success that never comes. There is no one thing that is doing the live stock interest so much harm as the man who is breeding cheap pure-bred stock. The farmers of this country must learn that the name "pure blood" does not always imply good stock. They must learn that there is such a thing as a pure-blood scrub, and that he is worse than the old-fashioned scrub.

Pedigree.—We have passed the day when a pedigree means anything, unless it be backed up by individual merit and an ancestry of like merit. A pedigree is of very little value, except that it shows the animal to be descended from illustrious ancestors—illustrious because of the superior individual merit of each one. It adds very little value to an animal to know that one of his ancestors six or seven generations back was a great prizewinner if none of that ancestor's descendants have proved to be prizewinners. When you find a pedigree all the names on which were illustrious individuals, and the animal himself is also a superior individual, then the word pedigree means something, and you need not fear paying a good round price for him. It is that sort of a pedigree that makes breeders pay a good many dollars for the animal to which it belongs. It is just such a cause as this that makes such a great difference in the prices of pure-bred animals of the same age.

The inexperienced buyer desiring to make his first purchase really derives very little information from the answers to his inquiries for prices which



SHIRE MARES, VIOLETT AND MAUD.

Violet, 3 years old, won 2nd in class for Shire mares any age. The pair won 2nd in class for draft pair, any breed, shown in harness.

OWNED AND EXHIBITED AT CANADIAN HORSE SHOW BY JOHN GARDHOUSE, HIGHFIELD, ONT.

he gets from different breeders. He is simply surprised to find out that one breeder asks him from \$75 to \$100 for a yearling heifer, while another one asks him from \$125 to \$150 for a heifer of the same age. The breeder who asks him the lower price probably does the most bragging.

My advice to the buyer would be to go to see both the breeders, spending time enough at each place to learn something, and find out why one asks twice as much money as the other. The chances are ten to one that the breeder asking the higher prices has the animals that are nearest worth what he asks for them. The buyer must judge as to that, but he is generally safe in the hands of a breeder of national reputation.

A very good place to get an education in prices is

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at a good sale, or at one of our national or county shows. Here the beginner has an excellent chance for comparison, and can learn what a really good animal is and what it is worth. If many of our young men would spend a little more time in the cattle, sheep and swine departments of our shows, and a little less at the race track, they might learn how to purchase breeding stock a little more intelligently, and when they sell their stock might the better understand why the butcher only gives them about half as much per pound as he gives their neighbor who is up with the times.

Maryland Pig Feeding Tests.

Among the conclusions derived from a number of experiments carried out at the Maryland Experiment Station, the following are of interest:

- 1. It was found that with some rations the gains on pigs could be produced as low as 2 1/2 cents per pound.
- 2. In all the tests where properly-compounded rations were used pork was produced at a profit when the pigs were not allowed to become too old.
- 3. The cost of producing a pound of pork increases with the age of a pig.
- 4. The aim should be to produce from 150 to 200 lb. pigs at six to seven months old for the greatest profit.
- 5. Skim milk was found to have a feeding value for pigs equal to fully double the price charged at most of the creameries of the State.
- 6. Separator skim milk at 1/4 cent per gallon, and linseed and gluten meals at \$15 per ton, have about the same value for balancing rations for pig feed.
- 7. Gluten meal was found to be more economical for balancing rations for pigs than linseed meal.
- 8. Sweet potato strings, cow pea pasture, when properly used, produced pork economically.

Horses for the War.

During the first four months of this year the British War Office have shipped to South Africa as remounts, in addition to horses and mules sent with troops, 27,041 horses and 17,143 mules. Between the 1st and 25th of May they expected to embark another 7,500 horses and 4,500 mules, and they had 7,300 horses and 2,000 mules on order, for which no date of embarkation had yet been fixed; so that the total of remounts bought since the beginning of the year was about 42,000 horses and about 23,000 mules.

FARM.

How to Interest Boys in Farm Work.

BY F. C. SEARS, NOVA SCOTIA SCHOOL OF HORTICULTURE.

I would suggest that in all the fruit-growing districts the farmers should allow their sons to each choose one tree in the orchard, the fruit from which they shall be allowed to have for their very own, to dispose of as they see fit and spend the proceeds as they like. And let the boys choose the trees for themselves, don't give them some old seedling tree which seldom bears fruit, and then such as is only fit for cider, and poor cider at that. Allow the boys to take full charge of this tree and perform all the operations necessary, pruning, spraying and cultivating it, and you will find that you can give them a stronger liking for orcharding than by any other method you can adopt. I am so firmly convinced that this is a fact that I want to do what little I can to help test it; therefore, if any Nova Scotia boy who secures a tree in this manner wishes further information as to the best treatment of it in any way, and will write to me, I will endeavor to give him the desired information or to secure it for him. And those farmers who do not live within any of our fruit districts I would urge to go and do as near "likewise" as they can. Give the boys something for their own and encourage them to do the best they can to make it a profitable venture.

I am inclined to fear that there has been in the past too much of that form of encouragement which consists in giving the boy a pig which becomes his father's hog. Let every father make an attempt this year to give his sons more encouragement, both financial and otherwise, and I believe that the result can but be for the best interests of this fair Province of ours, the finest bit of country that the sun shines on to-day.

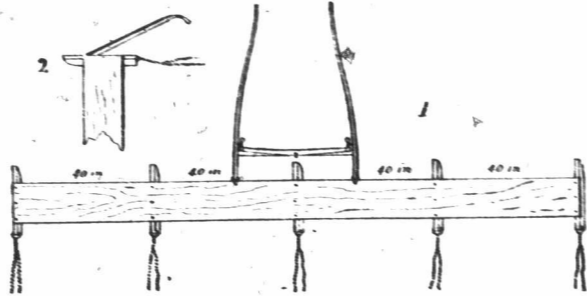
Dangers in Pasturing Sorghum.

In our issue of April 16th, 1900, a favorable reference was made to the value of sorghum in an article under the heading "Various Forage Crops for Summer Pasture." Our directions were based upon experiments conducted at the Nebraska Experiment Station, where extensive investigations with forage crops have been conducted. Another side of the question now comes to light and points out that in pasturing sorghum great care must be taken to avoid loss of stock. Last year a few herds in that State lost heavily, but the immediate cause of the trouble has not yet been ascertained. Many symptoms of the afflicted cattle tend to sustain the opinion that the sorghum plant in some stages of growth contains some virulent poison. Careful analyses have failed to discover the presence of toxic substances. The fact remains, however, that there is an element of danger in using sorghum for pasture, and that considerable care should be taken in feeding it. With this, as with all very succulent fodders, cattle should never be turned on to it even for a short time while they are hungry.

Corn Markers.

To the Editor FARMER'S ADVOCATE:

Some years ago I sent you a drawing of a marker that any man can make in a half hour, at a cost of about 25 cents, and it has been in use for six years. The following is a rough sketch, and the description follows:



A CHEAP CORN MARKER.

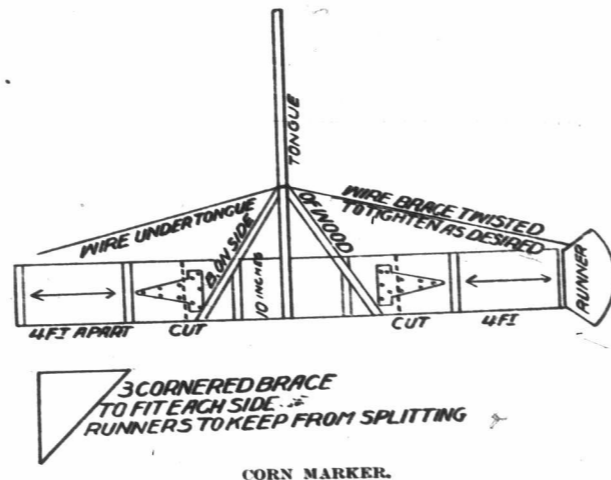
Take an inch board 8 inches wide, as long as required for 3 feet between marks, 12 or 15 feet long; 2x4 scantling, 18 in. long, rounded like a sleigh runner in front, and nailed on the under side of the board, rear end 2 in. projection from board. Buggy shafts fastened with wire through two holes for each shaft. Cow chains fastened at the end of each marker. This is a necessity, as frequently owing to furrows and any unevenness the markers fail to mark. Fasten an old plow handle at each end to guide the machine. With a boy to lead the horse, run the end marker in the last mark made. Should the horse not go exactly straight, speak to the boy, and in the meantime you can keep it straight with the handle. Arriving at the end, pick the machine up by hand and carry round to start again.

Ont. Co., Ont. Jos. E. GOULD.

Plan of Corn Marker.

To the Editor FARMER'S ADVOCATE:

SIR,—I see in the last issue of the ADVOCATE, a plan of corn marker is wanted. I will try to give plan of one we are using, and which we find works



CORN MARKER.

satisfactorily. The runners are 4 feet apart, and can be put at any distance desired. The rest, I think, will be understood by plan. Mt. Elgin Institute. WM. WILLSON, Foreman.

Turnip Growing.

For several years past, turnips have been a very uncertain crop in Canada and some parts of the United States, and even in Scotland, where they are hardly ever known to fail. The cause of failure in almost every case has been dry, hot weather for weeks after the seed was sown, the seed failing to come up. It seems born and bred in nearly every farmer to sow his turnips in ridges or drills. This may be all right in a moist climate like Scotland, where, until the last few years, they generally had more rain than they wanted, but in a country like Canada or some parts of the United States, where there is often six or eight weeks of a hot, dry spell, sowing on drills is no good. For the past seven years I had been trying to persuade an old Scotch farmer in Canada to sow his turnips on the flat, and never managed to get him to do it until last summer, although he only succeeded in getting two crops in the seven years, and last year was the driest of the seven, but by sowing them on the flat he had a good crop (about 500 bus. an acre). The seed was sown about the usual time (June 15th). It got no rain for about a month, and did not come up, then it got two thunder showers within a week of each other, when the plants came up well, and the crop held its own until the fall rains came and helped it out. This is the great secret of growing turnips—sow them on the flat. It may take a little longer time to thin them, but it saves time making drills. A man with a hand drill and marker can sow ten acres a day, and as straight as drills. In thinning, you can knock out the full breadth of the hoe, leaving little clumps, then select the best plant in each clump and pull the rest by hand. This leaves them about the right distance apart (12 inches), and always insures a good even crop. This little item of selecting the best plant amounts to a great deal in the final result. J. W. Grand Rapids, Mich.

Three-horse Tread Power Approved.

The farmer nowadays has a great choice of the kind of power with which to do his work. It has become a perplexing question for him to decide which is the one he should use, and we often find the farmer making a great mistake in his choice in this matter. I would like to offer a suggestion here which may help some to decide. I know that some are situated differently from others, and the same power would not suit everyone. When a farmer is purchasing a power, he wants to consider well what he has to do with it, and get a power that will do all his work; also, to look ahead a little and make sure that the power he is purchasing is going to do all his work for a number of years, remembering that if he is a progressive farmer he is going to have more work to do with his power this year than he had last year, and so on. Steam power would be very suitable for the dairy farmer, as he must have plenty of scalding water, but is almost too expensive for the average farmer. Wind power is a very cheap power after first cost, and is very suitable for the farmer in some ways. I might say it is the power for pumping water if you have a tank large enough to hold two or three days' water, and the farmer can cut his straw and grind his grain with it nicely in the stormy days in winter, which is a strong point in its favor, but it has one serious drawback, and that is, no farmer would depend on the wind to cut his corn to fill the silo. You may say, "But I have not got a silo." Well, I would say get one as quickly as you can; you cannot afford to be without one if you keep stock. A great many farmers are talking up the gasoline engine nowadays, and I have no doubt it will fill the bill. One great advantage it has is that it can be started at a minute's notice, and the minute it is stopped there is no more waste of power, but the first cost is high, and it costs you cash every minute it runs. Now, there is a power that is more suitable for the majority of farmers than any of those I have mentioned. And that is the three-horse tread power. I know that a great many farmers detest the name tread power, and I believe the reason of this is that so many farmers have purchased two-horse tread powers because they were a little cheaper. Now, I would say right here, that though the three-horse tread is an excellent power for the farmer, the two-horse tread is only a nuisance to try to cut feed with or crush grain. There is not power enough to give the men work, unless you set it so steep that you nearly kill the horses, and this is why so many are turned against them. You can just do double the work with three horses on a tread that you can with two. All one horse can do is to keep the power and straw cutter moving without doing any work; the second horse does the work when there are two, and the third horse doubles the work when there are three. It will give as steady work as any one wants for two men to cut straw—one man to feed and another to put the straw to him—but it must be on the floor beside the cutting box or he can't keep it going. If there were another horse on one man could not begin to feed straw in one of the largest cutting boxes and keep down the speed. Three horses give all the power needed to run a cutting box, and you can crush grain at a good paying rate, either with roller or plate grinder, and you don't need to elevate your power very steep either. We set ours 2 1/2 inches to the foot, and that is not nearly so steep as you will find some of the two-horse powers set. Now, I want to point out some of the many advantages it has over the sweep power, also some of the advantages it has over some of the other powers, and also a pointer or two on the make of a power you should purchase:

- 1st. It can be set on the barn floor, not taking up very much room, and therefore can be run in any kind of weather.
- 2nd. It can be started on the shortest notice, just the time required to take your horses out of the stable with their halters on and tie them to the power in the barn. They will walk right on without any hesitation.
- 3rd. There is no power easier on your machinery than a tread power; there can be no jerk. Speed rises gradually, and there is no flying off of belts.
- 4th. You need no driver, the man that attends to the work that is being done feeds to regulate the speed. One man is all that is required in crushing grain.
- 5th. Almost all the expense in running it is the oil. I consider it is only needful exercise for the majority of farmers' horses in the winter. I believe our horses are the better rather than the worse of it, and they are on it part of two days every week, or perhaps more, in the winter. If we are grinding, we rest them once in a while; if cutting straw we have to rest them every half hour to get straw up beside cutting box.
- 6th. I am sure there is not a more durable power on the market to-day; as it is easy on machinery, it is easy on itself. It is impossible for the horses to jerk. It is a good power to run a cream separator.

In purchasing one of these powers, make sure you get good length; you can't get one too long. Some horses will work all right on the shortest of them, but occasionally you will find a lengthy animal that will not work on it; perhaps it may be the best horse you have for the tread power. Ours is 11 1/2 feet extreme measurement across logs. Get one with good speed, one that will run your machinery at proper speed when your horses are walking at a moderate pace. Also get one with brake independent of drive wheel, so you can run your belt fore or aft, up or down, as you will find this a very im-

portant point. Also have a governor attachment. The most of the governors that are made now are good. I believe that 6-inch wheels under the logs will run easier than 3 inch. THOS. MALCOLM.
Bruce Co., Ont.

Delighted With Windmill.

To the Editor FARMER'S ADVOCATE:

I sometimes hear farmers asking if windmill power is a good power for a farmer. I will give my experience. A year ago last fall I had a geared windmill put up for me, a 12-foot wheel, with a mast grinder, which I think is the handiest for a farmer; at least, I would not change for a floor grinder. I can grind and pulp at the same time. I do not know how much more power it has. I have been delighted with it from the first day I used it. I have a large hopper which holds 15 or 20 bushels at one time, which I find very handy, as I can fill it up and do some chores round the barn while the windmill runs itself. It is very important that farmers should post themselves before buying, as they get taken in sometimes. I have never written to a paper before, but as I am writing to the FARMER'S ADVOCATE, I feel that I am writing to an old friend; the longer I read it the better I like it.
Russell Co., Ont. JOHN McDONALD.

Windmill Bearings.

To the Editor FARMER'S ADVOCATE:

I was much pleased with the letter from Mr. W. J. Anderson on windmills. I have been studying up the question of farm power, and I think it would be a good idea if you could get more letters like Mr. Anderson's. Some agents try to represent to the farmers that graphite bearings are a grand thing; that these boxings won't heat if they are allowed to run without oil. Others tell us that graphite bearings are no benefit, and that there is nothing better than the babbitt boxing. If you could publish the testimony of some unprejudiced expert it would be a great benefit to the farmers who have no means of ascertaining whether the ball or roller bearings, the graphite or common babbitt is the best for ordinary farm purposes. I believe that several of the best windmill firms have discarded the ball and roller bearings. If you could publish the testimony of some experienced expert on the subject, you would confer a boon on the farmers.
Middlesex Co., Ont. DAVID LAWRENCE.

A Wise Provision.

CORN AND MILLET FOR FORAGE.

A recent visit to the Asylum farm, near London, Ont., reminded us of a few precautions taken last year by the farm manager, Mr. Murdock, to meet the contingency of a possible drouth and consequent scarcity of pasture during late summer and early fall months. Early in May two and a half acres of corn were sown with the grain drill, every spout running. The ground was harrowed and rolled, and about July 1st the crop was commenced to be fed out to the fifty head of cattle, chiefly cows, in order to supplement the failing pastures. The 2½ acres lasted till August 15th, keeping up the flesh and the milk in a remarkable degree. The corn was very succulent, but being so, it combined well with the dry grass of the pasture fields.

About June 20th Mr. Murdock had nine acres of clover sod plowed and sown with Hungarian grass and millet in equal parts, about half a bushel per acre. The seed was slow in germinating, but when once up it came on rapidly, and before the first of August it was ready to pasture. At that time the grass fields were parched and brown, while the field of green millet seemed like an oasis in the desert. Fifteen working horses were turned in during nights and Sundays from that time till cold fall weather forced them to be housed. They suffered no ill effects in any way, but did remarkably well, gaining in flesh while working hard, on a medium grain ration, and the saving of hay was very considerable. After the horses were taken from the field in the autumn the cows gathered a lot of feed, as the crop kept on growing up afresh as it was eaten off. The wisdom of such a precaution must commend itself to every farmer, but more especially to those who were compelled to draw on their winter fodder before the summer of 1899 had ended. Even though the extra feed is not needed, it need not be lost, as it is always well to allow the pasture fields to meet the winter with a good covering of grass for the benefit of the land and the early pasture of the following spring; or if thought better the corn and millet could be cured for winter fodder, to take the place of hay or straw as the case might be.

Kicking Cow Remedy.

SUBSCRIBER, Huron Co.:—"We have a valuable cow which has the habit of retaining part of her milk. We would like to know if there is a remedy for it? As no one gave the remedy for a kicking cow that we use, I will give it: Take a rope about 3 feet, or long enough to put around the off leg and then twist it four or five times and then tie it securely around the near leg. A cow will soon get used to it, so that you can milk her outdoors with this rope on."

The Construction of a Concrete Wall.

First lay a platform of lumber on the ground, about 12 feet square, beside the pile of gravel. The gravel should be clean and sharp, in size from wheat grains to goose eggs. Don't use sand, as it takes more cement and makes no stronger wall. Get a small box that will hold more than a sack of cement—that is, 80 lbs.—empty a sack of cement into the box, then take five shovels of gravel to one of cement; use the square-mouth, short-handle shovel, as it cleans the platform better than other shovels; put the gravel and cement, one to five, as described, in a pile on the platform, then turn it over, start at the one side, then turn it back again. Be sure to turn the whole pile every time, then make a hole in the center large enough to hold, say, two pails of water, then turn your shovels with the back away from you, shove the gravel and cement mixture into the water, not breaking the edges to let the water run out. After piling it up in the center as before, then turn it over once more, this time using the sprinkling can if it is not wet enough. When the concrete is wet enough, you will know by taking a handful and squeezing it in the center of the hand as you would a snowball. If it stays as you press it, it is ready for the wall; if it falls down in the hand, it is too dry; if the water runs out, it is too wet. If you get your concrete right, you will have the first part of your trade learnt. Then we will suppose you have got the foundation dug out; if not, you will dig it twenty inches wide and about twenty inches deep, four inches inside and four inches outside of your building lines. Fill this up with concrete and stone, build in all the stone you can, as long as you keep them in from both edges about two inches; after filling up this trench in this way, set up scantling any size, as long as they are long enough to go to the top of your wall, one on the inside and one on the outside. In a twelve-inch wall they would have to be eighteen inches apart, so as to allow two two-inch plank and two inch wedges; inch wedges to knock out to let plank back from wall when raising plank to build next round of concrete. If you have twelve-foot planks, put uprights six feet apart. To make the corner, take two planks and nail them together edge to side to make a square, stand this up on the outside corner, and nail braces to keep them to their places. Nail all braces to the inside of your building; they are out of the road of getting the concrete to the building. Some use bolts instead of the uprights; but for a new beginner I would advise the uprights and wedges. Then start to fill in between those planks with the concrete. Remember to ram it well; you cannot ram it too much; put in about two inches of concrete, and then lay in a row of stones in the center, remembering to have two inches from the stone to the plank. Always go around the wall in this way, and don't forget to ram well. I have been working for the Estate of John Battle, of Thorold, Ont., for some years, and will endeavor to show the total cost of work and material of some of the buildings that I have built. Take a barn 44x76, wall 10 feet high, with a 12x30 root-house at back; it took 81 bbls. of cement and \$48 to build it. This gravel was the very best. It was Lake Huron gravel, and hardened like iron. Another barn, 44x60, wall 10 feet high, the gravel very fine, not stone enough; it took 80 bbls. cement and \$40 to build it, so you will see that it is not an expensive wall for the farmer. A cubic yard of gravel will build 27 cubic feet of wall; one barrel of cement will build 30 cubic feet of wall, and one man can build 40 cubic feet of wall in a day, so you can figure up your own wall how much it will cost you, and you will bear me out that a cement concrete wall is the cheapest that you can build. The older they are, the stronger; not like other material such as lime mortar to build with, as age does not strengthen them.
Huron Co., Ont. A. E. HODGERT.

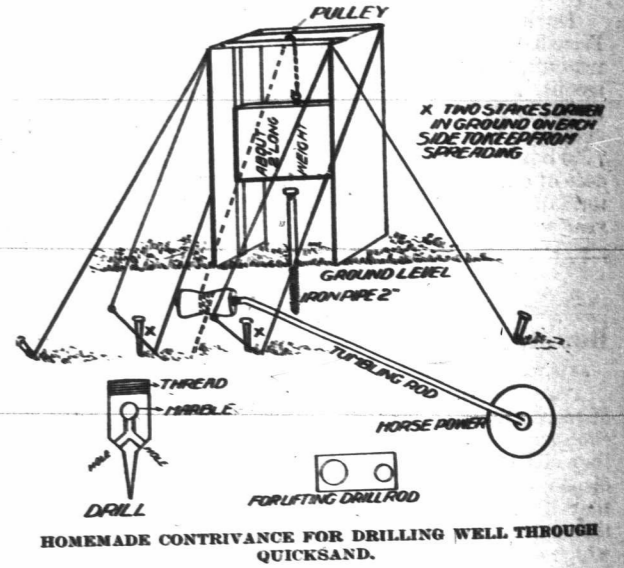
Turnip Fly Preventive.

The Irish Farmer's Gazette has the following reference to a pest which, in some seasons, causes no little damage in Canada: "The turnip fly annually causes a loss of thousands of pounds to the farmers of the United Kingdom. For its size, the fly—or as it should be more correctly called, the beetle—is one of the most destructive insects known to agriculture, and the rapidity with which it is capable of decimating a field of turnips has earned for it an unenviable notoriety among farmers in all parts of the kingdom. Various remedies have, from time to time, been recommended as a preventive of or as a cure for attacks of this insect. Few of these have been found of much practical use; but we are now assured by a correspondent, who has put the matter to a very exhaustive test during the past few years, that soaking the seeds in turpentine before sowing is a most reliable preventive. Our correspondent has experimented in various ways with this remedy, and has invariably found it to give most satisfactory results. The treatment is simplicity itself, as it merely consists of immersing the seed in turpentine for four or five hours shortly before sowing. This is not, of course, a new remedy, but as we are not always writing for the same circle of readers we have thought it well to mention it at this season, as there may be many among our younger friends who have not already heard of it. The correspondent to whom we have referred has found from repeated experiments that the best results are obtained when the seed has been steeped for about five hours."

Plan for Sinking Water Pipes Through Quicksand.

To the Editor FARMER'S ADVOCATE:

SIR,—In answer to J. C., Dundas, Ont., I would suggest piping, as I have two on my farm, both about 100 ft. deep, one flowing 3,500 gals. per day, the other 150 gals. per day. I will try and give details and sketch of how it was done, as plainly as possible: 1st, take two pieces of plank, 2 in. thick, 8 in. wide, about 18 or 20 ft. long, with a 2x2 in. strip nailed on the center of each plank to act as a guide strip for the weight to run up and down; and, 2nd, two pieces of plank, 2 in. thick, 8 in. wide, and a little longer than the others, to be bolted to the top of former pieces, same as shown in sketch. These pieces are to receive the drum at bottom. The two uprights are braced across the top, as shown in sketch. The distance between the uprights depends on the size of the drop-weight, which is a round or square block of hardwood with two pieces of wood driven into it on each side to guide it up and down the guide strips, with a loop driven into the top of it to hook the rope on for lifting it. The drum is the same, a round block of wood with two pieces of iron driven into each end for it to revolve on. The drum is revolved by horse power, or any other power handy. The drum has a slight hollow, as shown on sketch. The center dotted line shows the rope in place; the outside lines are only stay-ropes. If you notice, the two upright pieces are not fastened together at bottom, so as you can spread them to remove the weight. The first length or two of 2-in. iron pipe is driven in the ground, with a socket or connector on the end that enters the ground; on the other end, where the weight strikes it, screw on a cap, drive the pipe down into the ground by one man taking a couple of turns of



HOME MADE CONTRIVANCE FOR DRILLING WELL THROUGH QUICKSAND.

the rope round the drum, tighten, and taking slack rope as weight rises, then give slack on drum quickly and let weight drop on top of pipe. A man guides it into the ground, and until there is only about two feet above ground. If it goes easily, screw on another length, drive it down, then take off cap and remove weight; pour some water into pipe, put in drill-rod, which is 1-in. pipe connected together, as required with the top left open, screw on the drill to the bottom; lift drill-rod the same as weight, hoisting it up and letting it drop at short distances, increasing the drop as it makes its way down; also, keep turning round so as to drill perpendicularly; draw it up once in a while and unscrew drill off end, letting the mud run out. If the 2-in. pipe drives hard, drill down ahead of it, and then drive it down. You must not lift drop weight too high at first till you get used to it; also, drill-rod. The piece of iron which lifts the drill-rod is about 1-in. thick, with one hole a little larger than the socket or connector on the drill-rod, the other large enough to receive the hook on the end of rope. When the plate is lifted on the end, the two sides of the large hole binds on the drill-rod and lifts it up; also, when the rope is slackened it allows the drill-rod to drop through it. Of course, the deeper you go down the drill-rod has to be lengthened by screwing the pipes together, and unscrewed as removed. The drill is like a socket on one end, with a chisel on the other, with one hole bored on each side of it, with a third bored from top to meet the other two. Set a marble over the hole. It has to be large enough so that it can't pass the bar—a small piece of iron 1/2 in. or 3/16 in. thick, driven across the top of marble to keep it from going up into the pipe. Don't place it so close that it won't let the mud and gravel pass. The object of this well is to carry you past the quicksand to the gravel bed or to a vein of water. If ill-luck should so happen that you should want to draw your pipe, you can do so by placing two jack screws, one on each side of the pipe, with something heavy fastened round the pipe and projecting over on each side to receive the screws; then jack-up the same as you would a building, shifting it down as the pipe is drawn out of the ground. Two-inch pipe driven down into blue clay to the depth of over 100 ft. has been raised to the surface as good as new.
York Co., Ont. JAS. H. H.

Sinking a Well in Quicksand.

To the Editor FARMER'S ADVOCATE:

In the effort to get water in quicksand we tried the plan described in May 1st number of the ADVOCATE, but found that we could not get through the sand, and therefore did not get good water, and the planks only last a short time. In the fall of 1898 the Mathers Pump Co., formerly of Picton, came along with a machine to bore in any soil where the stone did not interfere. They used tile (made from cement and gravel) 18 inches inside. They bore inside the tile and the tile settle down of their own weight. They bored two wells for us, went through the quicksand and came to water gravel, and we have as good water as there is in this section. They charged us \$1.50 per foot for boring, and they furnished the tile; it shuts out all quicksand and surface water, and makes a first-class well. In the fall of 1899 we wished to have water in our barn, and as we could not bore there we thought we would try what they call a driven well. We went to Brockville to the James Smart Manufacturing Co., told them what we wanted, and they told us that they could furnish us with a pump that would work all right. We ordered one, and when it arrived we drove our well in one day twenty-one feet from floor, and we have first-class water and plenty of it. I consider it the best well of the three and far the cheapest, as it costs nothing for the well, only just the pump.

H. J. WHITTEKER & SONS.

Dundas Co., Ont.

Well in Quicksand.

To the Editor FARMER'S ADVOCATE:

In reply to a request of your subscriber for information as to digging a well in quicksand, I would inform him how we dug one three years ago. We first dug as far as the ground was firm, which, in this case, was about six feet. Then we made a circle, four feet across inside, of two thicknesses of inch boards, about the width of one brick. Place the circle of wood in the well, and build the wall of brick and cement, taking care to smooth the outside as well as the inside of the wall. After the wall is built level with the surface, let it set for a day; then dig out the bottom, and as the sand works from under the wall it will settle gradually, when build on top to keep it level with the ground. If the work is done true and carefully, there is no danger. There is four feet of water in our well, and the windmill has never been able to pump it dry. We placed a large galvanized basin under the pump to keep the sand from entering the bottom of the pump.

J. H.

Kentville, N. S.

Whole vs. Cut Potatoes as Sets.

Should potatoes be planted whole or cut into sets? There is some difference of opinion on the subject among practical farmers, and experiments which have been carried out in different parts of the kingdom at various times do not seem to afford any definite evidence as to the possession by either system of any great advantage over the other. It is commonly believed that in the case of early potatoes better results are obtained when the tubers are planted whole, but in the case of the later varieties where no special importance is attached to rapid growth in the beginning of the season, it is found to make but little difference whether the tubers are planted whole or as cut sets.

This has been the experience during the past few years at Holmes Chapel, where Mr. J. S. Gordon, B. Sc., has been carrying on experiments with the object of testing whether whole potatoes or cutsets give the best results. Mr. Gordon's experiments comprised five different varieties of potatoes. The tubers selected were of moderately large size, and they were cut into two or three sets, two eyes being left in the rose-end of each seed. The sets were cut from 8 to 10 days before planting, and the cut surfaces were dusted over with air-slaked lime in order to allow a crust to form and to prevent the sap from exuding. The sets were then put into separate boxes and planted in the usual course. In the case of the whole sets the potatoes planted were passed through a 1 1/2-inch riddle and the large ones thus removed.

The various lots were grown under exactly the same conditions, and it is found that in three cases out of five the cut sets produced the heaviest yields of salable potatoes, while the whole sets gave the best results in two instances, both as regards total quantity and the percentage of salable tubers. When the average of the five varieties were taken into account, however, the experiment showed that the whole sets yielded 13 tons 3 cwt. per acre, and the cut sets 12 tons 15 cwt. of salable potatoes. In addition to this, the cut sets yielded 26 cwt. of small potatoes, and the whole sets 24 cwt.

In a summary of the results, Mr. Gordon writes: "In planting cut and whole sets there appears to be very little difference in the yield. In comparing the average returns of 16 trials during the last four years with eight varieties, they show that whole sets give slightly the best results, with a gain of 9 cwt. of salable potatoes per acre, and that cut sets gave 1 cwt. per acre more 'chats' than whole sets; but it was observed that the size of salable potatoes was larger from the cut sets. The total yield was in favor of whole sets by 9 cwt. per acre."—English Exchange.

JAS. H. H.

Drainage Warms Land.

There are what are called cold lands and warm lands. The difference in the rapidity with which land warms up is of value to the farmer according to the crop he intends to place on it. The porosity of soil determines to a great extent the facility with which it will take in heat in the springtime. The land that is heavy and has no drain under it, either artificial or natural, will hold the water till most of it evaporates under the heat of the sun. This process of evaporation does not improve the soil till the process is completed. The act of making vapor incorporates a great deal of heat with the water to change it into vapor, just as certainly as it requires heat in the teakettle to change into vapor. In the latter case the act is apparent, and in the first case it is not visible, but it is nevertheless the same. No particle of water in the soil can be changed into vapor without heat being furnished for the operation. This heat is drawn mostly from the ground, partly from the sun. This renders the ground not warmer, but colder, till the water has evaporated. Could that surface water be drawn off from below the loss of heat by evaporation would be avoided. In that case the land gets all the heat that the sun sends it. Moreover, the warm spring rains then sink into the ground, carrying with them the heat they have obtained from the atmosphere warmed by the sun. The difference between land that is so porous that the water sinks into it and runs off from below and land where the water has to evaporate by the action of the air is sometimes as much as 10°. Land that is porous thus becomes warm enough for plants to grow in it weeks before heavy, soggy land.

Good Roads Reform.

We find that the question of good roads is agitating the minds of farmers in other countries as well as of those in our own. In a special Farmers' Institute issue of the Iowa Homestead are published letters from no less than seventy-two men residing in Iowa, Wisconsin, Kansas, Nebraska, and other Western States, dealing with the subject, "How can better roads be made without an undue increase of taxation?" With scarcely an exception, every writer proclaims against the old system of pathmasters and statute labor. There are very many suggestions offered upon the subject, but it is the one general opinion that such a system is antiquated, inefficient, and expensive. The general demand is to raise the road-improvement revenue by taxation instead of labor, and have the work planned and supervised by qualified men skilled in roadmaking. The following are letters and extracts which will indicate the general ideas of the wide-awake Westerner on this subject. Mr. Alex. A. Arnold, Galesville, Wis., says:

"The main reason why we do not have better roads is because of the slipshod methods of working out the highway taxes, and the system of working the roads. The first thing to be done is to pay the highway tax in money, as all other taxes are paid. The present system (if, indeed, it can be called a system) is a relic of the dark ages. Get the money to work the road, and then expend it as the railroad companies expend their money, and then we shall begin to see some improvement. I don't expect to live to see all roads good roads, but I am of the opinion that in all well-settled districts, with the present amount levied and paid in cash, most of the main roads can be stoned or gravelled within the next twenty years, and not a dollar more money be collected than is now levied and fooled away. Men are learning road building, and we will go at it with more intelligence; then we shall get more for the money, and especially so with the modern machinery for road grading and rock crushing. We don't want more taxes, but we want better roads, and we are going to have them."

Mr. S. S. McKibben, Earlham, Iowa, puts it thus: "In the first place, the road boss knows very little about grading roads or moving dirt, and what little work is done is put in the wrong place. My way to improve it would be to pay all road tax in money, and then have a road boss elected by the voters of each township to put in his full time on the road. I do not believe we shall ever have good roads until we have some such system. I know some will object and say we are paying too much already, which is probably true in one sense, but one only needs to take a trip of fifty miles across the country to be convinced that our present road law is considerably out of time. While the above plan would not increase the taxes, I am sure it would be the means of giving us better roads."

J. J. Casady, Cantril, Iowa, writes: "We should use good judgment by adopting the best system for making good roads; a system by which we can do the most work with the least expense. We should use machinery with which we could do the most work in the shortest time, and see that we elect or appoint a competent road overseer, one that understands how to build good roads."

The key to the road and the road-machinery problem is the cash system, paying road tax in cash instead of working it out, and using a part of this fund for the purchase of road tools, instead of levying an extra tax for this purpose. The plan is not a new system. It has been adopted in several townships, counties, and States. The township of Jackson, in Van Buren County, where I reside, was among the first to adopt the cash system. I don't think that our people could ever be induced to go back to the old system. We know that we have spent enough money in road taxes during the past

thirty years to have macadamized our entire roads, and until we began to pay our road tax in cash and use machinery, there had been little or no improvement in the highways. It is admitted by all that we have had more work done since we adopted the cash system than we ever had done before. Experience has shown that more can be accomplished with one dollar of tax paid in cash than two dollars or even three dollars of tax worked out on the highway. You can do more with three teams and one grader in a day than with three teams and plow and scrapers in a week. The road grader leaves a smooth regular surface, giving the road the proper contour. A road can be put into excellent shape by running the grader repeatedly over it. The growth of the use of the road grader has been wonderful during the past two years, and indicates that the farmer has discovered a practical solution of the problem how to build good roads."

Careless Threshers Break Grain.

To the Editor FARMER'S ADVOCATE:

SIR.—As you take a deep interest in the welfare of the farmers of Canada, would you call attention to the needless waste that is caused by careless threshers—breaking the grain in the process of threshing, fall wheat suffering the most? Some threshers will destroy as much as 20 bushels in a 100, others will scarcely break any at all. There must be a cause for this, as, if I remember rightly, in the old days of the horse power the wheat used to be threshed without grinding it. It may be thought that I have estimated the loss altogether too large. But when you consider that the broken grain has lost much of the flour that was in it, which is blown away, together with the bran, and that all that is left is two or more small pieces, I think you will allow that I have not placed the loss too high. Even if it is only five per cent., it is too much to lose, and there is often that much cleaned out by the fanning mill, and there is no mill that I have seen that will take it all out. Then the farmer in sowing for the next year's crop has to allow for the broken grain, as none of it will grow. It is altogether a dead loss, and there is no necessity for the loss either.

E. B.

Halton Co., Ont.

Preparing Potato Seed.

Many farmers who cut their potato seed take advantage of evenings and rainy days several days before planting, to thus prepare the seed, thinking that the cut surface is better to have dried somewhat before the sets are planted. For three years experiments were conducted at the Guelph Agricultural College to ascertain the merits or demerits of such a practice, and it was repeatedly proven that the seed planted as soon as cut gave greater yields than seed that had been cut four or five days previous. In order to have this question more thoroughly investigated, it was placed on the list of the Experimental Union in 1898 as a part of a large experiment, and in 1899 it was made a separate experiment among others made by the Union, when it was selected by a great many experimenters throughout the Province. The conclusions arrived at are that seed potatoes which were planted immediately after they were cut produced a larger average crop by at least 12 bushels per acre than seed potatoes which were cut and allowed to remain 4, 5 or 6 days before they were planted, in the average of the experiments conducted on 218 Ontario farms in 1899. We would suggest that if it appears necessary to cut potatoes some time before planting, that the cut surface be coated with gypsum or land plaster, which will serve to partially heal up the fresh, moist surface of the tuber, which, we take it, is the action of the soil when the planting is done.

A Durable Fence.

BEAUTIFY THE HOME.

Farmers, have you got your fencing all done? It takes a good deal of your time and money to keep your fences in repair, does it not? Could not much of this labor and expense be saved by a little forethought?

I would suggest that even before fences exhibit signs of old age or get shaky, go and dig up some hardy-looking young spruces or other evergreens growing in the woods and plant them alongside your fence. Tell your boys you are going to plant trees, and you will see how eager they will be to help you. They will be delighted. And what a durable fence you will have after a few years. Those deeply-rooted, living posts will never rot, but will grow in beauty and last a very long time. If every farmer would raise his fences in this manner, it would add much to the beauty of the country. When the trees grow up, what a delightful shade they will make for animals, shielding them from the scorching sun in summer and the cold winds in the fall of the year. Start your fence at once, farmers, there is no time like the present. Just another suggestion:

Try to beautify your home and surroundings and make them look attractive. Plant some ornamental trees near the house, lilac, balm of Gilead, mountain ash, maple, horse-chestnut, dogberry or wild cherry. It will pay you. Your children love beautiful things, and if they do not find them at home they will likely seek them elsewhere.

MRS. ANNIE RODD.

Waverly House, Queen's West, P. E. Island.

The Peace River.

To the Editor FARMER'S ADVOCATE:

About latitude 56° north and in longitude 124° west, there is the meeting of two rivers which join their forces here between the ranges of mountains, which run in a north-westerly and south-easterly direction, giving a strictly opposite direction from each other of the rivers mentioned. Although their junction is not more than perhaps 300 miles from the coast in a direct line, yet these streams drain a very large area, and even before their meeting are respectable-sized rivers. These are the Finlay, coming from the N.-W., and the Parsnip, from the S.-W., whose principal tributary flows from Summit Lake, which is only seven miles from the Fraser River, and not far from the Pacific Coast. Its altitude is 2,300 feet. At the junction of these rivers, to form what is known as the Peace River, they are at an elevation of 2,000 feet.

From here, through the main chain of the Rocky Mountains, the course is eastward, where it flows mostly in a tranquil current, with few rapids, along a beautiful valley about two miles wide, flanked by mountains from two to three thousand feet above the river, and whose highest peaks attain an altitude of about 6,000 feet above sea level. The river along this course is from 600 to 1,000 feet in width.

Where it leaves the mountains and is compressed through the canyon, it is in places not over 200 feet in width, and has a descent of 270 feet in 25 miles, making a water power sufficient to turn the world if it could be utilized; or even perhaps run the Manitoba political machine at a low speed.

From saying farewell to the mountains, it flows on to form what is popularly known as the Peace River Valley. Here the river is about 1,500 feet above sea level, and the high and beautiful table lands upon both sides of the river are from 800 to 1,000 feet above the river. These are drained by numerous small rivers from 100 feet to 400 feet in width, which flow in beautiful valleys from 300 to 500 feet below the general level, and deepening as they near the main stream. The Pine River is the largest of these. It comes in on the south bank, and passes through the mountains at an elevation of only 2,850 feet, and was formerly highly recommended for the main line of the C. P. R.

The trend of the river is eastward until after it receives the waters of the Smoky River, another stream from the south, whose waters rise in higher mountains, much further south, and whose tributaries interlace with those of the Athabasca River. The Smoky is a stream swift in its course and difficult to navigate, and is about 900 feet wide near its mouth. Among the peculiarities of this river are the subterranean fires, which give rise to its name, and though it is the most southern tributary of the Peace River, yet its summer freshets take place at a later date in the season than that of the other rivers. This is caused by its feeders being in a higher altitude, and therefore not so quickly affected by the summer's heat.

From this locality, which is known as Peace River Crossing—i.e., where the trail from Lesser Slave Lake to Dunnegan crosses the river—it turns to a northerly course for about 250 miles, to near Vermilion, thence easterly again for about 300 miles, until it receives in its embrace the waters of the Athabasca River, in the stream generally known as Slave River. This stream is the outlet of Athabasca Lake, flowing northward; about 30 miles north of the lake the Peace comes in. When the water is low in the latter river, they flow on oceanward in partnership; but when the waters of the mighty Peace are in the exuberance of summer vigor, there is but one river, and that, taking upon itself the task of filling up the great basin of Athabasca Lake, flows northward through two channels, the Slave River just mentioned, and one about six miles further up the stream, called the Quatre Fourche. Probably about one-third its volume of water is thus deflected southward, and performs what is generally considered the impossible feat of water flowing up hill. The balance of its waters proceed northwards, unbroken for about 75 miles, to the Smith Rapids. The river during this part of its course is not unlike the St. Lawrence along its course through the Thousand Isles.

This much we have said about the river, yet it is not the river in itself in which the principal interest lies, although from that standpoint alone it is one to which all Canada may unite with pride. A mighty stream, which even up among the mountains contains hundreds of miles of water stretches suitable for light-draft vessels, and then as it leaves the mountains gives about 600 miles of first-class navigation for ordinary river boats, until broken by what are called the Vermilion Rapids and Falls, which are about a mile and a half apart, and where the waters descend about 25 feet in about two miles. I cannot particularize much in an article of this kind; suffice it to say that the river flows on from here to the Smith Rapids, a distance of about 300 miles. These rapids necessitate a portage of 18 miles, and

are the only other obstruction existing ere the mouth of the McKenzie is reached, a distance of more than 2,500 miles from Summit Lake, and which, including all its rapids and falls, descends less than 1 foot per mile on an average during its entire course. Along the main part of the Peace River the current is from two to four miles per hour, according to the height of water, and the stream varies from a half mile to a mile in width.

E. J. LAWRENCE, Peace River.

DAIRY.

Seasonable Notes on Cheesemaking.

BY J. A. RUDDICK, DAIRY COMMISSIONER OF NEW ZEALAND. HEATING OR "COOKING" TEMPERATURES.

There is a tendency for the curd from rich milk to retain too much moisture, resulting in a weak, pasty cheese. This excessive moisture may be removed by extra hand-stirring when the whey is run off, but such treatment causes an unnecessary loss of fat and curd particles (white whey). A better way is to raise the "cooking" temperature gradually as the percentage of fat increases in the milk.



HOME OF E. J. LAWRENCE, PEACE RIVER DISTRICT. River 1 mile wide here.

When it reaches 4 per cent. on the average, heat to 100 degrees, and from that up to 102 in extreme cases. Some judgment must be exercised in making such changes, and if other means have been employed to get the curd firm these will have to be relaxed somewhat if higher heating is resorted to, or else the thing will be overdone.

SALT AND SALTING.

Endeavor to procure only pure and clean-flavored salt. It is very frequently tainted with objectionable odors, such as tar paper, bone dust, salt fish, etc. It should be even in the grain, and rather coarser for cheesemaking than for buttermaking. Having secured a good article, protect it by keeping in a dry place, free from all odors and danger of contamination.

More salt should be used as the milk becomes richer in fat, because the yield of cheese increases in proportion. The quantity of salt may be varied slightly from day to day, or on different curds, according to the moisture which they contain. Dry curds require less salt than those with more moisture, because there is less drainage to carry it off. Salt which is very fine in the grain will dissolve so



PEACE RIVER VIEW. Wheat and potatoes on farm of E. J. Lawrence, 700 miles north of Edmonton.

quickly that more of it runs away before being absorbed by the curd than is the case with coarse salt. Certain brands of salt dissolve more slowly than others, even when the grain is the same. This is particularly true of some of the ground rock-salts.

EXCESSIVE LOSS OF FAT IN PRESSING.

When the curd shows a tendency to lose too much fat during the process of maturing and pressing, and when the fat appears in the open spaces and fractures of the cured cheese, it is an indication of an abnormal condition of the milk that produces a curd with a weak structure which is unable to retain the fat properly.

This difficulty may usually be overcome if the following suggestions are observed: 1. Have the curd fairly firm before running off the whey. 2. Do not pile it after matting, and thus avoid the pressure consequent upon having several pieces placed one on top of another. 3. Mill the curd at least one hour before salting, but do not stir it afterwards any more than is necessary to prevent it from matting. 4. Keep the temperature a little lower at all stages after running off the whey. A curd which is put to press at 80 degrees will make a closer cheese than if it had been kept warmer, everything else being

equal, and the lowering of the temperature tends to harden the fat and solidify the curd, and in that way prevents loss.

Curd which is kept in a single layer will not become as "flaky" as it does when it is piled, but the proper "mellowness" and change as shown by the hot-iron test will come on just the same. This flakiness is more or less of a mechanical condition, due to the pressure and tendency to spread when the curd is piled in heaps, but it is often mistaken for a sign of maturity. The hot-iron test is far more reliable. Another point to be remembered is that curd will not mature so quickly at a low temperature as it will at a higher one.

WEAK, OPEN-BODIED CHEESE.

There are a good many cheeses having weak body and very open texture. These are defects entirely due to faulty methods of manufacture, and the responsibility for such must be shouldered by the cheesemaker. The body of the cheese is determined very largely by the condition of the curd at the time the whey is removed. If the curd at this stage is soft and tender the chances are the cheese will be short and tender in body. If acidity is allowed to develop to any extent while the curd is in a soft condition, a more or less sour cheese will be the result. It is not the amount of acid in the curd at the time the whey is run off which determines whether a cheese will be sour or not, but rather the condition of the curd as regards firmness when the acid develops. The curd must be firm and slightly elastic, so that when a handful is pressed together it falls apart readily afterwards.

Two causes contribute to openness in the cheese. In the first place, it is a common error to hurry the process by salting and putting to press too soon—that is to say, before the curd has become sufficiently mellow to mould together readily under the pressure. A sweet cheese is always open, because it resists the pressure and "huffs," or swells, after removal from the press. Secondly, the pressure applied in many cases is not high enough to do the work properly. It requires a man's strength with a lever at least 3½ feet to 4 feet long. The levers on many presses are not over 2 feet long, and, moreover, it is doubtful if some of these presses would stand any greater strain.

Possibly the reason why this state of things exists is because the first gang-presses were brought here from the United States, where, as a rule, they give their cheese comparatively little pressure, owing to the fact that a large proportion of the output is intended for local consumption—a trade which seems to prefer an open cheese. British buyers object to open cheese, because they have come to associate "openness" with a tendency to early deterioration.

The Farmer's Cow.

Of the three chief dairy breeds competing for the patronage of milk producers in America—the Holstein-Friesian, Channel-Islands and Ayrshire cattle—that breed must eventually prevail which proves itself best adapted to the wants of the great plain people—which proves itself a business breed for business men.

Wealthy men, who make their money in the city and are in no way dependent upon their country property for an income, can afford to take up a breed of cattle as a fad, just as they can afford to stock their parks with deer; but the common farmer and dairyman, who is not in the business for his health, but for his livelihood, in order to succeed, must have that breed which will return him the largest net profit for his labor, investment and feed consumed.

In its efforts to aid the thinking farmer in the selection of breeding stock for the improvement of his herd, the Holstein-Friesian Association is ever at the front. Its official tests are not made by the foremen of wealthy owners, or by the owners themselves, but by the officers of the various State Experiment Stations, and so vouched for. Nor is the cow credited with an indefinite amount of water, salt and casein as butter; but every milking is tested for butter-fat with the Babcock test, and the cow credited for butter on the basis of the amount of butter-fat she has produced. The buyer does not have to take the seller's word, the State vouches for everything. In the light of hundreds of these official tests, the results attained having completely buried the only really official tests of Jerseys known in America—those of the World's Fair—the Holstein-Friesian has proved itself the greatest of butter breeds, while its supremacy in milk production has never been denied.

It was formerly asserted by those interested in rival breeds that, while the Holstein-Friesians might give very large quantities of milk, yet the milk was thin; but this criticism was largely the result of ignorance, for average Holstein-Friesian milk will compare favorably as to butter-fat with that of the average cattle of the country; while as to quantity there can be no comparison at all.

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With the lowering of prices for milk and its products, the vealing of surplus calves becomes of more importance, and there is no veal that will compare with Holstein-Friesian or its grades. The calves are large to begin with, grow rapidly, and fatten readily; so that at four to five weeks old they dress from 100 to 120 lbs. As to beef, no sane man would claim that dairy cattle make the best; but if a Holstein-Friesian cow or heifer meet with misfortune, and lose the use of part of her udder, she does not have to be buried, or to be almost given away as a "canner," for the local butcher is always glad to get her at a fair price, and she makes excellent beef.

Strong of constitution, and not dainty as to feed, for milk, butter, cheese, veal, and dairy beef, the Holstein-Friesian cow stands without a rival in the estimation of business farmers and dairymen.

MALCOLM H. GARDNER,
 Sec'y Darien (Wis.) Creamery Co.

Milk Standards.

At a recent meeting of the Eastern Counties Dairy Association, Chelmsford, Eng., Mr. Primrose McConnell, delivered an address on the subject of milk standards mainly as it relates to the milk supply of cities and towns. He pointed out that the standard adopted by the Society of Public Analysts was 3 per cent. fat and 8 1/2 per cent. solids other than fat, or in all 11 1/2 per cent. solids. The Somerset House standard, which is the referee, is 2.75 per cent. fat and 8.50 per cent. solids other than fat, or in all 11.25 per cent. solids, slightly under the standard of the Public Analysts. Personally he favored a standard of 3 per cent. fat and 8.50 per cent. solids other than fat, or a total of 11.50 per cent., and said if they could not produce milk up to that standard, they had better go back to wheat-growing or something else. It was pointed out that the British expert in adulteration was making great use of separated milk and not of water, and with a fairly high standard the milk producer must let the milk go as he gets it from the cow.

The British Dairy Farmers' Association had conducted a series of tests at the October show, extending over a period of ten years, and he found that in that time they had tested 569 cows, including Jerseys and Guernseys. The average results were 4.27 per cent. fat and 9.07 per cent. solids other than fat, making a total of 13.34 per cent. solids. Leaving out the Jerseys and Guernseys, 314 cows had been tested, and the average results had been 3.95 per cent. butter-fat and 9 per cent. solids other than fat, or a total of 12.95 per cent. solids. Taking some of the cows giving the poorest individual returns, nineteen Dutch cows gave an average of 3.32 per cent. butter-fat and 8.88 per cent. solids other than fat, a total of 12.20 per cent. solids.

The proportion of cows with less than 3 per cent. butter-fat at these competitions was 20 per cent. of the whole, and there were actually 7 per cent. yielding less than 8 1/2 per cent. of solids other than fat. It was sometimes urged that the Dairy Show was not a right place to conduct such tests, that the crowds and the band were bound to have a disturbing influence on the cows. That cut both ways; the effect would be injurious in some cases, and in others the reverse, so that, on the whole, the results would not be materially altered under normal conditions. It had been said by Mr. Stokes, of the St. Pancras Vestry, that the milk from the Eastern counties yielded results exceptionally low in solids other than fat. Of a large number of samples taken, a large proportion were under 9 per cent., and 16 per cent. of the samples yielded less than 8 1/2 per cent. solids other than fat. This allegation led him to examine the results of all the cows shown from the Eastern counties at the Dairy Show. He found that eighteen Shorthorns had been shown in ten years, and that the average results of testing these were: Butter-fat, 3.52 per cent., and solids other than fat, 8.81 per cent., or a total of 12.33 per cent. This agreed with Mr. Stokes' statement. He had also looked into the results from his own cows over six years, and found that his average with mixed milk from sixty or seventy dairy cows of all sorts was 3.61 per cent. butter-fat and 8.78 per cent. solids other than fat, or a total of 12.39 per cent. Hence a standard of 11.50 per cent. total solids would not seem unduly high.

The number of cows that can be fed off of a given number of acres is limited by the productiveness of the land and the skill of the man in charge. The profitability of the food grown on a given number of acres depends on the kind of cows to which it is fed and how the food is mixed. It takes approximately as much to feed one cow as another—as much for a cow that makes one hundred pounds of butter in a year as one that makes four hundred pounds. To-day half of the cows in Canada are not making more than one hundred and twenty-five pounds of butter a year, which does not pay their board and keep. If they were replaced by good cows the butter product would be doubled without increasing the cost more than twenty-five per cent.

Milk cans should be cared for as soon as returned from the factory to the farm. They should be rinsed in warm water, then thoroughly cleaned and left in the sun to dry, inverting in such a manner as to permit circulation of air. If this is faithfully followed there will be no bad flavors resulting from accumulations of germ life in the seams and covers of the cans.

Butter--From the Stable to the Table.

BY MISS LAURA ROSE.
 ARTICLE V.

PASTEURIZING, RIPENING AND GENERAL CARE OF CREAM.

Pasteurizing is not necessary, nor an improvement, if good flavored butter can be made from the raw cream. But if flavors due to the presence of undesirable germ life, or to the cows getting turnips, weeds, etc., are present, pasteurizing will ensure a mild, good flavored butter, with increased keeping qualities.

Either the whole milk or the cream may be pasteurized, providing it be sweet.

In creameries the milk is often pasteurized, and flows immediately into the cream separator.

On the farm it is more practical to keep the cream sweet until sufficient is collected for a churning, then pasteurize it. Place the can holding the cream in a vessel of hot water. Do not have the water rise to over 180° F., or the cream will have a cooked flavor. Heat the cream to 160°, stirring constantly or very frequently. Remove from the fire and allow to stand twenty minutes. Then cool rapidly to ripening temperature, by placing the can in cold water and stirring. The heating drives off any flavors, and kills nearly all bacteria. It makes what is called a clean seed-bed, into which, if we wish the cream to ripen within a reasonable time, we must introduce a starter. The starter may be some sour skim milk or cream, or may be one scientifically prepared with a commercial culture.

A good starter may be obtained by filling a sterilized Gem jar with milk from a healthy fresh milch cow. Set the jar of milk in a warm, clean place to sour naturally. No matter how procured, every starter should have a clean smell, and a sharp, pleasant, acid taste, for remember, you will have in your butter the same flavor as you have in the starter you have added to your cream.

The amount of starter to use depends on the length of time the cream is to be held, the conditions of the weather, and the kind of cream. The amount may vary from five to fifteen per cent. When the cream is to be churned the next day, ten to fifteen per cent. of starter is not too much to use in winter.

If the cream has been pasteurized, when it has been cooled to 80° strain in the starter, stir thoroughly, cool to between 60° and 70°, then stir occasionally to insure even ripening. When it has a slightly acid taste, but has not started to thicken, further cool to 55° or lower, and hold at that temperature until churning time. Always keep the cream can covered.

The more usual way on the farm is to allow the raw cream to sour of its "own sweet will." When the conditions are favorable, splendid butter is often the result. Still, knowing just when necessary to pasteurize, and the judicious use of a starter, gives the buttermaker control over the flavor and ripening of the cream.

It is well to have two cream cans, as there is always a skimming which cannot be added to the can before churning time. No fresh cream should be added to the ripe cream for at least twelve hours before churning. Sweet and ripe cream when mixed together do not give nearly so exhaustive a churning, the buttermilk always showing a greater loss of butter-fat when tested.

The cream can should be well washed, scalded and aired each time used. If the cream is not to be pasteurized, to the first skimming may be added a pint or more of the sour cream on hand. This acts as a starter and controls the flavor. Stir well each time fresh cream is added. Keep in a room where the temperature is from 55° to 65°. When cold cream from the deep-setting cans is added, the temperature is lowered, and so fermentation does not go on too rapidly. Separator cream requires to be cooled before adding to the can. Low ripening temperatures are said to produce a better flavored butter than high temperatures.

When enough acid has developed, the cream should be of the consistency of syrup, and when poured have a smooth, velvety, mirror-like appearance, and an agreeable acid smell and taste. We ripen cream to develop the flavor, improve the keeping qualities of the butter, and to obtain a more exhaustive churning, but if we do not exercise care and skill these results will not follow.

Holding the cream for too long a time at too low a temperature gives a bitter flavor, due to an yeast plant growth.

In many farmhouses care is not taken to prevent the cream from freezing. If at all possible this should not occur, as freezing is detrimental both to the texture and flavor of the butter.

Cream allowed to get overripe gives the butter a whitish appearance and an old buttermilk flavor. Always err on the sweet side.

It is only in recent years that the ripening of cream has been the subject of much thought and study. Fermentation in cream is the result of the presence of certain forms of bacteria, which convert the milk sugar into lactic acid, causing the souring and thickening of the cream. The lactic acid germ is the most desirable and most prevalent form of bacteria found in cream.

That flavor in butter can be largely controlled by the ripening process has been fully demonstrated, and too much care cannot be given to it.

"A little leaven leaveneth the whole lump."
 O. A. C., Guelph.

Evolution of a Butter Cow.

The Hon. Joseph H. Walker, of Massachusetts, who has distinguished himself as a breeder of Jersey cattle, as well as a member of Congress, said in one of his catalogues recently:—

"I propose to maintain the following proposition, viz.: That a butter cow is valuable in proportion to the smallness of the feed required by her to make a pound of butter, as opposed to the prevailing custom of valuing cows by the number of pounds of butter they have made in any given time, regardless of the feed they have consumed in doing it.

"Other things being equal, breeding animals are of value in proportion to their near relationship to great performers, and to the number of animals close up in their pedigrees which are also of such blood as is in great performers, and to the volume of that blood in each of their ancestors.

"The longer the period of usefulness of a cow, the more valuable she is, and, furthermore, some allowance ought to be made for the age as well as for the fed of a cow, in valuing her test.

"After a cow's ten-year form, add 10 per cent. to her product for each year after the tenth year, to ascertain her probable butter yield at her prime.

"In the final estimate of cows, their breeding value should be rated in the order of the smallness of the food consumption to the pounds of butter made by them or by their ancestors.

"If butter be worth 30 cents a pound, and it costs 35 dols. to keep a cow, the farmer or dairyman paying:

| | In ten years. |
|---------------------------------------|---------------|
| \$ 30 for a 200-lb. cow realizes..... | \$ 182.57 |
| 125 for a 300-lb. cow realizes..... | 354.75 |
| 250 for a 400-lb. cow realizes..... | 483.49 |
| 350 for a 500-lb. cow realizes..... | 654.17 |
| 450 for a 600-lb. cow realizes..... | 811.69 |

GARDEN AND ORCHARD.

Marking and Inspection of Export Fruit Packages.

Hon. Mr. Fisher, Dominion Minister of Agriculture, has introduced at Ottawa an act entitled "The Apple and Pear Marks Act," to take effect on July 1st, 1900. It provides that every person who, by himself or through the agency of another, packs apples or pears in a closed package intended for export, shall cause this package to be marked in a plain and indelible manner before it is taken from the premises where packed: (a) with the initials of the christian name and the full surname and address of the packer; (b) size (diameter across the core in inches or fraction thereof) of the fruit; (c) name of the variety and (d) designation of the grade of the fruit; and no one is allowed to sell, offer for sale or have in his possession for sale packages of fruit intended for export unless marked with the name and address of the packer and the diameter of the fruit.

Grade "A No. 1 Canadian" shall consist of well-grown specimens of one variety, sound, of nearly uniform size, of good color for the variety, of normal shape, and not less than ninety per cent. free from scab, worm holes, bruises and other defects, and properly packed.

Grade "No. 1 Canadian" shall consist of specimens of one variety, sound, of fairly uniform size, and not less than eighty per cent. free from scab, worm holes, bruises and other defects, and properly packed.

Apples or pears disqualified from being marked "A No. 1 Canadian" or "No. 1 Canadian," shall be marked "No. 2 Canadian" in a plain and indelible manner.

It shall be considered a false representation when more than ten per cent. of such fruit are substantially smaller in size than, or inferior in grade to, or different in variety from the marks on such package.

Every person who violates any of the provisions of this Act shall, for each offence, upon summary conviction, be liable to a fine not exceeding one dollar and not less than fifty cents for each package which is packed, sold, offered, exposed or had in possession for sale contrary to the provisions of this Act, together with the costs of prosecution, and in default of payment of such fine and costs, shall be liable to imprisonment, with or without hard labor, for a term not exceeding one month, unless such fine and the costs of enforcing it are sooner paid.

Whenever any apples or pears packed in a closed package are found to be falsely marked, any inspector charged with the enforcement of this Act may efface such false marks and mark the words "falsely marked" in a plain and indelible manner on such package.

Every person who wilfully alters or obliterates wholly or partially, or causes to be altered or obliterated, any inspector's marks on any package which has undergone inspection, shall incur a penalty of forty dollars.

The person on whose behalf any apples or pears are packed, sold, offered or had in possession for sale, contrary to the provisions of the foregoing sections of this Act, shall be *prima facie* liable for the violation of this Act.

It shall be lawful for any person charged with the enforcement of this Act to enter upon any premises to make an examination of any packages of apples or pears suspected of being falsely marked in violation of the provisions of this Act, whether such packages are on the premises of the owner, or on other premises, or in the possession of a railway or steamship company; and any person who obstructs or refuses to permit the making of any such examination, shall, upon summary conviction, be liable to a penalty not exceeding five hundred dollars and not less than twenty-five dollars, together with the costs of prosecution, and in default of payment of such penalty and costs, shall be liable to imprisonment, with or without hard labor, for a term not exceeding six months, unless the said penalty and costs of enforcing it are sooner paid.

Prosecutions under this Act will be under the Criminal Code and by summary conviction before a magistrate.

Any pecuniary penalty imposed under this Act shall, when recovered, be payable one-half to the informant or complainant, and the other half to Her Majesty.

The Governor-in-Council may make such regulations as he considers necessary in order to secure the efficient operation of this Act.

Planting and Cultivating Garden Crops.

Corn.—For table use, the seed should be planted as soon as the ground is warm and all danger of frost is over. Seed that lies dormant in the soil for an extended period never produces as vigorous and even a crop as that which sprouts and comes away soon after being planted. From the middle to the last of May is a safe time to plant. The land can hardly be too rich for corn, and it should be in a finely-pulverized condition. The seed may be planted in rows at intervals of about nine inches, the rows three or four feet apart, or in hills three or four feet apart each way, according to the cultivation to be followed. The seed should be covered about two inches. If grown in hills, three or four plants should be left in a place, which means planting about six seeds to the hill. Corn should be cultivated shallow, never deep enough to cut the roots. For table use, to have a long season of this vegetable in its best condition, plantings of the very early and some good second early kind should be made at the same time; and then plantings of the second early kinds should be made once in two weeks thereafter up to about June the 20th. For varieties the following may be safely depended upon: Early Market and First of All are the two earliest sorts, and are closely followed by Cory, Crosby's Early Sugar and Extra Early Minnesota.

Cucumbers.—The land for cucumbers should be a deep, rich, somewhat retentive loam. The seed may safely be sown from the middle to the last of May. Extensive growers in some localities furrow out the land six feet apart one way, and mark crossways of the furrows with a 6-foot marker, and put a shovelful of well-rotted manure or compost at each intersection. Cover this manure with soil and plant the cucumber seed. About ten or a dozen seeds should be put in each hill and covered about one inch deep, and the soil packed over the seeds. As soon as the plants are up and after each rain they should have the soil loosened around them. They should also be kept dusted with Paris green and plaster, or some other dust, to keep off the striped beetles, which are often very destructive to the plants. The land should be cultivated both ways until the vines prevent it, so that very little work will have to be done by hand. About three good plants are enough for each hill, and the rest should be removed after the danger from serious insect injuries has passed. For pickling, Prize Pickle and Cool and Crisp are good sorts. Giant Pera and Ever Bearing are large producers of crisp, tender fruit.

Squash.—The cultivation of the squash and the pumpkin is much the same as for cucumbers. About six seeds should be put in each hill. These should be eight feet apart each way for the longer growing kinds and five feet apart for the bush sorts. The plants should be thinned out after they are established, to two plants in a hill. They are affected by the same insect pests as the cucumber and the same remedies are in order. The squash bug (*Anasa tristis*) is the most troublesome pest. They appear about the first of July. Hand-picking in the morning and evening, when the bugs are somewhat torpid, is the most practical remedy. Boards laid among the plants at night will be found to have many bugs under them in the morning and these may be crushed, scalded or otherwise destroyed.

Of the early varieties, Crook Neck and Early Yellow Bush are recommended, while for winter use, New Red Hubbard, Boston Marrow and Early Hybrid are reliable and good.

Melons.—The culture of musk melons is practically the same as that recommended for cucumbers, and the insect pests are also the same. A warm soil is, if anything, more desirable for this crop than for cucumbers, and in moist seasons it does especially well on quite sandy land, provided it has been well manured. It is a good plan to pinch off the ends of the vines after they have grown several feet, for the purpose of forcing out the laterals on which the fruit is borne. Late settings of fruit may be removed to advantage in September, as they then have not time to mature. Earliest of All, Emerald Gem and New Triumph are among the best varieties.

The culture of watermelons is the same as for cucumbers and musk melons, with the exception that the vines should not be pinched, and they require rather more room in which to grow. Eight feet apart each way is a suitable width between the hills. Early Canada, Cole's Early, Cuban Queen, Black Spanish and McIver Sugar are delicious, crisp and early.

Tomatoes.—The land preferred for tomatoes is a rich, retentive loam, but they will do fairly well on almost any well-drained soil. The tomato pre-eminently needs a warm place, and if rich manure is plowed into the soil, its fermentation will raise the temperature of the land. It is very important that the plants should be well hardened off and all danger of severe frost has passed before they are set in the open ground. They should be set about 5 feet apart each way, and about two inches deeper than they stand in the cold frame, bed or box. They need thorough cultivation, which can be best given by a horse cultivator. Tomato plants under field cultivation are generally allowed to run over the ground in any direction, and are not trained; but even under this method of management it is a good plan to cut off a foot or more of the ends of all growing shoots about the middle of August, so that all the strength of the plants may go to ripen the fruit that is well formed and still green. It is a good plan in a small garden to cover the land thinly

under the vines, after they set fruit, with a little hay, so that the fruit may be kept from getting dirty, in case they are not trained. The improved varieties are Extra Early Atlantic, New Canada, Dwarf Champion and Imperial. Tomatoes do not suffer severely from insect pests, but the disease, tomato rot, causes considerable loss. The remedy is to spray the young fruit with Bordeaux mixture. All diseased fruit should be destroyed, in order to prevent future infestations.

Celery.—Having stocky, vigorous plants that have been grown in a hotbed and hardened off in cold frames, the next thing is to set them so as to secure a good crop. It is quite a common practice in some sections to grow celery as a second crop after early peas, lettuce or beets. For fall and winter celery, the plants may be set from the middle of June to the middle of July. This crop is liable to suffer from the want of rich nitrogenous manure, and from a superabundance or lack of moisture in the soil. On this account it does best on retentive, well-drained, rich land. Well-drained, deep bog land, with the water about eighteen inches from the surface, is often excellent for this purpose. Before planting, the land should be thoroughly plowed and harrowed. Furrows should then be made where the plants are to go, about six inches deep, in which about three inches of fine, well-rotted manure or compost should be placed. The manure should be thoroughly mixed with the soil and the furrows nearly filled. In any case the rows should be four or five feet apart for the common kinds that have to be bleached by "banking up with earth," but the self-bleaching kinds can be managed in rows three feet apart. Before the plants are dug from the seed-bed they should be thoroughly soaked with water. The plants should have their tops partly cut off. The place where they are to be planted should be moist, and the roots prevented from drying during removal. The plants should be set about six inches apart in straight rows. If the soil is dry it must be watered before setting out the plants, and if the weather is bright and dry the plants must be shaded from the sun. Finely-cut grass will serve well for this purpose. The ground should be kept clean and mellow with a horse cultivator throughout the season. If while the crop is growing it is considered the crop requires more food, it may be supplied by plowing a shallow furrow away from them on one side and putting in fine, well-rotted stable manure, hen manure or compost and covering it will soil. As celery grows, it naturally spreads on the surface of the ground like the carrot. The leaf stocks should therefore be drawn together and earth firmly placed around them by the hands to hold them in an upright position. The land should be thoroughly cultivated and a furrow turned towards the plants on each side of the row before the banking process is begun, so that there may be plenty of loose earth to work with. The banking should be done at several operations as the plants grow, so that at the end of the growing season just the green leaves will be showing from the top of the ridge. The celery can, if desired, be bleached with boards, instead of earth. Boards ten inches wide are best. The leaf stalks should be drawn together and slightly banked before applying the boards. The boards should be placed upon each side of the row, quite close to the plants, and held in place with pegs. Earth bleaching is still more satisfactory, especially for a late autumn crop. Blight or rust is the chief enemy of the growing crop. It can be checked by spraying with Bordeaux mixture.

Burgundy Mixture for Spraying.

The Irish Land Commission has issued a valuable bulletin, giving spraying instructions for the prevention of potato disease. The bulletin goes on to state that the experience of those in Ireland who, during recent years, have practiced spraying for the prevention of potato disease (*Phytophthora infestans*) has proved that in districts in which that disease is prevalent the timely and proper application of Bordeaux or other suitable mixtures to the foliage of the potato plant, by means of an efficient spraying machine, though not altogether a preventive of the disease, usually has a marked effect in lessening the loss of yield and quality which is caused thereby, and under such circumstances the value of the increased yield due to spraying generally exceeds considerably the cost of application. The mixture most frequently used in Great Britain, as also in Canada, is Bordeaux mixture, the same as has been so fully described in recent issues of the FARMER'S ADVOCATE. The bulletin also refers to another mixture, known as Burgundy mixture, consisting of copper sulphate, soda and water. This mixture, when applied immediately after preparation, has the power of adhering to the leaves very considerably in excess of copper sulphate and lime mixtures similarly applied, but copper sulphate and soda mixtures deteriorate rapidly after preparation; so much so, that a copper sulphate and soda mixture which is not applied until 24 hours after its preparation will have lost almost all power of adhesion, whereas a copper sulphate and lime mixture loses but slightly in adhesive properties when held over for a similar period before application. Copper sulphate and soda mixtures, known as Burgundy mixtures, must be applied soon after preparation, when it possesses superior adhesive qualities, while its beneficial effect on the crop is remarkable.

The copper precipitate in a copper sulphate and lime mixture settles down when the mixture is

allowed to stand; moreover, some of the lime is always present as a fine gritty deposit. The copper sulphate and soda mixture, on the other hand, is gelatinous in nature, and the precipitate is lighter, and consequently remains a longer time in suspension, while it is quite free from gritty matter. The copper sulphate and soda mixture also runs more freely through the spraying nozzles, which the gritty deposit in the copper sulphate and lime mixture has a tendency to choke.

The proper strength of Burgundy mixture for potato rot or other vegetable fungi is about 2% strength. To prepare 40 gallons of this consistency, dissolve 8 pounds of copper sulphate in 35 gallons of water; then dissolve 10 pounds of soda crystals—washing soda—in 5 gallons of water. The soda solution should be of such a strength that one part of soda solution poured into and mixed with seven parts of the copper solution will produce a mixture free of acidity. To test the acidity of the mixture, dip a piece of blue litmus paper into the mixture. If it remains blue, it is free from acidity and ready to use, but if the paper turns reddish, the mixture is too acid and requires more of the soda solution. Note accurately the total quantity of soda required to produce the desired result, and use the same proportions of copper sulphate and soda in preparing further supplies.

The solution of copper sulphate and soda, respectively, may be prepared separately and kept in stock for any length of time without deteriorating, but the soda solution must not be added to the copper sulphate solution before the mixture thereby produced is passed into the spraying machine for use, when the quantity required for immediate use may be prepared by pouring one part of the soda stock solution into seven parts of the copper sulphate stock solution; the mixture thus obtained should be well stirred before spraying is commenced. Always pour the soda solution into the copper solution, and not the reverse, and always stir each solution well before mixing them. The first dressing should be applied to potato vines when they are 8 or 10 inches high, or before the vines show any signs of the disease. It should be repeated at intervals of about ten days, the same as on apple trees for scab. It should be applied as a fine spray, so as to moisten the entire leaf surface, but not sufficient to cause the leaves to drip. When it is desired to spray for potato bugs, 6 ounces of Paris green may be added to the 40 gallons of Burgundy mixture.

The Box or the Barrel?

Speaking upon American exports recently, at a meeting of the Eastern New York Horticultural Society, held in the city of New York, Mr. A. S. Baker, managing director of the International Cold Storage and Lightering Company, of Southampton, England, made the following interesting references to this subject:

"You ask me what do I recommend? I say, abolish the barrel altogether. It will pay you. Why? In the first place, you will save 20 per cent. of your freight rates. Now, you know on board ship you do not pay for weight; you pay for measurement. The difference in stowing between a box containing one bushel of apples and a barrel is so great that you will save at the very least 20 per cent. in your cubic measurement, thus reducing your freight bills very considerably. There is another advantage about the box. The apples carry better; they get on to the market in better condition. They are altogether more salable. A box measuring 22 x 11½ to 10½ outside measurement will contain 50 lbs. of apples—or one bushel, English standard. The apples can be all wrapped in paper. There is no danger then of contamination from a bad one. There is another thing I will tell you. Apples, when stored away on board ship, contain a considerable amount of latent heat which manifests itself in the middle of a barrel, and, no matter how honestly you pack the barrel, the middle will never open as bright as the top or bottom, owing to this heating on the way. With a box this need never happen; when the box is properly made, it never does. Those who have to handle freight can handle a small box better and with more care than a barrel. The danger of bruising is reduced to a minimum, especially with the use of paper around each apple. You ask then, but will it pay us to go to this extra trouble? That is for yourselves to decide.

This same box that I describe, packed with such quality of apples as exist in this country, is uniformly worth on the London market fifteen shillings (\$3.75). Some of you will remember the returns, and say that you only get eleven shillings (\$2.75) for your barrel, which contains nearly three bushels. Gentlemen, this is something for you to think over. Which do you want, eleven shillings for your clumsy barrel of apples, or fifteen shillings for your bushel box?"—*Montreal Witness.*

COMMENTS ON THE ABOVE.

Mr. Baker's recommendation, as reported above, has not been carefully considered, at least exhibits a want of knowledge of the business. 1st. There would be but a slight saving in ocean freight, as the boxes could not be packed closely without allowing space for ventilation. If well ventilated, I believe they would arrive in better condition, two important points in his favor, with an if.

Only choice fruit should be wrapped in tissue paper. My experience in shipping choice fruit in 50-pound cases, wrapped as described, has been fairly satisfactory. I shipped this past season 168 cases of

very choice Spys and Baldwins (chiefly Spys). My net returns were \$179.90. I could have sold them here for the Canadian trade at \$1.50 per case. I do not think I could promise a neater package or more careful selection and wrapping of finer fruit than those 168 cases contained. They were the cream of the 300 barrels of first-class stock. The balance of the 300 barrels were packed in barrels and sold to a buyer here (after careful inspection) at \$2.50 per barrel. This is cold business, not theory.

2nd. What I do think is that if our growers would carefully select and neatly wrap in paper and pack in 50-lb. cases a portion of the crop, we might cultivate a trade that would pay us for doing so.

If our Mr. Baker will come over to Canada, I can assure him he can get 1,000,000 cases put up as described for \$1,500,000, and the freight would not exceed \$50,000, and if he has a market that will give him 15 shillings per case, there's a cool million for him in one season, and I will help to make him a millionaire. The fruit-growers of this country are generous, and don't mind helping a man along at all, so come and see us.
A. H. PRETTIT.
Lincoln Co., Ont.

Destroy the Tent Caterpillar.

Wherever spraying of fruit trees has not been attended to, care should be taken to watch and destroy the tent caterpillar in its early stages. Look for the webs and destroy them by hand or by any means that will not injure the tree, but kill the caterpillars before they get forward enough to eat the leaves. It is a disgraceful sight to see an orchard stripped of its leaves, and a season's fruit wasted, and there is no reasonable excuse for it, as a little care and labor at the proper time will save the orchard.

POULTRY.

Broiler Raising at the Guelph College Farm.

To the Editor FARMER'S ADVOCATE:

I herewith enclose a statement of the sale and cost of the early broiler chicks raised and sold by the Guelph Agricultural College. I regret to say that, owing to circumstances, it was impossible to keep an exact account of the food fed. We are experimenting with later broods of chicks in this respect. I think our estimate is, if anything, in excess of the actual cost. We estimated on the food that is being consumed daily by the young chicks we now have.

| | |
|--|---------|
| Jan. 16-158 eggs at 2 cents each..... | \$ 3.16 |
| Oil used in incubator—24 gallons at 20 cents | 50 |
| Oil for brooder for six weeks—54 gallons | 1.10 |
| at 20 cents | 1.10 |
| May 4—Food consumed to date (estimated)..... | 5.00 |
| Total..... | \$ 9.76 |

May the 4th one dozen of the chicks were dressed and sent to Toronto. They sold for \$6 per dozen, netting us \$5.70, there being 30 cents charges. Had the whole flock been dressed (49) in November, at these prices they would have brought \$23.27. Deduct the cost of growing, which is \$9.76, and a balance is left us of \$13.51. Nothing has been charged for labor nor credit allowed.

The thirty-seven chicks not sold are being held for breeding purposes, some of which have already been disposed of to fanciers at prices ranging from \$1 to \$3 each, according to breed and quality. The most of these chickens were Plymouth Rocks and Wyandottes. The twelve dressed weighed 19 pounds.

It will be noticed that it took over three eggs to produce one chick. This is one of the difficulties in connection with the broiler business in our climate. The percentage of fertile eggs is not large, and the vitality of the germs is anything but satisfactory. During the season the fowls are closely confined in the houses the eggs are usually inferior in fertilization. We hope in time to be able to suggest some methods by which this can, to some extent, be overcome.

How the Chicks were Fed.—No food was given until the chicks were 36 hours old. Care was taken to keep the brooder at a temperature of 90° during the first week, after which it was gradually lowered to no heat at the end of the sixth week.

Their first feed consisted of hard-boiled eggs chopped fine, bread crumbs, raw onion finely chopped, in about equal proportions. This was fed for the first few days, after which they were gradually weaned from hard-boiled eggs to cooked liver, chopped fine, and to a certain extent from the bread crumbs to a mixture of grain in equal proportions of bran, oatmeal and corn meal. This was slightly moistened with skim milk, care being taken to avoid stoppiness. A little grit was added occasionally. By way of variety the onions were at times omitted, and in their place roots, sprouts or sprouted grains were used. Throughout the whole period it was endeavored to feed a food of nearly equal proportions of animal, vegetable and grain foods. After the chicks were ten days old they were induced to take exercise by feeding cracked wheat or millet seed scattered in cut straw over the floor. Good pure water was always before them.

They were fed five times daily in just such quantities as were readily consumed. The chicks were occasionally driven out into the pure air. I firmly believe that the short time required to shovel away the small amount of snow from in front of the house is amply repaid in the healthy condition of the stock.
W. R. GRAHAM, Manager.

Poultry Dept., O. A. College.
P. S.—I presume a charge of \$1 should be made for coal burned in warming the air in the house.
W. R. G.

Farm Poultry.

Many farmers are awakening to the fact that poultry-raising is of some importance, and are giving it more attention. Most farmers try to improve their flocks by exchanging males with their neighbors, which is well if they make sure of a pure-bred bird of a utility breed, and continue to use a male of the same breed. Probably the cheapest way to get into a flock of pure-breeds is to buy a setting or two of eggs from a reliable breeder. Large and comfortable poultry houses are needed, but many farmers have timber of their own, and can at very little expense get material ready and build houses without any outside help. One yard should be kept for the best fowls in winter and early spring, so as to have eggs from the best for hatching the next year's chicks. The young chicks especially need a good range, as they will make quicker and larger growth, and thus the pullets will get ready to fill the basket with eggs next winter.

The farmer does not need to worry about balanced rations in summer, as his meadows, wheat and clover fields will serve to feed his hens and chicks after they are old enough to scratch. Even in the winter the farmer has little feed to buy, unless it be granulated bone or meat scraps, and even this can be largely supplied at home if he has a bone crusher. He should put away a few more cabbages, beets and turnips than the family needs for winter.

In the feeding of granulated bone, be sure that the bone is fresh. One advantage of fresh bone is that, in addition to the supplying of needed material for bone and feather growing, it supplies more or less animal food. Farmers generally feed for eggs. A good food for the production of winter eggs is corn, green foods, and warm meals. In the morning fowls should have to scratch for their food, and thus warm themselves by exercise, not by warm foods. At night they should have warm food. Gravel and grit must be provided, and the fowls should be given full access to ashes or some dust bath. Among the diseases and vices of poultry are lice, gapes, roup, and egg-eating.

Lice are, in nine times out of ten, the cause of all other chicken diseases. To get rid of lice, saturate the roosts with coal oil, and sprinkle the hens with insect powder.

Gapes is a disease caused by a small worm which grows in the windpipe. This worm must be removed, or the chickens will strangle. To remove the worm: put chicks in a box, put a hot stone or piece of iron in one corner and sprinkle a few drops of carbolic acid on it. The chicks will sneeze and dislodge the worm. Care must be taken to prevent the smothering of the chicks.

Roup.—To prevent roup, use a heated stone, and pour on some tar, enough to thoroughly fill the nest with smoke. You may also put a little blue vitriol in their drinking water. To an eight-quart pail of water put in a piece the size of a hickory nut.

Egg-Eating.—To prevent egg-eating, use china nest eggs. When the vice is acquired, it is difficult to cure, and, as a rule, the only effectual cure depends on isolating the criminal, which is also necessary to prevent her contaminating others.

Ducks.—Most farmers keep a few chickens, but only a few keep ducks. The reason for this I do not know, as I think ducks are the most profitable. There is scarcely any loss of young ducklings, even with average care.

Ducklings must have plenty to eat, and it is surprising the amount they consume. At first it seems that the cost of keeping ducks is considerably more than the cost of chickens. But when the growth is once made, a Pekin duck will not cost nearly as much as a hen. Ducks are ready for market in ten weeks, and they will command a much higher price than chickens.

Some object to ducks on the ground that they must have a creek to swim in. I believe they are better without one. A dressed duck commands a high price, and their feathers pay for the dressing of them.

Turkeys are not difficult to manage when one gets acquainted with their ways. They need but little feed, but it is advisable to feed them some once a day to keep them gentle. Turkeys sometimes steal away their nests. This may be prevented, however, by making a nest for them. To make a turkey's nest, put some straw into a brush pile, place eggs in nest, and drive the turkey to it; put her on it, then place a box over her. Give her feed and water three times a day, and the second day let her out. Be sure that she returns to the nest, and cover her up again for a couple more days, then let her out. She will return to the nest this time of her own accord. A turkey will take good care of her brood.
JOHN H. ROCK.
Oxford Co., Ont.

How Many Males in the Poultry Yard?

C. P. Reynolds, a Michigan breeder, referring to the idea that the ratio between cocks and hens should in the heavy breeds be about one male to six or seven hens, and the lighter, non-sitting breeds, like Leghorns, one to ten or a dozen, says that during late years he has got just as satisfactory results in fertile eggs by using one healthy, vigorous male with 40 or 50 hens. The hens were of the Plymouth Rock variety, and had practically unlimited range. He therefore concludes that it would be much better for farm poultry raisers to use fewer males and better ones. The experience of practical Canadian poultrymen on this point, through the FARMER'S ADVOCATE, would be of value.

VETERINARY.

Ringbones.

Ringbone is, in nearly every case, a serious condition, because in the great majority of horses affected with it there is more or less lameness, which is irremovable unless the lower part of the limb is rendered insensitive by dividing the nerves supplying it with sensation. Owing to the bony deposits interfering with the movement of the joints when they are situated around them, or to the pressure they make on the ligaments and tendons which are spread in wide bands over them, a cure could only be effected by their removal, and of course this is impossible. The same anatomical arrangement also explains the great pain the animal gives evidence of while ringbone is forming, and after it is fully developed. It must be acknowledged, however, that cases are seen now and then in which lameness is only slight or is altogether absent, but then the ringbone has been produced by external injury, or has been very slowly developed.

The causes of ringbone are various. In some animals, or breeds of animals, there appears to be a natural predisposition to it, this predisposition being generally related to defective pastern joints or deformed limbs. Strain on the ligaments connected with the pastern bones, and concussion from being worked on hard roads, when the horses are still immature, have, no doubt, much to do with its production. Therefore it is that it is most frequently found in riding horses which have been much travelled on roads at a fast pace while young. But it is, nevertheless, sometimes seen affecting two or all of the pasterns of horses which have only been moderately worked, and not always on hard ground, and such cases might be ascribed to hereditary predisposition. Bad shoeing, in which the hoofs are not properly levelled, or one side of the shoe is left thicker on one side than on the other, may also induce the formation of ringbone. It is perhaps oftenest seen in horses with either very long, sloping pasterns, in which the ringbone is generally at the sides, or in short, upright pasterns, in which the deposit is most frequently observed in front. The toes are also turned out or in in those horses which have a tendency to ringbone.

The lameness may be very considerable, even with a small ringbone, and not so much with a more voluminous one, this depending greatly upon its situation. When it is forming, there is much heat at the part and pain on pressure made by the finger, as well as in bending the pastern joints. The horse steps short in trotting on hard ground, and especially in turning, and is inclined to go on his toes. He always travels worst when ridden.

The prevention of ringbone is evident. Animals which have a predisposition to it, either from a constitutional tendency to throw out bony deposits about the pasterns, or have defectively-formed limbs which may favor its production from unequal bearing on the bones and joints, should not be bred from. Immature animals should not be subjected to undue strain on their limbs, particularly on hard ground, and care ought to be taken to keep the hoofs level and in a good direction, whether shod or unshod.

As for treatment, this will necessitate the intervention of the veterinary surgeon, whose skill will also have to be invoked to diagnose the existence of ringbone in most cases. It is all-important to regulate the distribution of weight on the pastern bones and joints by attention to the hoofs and shoes. When ringbone is forming, absolute rest should be given as far as it is possible to do so, for a considerable time, and the floor of the stall or loose box should be laid with some soft material, such as peat litter. Refrigerating lotions must be applied to reduce the inflammation, and may soon be succeeded by blisters, the best being biniodide of mercury, which can be repeated at intervals. The actual cautery ("firing") is sometimes resorted to, deep punctures being preferred to lines, and sometimes this is beneficial.

In cases in which all this treatment has failed, division of the sensory nerve that supplies the pastern with sensation has rendered the animal free from pain, and consequently from lameness, if the joints are not involved, but this operation, while it may render the horse useful, is not without certain dangers subsequently.

In chronic cases of ringbone much benefit may be derived from careful attention to the shoeing, as already indicated; and I have noticed a remarkable diminution in lameness follow the insertion of India rubber plates between the shoe and hoof.

In all cases of ringbone, as has been already

mentioned, important service can be rendered by the skilful shoer, who in maintaining the proper dimensions of the hoof and securing a just distribution of the weight on the bones by attending to their direction, can enable an otherwise all but useless animal to continue work satisfactorily for perhaps years.

ENTOMOLOGY

Entomology to the Agriculturist.

(Continued from page 265.)

CABBAGE MAGGOT.

Another frequent trespasser in our garden is the cabbage maggot. Just as we are congratulating ourselves that at any rate the unknown has not got our cabbages, we notice they quite suddenly begin to droop and die. Their leaves have not been attacked, so we must look for the trouble in the roots. On removing a little of the soil, we find a number of white maggots eating the stem just above the true root. Now, as we are too late for the use of preventive measures, we must try the "active" ones. Two simple ones are recommended by Dr. Fletcher, one being kerosene emulsion, and the other a mixture of 4 ozs. of white hellebore, 4 ozs. of kaint, and 2½ gals. of water. As soon as the damage is discovered, remove the earth round the roots about two inches from the surface with your left hand, palm downwards, and two fingers on each side of the stem, and pour in half a teaspoonful of the kerosene emulsion or hellebore mixture. The kerosene emulsion should be diluted with water added in the proportion of 9 parts of water to 1 of emulsion. Kaint acts as a good fertilizer to enable the plant to recover from the injury. The fly, a little gray fly, lays its eggs about the middle of June around the stem of the plant, just below the surface, so that if the earth about this time is kept hoed up to the collar, it will keep the fly from getting down to lay its eggs. Either of the above remedies, applied early in June, and repeated once or twice, will keep the fly away.

PREPARATION AND USE OF KEROSENE EMULSION.

So standard a remedy as kerosene emulsion should be known to everyone. It is a mixture of 1 gal. of kerosene or coal oil with hot soapsuds made of ½ gal. of water (rain water preferred) and ¼ lb. of soap, and all being thoroughly churned together till it will adhere to the surface of glass without oiliness. This will keep any length of time, but when required for use, be sure to dilute it by adding from 9 to 15 times its measure of warm water. Kerosene emulsion, diluted, by adding 9 parts of water to 1 part of the emulsion, is the standard remedy against the cabbage and turnip aphid. In the case of plants which have tender foliage, a decoction of tobacco and soap water (1 lb. of cheap factory tobacco mixed with 5 gals. of soap suds) should be used instead of kerosene emulsion. All lice (aphides, etc.) are suckers through tubes.

WARBLES IN CATTLE.

I referred a short time ago to the ox bot-fly. I suppose every cattle farmer is pretty well acquainted with this fly, but it is a trouble that is too apt to be treated as of not a very serious nature, and as not preventable. Now, this is a great mistake, and I want to show how much of a mistake. In the first place, the bot maggot or warble so damages the hides that grubby hides sell for one-third less than sound ones, and the importance of this is apparent when we consider that the bulk of our hides are now being shipped to England and elsewhere instead of being retained in the Territories. But the beef of the animal infested by the grub is itself rendered so inferior that buyers of the highest class of meat, who supply hotels, etc., will not, on any account, buy carcasses showing traces of warble attack. Such beef has therefore to be sold at a lessened price below that obtainable for good beef, the reduction ranging from \$2 to \$5 per carcass. The producer, therefore, not only suffers a loss, but in view of the large and increasing exports of beef (cold stored) to England, it again becomes important to see that the reputation of the Territories is sustained by keeping stock free from this pest. Dairy farming is extensively carried on in many parts of the Territories, and it is well to know to what extent warbles are able to affect the dairy in countries infested by them. There is the loss in quantity of flow of milk as well as deterioration in quality, resulting from the annoyance of the animals by the flies when depositing their eggs, and later by the grubs. The shrinkage in the milk is estimated at 10 per cent., and the deterioration in quality at the same rate, making a total of 20 per cent. The milk from warbled cows, moreover, is liable to introduce the warble into the human being. Mr. Gregson here read to the meeting a few particulars relating to several stock-raising States of Mississippi Valley, showing how serious the warble pest could become. In districts that are known to be subject to the warble, it is, therefore, surely worth while to persevere with preventive measures. The history of the warble is a strange one. It is understood to be, shortly, as follows: In the months of summer the fly lays its eggs on various parts of the animal's body, and in licking its coat the animal swallows a number of the eggs or young hatched larvae. About Xmas time the larva in its wanderings in the animal's body has worked its way through the tissues of the skin of the back, where it is then found (but underneath the skin). The maggot then bores through the skin, caudal end

first, in which position it remains till fully grown. It breathes through this hole in the hide by means of two spiracles situate not on each side of its body, but at its anal extremity, hence a little grease will easily kill it. As soon as the warble is fully grown it forces its way out through the breathing hole and drops to the ground, in which in a few weeks' time it transforms into the perfect ox bot-fly. We see, then, by the time the warbles are discovered the mischief is done. It is far better to protect the animal against the fly, and this can be done by smearing the animal's body, especially the parts which it can reach with its tongue, with strong-smelling oils, such as train oil, fish oil, kerosene emulsion diluted, or rancid butter.

NATURAL ENEMIES.

Remedies are, after all, but the weights used to overcome the balance of nature. Insects, myriads as they are, have many enemies, parasites and other insects, birds, toads, fungi, drought, wet, etc., which serve to keep the balance level, but so long as man grows their food supply, so long will he be subject to attacks by noxious insects, unless he adopt corresponding measures to control them. Insects' enemies do no more than maintain the equilibrium, and if we, as we are all doing every year, grow their food, or, in ignorance, destroy any of their enemies, by so much do we increase the power of the noxious insects, and here again we see the value of entomology, because it teaches us how to recognize the enemies of insects. Take once more the cutworm as an illustration: There is a common beetle in our gardens called the fiery ground beetle, so named because on its wing-cases, which are shiny black, are six rows of glistening coppery color. (A specimen of this insect was handed round the meeting for inspection.) This beetle appears in June, and in both its stages of beetle and larva it fiercely attacks and devours cutworms. The grub has a terrible looking appearance, and is exceedingly agile. It is flattened and of a black color, with a pair of sharp hook-like jaws projecting in front of its head. This fierce-looking grub pursues the worms in their retreats underground, and seizes them wherever it comes in contact with them, clinging to the worm like a bulldog through all its writhings and twistings, till at last the worm succumbs exhausted, and the conqueror bites two or three holes in its skin and proceeds to suck out its juices. Then in our gardens also is another common beetle, which is fiercer even than the fiery ground beetle. It is called the tiger beetle, and has three whitish irregular stripes on each side of its back. (A specimen of this insect was also handed round for inspection.) The female lays its eggs in the spring in some favorable spot where the young grub will be able to procure food. The egg is hatched, and a hideous-looking grub comes out. His head is large and flat and horny, and is surmounted by two tremendous curved jaws. This grub is very voracious, and devours immense quantities of insects. We have seen how the grub of the fiery ground beetle pursues the cutworm; but that is a mild way compared with the plan adopted by the grub of the tiger beetle. The grub digs a hole in the ground about a foot deep and about as large as a lead pencil in diameter. To do this it hoists itself round, and loads on its broad flat head as much dirt as it can carry, and deposits it around the mouth of the hole in a fine powder. When the hole is deep enough, the grub climbs to the top of it, covers its head with soil and waits. By and by some poor cutworm taking an evening walk steps upon the living trapdoor. Instantly he is seized by the terrible jaws of the grub, and dragged down the awful pit, and there torn to pieces and eaten. The perfect tiger beetle is just as voracious as its grub, but it hunts down its victims in the face of day. There are very many other beetles that are beneficial. In fact, it is safe to say that with the exception of the "click" beetles and May beetles, which all farmers know, it would be better to allow all beetles we notice running about the ground to live, if there is any doubt about them. Take another illustration, the Colorado potato beetle. There is a little fly like a small house fly, but with a silver-white face. This fly deposits its eggs in the actual body of the living grub of the potato beetle and the tiny maggots hatch there and eat out its vitals. The pretty little beetle called the ladybird is another deadly enemy of such noxious insects as plant lice, as well as of the potato beetle. It lays its eggs among those of the potato bug, and when the young larva hatch, they live on the young of the potato bug. But our most powerful allies are found in the insect-eating birds. Thousands of wire-worms, grubs, etc., fall annual victims to them. The number of insects consumed by birds may be inferred from watching a pair feeding their young. Watch a nest of say five young jays. Each of these birds while yet very young will consume at least 20 grubs of an average of sizes in one day. Each of the parents will consume say 50, so that the pair and family will devour 200 every day. This in three months amounts to 20,000 in one season. The harm that birds do to the grain is more than offset by the good they do in keeping down noxious insects. I find I have with me another beetle which is a deadly enemy of the cutworm. It is called the murky ground beetle. I will pass it round for inspection. Mr. Gregson then instanced how a very simple knowledge of the life habits of insects can often be utilized as a means of circumventing them by teaching us to secure our property at the critical period, such as by timing seeding operations. He illustrated the turnip flea beetle as an example,

This little beetle hatches late in May, and if we defer sowing our swedes till June, they will have hatched and disappeared to native cruciferous plants before the young turnips are up. An "active" remedy for this pest, recommended by Dr. James Fletcher, is to dust the young turnips with dry Paris green and land plaster, or sifted ashes, when the dew is on the young turnips.

INSECTS LIKELY TO INCREASE.

A close observation of facts regarding insects will also be of material value in many ways. The large immigration from the East is almost certain to bring in pernicious insects—indeed cultivation of the land alone always induces the arrival of insects, so I would like every farmer to take note this year of the relative abundance of insects of various kinds and the exact nature and extent of their depredations, and to carefully notice the birds, insects, etc., which are beneficial, and, if possible, always to secure actual living specimens of the insects. The entomologist works for the farmer. The farmer is, as it were, his constituent, and hundreds of thousands of dollars are saved every year to this continent by the carrying out of his recommendations. The aim of the entomologist is not to exterminate injurious insects, or any particular kind, for that would be to attempt an impossibility, but we aim to control them by imparting information as to habits and preventive and remedial measures, so that accurate information given to him by the farmer will always result to the farmer's benefit.

THE ENTOMOLOGIST A BENEFACTOR.

It is my privilege to be President of the Northwest Entomological Society, a society which was called into existence to show the farmer, as far as possible, that his crops and cattle can be protected and preserved by aid of the entomologist. Every member of the Society is working for the benefit of the farmer, and although none of us here assembled have this year sustained any ruinous injury to our crops, there is always a heavy percentage of loss through insects which every farmer can avoid by following the simple remedies recommended. Dr. Fletcher estimates that there is no crop grown which is not diminished by an average of one-tenth, and this loss in some years runs up to one-fourth or one-half of the whole crop, and I think, for the sake of our fellow farmers, and of all the new settlers, there should be a cordial support to the entomologist. The Innisfail Agricultural Society have honored me with this invitation to speak, and I should be glad if at the end of this year I could report that they respond with perseverance to the efforts of the entomologist. And we must also remember that even though we ourselves may know how to deal with insects (both friends and foes), there are hundreds of immigrants now settling around us who have never heard of any remedies for insect troubles. These will have just the same insects to contend with as we have, or may have, and it is our duty to see that they are made acquainted with all tested remedies and methods of dealing with them, if only for the reason that unless the new settlers do so deal with them their farms will become breeding grounds for propagation of insects to our own injury. No law that has ever been passed against insects has been effective in compelling one's neighbor to protect his crops. The only way to accomplish this is to enlist the common sentiment of the locality and rely on the coercion of neighborhood opinion, and to do this it is the endeavor of the entomologist to make the results of his discoveries so simple and popular that the farmer will at once be interested and appreciate their importance so far as his own crops are concerned. He will then be anxious to have his neighbor take at least preventive measures against noxious insects.

Farmers came from long distances to attend the meeting and participate in a lively and helpful discussion. A unanimous vote of thanks was tendered Mr. Gregson for his valuable address.

APIARY.

The Production of Comb Honey.

Summary of paper read by John Newton, Thamesford, at the last meeting of the Ontario Beekeepers' Association.

Select your strongest colonies for comb production. I do not want bees that build braces or burr combs. Comb-honey supers with braces across them are not nice to handle. Pinch such a queen when the spring work is done, clipping queens, giving rooms to crowded queens by scraping honey at the top of the frames, so that those cells will be replaced with eggs by the queen, levelling up hives, etc., and, before the honey season opens, get the comb supers filled with sections 4½x4½x1½, which are filled full of foundation, about twelve square feet to the pound, made of the finest wax. Separators are used between sections, and a perforated follower or divider at the sides, which gives extra bee space—a very important point for keeping the necessary heat day and night at the outside of the outside sections. The divider is made like one of the separators, with a cleat nailed on to allow the extra bee space, and it is perforated with ⅛-inch holes. I use a two-part super, which gives the bees plenty of room for surplus, and, at the same time, does not give them so much room as to discourage them from entering the super.

Hives for comb honey will now be crowded with

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arding insects ny ways. The almost certain ed cultivation e arrival of r to take note of insects of and extent of ly notice the ficial, and, if ing specimens orks for the is constituent, ars are saved rrying out of entomologist ssects, or any to attempt nrol them by and preventive ccurate infor- r will always

bees from side to side, and filling up with new honey. Place on them one of the half supers close down. Put on the rim of the hive to keep it warm. When swarming begins, hive the bees on the old stand in hives in which there are five starters about two inches deep, the rest of the hive being filled with dummies. After the swarm returns, place the parent hive alongside of the swarm for five days after removing to the new stand, the flying bees of which will go into the swarm and strengthen it. If the swarm is very large, or two go in together, supers are at once taken from the parent hive and placed on the swarm with a perforated metal board between to keep the queen below; but, with an average swarm, do not put the supers on for a day or two. This catches pollen below and keeps it from the sections. Remove the perforated metal board as soon as the queen is at home below, as bees do not work so readily in sections if they have to pass through these screens. Close attention must be given to hives during the honey flow to see if more room is needed, or if the supers have to be reversed from end to center, in order to get the end ones filled as well as the center ones. I always put an empty super next the hive. When the supers are filled, I remove by using smoke or a bee escape. When all the honey is taken off, the sections are scraped and graded, and packed in drip cases holding one dozen each. They are then ready for market.

Wonderful Strides --- Super, Not Sugar.

I find the question department of the FARMER'S ADVOCATE very instructive, and am sure if I were engaged in farming it would be most helpful. A friend of mine, in writing, says he is taking your paper and thinks it has made wonderful strides even since last fall. I am sure I enjoy reading the paper, even though not a farmer.

In my article, page 266, the printer has committed a grievous error when he makes me say "transfer the sugar from the parent hive, and the new swarm will continue its unfinished work." The super, which I meant to say is to be transferred, contains nothing stronger than honey, or my father's long struggle for a pure-honey law would come to naught. I hope you will make a prominent correction of this, as the conclusion of the sentence might easily be construed to carry out the idea of sugar.

MORLEY PETTIT.

QUESTIONS AND ANSWERS.

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

Veterinary.

NAVEL ILL.—JOINT ILL.—ARTHRITIS.

W. R. R., Huntingdon Co., Que.:—"I have a colt, about 2 weeks old, with a swollen joint in off hind leg. What drew my attention to it first was its being unable to rise, and upon examining it found the off hind joint very much swollen. There is a lump on the inside, and also on the outside, immediately behind and between the main cord and joint, and also on the inside front of leg, on joint. It is a little lame, but can rise now itself to suck, otherwise it is quite bright. There is no appearance of it having been stamped on or otherwise bruised. Do you think it is a disease in colt, or would it be caused by a sprain?"

"2. Please inform me what to do with a mare that is nursing? Her blood must be in a bad state, as her legs are all scabs and hair is coming off. I would not farm without the FARMER'S ADVOCATE."

[It is possible that the colt has in some way received an injury to the joint to cause the swelling, inflammation and lameness. If so, a recovery will take place, which can be hastened by frequently bathing the affected joint with warm water, and applying the following lotion: Tincture opium, 1 ounce; sugar of lead, 4 drams; water, 8 ounces. I am, however, inclined to the opinion that the colt is affected with navel ill. This is a very serious disease in colts, being very prevalent in some sections, and occasionally met with in mostly all sections. In some sections it occasionally assumes almost an epidemic form. The symptoms presented are as follows: At a few days to a couple of weeks old, a colt that apparently has been all right and doing well is noticed to be lame in one or more limbs, in some cases unable to rise. An examination will reveal a swelling and soreness in one or more of the joints. The knees and hocks are the favorite seat. A person is inclined to think that the dam has trodden on it, or that it has been injured in some way, but a careful examination will not reveal any abrasion or other symptoms of direct injury. The swellings are usually rather soft, hot and painful. In some cases the joint at first affected, either with or without treatment, will apparently get better and some other joint become affected, the trouble to reappear, after a variable time, in the one primarily diseased. The progress made by the disease differs very much in different patients. In some it is rapid, in others slow. The animal becomes worse, the symptoms increasing in severity, and frequently fresh joints becoming affected. In some cases the swellings become soft and fluctuating, indicating the presence of a fluid; if it be lanced, or ruptured spontaneously, a consider-

able quantity of a dark, muddy, brownish or grayish colored fluid will escape. In other cases, the quantity of liquid formed is only small. The articular cartilages become destroyed, and when this stage is reached the animal will be very lame, and probably unable to rise; if the joint be manipulated, flexed and extended, the ends of the bones (from which the cartilage has sloughed) can be heard and felt grating against each other. In mostly all cases of this disease, the symptoms increase with greater or less rapidity, notwithstanding any treatment that can be adopted, until death occurs. In some cases very great care and nursing will save the life of the foal, but in any cases where this has occurred in my experience, the joints that were affected never regained their normal condition. A greater or less quantity of articular cartilage had become destroyed (and this cartilage will not be reproduced), the animal would thrive fairly well bodily, but would be crippled, the lameness increasing as age advanced, and eventually have to be destroyed.

Where symptoms simulating those of joint ill or navel ill appear in a colt, and any doubt as to the nature of the trouble exists, it should be treated as for a direct injury. If recovery takes place, we know that it must have been injured in some way, but if positive symptoms of joint ill appears, it is humane to destroy the little thing at once. If we decide, even when positive symptoms are present, to treat, we should be very careful in feeding the dam, and should give 1 dram potassium iodide in her bran twice daily; also give the colt 5 grains potassium iodide in a little of the dam's milk three times daily. Bathe the affected joints almost continuously with warm water, or poultice them, and apply an anodyne lotion same as mentioned for injury, or a cooling lotion, as follows: Sugar of lead, 1 ounce; sulphate of zinc, 6 drams; water, 1 pint. Keep the colt as comfortable as possible, assist it to its feet and hold (if it is not able to stand) it up to nurse. If abscesses form they must be lanced and treated as an ordinary abscess by flushing out well twice daily with warm water, and then a small quantity of, say, carbolic acid 1 part, water 60 parts, injected into cavities.

Causes.—Some writers claim that the disease is caused by an impure condition of the dam's blood. Some state that impure milk is the cause; others, that it is due to cold and dampness, etc. Pathologists at present all admit that the trouble is due to a microbe that gains entrance to the circulation of the colt by means of the navel opening after birth. This germ exists in the earth, dust, manure, etc. Some claim that it does not exist in the earth, and that there is no danger of the disease affecting a colt that is born in the field; but I have known the disease in severe forms to attack foals that never were in a building. Be this as it may, we all acknowledge the essential element of the disease, viz., a germ or microbe, and if we can prevent its entrance into the body we will prevent the disease. All stables where mares are to foal should be kept thoroughly clean. Manure should not be allowed to accumulate. The stalls should be regularly cleaned, and it is good practice to scatter a little slacked lime on the floors; also good practice to sweep off the walls and ceilings and whitewash them at least once a year. These precautions are taken with a view to prevent the propagation, or, in fact, the presence of the germ. But we are unable to tell whether or not we have succeeded in this, and hence, assuming that the germs are present, we must take means to prevent their entrance into the animal. For this purpose some good antiseptic and germicide must be used. Perhaps no preparation will answer this purpose better than corrosive sublimate. Any man who is breeding mares should have on hand at foaling time a solution of this, about 1 to 500; that is, one part corrosive sublimate dissolved in 500 parts water, or 8 grains to 8 ounces water. As soon as possible after birth, dress the navel opening with this solution, and dress 4 or 5 times daily until the opening has healed, which will usually be 3 or 4 days. This precaution, while not always necessary, is at all events advisable. It will destroy any germs with which it comes in contact, and also acts as a good disinfectant, and assists healing.

2. As to the other mare, all that will be necessary is to dress the legs twice daily with 1 part carbolic acid to 60 parts sweet oil. J. H. REED, V. S.]

NAVEL ILL.

This disease is due to a germ penetrating the navel wound. The germs might remain local, but their poisons were absorbed from the wound, and could give rise to serious systemic disturbances, including pain in the joints. When the pus germs gained the wound, as frequently happened, they spread up the clots in the vessels of the cord, and they might gain general circulation in this way. When this happened, pyæmia—that was to say, innumerable small abscesses were formed in the important organs, the germs having been carried to them by the blood stream. The germs might also cause inflammation of the joints. This was one of the principal symptoms. It was called navelill and joint ill, the two, in fact, being bound up a good deal with each other. The best method of prevention was to disinfect the navel wound almost immediately after birth. Dry antiseptics were best for this, because they stuck to the wound for a longer time than solutions. The cord should be tied or ligatured. This prevented germs gaining access to the clots, and in a fortnight or so the vessels of the cord were so shrunk that they

were almost converted into fibrous cords. Along these the germs would not penetrate.—Prof. Stackman, of Edinburgh.

RATION FOR DRIVING HORSE—PINWORMS.

IGNORAMUS:—"What ration do you recommend for driving-horse averaging 10 or 12 miles daily? Do you advise pasturing where possible?"

"2. What is the cause of fine, reddish-colored worms, about 1 inch long, in fresh horse droppings when scouring, after being on grass? They are very lively, and wriggle down out of sight in a few minutes. What treatment is necessary? The horse seems in good condition, and does not scour easily on the road."

[1. There is no other ration that quite takes the place of good hay and oats for a driving-horse. In the morning water the horse and give a gallon of clean oats, mixed with enough cut hay to cause him to masticate well. Half a gallon of wheat bran and a pinch of salt will improve the feed. Give what clean, fresh hay, chiefly timothy, he will eat in half an hour. A horse should not start out to drive on a loaded stomach; he should, therefore, have finished his breakfast more than half-an-hour before being hitched. At noon he should receive the same food, with less hay than in the morning, and his night meal should be the same, with all the hay he cares to eat in probably two hours. Always water before feeding. An occasional feed of grass will do the horse good, but it should not be allowed on an empty stomach.

2. We take it that the worms referred to are pinworms, which infest only the rectum of the horse. They are small, pointed at one end, and from 1 to 2 inches long. Medicine given by mouth will do very little good, although a physic will be quite in place. Give as a drench, 8 drams of Barbadoes aloes and 1 teaspoonful each of baking soda and ginger, dissolved in a pint of warm water. After this, clean out the rectum by hand and inject the following: Quassia chips, ½ lb.; and soft water, 1 gallon. Boil down to half a gallon, strain off, and inject with a large syringe. Retain the injection in the rectum half an hour by holding down the tail firmly. Clean out the rectum, and give the injection once a week until the worms disappear.]

SPRAINED FETLOCK.

W. E., Simcoe Co., Ont.:—"I have a horse, 5 years old, which has been lame in his left hind leg for about a week. As far as I can judge, it is a sprain of the fetlock joint, as the joint is slightly swollen. He is not very lame, but I have kept him idle most of the time. I have been applying St. Jacob's Oil, but as yet without apparent effect. Please kindly inform me whether the treatment you prescribe in your last issue for 'sprain of the back tendons' (May 1) is applicable to this case, or whether the blistering should be omitted in view of the recent nature of the injury. It is scarcely necessary for me to add a word to what others have said in praise of the ADVOCATE, but I consider it the best farmers' paper I have seen."

[The injury to your horse, being of recent occurrence, requires rather different treatment from the case referred to. If you have made a correct diagnosis, a cure should be effected in about three weeks. Give the horse perfect rest in a comfortable box stall; feed lightly. Good practice to give a slight purgative—say 6 drs. aloes and 2 drs. ginger. Bathe the affected joint well three times daily with warm water, and apply with smart friction some of the following liniment: Spirits of ammonia, oil of turpentine and tincture of arnica, of each 2 ozs.; alcohol, 4 ozs.; water sufficient to make a pint. If, after the lameness disappears, the swelling does not also disappear in a reasonable time—say a couple of weeks—it would be well to apply a blister; or if the lameness does not disappear, as occasionally happens in severe cases, you should blister. You may use the blister referred to or the following: 2 drs. each of pulverized cantharides and biniodide of mercury, and 2 ozs. vaseline. Clip the hairs off the parts, and rub the ointment well in. Tie the head, so that he cannot bite the parts. In 24 hours rub well again with the ointment, and 24 hours longer wash off and apply a little sweet oil. Let the head down now and apply a little oil every day until the scale comes off, when, if necessary, blister again. J. H. REED, V. S.]

SORE SHOULDERS.

W. B., Norfolk Co., Ont.:—"I have a mare troubled with small boils on her neck; often as many as six at one time, and varying in size from a pea to a ten-cent piece. Some of them contain matter and others blood. I feed her oat straw, with three quarts of oats chopped and two quarts of bran, three times a day. She is in good condition, and as slick as a ribbon. Could you please give me some idea what it is, and what to do for her?"

[There is nothing more tiresome to a good horse-man than to be constantly troubled with sore shoulders and to small pustules or boils. It will be necessary to pluck out the hair of the mane immediately under the crutch of the collar. Have it newly lined with flannel. Then well wash with soap and water, make a paste of linseed meal and apply by means of an old large collar. As soon as the boil softens open freely with a lancet, and follow by a dressing of an ointment composed as follows: Resin ointment, 4 ounces; oxide of zinc, 1 ounce; carbolic acid, ½ ounce. This should be applied to the interior of the wounds every day. You may expect improvement in a week from commencement of treatment. DR. W. MOLE.]

Honey.

amesford, at the Association.

comb produc- rances or burr rances across such a queen g queens, giv- ing honey at e cells will be illing up hives, opens, get the xls, which are square feet to eparators are ed follower or a bee space—a e necessary e outside sec- e of the separa- e extra bee h holes. I use ees plenty of ime, does not ourage them

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LAMINITIS OR FOUNDER.

F. B., Cumberland Co., Nova Scotia:—"I have a Clyde mare, fourteen years old, that seems to be incurably lame. I had the veterinary to her, and he said it was 'founder.' The hoofs are tough and thrifty looking, and always seem to be about the right temperature, but they are rather narrow at the heels and grown in ridges. The frog is large, and on each side of it the sole has grown thick so as to form a lump. She stands in the stable with feet braced out in front of her. Both feet are alike, and she does not favor one more than the other."

[The after-effects of laminitis are so many that it is sometimes difficult to recognize the fact that an animal may have suffered from a slight attack and to have escaped notice. This will, as years pass on, cause the sole to drop down and become pumiced. Bruises of the sole follow, and the secretion of the horn at the coronet varies so we get the ridges like the horn of a ram. In some cases where the animal places all his weight on the heels the ridges are wide apart at the heels and close together in the front. Animals affected with pumiced foot progress in a very slow, painful manner, and to relieve the feet often become wasted under the shoulder blades, or, as we sometimes say, become flat-chested. On no account have the soles or frog touched with a knife or rasp. While it may temporarily relieve the pain on pressure, it at the same time allows of more exudation between the coffin bone and sole, and renders it more liable to bruises. The only benefit that can possibly be effected is to apply what is known as a dish bar shoe. Get the blacksmith to make a pair of bar shoes one inch thick at the toe, tapering off to a knife edge, turned slightly up like a quill. This will allow the animal to place the heel on the ground when progressing, with a fair amount of comfort. DR. W. MOLE, M.R.C.V.S., Toronto.]

GOITRE IN PIGS.

J. C. S., Bruce Co., Ont.:—"I wintered 11 grade Berkshire hogs, and they did very well for about three months, when four or five of them began coughing, and finally three of them died about two weeks ago. I opened them and found a growth in their throats about the size of a pig's kidney, which seemed to press on the windpipe till they choked, as the windpipe was very flat where the lump pressed on it. The lump was loose and would lift out when the throat was opened. It did not show on the outside of the skin. I had them in a stone stable. First, can you tell me what the trouble was? Second, do you think it would be safe to open the pigs' throats and take out the lump?"

[Your pigs were affected with goitre, an enlargement of the thyroid glands. This condition occasionally occurs in mostly all animals. Water containing large quantities of lime is supposed to cause it. I have frequently noticed it in pigs whose surroundings were damp. Stone stables are inclined to sweat in frosty weather and thereby produce a dampness which might be the cause in your case. As to dissecting the glands out as you mention, I may say that if the operation be skillfully performed and proper after-attention paid to the animals, it would be followed by success. The glands are ductless, and the animal will thrive without them, but there are many blood vessels in this neighborhood, and there is great danger of bleeding, unless the operation be very carefully performed. If, in the early stages, a little tincture of iodine be injected into the swelling with a hypodermic syringe, it would cause the enlargement to disappear, but when such a stage is reached that there is danger of suffocation, nothing but an operation will suffice. It is probable a change of quarters and regular exercise in the open air, when the weather be not excessively cold, would act as a preventive. J. H. REED, V. S.]

WOLF TEETH IN HORSES.

SUBSCRIBER, Wellington Co., Ont.:—"I have two colts, one three years old, the other one a few months under three. They have what are called wolf teeth. Are they an injury to the animals; if so, how should they be removed?"

[Wolf teeth are those small supernumerary teeth which appear in the space just in front of the first molar, and are generally supposed to cause serious disorder to the eye. As a rule, however, veterinary surgeons believe they do little or no harm, except perhaps a very slight irritation to the eye. If very large they may interfere with mastication. If it is desired to remove them, a small pair of forceps should be used for the purpose.]

Miscellaneous.

STAVE AND STONE SILO.

R. E. MOFFATT, Carleton Co., Ont.:—"We are going to build a silo, 9 ft., stone, round; 16 ft., stave. Can you see any objection to such a structure? How many tons of ensilage would it hold, 25 ft. high, 16 ft. in diameter?"

[We see no objection to such a combination for a silo, provided the inside of the stonework is made even and smooth, and strong enough that it will not crack. The joint must be made flush inside and well cemented on the outside to facilitate even settling and no admission of air. We cannot, however, see the necessity nor the advantage of so much stonework, unless it is built into a bank, and therefore necessary to hold the planks aboveground. Most of stave silos are set on stone or cement foundations, about one foot above ground. A round silo, 25 feet high and 16 feet in diameter, will hold about 105 tons of corn ensilage.]

FLOWING DOWN CLOVER.

R. T. & S., Hastings Co., Ont.:—"We have a field that we seeded down with Mammoth clover alone last year, and it is a good catch all over. We were thinking of leaving it till about the 1st of June and then plowing it under for manure and planting corn. What we want to know is, which would be the best, to do as we suggest or leave it for a crop, cut it, and plow next spring? Of course, we are trying to enrich our soil."

[A fairly good crop of fodder corn may be secured on the land after plowing down the clover about the 1st of June, but the soil would not be much enriched by such a plan. Since the roots of the clover contain the bulk of fertility, we would advise, if another field is available for corn, harvesting the clover crop as early as good hay can be made, and then plowing the ground. In this way both humus and fertility will be added to the soil. Roll and harrow immediately after plowing, to conserve moisture and hasten decomposition of roots and grass, and if land is suitable for fall wheat, by occasional surface cultivation, especially after rains, a good preparation for wheat will be made and the field may be seeded to clover again next spring; or, if ridged up in the fall it will be well prepared for a crop of spring grain. If fall wheat is not to be sown, more top could be turned under by delaying the plowing till a good aftermath has grown up, which would be about Sept. 1.]

STAVE SILO.

W. A., Simcoe Co.:—"Will corn mature properly for the silo in the north of Simcoe County by planting early varieties?"

"Would a stave silo built outside a barn need any protection from frost? Would the ensilage freeze around the outside or on top during severe cold (15° to 25° below zero)? What is the general plan of getting the ensilage from such a silo into basement stable?"

[We should say that the earlier varieties of corn will mature sufficiently for good ensilage in any part of Simcoe County.]

We know of a number of stave silos in various parts of Ontario built outside the barn, and have had experience with one ourselves in winters when the temperature went 25° below zero. At such times the silage freezes around the sides near the top only, but this frozen silage dug out with a pick when weather moderates and left a day or two in feed passage of stable, thaws out and is all right for food. Our plan was to build the silo eight or ten feet from the stable wall and enclose a roofed space of 8x8 or 8x10 feet and 7 or 8 feet high between stable and silo for a feed room or mixing room, and have a chute, say 2x2 feet, running up from this room near to top of silo, into which the silage is thrown and carried down to the feed room. Of course, for convenience of feeding, a door in the stable wall opposite this feed room is necessary, through which to carry the feed to the stock, and if it can be arranged to have a chute from the barn floor to carry chaff or cut straw and hay to the feed room for mixing with ensilage, all the better.]

TERMS OF FREE ENTRY INTO U. S. OF PEDIGREED STOCK.

A. L., Elgin Co., Ont.:—"Who is secretary of the American Shorthorn Association? Have animals to be registered in the States before they can cross the lines free of duty? Will our local vet. do to examine the cattle for disease? Also, at what ports must they be entered?"

[J. H. Pickercell, Springfield, Illinois, is the secretary. Animals to be entitled to free entry must be registered in the American Shorthorn Herd Book, and in order to this their ancestors back to the imported animals must also be recorded in that book. The Government Veterinary Inspector of your district must apply the tuberculin test and furnish a chart of the result, to accompany shipping bill. No particular ports are named at which animals may enter.]

WHERE SHOULD THE COW CALVE?

ENQUIRER:—"When one has access to a comfortable box stall, do you consider it wise to allow a cow to drop her calf in a yard in which there is a herd of a score of cattle?"

[When a cow calves in the fields she almost invariably gets away alone in some quiet, secluded corner and comes out only after the calf is a few days old. For this reason, if for no other, it would be wise to house the cow in the box stall as she approaches parturition, if the best results are to be obtained. We can hardly imagine one being so careless as to allow a cow to calve in an enclosed yard where other cattle are running. In such a case there is danger of losing the calf, as well as having the cow injured by becoming overheated from undue excitement in protecting her offspring, which is liable, at least, to cause derangement of the udder, if nothing more serious results.]

DIFFERENCE BETWEEN BUTTER AND BUTTER-FAT.

PATRON OF A CREAMERY:—"Are butter-fat and butter the same; if not, what is the difference?"

[No; they are not the same. Butter-fat is the pure oil or fat of the milk; the per cent. of which is ascertained by the Babcock tester. Average milk contains 3.6 per cent. butter-fat. Butter is composed of about 84 per cent. butter-fat, the remaining 16 per cent. being made up of water, curd, and salt. One pound of butter-fat makes in the neighborhood of 11.5 lbs. of butter.]

Laura Rose, O. A. C. Dairy School.]

CRIBBING HORSE—COW WITHHOLDING HER MILK—RIDGING LAWN OF DANDELIONS.

A SUBSCRIBER, Norfolk Co., Ont.:—"I have been reading the ADVOCATE since the first of last January, and have received many useful hints, as well as much valuable information. The ADVOCATE should be in every farmhouse."

"1. Now can you tell me, is there any cure, or what will stop a horse from cribbing or sucking wind?"

"2. Will it interfere with a cow letting down her milk, to feed her chop stuff while she is being milked, or should she be milked first?"

"3. Can you tell me how to rid my lawn of dandelions?"

[1. Cribbing or crib-sucking is a habit of grabbing the manger or other objects with the front teeth, and is usually associated with the serious vice of wind-sucking, which often leads to digestive disorders, colic, and loss of condition. The horse seizes the manger or other solid object with his teeth, arches and shortens the neck, and makes a grunting noise. The habit is frequently acquired during idleness or from soreness of the front teeth. When first noticed it is well to place the horse in a box stall that has no manger, rack or other object to take hold of. Allow him to take his hay off the floor and his oats from a pail, which should be removed as soon as the meal is finished. Have his teeth examined and dressed, if necessary, by a veterinary surgeon. If the horse is a confirmed cribber put a muzzle on him and leave it off only while he is eating or on the road. In pure wind-sucker, a strap may be buckled tightly around the upper part of the neck, though at the risk of inducing roaring.]

2. The writer has frequently found it of advantage to give a cow, that inclines to withhold her milk, a feed of chop or other food that she relishes, just before sitting down to milk. This treatment may not work with all cows, but we have seen none but great results from it. Kindness and quietness at milking time will be found to pay.]

3. To rid a badly-infested lawn of dandelions is a difficult matter and one which we will ask our readers to discuss. In a lawn where these weeds are thin they may be spudded out, but where the plants are very thick the best plan we can suggest is to remove the old sod and re-sod with a clean grass turf.]

REARING QUEEN BEES.

H. A. S., London, Ont.:—"I have a well-bred Golden Italian queen, and I wish to raise several queens from this hive so that I may distribute them among my neighbors. Could you describe a simple and handy method for the raising of queens?"

[To rear queens successfully requires quite a bit of experience, but here is a simple method. Take from the Italian stock two or three cards containing eggs and brood in all stages of development (replacing them with empty combs), and give to a strong colony from which you have removed the queen and all eggs and brood. On the eighth day a lot of queen cells will be started on these combs.]

On the third day the three empty combs in the Italian stock will have eggs enough to be placed in another strong colony, from which you have also removed queen, eggs and brood, to start more cells. This operation may be repeated several times. All this should be done when weather becomes settled and fine and honey is coming in freely.]

The queen cells can be introduced in queenless hives, or nuclei (small hives containing two combs) may be formed for the full development and perfection of the queens. MORLEY PETTIT, Middlesex Co., Ont.]

MARKETS.

FARM GOSSIP.

Ontario Farmers' Institutes.

Arrangements have been made for the regular annual meetings of the various Farmers' Institutes throughout the Province of Ontario during the month of June. Supt. Creelman has made provision whereby a number of meetings will be attended respectively by Miss Laura Rose, Prof. J. B. Reynolds and Prof. H. H. Dean, giving addresses on such subjects as may be selected by the local institute, such meetings to be held in the afternoon. In case an evening meeting can be held and the delegate arrive at the next place of meeting before 1.30 p. m. on the day advertised, an evening meeting may be arranged for if desired.]

SECTION I.

Delegate.—Miss Laura Rose, Lady Instructor in Dairying, Ontario Agricultural College, Guelph.

Subjects.—"Bread and Butter Making," "The Properties and Care of Milk," "Difficulties in the Dairy and How to Overcome Them."

1. Fenelon Falls (Dickson's Hall), Victoria East, June 2nd.
2. Hamilton (Mountain View Hotel Hall), South West, June 4th.
3. Milton (Town Hall), Halton, June 5th.
4. Hespeler (Royal Templars' Hall), South Waterloo, June 6th.

SECTION II.

Delegate.—J. B. Reynolds, Professor of Agricultural Physics, Ontario Agricultural College, Guelph.

Subjects.—"Surface Cultivation," "Light and Ventilation in House and Stable," "The Silo and Silage," "Some Improved Methods and Appliances for the Farm."

1. Shelburne (Town Hall), Dufferin, June 5th.
2. Flesherton, Centre Grey, June 6th.
3. Owen Sound (Y. M. C. A. Hall), North Grey, June 7th.
4. Warton (Town Hall), North Bruce, June 8th.

SECTION III.

Delegate.—H. H. Dean, Professor of Dairy Husbandry, Ontario Agricultural College, Guelph.

Subjects.—"Milk and Cream for City Trade," "The Economical Production of Milk," "The Present Outlook for Canadian Farming in General and Dairying in Particular."

1. Weston, West York, June 5th.
2. Wexford (Methodist Church Hall), East York, June 6th.
3. Newmarket (Templars' Hall), North York, June 7th.
4. Cookstown, South Simcoe, June 8th.

Ontario Crop Report.

The following statement has been issued by the Ontario Department of Agriculture regarding the condition of crops and live stock during the first week of May, 1900, based upon reports received from over five hundred special correspondents.

The Weather.—The temperature of the winter of 1899-00, including the six months November to April, was one degree higher than the general average for that period. November and January were both remarkably mild months, but March was unusually cold, its mean temperature of 20.5 being 5 degrees less than the average.

Full Wheat.—The general tenor of the reports as to the condition of fall wheat is decidedly favorable, the crop having in most localities stood the winter well and promising excellently. Provided there is a sufficient supply of moisture, the principal cause of injury has been the formation of ice on level or low-lying lands from water which collected in pools after the melting of the snow, by which many young plants were killed, and the fields left uneven and patchy.

Clover.—The losses of last year, when clover suffered severely from the severity of the winter, have somewhat diminished the area devoted to this crop. Owing to fall drought there was a poor catch in newly-seeded meadows, but the winter was a favorable one, and the new growth has for the most part survived in excellent condition.

Winter Ryegrass.—This crop is being grown more extensively than formerly, especially in stock-raising neighborhoods, being used mainly for pasturage or green fodder, though there are many localities where it is not cultivated.

Vegetation.—The present season is considerably later than the average, owing to the prevalence of frosts and cold winds, and the lack of rain. The grass is in excellent condition, and has made a good start, although in some localities it is too short and scanty for the pasturing of cattle, but the prospects are favorable for a bountiful yield if rains and warm weather set in.

Spring Seeding.—The coldness of the season has somewhat retarded spring sowing, which was commenced somewhat later than the customary date in most places. The ground was generally in good condition to receive the seed, the principal exception being as to clay soils, which frequently proved difficult to work, being stiff and lumpy.

Fruit Trees.—Fruit trees and bushes have come through the winter with unusually small loss. Although the season has been backward, there was promise of a heavy bloom on fruit trees when correspondents wrote at the beginning of May, and if frosts and heavy rains are escaped at the period of blossom, a large setting of fruit may be expected.

Live Stock.—Reports as to the condition of live stock are in the main favorable, the animals being, as a rule, healthy and vigorous. Owing to the need of economizing fodder, many of the cattle are lean. In many cases they went into winter quarters in poor condition by reason of the drought. Though quarters in poor condition by reason of the drought. Though quarters in poor condition by reason of the drought.

Farm Supplies.—Conditions as to the amount of hay and grain supplies available after satisfying the home demand are extremely variable. In most neighborhoods there is little or no hay for sale, but there are numerous exceptions, the farmers having in many instances kept large supplies on hand, owing to the large price. Oats are generally scarce, but are offered freely in some places, more especially in the eastern counties. A good deal of wheat still remains in hand in the western part of the Province, where many of those who could afford to hold have done so, hoping for a rise in price.

Carleton County, Ont.

We have had a very cold spring, without rain until May 8th, and, as a consequence, grass and clover have made a poor showing as yet. Considerable seeding has already been done, and if the weather remains dry a few days more will complete that part of the season's operations. Spring wheat, oats, peas, and barley are the principal cereal crops sown in this locality; very little attention is given to fall wheat. The farmers of this county have been blessed with an almost exhaustless soil, and until quite recently the object was to place on the market the most grain of the best quality from every available acre, the returns of which have always been satisfactory.

Prospects for Clover in Maritime Provinces. Halifax Co., N.S.—I find that clover seeded last year on heavy clay land has been somewhat killed by too much rain, and along the river on drier land it is looking well.

Prince, East, P. E. I.—The clover fields in this section have not been appreciably injured this winter, but the heavy growth of straw occasioned by the rains of last June and July weakened the plants very much, and there was little growth last autumn.

Northumberland Co., N. B.—The clover fields are in good condition this season.

Annapolis Co., N. S.—Newly-seeded fields are not looking well. The very open winter experienced in our Province has played havoc with grass fields, particularly last year's seeding, fully one-third showing no sward.

Electricity vs. Steam.

Armour & Co., of Chicago, at a cost of nearly half a million dollars, have just substituted electricity for steam as a motive power in their great packing establishment, and expect to effect a saving of fully one-half fuel expense and more than that in labor.

Toronto Markets.

The opening of navigation on the St. Lawrence caused an overflow market. Four boats are fully booked to leave Montreal the second week in May. This caused a slight flutter on Tuesday, when 2,377 cattle were on offer, 2,100 hogs, and 250 sheep and lambs, 30 calves. Everything was disposed of at firm or advanced prices, and we estimated that the gross turnover for the day's business transactions must be in the neighborhood of \$100,000, and this was taken from the City and placed directly in the hands of the farmer.

Export Cattle.—The home demand for best class of cattle seems to warrant the forecast that not many cattle will be exported this season. Boats are scarce for the cattle trade, price still very high, and our chief exporters are not inclined to risk much in the export business this year. Cables are reported to be very good, which made trade brisker, the export cattle in better demand at slightly higher prices.

Messrs. Dun Bros. bought three loads of export cattle, 1,280 lbs. average, at \$4.90 per cwt. Mr. D. O'Leary sold a load of extra choice exporters to Mr. J. Gould, average 1,370 lbs., at \$4.30 and declared that with shrinkage and expenses, he lost money, as they cost that in the country.

Butchers' Cattle.—Choice butchers' cattle weighing 1,000 to 1,100 lbs., equal in quality to the choice export, were in good demand, sold at \$4.25 to \$4.35 per cwt. Good butchers' cattle sold at \$3.65 to \$3.90; mixed cows, heifers and steers at \$3.45 to \$3.65 per cwt.

Mr. W. McClelland bought 10 butchers' cattle, average 1,080 lbs., at \$4.12 per cwt. Mr. D. O'Leary sold 4 butchers' cows, 1,200 lbs., at \$3.40. Mr. J. L. Rountree bought one load of good butchers' cattle at \$3.60 per cwt.

Bulls.—Heavy export bulls were in good demand, sold at \$4 per cwt. Light export bulls, sold at \$3.75 per cwt. One export bull weighing 1,830 lbs., sold at \$4.25 by Mr. J. Brody. Many estimates were made of his weight, no one within 50 lbs.

Mr. T. D. Madill sold a bull weighing 1,550 lbs. at \$4.12 per cwt. Mr. P. J. Henry sold two bulls, 1,830 lbs., at \$4 per cwt. Feeders.—Very few good short-keep feeders on offer, but a large number of steers weighing 1,050 lbs. were taken by farmers at \$4.15 to \$4.30 per cwt.

Sheep.—Deliveries very light; prices firmer, at from \$4 to \$5 per cwt. for ewes, and at \$3 to \$4.15 for bucks. Mr. Wesley Dun bought 50 sheep at \$4.00, and 175 sheep at \$4.75 per cwt. Lambs.—Yearling lambs were steady, at \$6 to \$6.75 per cwt., and 23 spring lambs at from \$2.50 to \$5 per head.

Milk Cows.—There is a very fair demand for good milk cows; 24 on offer, at prices ranging from \$20 to \$50 per head. Mr. Ryan bought eight good dairy cows at \$45 per head average. Mr. Armstrong bought four cows at \$35 to \$40 per head. Calfes are in good demand; choice veals wanted. Prices from \$2 to \$10 per head, according to size and quality.

more like wild animals than our sleek, rounded, well-fed good breed. We all come to the conclusion that they always came on the market as dressed hogs in car lots, and went direct to the packing houses. This caused the price to be slightly easier on all light hogs. We have advised that hogs, to bring top price, must be 160 to 200 lbs. This has led the farmers to consider that a hog 150 lbs. would pass as a straight animal. They are now sternly culled, and the weights put up to 180 lbs. to 200 lbs. for top price at \$6.12 next week.

Dressed Beef.—Fore quarters, per cwt. \$4.50; hind quarters, \$7; lamb, per lb., 6c.; mutton carcass, per lb., 8c.; veal carcass, per lb., 7c.; spring lambs, each, \$3 to \$5; dressed hogs, per cwt., \$7.75. Nine quarters of dressed beef, weighing 1,000 lbs., were sent to Ottawa for the relief of the Hull fire sufferers by Messrs. Wm. Harris & Sons, St. Lawrence Market, by the Canadian Express Co., who carried this and other consignments free of charge.

Wheat.—400 bushels of white at 71 cents per bushel; 300 red at 69 cents per bushel. Oats.—400 bushels sold at 32c. to 33c. per bushel. Barley.—100 bushels sold at 44c. per bushel. Peas.—Scarce, at 59c. per bushel. Hay.—About 10 loads per day, at \$10 to \$11 per ton. Baled Hay.—Calf lots are quoted at \$9 to \$9.50 per ton. Straw.—Only 4 loads on offer, at \$8 to \$9 for sheaf, and loose at \$4.

Butter.—City mills report stocks of bran below normal, and consequently the price advanced \$1 per ton; now quoted at \$16.50; shorts at \$17.50 at mills. Hides and Wool.—Hides, No. 1, green, per lb., 8c. to 9c.; No. 2, 7c. to 8c.; No. 3, 6c. to 7c.; No. 4, 5c. to 6c.; No. 5, 4c. to 5c.; No. 6, 3c. to 4c.; No. 7, 2c. to 3c.; No. 8, 1c. to 2c.; No. 9, 1c. to 2c.; No. 10, 1c. to 2c.; No. 11, 1c. to 2c.; No. 12, 1c. to 2c.; No. 13, 1c. to 2c.; No. 14, 1c. to 2c.; No. 15, 1c. to 2c.; No. 16, 1c. to 2c.; No. 17, 1c. to 2c.; No. 18, 1c. to 2c.; No. 19, 1c. to 2c.; No. 20, 1c. to 2c.

Eggs are reported scarce on this market, and prices hold steady at 12c. to 12 1/2c. per dozen. From farmers the price is still about 2 dozen for the quarter, large and small. Manchester Butter Market.—A good deal of butter has since our last report been taken off the market in anticipation of the new supply. Still a new arrival for the English trade from Siberia, Russia. This new supply is engaging attention at the present time.

The efforts of the Russian Government to promote the butter industry in Siberia is now bearing fruit. The better packing and improved quality will be a serious competitor in the English market. With the Colonial supplies, Russia is making great progress with her poultry, horses, rabbits and deer products, which are now landed in excellent condition, whilst the game includes ortolans, plovers, quail and capercaillie, all delivered in a frozen condition. New York prices have fallen 2c. to 3c. per lb., the higher priced goods showing the greatest drop. In Canada, the shortness of grass has kept supply under and the market firm.

A great number of the farmers kept more stock than they had prepared winter supplies for, consequently the milk flow is not so great as expected, and many farmers are complaining of short keep, as most of the silos are getting very low. Demand for good butter is always keen. Prices steady at 11c. to 12c. for large and small dairy rolls. Creamery quoted at 13c. to 20c. per lb. Cheese.—Locally, the cheese market is very dull, and bids fair to remain so for the next few weeks; no supplies coming forward, stocks low, and quoted at 11c., colored, and 11 1/2c. for white.

Market Notes.—Mr. Geo. Alderson, of the London Packing House Co., was on the market for pointers in the hog trade. Mr. Rowatt, of Sudbury, and Mr. Reid, of Kingston, were looking for short-keep feeders. Mr. A. Zoller, of Newcastle, England, purchased three loads of exporters at \$4.50 per cwt. Mr. John Smith, M. L. A., of Brampton, was a visitor to our market on Thursday. Florists.—The display of flowers at St. Lawrence Market was a beautiful sight to-day, and would require technical knowledge to describe all on view. The lilies, carnations, primroses and sweet peas are in magnificent profusion. May 11th, 1900.

Chatty Stock Letter from Chicago.

Table showing current and comparative live stock prices. Columns include Beef cattle (1500 lbs. up, 1200 to 1500 lbs., 1000 to 1200 lbs., 800 to 1000 lbs.), Hogs (Mixed, Heavy, Light, Pigs), Sheep (Natives, Western, Yearlings, Colorado lambs, Spring lambs), and Top Prices (ago, 1899, 1898).

The demand for young cattle to feed is very strong. Buyers have been paying as high as \$7 per 100 lbs. for young steer calves averaging about 115 to 160 lbs. on the Chicago market. Canadian store cattle continue to command attention, and buyers in the West do not seem to be able to get enough of them. They are going into Ohio, Indiana, Michigan, Illinois, Missouri, Iowa, Kansas and Nebraska. They are well bred in the home and thin enough in flesh to be only attractive to those who want them for feeding purposes.

The advance in the price of cattle on the English markets is very encouraging just now to American shippers. The prices for good cattle here have been comparatively low, and it is expected that there will be a liberal marketing of heavy-weight cattle during the next month or so. The general situation in the export trade is pretty encouraging on the whole.

Since Argentine has been scheduled by Great Britain there is talk of bringing the boats north to carry live stock from this country and Canada to England. There has been a great improvement in the South American vessels during the past few years, but they are still very inferior to those our exporters are accustomed to ship in. Furthermore, it is doubtful if exporters will want to take chances in sending stock in ships that have carried cattle affected with foot and mouth disease. It is possible that a thorough disinfecting will make them perfectly safe, but until shippers can be assured of this they are not likely to be generally patronized.

An idea of how closely cattle dealers figure sometimes is shown by a recent transaction in which a train load of cattle sold at \$5.50 to \$5.60 on the market. A cattle shipper bought \$20,000 worth of cattle and marketed them within three days, and when all expenses were paid he was just \$2.47 to the good. That is figuring mighty close to the disappearing line of profits.

The buying of pure-bred bulls is not being confined to men who raise cattle for fancy breeding purposes. One of the hopeful signs of the times is the fact that breeders of ordinary beef cattle are conspicuous among the buyers of pure-bred bulls of the beef breeds.

Guelph Monthly Cattle Fair.

The May monthly cattle fair 30 years ago was a great event. To-day it has dwindled down to nothing. There were a few cattle and pigs brought in, previously purchased. There was practically no butchers' cattle. The prices of stock are about the same.—May 2nd Mercury.



The Mutiny of the "Helen Gray."

BY GEORGE MANVILLE FENN.

(Continued from page 272.)

"Barque Helen Gray seized by Malays. Captain and crew murdered. Captain's wife, child, and two men left. Up winding muddy river by round-topped hill. Help!"

I thought that would do, and rolling up the paper, I let it go down the neck of the bottle, and was about to cork it up tightly, but it struck me that if a bottle were seen floating it might not be noticed, and I had to think out how I should act.

It did not take me long. I set my knife to work and split off a skewer-like bit of wood from my bunk, pointed one end, and made a slit in the other, into which I stuck a piece of paper from my notebook; so that after I had well corked the bottle, and corks in the pointed piece of wood, I knew that if the fish and crocodiles left that bottle alone it would go floating down the river and out to sea like a buoy, and some vessel might pick it up.

It seemed an age before I heard the chain cable rattle and felt the way of the vessel checked. Then, waiting patiently for about half an hour, I put my head above the hatch and listened, meaning to wait till I could creep on deck with what I called my life-buoy, and drop it gently over the side. I knew there would be someone on the watch, but I could not tell where; and as I listened, there came from out of the dark jungle close at hand a deep snarling roar, which I felt could come from no other creature than a tiger, and my heart sank as I felt how impossible escape would be that way. We must either steal down the river in a boat or wait for help. At least there was another way—for my messmate to join with me in killing the Malays as they had killed our men.

I stood there waiting for my chance, but as I waited there came a splash from the river here, and another there, evidently made by big fish, and feeling satisfied that a splash more or less would not be noticed, I raised the bottle and held it above my head for a few moments, then hurled it bottom forwards with all my might.

"If that strikes a rope it will fall upon the deck," I thought, but the next moment I heard a loud splash, and feeling that I had sent my messenger to fetch us help, I went below.

As soon as I woke the next morning I lay down with my back in the light shed by the hatchway, and wrote nearly the same words upon leaf after leaf of my little notebook, doubling them afterwards so as to be ready to tear out when wanted; and my next thought was how to get some more bottles.

When I went on deck Ismael gave me a friendly nod, and pointed to the provisions on the end of a tub, and my heart rose as I saw a wine bottle and another evidently empty at the side.

I made no scruple about helping myself, and taking the empty bottle, poured some wine into it, then carrying my food on the poop-deck, sat down to eat and drink.

Feeling that the best thing I could do was to affect the utmost unconcern, I asked Ismael for some more wine, and to my horror he led me to the carpenter's tools were, and bidding me take hammer and chisel he went down below to where the hold had been opened.

"Take all you want," he said, pointing to one of the cases of wine stowed in a stack.

I broke open the case and took out two bottles, trembling all the while lest Joe Stacey should be discovered.

That night at the change of tide I sent a champagne bottle whose contents had been poured away floating down with another message; and an hour later I started another, while without any difficulty, the man who saw me go taking it quite as a matter of course, I went boldly, loaded myself with meat and biscuits, and carried the stores to the forecastle hatch.

Just as I got there though, Ismael confronted me and asked me sharply what I was doing. I showed him, and he was quite satisfied and walked away.

These journeyings to and fro taught me one thing, and that was that the Malays who seemed to be noticing nothing were always on the watch and ready to start up out of the most unexpected places.

This was brought home to me on my walking to the hold and going down to where the open case of wine lay waiting. I had taken two bottles away and to my great joy I found another had gone.

Joe must have taken this, for I had not seen the Malays come down, Ismael having had a case placed in the cabin for their use.

I had not come down empty-handed, for I had a tin of preserved meat and biscuit with me, and these I laid on the open case, saying aloud:

"Meat and biscuit and wine with plenty of water would keep us three alive a long time."

"Yes," said a low voice close behind, and a shiver ran through me. "Don't drink too much. The prophet forbids wine."

"Oh, I won't take too much," I said, "but I don't want to be always having to come down here."

As I spoke I took two more bottles by the neck and moved towards the ladder, and to my great delight Ismael, for it was he, followed me without a suspicion.

Twice over that night I tried to put my fresh plan in force, but each time I went on deck smoking I found that there was someone on the poop-deck, and though I tried again and again, there was always some dark figure to be dimly made out against the sky.

During three days we slowly drifted up with each tide and thrice at each change I sent wine bottles floating down, each with its well-corked message and its flag-like signal stuck in the neck, while the greater part of the day following I spent leaning over the side, anxiously watching the returning tide in an agony of dread lest one of the bottles should come floating back and be noticed by the Malays.

But not one hove in sight, and on the fourth night as we lay at anchor, I sent out with the stream no less than a dozen bottles, the contents of a case I had managed to empty down in a corner where the wine soaked away, wondering the while at my success.

All my paper was used now, and, feeling that if these messages were to do any good I could let them rest and wait, I made up my mind to have one more try to put my other plan in force.

My plan was to go on the poop-deck armed with a knotted rope which I had, and making one end fast to a belaying pin or ring-bolt, to lower myself down over the stern opposite to the cabin window.

"And if they hear me I shall get a thrust from a kris, fall over into the river, and the crocodiles will make short work of me. Never mind, I'll risk it," I said to myself, and as we were gliding up the windings of the river, I tried to make my way on to the poop-deck, but two of the Malays were there and awake, and after being nearly caught twice over, I determined to try instead and get word with Joe Stacey; but even here I failed, for all below seemed to be still as death.

My feelings may be imagined next morning when I went on deck to find that we were in a wide lake-like opening which seemed to mark the extent of the navigable part of the river, for away to the right there was the rushing noise of falling water, and the stream that had been so oily and sluggish was now rippled and fast.

I saw now the object of our journey. At this, the tidal end of the river, there was a collection of palm-thatched houses and what seemed to be a stout stockade of bamboos, while in a shallow part where some rocks projected from the bed of the river, there were the remains of a large prahu which looked blackened as if it had been burned.

But there was no sign of living being; and by degrees I saw that the place was deserted. That this was our destination it was plain enough to see, for our anchor was down, and under Ismael's direction the smallest anchor was lowered into the boat which they had drawn alongside, and this was carried some distance astern to cast into the river so as to effectually moor the vessel fore and aft.

The boat was about fifty yards away, with four men in her, while Ismael and the other paid out the rope from the stern, and I looked on thinking that if I had been armed, and with Joe Stacey by my side, how easy it would have been to beat these two overboard and keep the others off. Then we had but to cast off the chain cable and float back with the falling tide.

"Why couldn't I do this alone?" I thought to myself as I looked round for a capstan bar, but to see in a despairing way that they were all forsworn.

The next moment the chance was gone, human feeling, I suppose, driving it out of my head.

For there was a shout and a splash, and as it were an echo of the first. The anchor had been cast out of the boat, but one of the men who lifted it out overbalanced himself and made a spring to avoid being dragged down. The consequence was that he plunged in several feet from where the anchor sank, and the boat went in the other direction.

As the men seized the oars the head of the Malay rose to the surface and he uttered a laughing cry as he struck out for the boat, but the next moment his eyeballs gleamed white in the sun, his face was horribly distorted and he uttered a yell of agony, throwing up his arms wildly and then shouting again and again, the last cry being a smothered gurgle as he was dragged under water.

Then all was still and the river flowed on.

It was a shriek from the cabin window and a wild sobbing cry of horror which brought me to myself.

"Come on!" I shouted to Ismael as I made for where one of the boats swung from the davits. But, looking cold and strange, he laid his hand upon my arm and shook his head.

"Kismet," he said; "the mugger has taken him." I stood there shuddering and searching the surface with my eyes, but just as a duckling or water-rat is snatched under by a pike in some pool or stream, the poor wretch had gone, and his comrades rowed hastily back to the ship's side, climbed on board, and made the boat fast by a rope.

Finally they tightened one cable to fast moor the vessel, and a couple of stout ropes were taken ashore to make secure to as many tall palms, the men working in a calm stolid manner, the only evidence of their being startled being shown in the silence with which they did their work.

CHAPTER VII.

Here then was the object of the Malays in seizing the ship and bringing it up this out-of-the-way river. The old deserted camping must have been known to some of them, and after waiting for an opportunity to rise against those they served, these men had seized what was to them a treasure of uncounted value.

Feeling that patience was my only chance, and that I should win the Malays' confidence by taking my position as a matter of course, I set to work with them in all they did, helping them to cut down bamboos and to spread the great palm leaves for thatching the largest house, after the ladder up to its bamboo platform, eight feet above the ground, had been mended; and as soon as this was ready the various stores of the ship were attacked.

The first things sought for were the cases of arms and the ammunition, a large proportion of which was stowed in the repaired house, rifles and pouches of cartridges being ranged on either side of the door and windows.

Then the wine and provisions were landed, and each day as the men went to and fro with boatloads, I was in dread lest Joe Stacey should be discovered. But my alarm had been unnecessary; stores of provisions which I had left in the neighborhood of the water tubs disappearing regularly, but all the same I could not make out Joe's hiding place.

I found out now that when we were busily engaged ashore and out of reach Mrs. Barton was allowed to leave her cabin and walk about the deck, but long before the time for our return on board she was locked up again, and I used to chafe and spend my time thinking out plans for sending her a hopeful message. But I thought in vain. I was dealing with people more than my match in cunning.

I was seated on deck, forward, one evening, thinking over again of the possibility of getting one of the boats beneath Mrs. Barton's cabin window and taking her off, when the idea came.

I have said that it was impossible to get from my berth in the forecastle to Mrs. Barton's cabin, for either Ismael or Dullah was always close handy to the steps leading up to the poop-deck, and I dared not attempt travelling from mast to mast by the stays, for the vibration would have certainly given warning on those still nights; but now there seemed a way and I wondered I had not thought of it before.

As I stated, two stout cables had been run ashore from the head and stern of the vessel, and these answered the double purpose of mooring and of keeping her upright when the tide was low and the keel touched the ground. At such times the barque hung away from the shore and these two cables were drawn exceedingly tight, but not enough to part, for the big palms to which they were attached high up gave like a couple of natural springs. So, seeing my way now quite plain, I tried to realize another idea—that of getting speech with Joe Stacey.

That seemed in vain, and, full of excitement, that night I went down into my berth meaning to wait till quite late, after satisfying myself that the stern rope passed as near as could be over Mrs. Barton's cabin window.

I had not been below in the forecastle long when I was startled, for there was a faint tap on the bulkhead down close to the floor.

It was repeated.

Eager and wondering, I crept to the spot on hands and knees, and taking out my knife I gave a slight tap on the bulkhead.

It was repeated directly from the other side.

I struck twice in quick succession and there were two taps.

Then I gave two more, waited a few moments and gave another.

They were answered in the same way, and, full of excitement now, I opened the small blade of my pocket-knife and began to bore a hole. But before I had much more than begun, I heard a familiar sound—that of an auger, and in a few moments the steel came through, was withdrawn, and a voice whispered—

"Is it all right, lad?"

"Yes, Joe, yes. Talk low. Are you all right?"

"Rather sick of it, lad. Thought I should never get to you. Think I may go on and get out a board!"

"Yes. No one comes down here."

"Thank goodness!" he said; and setting to work with the auger, making hole above hole, which I connected with my knife, before morning we had got out a piece of the bulkhead sufficiently large for him to creep through. And then, utterly worn out with the exertion and want of air, he told me how he had been at work for days and days trying to tunnel to me, and succeeded from the fact that it was here that a quantity of machinery was stowed openly because of its weight, that he was able with great exertion to creep along in and out; but more than once getting so wedged in that he was afraid he would have to call for help.

"It was hard work that night," he whispered to me. "They somehow managed to lure the chaps up one at a time, and then it was the knife and overboard almost before they had time to call out. I hardly know how I managed; sudden twist round and a dodge from them in the darkness, and as they were after me I made a bit of a jump, caught hold of the shrouds, and swung myself up. Then just as I could hear their feet run under me there was a big splash in the sea, and they stood looking over the side whispering, and I s'pose they thought it was me. You know all the rest," continued Joe, "but there's been times, mate, down below there, when I felt as if it would have been better to have been killed than buried alive as I was."

"But you got the food I put for you?"

"Oh yes, lad, that was all right, and there was plenty of water. Five of 'em, eh? And we're two. Well, if we can take 'em two and a half and two and a half I'm ready. Feel as if a fight would stretch me and do me good. What do you say?"

"Why not provision one of the boats, get Mrs. Barton and the child on board, and trust to that?"

"No, thank ye, lad. I've done it: I was once nine days at sea with twelve men in an open boat. Very fine and brave to talk about, but of all—There, kill me right off if you like, but no open boats. I'm for a fight. But, I say, haven't you had word with the skipper's missus?"

"Not a word. I am going to try and get speech with her to-night," and I told him my plan.

The boat is swinging by the painter, I feel sure," I whispered. "I'll go and warn her while you run the boat round under the stern. I would lower them both down to you, and we could escape in the darkness."

"No, you couldn't, lad. They're too artful to leave a boat ready for you to get away so easily. How do you know that there isn't a man sleeping in it? No; it will have to be a fight. And that's what I should like; it's what they deserve."

"No mind what they deserve," I whispered, angrily, "we have to save that poor woman and the child, and—"

I caught him by the arm, for there was a soft movement on deck which my ears had grown quick at detecting, and I could even hear a faint breathing as someone came and listened at the hatchway.

The Malay stopped listening so long that, in dread lest he should be seen, I muttered uneasily as if in my sleep, turned so as to make a slight scuffling noise, and sighed.

The ruse was successful, for there was a movement on deck, and we two sat listening in silence for about half an hour before I ventured to place my lips to Joe's ear, and whispered what I was about to do.

"Think you can manage it, lad?" he said.

"Yes."

"Go on, then, but take care. It will give her ease, poor thing. But if they see you, give a good loud whistle, and I'll be with you. We must be good mates now."

I left him and crawled on deck, fully determined to make an excuse if I was caught, and not betray Joe to what I knew would be death. If I met my own—

"God forgive me!" I said to myself, "and may they at home never know."

I crept up to the hatchway, and found it darker than ever. There was a heavy mist, but it seemed to be floating above where I stood some ten or twelve feet, so that not a gleam of light came from the sky. All was still as death on deck, but splashing and now and then a heavy blow on the water came from the river, while from the dense forest there were curious sounds, and once a low deep roar, which sent a shiver through me. But the moment I began to act I felt as if my nerves were like steel.

I crawled out of the hatchway and crept under the starboard bulwark, to lie listening for a few minutes before raising myself up and going aft a little, with my hand raised to run along till I felt the mooring cable, which was strained tight. Then, after pausing a little longer, I grasped it with both hands, threw first one and then the other leg over it, and began travelling silently along with my head towards the shore.

It gave a little, but not much, and I found that I could get along almost without a sound, but it was work which took all my energy to be calm and cool, for as I crept along, hanging by hands and legs, I could hear splashing in the water beneath me, and in imagination I could picture a couple of pathosome reptiles with their gaping jaws watching me, and preparing to make a snap and drag me down.

There was the knowledge, however, that I must be at least a dozen feet above the surface to comfort me; but the cable gave more and more, and I was going down for a time, but not for long, and my spirits rose again as I found that I had begun to ascend, till my head came in contact with the palm tree to which the great rope was secured.

I let my legs sink down, and hung for a moment before swinging round and clasping the trunk with my legs, for I dared not drop. Directly after I was on the ground trying to make sure of my direction in the intense darkness, and, finding a fresh difficulty, for I could not be sure of hitting on the fellow tree.

I started off, though, taking step by step with the greatest caution, believing the while that I was going parallel with the barque, but with the confusion of darkness upon me, and my dread filling the space before me with slimy reptiles from the river on my left, and sleek, savage, cat-like creatures from the jungle on my right.

It was not the length of the ship that I had to traverse, and before long I knew that I must have gone that distance and more, but there was no tree; and though I took a few steps to right and left I could not find it, and with the mental confusion increasing I stood still in despair, when a loud slap on the water from behind told me that I must have gone away from the river. Turning quickly the next moment I stumbled against a bush, and felt that all was over for to my horror and astonishment the bush flamed up in a scintillation of sparks. I had disturbed a colony of fire-flies, and I stood waiting to hear voices on board. Then the sparkling died out, and it was dark once more.

But all was still. My hopes returned again, and I took a few more steps to my left, for the curious phosphorescent light of the fire-flies had dimly shown me a tree trunk, and knowing that there could not be another near, I went on with outstretched hands and directly after touched the tree.

I breathed more freely as I clasped it, climbed up a little way, and found the other cable, along which I began to crawl, but feet forward this time, till I judged that I must be close to the ship.

It was so, for my feet touched it, and I hung there listening for a sound, even if it were the breathing of watcher or sleeper, before lowering my legs, and then going hand over hand, to stop short, as close to me I heard a low, catching breath, and in a hoarse whisper came the words out of the black darkness with an intensity that was horrible—

"Keep back, or I'll kill you!"

I tried to speak, but for some moments—perhaps it was but one, and the excitement seemed to lengthen the time—I couldn't get out a word, but hung there expecting the blow of a knife or the shot from a pistol to make me drop into the power of the hideous reptiles swimming below. Then my tongue seemed loosened.

"Hist! Mrs. Barton! a friend!"

"No! I have no friends here. Keep back if you value your life."

"Woman, are you mad?" I whispered. "It is I—Roberts."

"Yes, the friend of those wretches."

"Their prisoner," I said. "Hush. For little Lyddy's sake trust me."

She uttered a sob, and her voice changed as I felt her hand clutch me by the shoulder, and a knife fell upon the cabin floor.

"Yes, yes," she whispered. "You are an Englishman. You could not be so base."

"Hist, let me come," I whispered; and swinging my feet forward, felt the open window; and the next moment I was in the cabin, to listen, but all was quiet.

[TO BE CONTINUED.]



Are There Two?

A bad little boy with a cross little face
Came slowly downstairs in the morning;
Of fun or good nature he showed not a trace,
He fretted and cried without warning.
He'd not touch his breakfast, he'd rather not play;
If you spoke, he just answered by snarling;
He teased his pet kitty, and all the long day
He really was "nobody's darling."

A good little boy, with a bright little face,
Came down in the morning-time singing,
And indoors and out, and all over the place,
His laughter and music were ringing.
He ran grandpa's errands, his orange he shared
With Sue; and he found mamma's thimble,
To do what was asked he seemed always prepared,
And in doing it equally nimble.

These two little boys that I've told you about,
Though they live in one house, are not brothers;
The boy that can sing and the boy that can pout
Have not two loving fathers and mothers.
There are two kinds of tempers, and only one boy,
And one is indeed such a sad one,
That when with the good one he brings us all joy,
We ask "was he really the bad one?"

How Would You Like It Yourself?

There was a great commotion in the back yard.
Mother hurried to the window, to see Johnny
chasing the cat with stones.

"Why, Johnny, what are you doing? What is
the matter with Kitty?" she asked.

"She's so dirty, mother. Somebody shut her up
in the coal hole," he said.

"And is that all?"
"Why, yes," said Johnny. "She's dirty
and black and horrid! We don't want her
here."

Mother was about to speak, but she
checked herself and went back into the
house. Presently Johnny came in, crying,
and ran to her for help. He had fallen into
a puddle, and was dripping with mud.

"Oh, mother, mother!" he cried, sure
of help from her.

"Jane," she said quietly to the nurse, who
was sewing, "do you know where there are
any good-sized gravel-stones?"

Nurse looked up, astonished, and Johnny
stopped his loud noise to stare.

"Stones, ma'am?" asked Jane.
"Yes, to throw at Johnny. He's been in
a puddle, and is dirty and black and horrid.
We don't want him here."

Johnny felt as if this was more than he
could bear, but a funny smile on his
mother's face kept his heart from being
quite broken.

"Please, mother, I'll never do it again!" he
cried. "Poor kitty! how sorry she must have felt
when I threw stones at her."

Johnny was then washed and comforted, but he
did not soon forget the lesson he had learned of
doing to others as he would have them do to him.

A Smiling Face.

Does anyone like a drizzling rain
As well as a sunny sky?
Does anyone turn to a frowning face
If a pleasant one is nigh?

Oh, give us all the look that springs
From a kindly nature's grace!
We do not care if he's dark or fair—
The boy with a smiling face.

Does anyone like a lowering cloud
As well as a shining light?
Does a peevish word have power to please
Like a laugh that is sweet and bright?

Oh, the girl that is gloomy, with fretful scowls,
Though she dresses in silk and lace,
Hath never such art to charm the heart
As the girl with the smiling face.

Dear boys and girls, remember this—
You are apt to meet with loss,
No matter what thing you undertake,
When you're sullen, and sour, and cross.

Dear boys and girls, I would say it thrice,
'Twill help you in every case;
If you'd win success and the world would bless,
You must wear a smiling face.

Blowing a Horn.

A little four-year-old was taken on a visit to
grandmamma in the country. There, for the first
time, he had a near view of a cow. He would stand
and look on while the man milked, and ask all
manner of questions. In this way he learned that
the long crooked branches on the cow's head were
called horns. Now the little fellow knew of only
one kind of horn, so hearing a strange bellowing
noise in the yard, he ran out to ascertain its
cause. In a few minutes he returned, exclaiming:
"Mamma, mamma! Oh, do come out here! The
cow's blowing her horns!"

THE QUIET HOUR.

Working for God.

"Thy servants militant below
Have each, O Lord, their post,
As Thou appoint'st, Who best dost know
The soldiers of Thine host.
Some in the van Thou call'st to do,
And the day's heat to share;
And in the rearward not a few
Thou only bidd'st to bear.
A brighter crown, perchance, is theirs
To the mid-battle sent;
But he Thy glory also shares
Who waits beside the tent;
More bravely done, in human eyes,
The foremost post to take;
The Saviour will not those despise
That suffer for His sake."

You wish to work for God, and you see plenty of
work to be done in the world; is it then only
necessary to plunge in and do anything you like?
If all the workers were to act in this way, just think
what confusion would be the result. Could a
farmer work his land in that haphazard fashion?
If he had half a dozen men to do the work—we will
suppose them to be young, untrained men, just out
from England to learn farming—and told them
there was plenty of work to do, they could please
themselves what they attempted. Think of the
state of the farm after a few months of such un-
trained industry! Would the animals be fed regu-
larly, would the plowing and seeding be done at the
proper time, would the cows always be milked?
When it was time to do the harvesting the men
might be sawing wood for next winter, or painting
the house.

But there is no need to illustrate farther. We all
know that where a number of people are working
together, and there are a great many things to be
done, there must be someone to direct and plan, or
a great deal of the energy will be misdirected, and
tedious or unpleasant duties will be neglected alto-
gether. Now, this is just as important in work
done for God as it is in factory work. "We are
laborers together with God," and unless our work



"SPORT."

is done under His direction, we may do harm instead
of good.

Perhaps you think your life is being frittered
away in little trivial duties that any person could
do, while you feel capable of higher and, as you
think, nobler work. You do the work in a spiritless
fashion. You think it a waste of valuable time to
wash dishes or do the "chores," plodding along at
the same tasks day after day. My dear friend,
never forget the wonderful significance of those
years spent in the carpenter's shop of Nazareth.
He, the greatest Man, did not think those years
wasted, although He had a world to save. He came
into the world to do His Father's will, and He was
content to do it. It might be working with Joseph,
"with chisel, saw and plane," or it might be feed-
ing thousands with bodily and spiritual food. His
work was always great, because it was the work
His Father had given Him to do. Is it not so with
us too? We are very apt to forget the truth con-
tained in the familiar lines:

"We need not bid, for cloister'd cell,
Our neighbor and our work farewell
Nor strive to wind ourselves too high
For sinful man beneath the sky.
The trivial round, the common task,
Would furnish all we ought to ask—
Room to deny ourselves—a road
To bring us daily nearer God."

But, if charity begins at home, it certainly should
not end there, if you have any opportunity at all of
reaching out to the outside world. Surely you can
manage to do a little missionary work in the Sun-
day-school. If that work is done prayerfully and
perseveringly, the seed sown may be multiplied an
hundred-fold and go on bearing fruit to all eternity,
increasing as the years roll on. How many chil-
dren are there, even in this Christian Canada of
ours, who never receive any religious teaching
except in the Sunday-school? It is a grand open-
ing for a worker, and impressions made on a child's
sensitive soul are very lasting. Don't be discour-
aged if you see no result for a long time. Sow the
seed in faith, trusting God to give the increase.

Perhaps you are longing to make some great
sacrifice for God, overlooking the fact that you are
refusing the small sacrifices He asks of you. You
look for crosses to carry, but do not choose to take

up the burdens God has laid at your feet. There
are little children to care for, but "Children are
such a bother." There are plenty of ways in which
other people's burdens can be lightened, but "It is
such a nuisance to be always doing odd jobs or
running errands for others." So you pass duty
after duty, all the time looking out eagerly for
Duty (spelt with a capital D). What kind of a
harvest can you expect if you think it too much
trouble to plant the seed? Each opportunity of
helping another, which slips by unheeded, may rise
up some day to witness against us—"Inasmuch as
ye did it not to one of the least of these, ye did it
not to Me."

What special work has God given to you? How
can I tell? Certainly He has given you some work,
and if you are neglecting that, in order to attempt
what you consider to be grander and more impor-
tant, you are making a very great mistake. God
sees the work as a whole, and has planned out the
duty of each worker. The man who is set to oil the
machinery in a factory may think his work is of
little importance—he may see no result, but he is
helping the others to do their work easily. His part
may be unnoticed and unthought of, but if he failed
in his duty, the machinery would be ruined. Every-
body's work is important, and nothing done for
God can be small.

"Friends, in this world of hurry,
And work, and sudden end,
If a thought comes quick of doing
A kindness to a friend,
Do it that very minute! Don't put it off—don't wait.
What's the use of doing a kindness,
If you do it a day too late!"

HOPE.

Our Library Table.

"TO HAVE AND TO HOLD." Mary Johnston.—
This is a remarkable book, combining great force
of style and a delicate delineation of character not
often met with. Since "David Harum," perhaps
no book has caused so great a sensation in the
literary world, nor has had such enormous sales.
The descriptions are picturesque in the extreme.

Here is a paragraph: "The work of the day
being over, I sat down on my door-step,
pipe in hand, to rest awhile in the cool of
the evening. Death is not more still than is
this Virginian land in the hour when the
sun has sunk away, and it is black beneath
the trees, and the stars brighten slowly and
softly one by one. The birds that sang all
day have hushed, and the horned owls, the
monster frogs, and that strange and omi-
nous fowl (if fowl it be, and not, as some
assert, a spirit damned) which we English
call the whip-poor-will, are yet silent. Later,
the wolf will howl and the panther scream,
but now there is no sound. The winds are
laid, and the restless leaves droop and are
quiet. The low lap of the water among the
reeds is like the breathing of one who sleeps
in his watch beside the dead."

This is no sentimental "fine writing,"
but is a true poet's interpretation of
nature. The period is 1621, and is full
of stirring incident. The fine character
of the hero, Captain Ralph Percy, and
the dainty yet brave lady of his love, Lady Jocelyn
Leigh; the Rev. Jeremy Sparrow; the jealous yet
faithful Deacon—all these and others are vivid
pictures. The Indian descriptions, too, are most
graphic, and the numerous adventures by sea and
land hold our interest up to the last word. Pub-
lished by George Morang & Co, Toronto.

"IN KEDAR'S TENTS." John Seton Merriman.
—Another delightful novel by this clever author,
dealing with self-sacrifice, treachery, love and ad-
venture, told with all the vigor and brilliancy
which always distinguishes Mr. Merriman's works.
FELIX.

"Sport."

What a natural group! Every figure so perfect-
ly interprets the leading sentiment of its owner.
That enterprising young fisherman, I wonder what
he'll catch? That boy kicking up his delighted heels
is a jolly one, I'm sure; and the two demure-looking
little maidens, so earnestly absorbed in the wonder-
ful performance of brother, cousin, playfellow, or
whatever he is! They are all too young to speculate
about, but perhaps some day these "young sports"
may be walking by this very spot, and moralizing
as to whether they have ever had such happy times
since those careless days. A truly natural and
refreshing picture, which makes old hearts young
again, and makes the youngsters literally long to
go and join in the fun.

Words of Wisdom.

Heaven without good society cannot be
Heaven.

What's an estate good for, if it cannot buy
content.

Who depends upon another man's table, often
dines late.

He who rides behind another does not travel
when he pleases.—*Span*.

He who loses money, loses much; he who loses a
friend, loses more; but he who loses his spirits,
loses all.—*Span*.

Travelling Notes.

AUSTRALIA.

As a rule, March with us in Canada is variable and disagreeable. Here, however, and usually until the end of October, it is delightful. The general drawback of extreme dryness is ameliorated by refreshing rains, which lay that obnoxious dust, spoken of before, and revives the sad-looking, parched grass, which now takes on that lovely green glow which is surely grass' own privilege. Still, on the whole, the brilliancy of nature does not strike us here as in many of the other places we have now seen. There are, of course, most lovely spots, such as those valleys "where the graceful fronds of the fern trees surmount trunks seven to twelve feet high. The great fronds of two years back hang down round the trunk in golden-brown beauty, while last year's growth forms a dark-green umbrella above them, and at the summit, rising straight in fresh new green, are the fronds of the year." This absolutely true and graphic description of the fern trees is from the gifted French author, Max O'Rell (Paul Blouet). Australia is certainly poor in trees, or rather in variety of them, although rich in shrubs and flowers. The Eucalyptus, or gum tree, abounds, and is not specially beautiful. Their immense height (some of them four hundred feet) and large circumference, equal to the famous Californian forest giants, make them naturally an imposing feature of the scenery. They constantly shed their coats, and then appear scraggy, lean, and as white as if they were white-washed. To quote from another well-known author who thoroughly knows this great country: "The loneliness of the Australian bush can hardly be painted in words. Here extends mile after mile of primeval forest where perhaps the foot of white man has never trod—interminable vistas where the Eucalyptus trees rear their lofty trunks and spread forth their lanky limbs. Level untimbered plains alternating with undulating tracts of pasture, here and there broken by a stony ridge, steep gully or dried-up creek—all wild, vast and desolate. All the same monotonous grey coloring, except when the Wattle, when in blossom, shows patches of feathery gold, or a belt of scrub lies green, glossy and impenetrable as an Indian jungle. The solitude seems intensified by the strange sounds of reptiles, birds and insects, and by the absence of larger creatures, of which, in daytime, the only audible signs are the stamped of a herd of Kangaroo or the rustle of the Wallaby or a Dingo stirring the grass as it creeps to its lair. And there is the whirring of locusts, the demoniac chuckle of the Laughing Jackass, the screeching of cockatoos and parrots, the hissing of the frilled lizard, and the buzzing of innumerable insects hidden under the dense undergrowth. And then, at night, the melancholy wailing of the Curlews and the dismal howling of Dingoes."

These Dingoes are the wild Australian dogs, graceful creatures something like a wolf, with no bark, but just the celebrated dismal wolf howl. It is terribly destructive to sheep, and in consequence is fast being exterminated. The kangaroos, too, are not now very plentiful, and will probably gradually disappear like our own buffalo. These kangaroos are very curious in their ways. They seldom attack, but can defend themselves well. For instance, one little kangaroo trick shows much skill and forethought. When hunted by dogs he will run to a place where there is water. He will go into it and wait until the dog follows, catch his enemy's paws in his own ultra long hind ones, sit down, and with his short fore paws hold doggie under the water until he drowns. Truly, the strange, the awful silence in these Australian forests must have a tremendous effect upon those who are obliged to be much in them. Of course, in these times there is, perhaps, some difference, and gradually civilization will cut its way into the forest's heart, as it has in other regions; but there are stories of former days (not so very long ago, either, for compared to America, Australia is young) when the lonely Bushmen have been known to almost lose the faculty of speech, and when shepherds went crazy. Imagine a shepherd alone in his hut, seeing no one but the man who brought him rations from month to month, often missing seeing even this man, if absent from the hut when the rations were brought, his only living companions being the sheep and his faithful dog. What wonder that any ordinary (or extraordinary) brain should give way! We might mention that the laughing jackass is a bird (perhaps all youngsters didn't know this), and by a law of the Colonies you must not shoot him, as he is a formidable destroyer of snakes. He is a smallish, thick-set bird, with a head almost as large as his body, and what a beak! No wonder the snakes don't like it! His cry of *hoo hoo hoo! ha ha ha ha!* is irresistibly comic; in fact, the only comic sound of the whole vast solemn forest, and often his festive cry is accompanied by the frogs, who add their talent to the concert. Then, if you are very much in want of a noise other than these and the intensely dismal wail of the crow, curlew, morepork, etc., just fire a shot into the trees, and you may chance to raise a colony of cockatoos, who will soon raise a hubbub which will satisfy you. They say that the cattle seldom low here, and that a few English sheep being driven to a fresh pasture will make more row than thousands of Australian ones, which seldom bleat. We wonder sometimes whether climate has to do with this, and some day we shall ask someone cleverer than we (were that possible), and own up at once

that we don't know. What a difference there is as to rabbits too. In Europe, if you kill a rabbit you are liable to a fine. In Australia, however, if you miss a rabbit, woe to you. They are most destructive, and the squatters have to put wire fences all around their immense stations to keep them out. One may readily imagine how they can overrun everything, when it is asserted that in ten years two rabbits mean seventy millions. Well, perhaps, as once before, we are encroaching on our other department, so we subside.

Here in Australia exists the same thing that is so noticeable in the States, in Canada, and indeed almost everywhere, viz., the election to prominent positions of Scotchmen. There is certainly something in this fine race which begets confidence. Clear-headed, thrifty, honest, our old friend the "kiltie" seems to always fall on his feet into some position of trust. One might almost say the English Colonies are in the hands of the Scotch. At one time, out of seven Governors, five were Scotch. The President of the Legislative Council—a Scot—and many of the councillors. The Agent-General in London, England—another Scot—and there are numerous other instances. The south of New Zealand is as Scotch as Edinburgh, they say; and at Broken Hill, said to be the richest silver mine in the world, the five great shafts leading down to the treasures are named MacIntyre, Drew, Jamieson, MacGregor, and MacCulloch.

Recipes.

SPICED BREAD PUDDING.

This is one of the many ways in which stale crusts of bread can be used. For every breakfast cup of crust, broken up and packed closely, allow a pint of sweet milk, and soak till quite soft; then beat briskly with a fork till there are no lumps left. Stir in one-half cup of golden syrup (not treacle), one cup of stoned raisins, and a quarter teaspoonful each of salt, ground cloves, nutmeg, allspice, and cinnamon. Mix thoroughly; put into a greased dish, and bake in a moderate oven for about 40 minutes. It will be noticed that no eggs are included in this recipe. The pudding is very nice without them, but the addition of one or two beaten up with milk is an improvement.

EGGS AND WATERCRESS.

Hard boil half a dozen eggs, place in cold water, and carefully remove the shells. Cut each egg in half, lift out the yolk, place it in a basin with a little minced ham and a few capers. Moisten all with a tablespoonful of melted butter, and season with pepper. Work all together with a spoon, fill each half of the eggs, and press the two halves together. Soak some watercress in salt and water, and arrange it on a dish, place the eggs on this, and serve.

TO CLEAN A WHITE STRAW HAT.

Dip a nail brush in lemon juice and flour of sulphur, and give the entire hat a vigorous scrubbing.

BEST WAY TO CLEAN MARBLE.

Mix two parts of powdered whiting with one of powdered bluing and half a pint of soapsuds, and heat it to the boiling point; while still hot, apply with a soft cloth to the discolored marble and allow it to remain there until quite dry, then wash off with hot water in which a little salts of lemon has been dissolved. Dry with a piece of soft flannel.

A GOOD SEED CAKE.

Work two ounces of dripping into one-half pound of flour, in which a teaspoonful of baking powder has been mixed. Add two ounces of sugar and a teaspoonful of caraway seeds. Mix with enough milk to make a stiff dough, and pour into a well-greased tin. Place in a moderate oven and bake an hour.

To simmer means to cook so gently that the only motion in the water is in little bubbles around the edges of the kettle. The toughest meat may be made tender if simmered a long time in water to which a little vinegar has been added. Simmering extracts the juices. Hard boiling keeps them in. In cooking, these distinctions must be recognized if one wishes good results.

To chop suet easily, flour it and the chopping knife, and have the suet as cool as possible before chopping.

Puzzles.

[The following prizes are offered every quarter, beginning with months of April, July and October. For answers to puzzles during each quarter—1st prize, \$1.50; 2nd, \$1.00; 3rd, 75c. For original puzzles—1st, \$1.00; 2nd, 75c; 3rd, 50c. This column is open to all who comply with the following rules: Puzzles must be original—that is, must not be copied from other papers; they must be written on one side only of paper, and sender's name signed to each puzzle; answers must accompany all original puzzles (preferably on separate paper). It is not necessary to write out puzzles to which you send answers—the number of puzzle and date of issue is sufficient. Partial answers will receive credit. Work intended for first issue of any month should reach Pakenham not later than the 15th of the month previous; that for second issue not later than the 5th of that month. Leave envelope open, mark "Printer's Copy" in one corner, and letter will come for one cent. Address all work to Miss Ada Atmand, Pakenham, Ont.]

1—RHOMBUS.

Across—1, dress; 2, a pause in the musical performance of a song; 3, to jut into an angle; 4, seed, particularly of animals; 5, overgrown with a certain coarse grass.

Down—1, a letter; 2, a coin; 3, the name of a genus of insects; 4, misfortunes; 5, a disease; 6, close, severe, or poignant; 7, to unite forever; 8, no good; 9, a letter. IKE ICICLE.

2—CHARADE.

Jemima, an English spinster. When a pretty lass, never did marry, So when she *One* upon the right man, Be sure she didn't tarry. A little she had, but no money, And her suitor had none too, So she took the gold of *Two* pretty *Three*, And *Complete* to Canada they flew. ROLLY.

3—CHARADE.

First and Second went to India with their mother. And one fine day she gave them permission to go in a *Complete* carried by two servants to a native village two miles away. While passing through the jungle, a loud roar smote upon their ears, and a giant tiger bounded across the path. The bearers, with a yell, dropped their burden and bolted, leaving the terrified children crouching low in the *Complete*. Soon a party of beaters and the hunters came along, also the cowardly servants, and the children got over their fright in a short time. ROLLY.

4—THE BIRD PUZZLE.

In the woods the other day I saw four robins, four sparrows, four jays and four woodpeckers. Show how these sixteen birds might have arranged themselves, one bird in each tree, in a square of four trees to a side, so that no two birds of the same kind should be in any one of the four rows, any one of the four columns, or any one of the two diagonals. F. L. S.

5—NUMERICAL ENIGMA.

I contain thirteen letters, and name a very popular English novel. 1, 2, 3, 5, 7 baked clay used in building. 9, 12, 6, 3 a circle of light. 13, 4, 7, 6 an antiquated mode of settling a dispute. 5, 10, 11, 12, 8, 9 an expired gas. M. N.

6—CHARADE.

My *whole* is an atrocious deed, But rarely done in modern times; But many a year on the great seas Was the scourge of all transporting lines, And my *first* is but an animal small Whose skin is used in artistic wear, And my *second* and *last* is a short repose Which catches the idle unaware. NOTA BENE.

7—LOGOGRIPH.

Whole I am to loan; behead and transpose, I am weary; delete, I am fastened; transpose, I am to devise; transpose again, I am a flow of water; again transpose, I am good; curtail, I am a small cube; delete and transpose, I am abbreviation for a man's name; behead, and I am in England. NOTA BENE.

8—NUMERICAL ENIGMA.

15, 14, 12, 9, 3, 10 is a conception or sentiment. In 11, 7, 1 a poisonous serpent, you can see. By 4, 11, 5, 2, 13, 3, 15, putrid flesh is meant. Rock-bound and iron-bound 4, 3, 6, 7, 8 is sometimes said to be. My whole looks forward to to-morrow's morn. It leaves many paupers on life's way; So always listen to the words of wisdom, "Never put off what you can do to-day." IKE ICICLE.

9—NUMERICAL ENIGMA.

My 1, 2 is a Greek word for earth. My 4, 5, 6 is a epoch. My 8, 7, 6, 3 is a sect. My 12, 13, 4, 5 is a derision. My 7, 10 is a text beginning. My whole is the name of a capitulated commander. MURIEL DAY.

Answers to April 16th Puzzles.

- 1—Pendragon.
- 2—Saw no omen if a fine moon was.
- 3—Queen Victoria—Canada.
- 4—Cape Town
a e r l o b e o
p r o s w e a r
e l s i n o r e
- 5—Able was I ere I saw Elba.
- 6—Ladysmith.
- 7—f r a m e
r a v e n
a v e r t
m e r g e
e n t e r
- 8—Methuen.

SOLVERS TO APRIL 16TH PUZZLES.

"Diana," "Ike Icicle," M. R. G., Muriel Day, Lizzie Conner.

ADDITIONAL SOLVERS TO APRIL 2ND PUZZLES.

Lizzie Conner, "Ike Icicle."

COUSINLY CHAT.

"Nota Bene."—You are quite welcome, but please write your puzzles in ink. R's address is Howard Mills, Malakoff, Ont.
"Ike Icicle."—We do not understand that sort of chemistry in this Province. Please do not give us any more examples of it. Shorter puzzles are more acceptable where space is at a premium. I am glad you have found time to solve.
Lizzie C.—I am glad to have you back again. You have not forgotten how to solve, I see.
Muriel would like another "Memory Gem" contest. What do the other cousins say about it?
"Diana."—You are eligible; we have all sorts, from the schoolmarm to the small boy.

Colonel Sargeant tells many enjoyable war stories. Once when instructing some men, he asked, "When you are on the skirmish line, and suddenly encounter the enemy, what would you do?" "Fall flat." "And what next?" "Stay there." On another occasion he was questioning a man respecting his absence for six hours. "I was chasing a Filipino an hour, sir." "How about the other five hours?" "The Filipino and his friends were chasing me, sir."

"Silence in the court!" thundered a Kentucky judge, the other morning. "Half a dozen men have been convicted already, without the Court's having been able to hear a word of the testimony."

GOSSIP.

Mr. Sanders Spencer, Holywell Manor, writes us that the transfer noted in our April 16th issue, of the White Sittytton-bred Short-horn bull, Count Arthur, by Mr. Jelliffe, to Rev. J. S. Smith, of Boyle, Ireland, could not be consummated, as the bull had to be slaughtered at the farm of the former gentleman. This, Mr. Spencer says, I learned a few days ago from a letter from Rev. Mr. Smith, who had unsuccessfully tempted me to sell to him Count Arthur's real brother, Count Valiant, a bull which Mr. D. Willis showed and used in his own herd ere I bought him some 2 1/2 years ago.

The following testimony of experience with the sheep-shearing machine advertised by the Chicago Flexible Shaft Co., 158 Huron St., Chicago, is from George McKerrrow, of Sussex, Wis., who is well known among the sheepmen of the United States and Canada, being President of the American Oxford Down Sheep Breeders' Association: "I sheared a 250-pound prize Oxford in 8 minutes, better and easier than I ever sheared a sheep before. My 16-year-old son sheared a number of large rams in 12 to 15 minutes each, doing a smooth, nice job. More than the price of coming per head is saved on each sheep in wool, and the price is again saved in freedom from cuts on valuable sheep. We would rather pay liberally for machine shearing than have the work done old-style for nothing."

THE JERSEY CATTLE CLUB.

The 32nd annual meeting of the American Jersey Cattle Club was held at New York, May 2nd, and was attended by 37 members, from 13 States, 102 represented by proxy. The number of animals registered for the year ending March 1st, 1900, was: Bulls, 3,125; cows, 9,290; total, 12,415. One hundred and thirteen animals imported during the year were registered. The transfers for the year were 12,956. During the year 327 butter tests were accepted for publication. A recommendation of the board of directors was adopted, to the effect that in registering the first calf of a heifer, if the date of service is not known, the statement "served in pasture" will be considered sufficient to comply per head of the by-laws relating to that point. A committee was appointed to act in the matter of a dairy test at the Pan-American Exposition at Buffalo in 1901, and a sum not to exceed \$5,000 appropriated for that purpose. The receipts of the Club from all sources for the year were \$2,572, and the expenses \$2,502; net gain, \$70; assets, \$21,691. Officers: President, A. B. Darling; Vice-President, Geo. E. Peer; Secretary, J. J. Hemingway; Corresponding Secretary, Valancey E. Fuller.

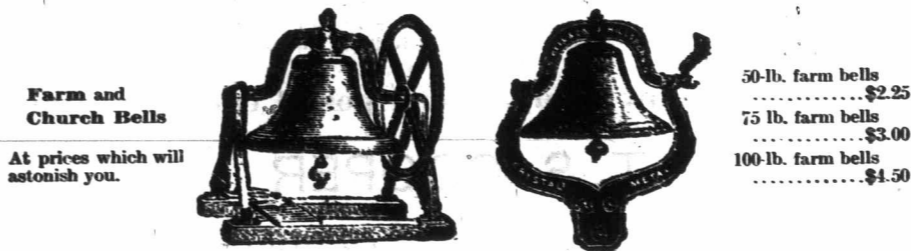
BRAMPTON JERSEY HERD.

B. H. Bull & Son, Brampton, Ont., write:—The young bulls advertised in this issue are nearly all sired by Brampton's Monarch, imported. They are the best lot we ever saw in one herd, and we take pleasure in showing them and our other stock to Jersey fanciers, whether purchasers or not. Our stock of over seventy head of cattle have wintered exceptionally well. Brampton's Monarch, the sire of these bulls, was winner of the sweepstakes in Toronto in 1888 when about seventeen months old, beating the champion bulls at London, Ottawa, Omaha, etc. He is sired by Castor's Pride, one of the best sons of Golden Lad, possibly the best bull that ever lived on the Island of Jersey. The dam of Castor's Pride was Castor's Beauty, by Castor, the winner of the championship bowl and Queen's gold medal at the Royal Windsor. Brampton's Monarch (imp.) is out of Canada's Queen (imported), that won first over the Island of Jersey as a yearling and again as a two-year-old, and first at St. Mary's and at the R. J. A. S. in 1896 on the Island. She also won first prize as three-year-old and sweepstakes in Toronto in 1897, six months after being fresh. In 1898 she won first prize and sweepstakes in possibly the strongest competition ever seen in a showing on this continent. We have young bulls out of such noted cows as Rhoda, that gave 19 lbs. of butter per week, and 47 lbs. milk per day. She has won first prize at Montreal, London, and Brantford, and also won second place in the Provincial dairy test in 1898, and won first prize and sweepstakes in London in 1899. There is another one out of Sunbeam of Brampton, that has won for herself such an enviable reputation in the showing. She won six first prizes in 1896, being first everywhere shown, including Toronto and London. In 1897 she won first as a three-year-old, first in herd and sweepstakes in Montreal, and first in milk test open to all ages and breeds at the Brantford Fair. Her first calf has won first prize in Toronto; her next calf won the sweepstakes in Montreal, and is now at the head of a fine herd in Vermont. Jetsam's Molina, daughter of imp. Jetsam, has a typical bull about eight months old, and for style and dairy build he is very hard to surpass. Jetsam's Molina, who has won first prize at Toronto and many other fairs, has a typical udder, and averaged 40 lbs. of milk per day with this calf. Minette, of Brampton, has a fine bull about nine months old. She won second prize in the three-year-old class in Toronto and London in 1899, and second in the heifer class in the Provincial dairy test, 1898. She produced 41 lbs. milk per day with this her second calf. She is sired by Aylesbury, he by Brier Pogis, that is out of Sweet Brier of St. Lambert, test 22 lbs. butter per week. Minette is out of Princess Minette, test 18 lbs. 6 ozs., and she was the dam of the famous Adelaide of St. Lambert, that has a record of 2,005 lbs. milk in one month. Minette of Brampton is 75 per cent. of the same blood as Adelaide of St. Lambert. Dolly's Pet of Brampton, that won first prize in Toronto, London, and Brantford, 1899, and has never been beaten in her class in any showing, is the dam of another promising bull. Dolly gave over 30 lbs. milk per day with this her first calf. When she had been milking one year she gave 19 lbs. milk per day. Her calf was shown a little last fall, and was never beaten. We have also bulls out of Bettina of Brampton, that won second prize in Toronto and first in the Provincial dairy test in 1898, and out of Kathleen of Brampton, that won second prize in Toronto in 1898, and third in the Provincial dairy test in 1898, and out of Rhoda Pogis of Brampton, a superior daughter of Rhoda, that is now doing grand work in superior herd in New York State. These bulls will be sold at reasonable prices.

Send for Illustrated Price List.

Table with columns for Wire Nails, Cut Nails, Plain Galvanized Wire, and Black Oiled and Annealed Fence Wire. Includes prices per keg and per 100 lbs.

The price quoted on Wire and Nails is extremely low. As we are selling immense quantities of these goods at the low figures we offer them, we would advise our customers to buy at once. As soon as present stock is exhausted, we will be compelled to advance our prices.



WILKINS & CO., TORONTO. 166 AND 168 KING ST.

NOTICES.

Because it Does the Work. DOWNING, Wis., Oct. 12, 1899. I sell your CAUSTIC BALSAM and find it a good seller because it does the work. Would like some advertising matter; let a thing be ever so good, if you don't keep it before the people sales will fall off. It will do the rest. E. F. STODDARD.

A Handy Extension Ladder.—A farmer without a convenient ladder for going unto roofs, stacks, fruit trees, etc., is frequently put to a deal of inconvenience. To meet all these climbing contingencies several ordinary ladders of various lengths are essential. These, however, are not necessary when a good extension ladder is used, and of extension ladders there are none better than the Waggoner, made by The Waggoner Ladder Co. at London, Canada. They also make step ladders for fruit picking, window washing, etc., that are strong, light, durable, and cheap. Their catalogue and price list will furnish useful information. See their advertisement in this issue.

The Sheep, by Dr. Wm. A. Rushworth, and issued by the Sheep Breeders' Directory, Buffalo, is a recent work, dealing principally with the diseases and treatment of sheep, but also containing valuable chapters on the prominent breeds of sheep, the feeding of sheep and lambs for the market; also the mating and selection of sheep for the improvement of the flock. The wool industry is dealt with, as well as insect and parasitic troubles. The work also contains numerous illustrations of typical specimens of the various breeds, as well as figures illustrating the various subjects dealt with. The work is well gotten up, and handsomely and well bound. The price of the book, of 496 pages, is \$1.50, for which it can be secured through this office.

Important to Breeders and Horsemen. Eureka Veterinary CAUSTIC BALSAM.

A reliable and speedy remedy for Curbs, Splints, Spavins, Sweeney, etc., etc., in Horses, and Lump Jaw in Cattle. See pamphlet which accompanies every bottle, giving scientific treatment in the various diseases. It can be used in every case of veterinary practice where stimulating applications and blisters are prescribed. It has no superior. Every bottle sold is guaranteed to give satisfaction. Price 75c. per bottle. Sold by all druggists. Guaranteed remedy for sterility in cows, with full instructions. Price, \$2. Prepared by THE EUREKA VETERINARY MEDICINE COMPANY, London, Ont.

EDWARD R. HOGATE COMPANY IMPORTERS OF Shire, Clydesdale, Hackney and Coach Stallions.

We have them on hand from 3 to 5 years old, Shires and Clydesdales, weighing from 1,800 pounds upwards, and Hackneys and English Coach horses from 16 to 17 hands high, full of life and superb action. Write now for particulars and where you can buy the cheapest. Our last importation from England arrived February 1st, 1900. Terms to our customers. ADDRESS: EDWARD R. HOGATE, 264 Arthur St., TORONTO, CAN. Barns: 84 and 86 George Streets.

FOR SALE: A 3-YEAR-OLD Hackney Stallion

Winner of 7 first-prizes at Toronto and London, and also a silver medal given by the English Hackney Horse Society. Five Clydesdale colts, two coming 1 year old, two coming 2 years old, one coming 3 years old. Also a choice lot of fillies, 1, 2 and 3 years old.

D. & O. SORBY, GUELPH, ONT.

THORNCLIFFE Stock Farm

The largest stud of Clydesdales in Canada, headed by the Champion Stallion of all ages, "LYON MAGGREGOR."



Stallions and Colts

From the best blood in Scotland and Canada. Ayrshire bulls and heifers from imported stock. Jersey heifers and bull calves, sired by the prize-winning bull, Distinction's Golden. Best milking strains, with good teats. Terms reasonable. A visit to Thorncliffe will well repay you.

ROBT. DAVIES, Thorncliffe Stock Farm, TORONTO.

JERSEY BULLS.

High-class show bull, Prince Frank's Son 48758, A. J. C. C., solid color, calved Oct. 25th, 1896. 1st prize at Western Fair, London, 1897, as a calf, and 1898 as a yearling, beating 2nd-prize bull at Toronto. Quiet, sure and a capital breeder; probably the best show bull in Canada to-day. Sire 3 times a sweepstakes winner at Western Fair; dam a pure St. Lambert and a good one. Also yearling bull, St. Lambert of Ettrick 3335, A. J. C. C., solid color; calved Jan. 25th, 1899. Handsome and richly-bred. Sire, Stoke Pogis Cross 3670, pure St. Lambert; dam a deep milker. Also handsome bull calf, eligible to register, solid color. Sire, Prince Frank's Son; dam, Stella of Ettrick. Prices right for quality. Come and see, or write. W. G. LAIDLAW, Wilton Grove, Ont.

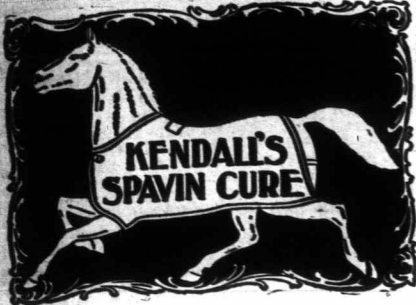
GOSSIP.

H. J. Davis, Woodstock, Ont., advertises in this issue Yorkshire hogs of the bacon type, sows in pig, boars and sows ready for breeding and spring pigs 2 to 3 months old, registered and express prepaid.

SCOTCH AYRSHIRES FOR CANADA.

Mr. Robert Hunter, representative of Mr. Ogilvie, Lachine Rapids Farm, Montreal, Canada, has been busy in Scotland of late making a very select purchase of Ayrshires to augment Mr. Ogilvie's already famous herd. Prominent among the 16 animals in the importation is the comely 3-year-old cow, Senorita of Old Grainey, at the reported price of 100 guineas. She was bred by Messrs. A. & W. Kerr, Old Grainey, Gretna; is a daughter of the noted Peter of Whitehill, and has made a remarkable performance, winning the championship both at Castle Douglas and Ayr, and would not have been sold, only the Messrs. Kerr are fortunate in being owners of a full brother of the queen—a 2-year-old bull—from which they hope to breed more Derby winners in future. From Mr. Jas. Murray, Muir, Cumnock, he has purchased the cow in milk that won first at Cumnock this year as female champion, and another cow that has won for Mr. Murray like honors on two previous occasions. From Mr. Gray, Barmochill, was purchased his well-bred cow that secured for her breeder second in milk at Tarbolton, and is a model Canadian cow. There was also purchased from Mr. Gray a daughter of this cow, and another equally attractive animal. Among other purchases were: From Mr. Montgomery, Lessnessock, a 3-year-old quey that has won for her breeder many firsts at Ochiltree and Cumnock; from Mr. Symington, Connel Bush, Sanguhar, a very good 2-year-old, bred by Messrs. Wardrop, Garraff, Cumnock. Mr. Woodburn's famous Holthouse stock adds a worthy representative in a grand, big, useful 3-year-old quey, with the appearance of doing credit to that milky herd. Mr. Robert Woodburn, Jr., Whitehall, has sold Mr. Hunter a good 1-year-old bull by Prince Robert of Holthouse, an Auchrain-bred bull that was lately sold at a high price. From Mr. McKean, Dam of Aber, his great bull, Douglasdale (335), champion at Glasgow, 1898, bred by Mr. McKinlay, Hillhouse, Sandilands, also the good 2-year-old heifer, Lady Montrose, that won first honors at Glasgow, as well as Mr. McKean's cow. From Mr. Cockrane, Nethercraig, his stylish 3-year-old heifer, Dandy Lass of Nethercraig (13382), bred by Messrs. R. & Hunter, Foulton, that was first at Kilmarnock as quey in calf; also Kirsty II of Nethercraig, a 2-year-old heifer bred by Mr. Mackay, Drongan Mains, grand sire Glencairn III., a bull that has left good stock in Canada. From Mr. Todd, Harperland, his champion cow Nellie IV., as a 3-year-old, first and champion at Dundonald, first and champion at Kilmarnock, bred by Mr. McKinlay, Hillhouse, Sandilands, also the good 2-year-old heifer, Lady Montrose, that won first honors at Glasgow, as well as Mr. McKean's cow. From Mr. Cockrane, Nethercraig, his stylish 3-year-old heifer, Dandy Lass of Nethercraig (13382), bred by Messrs. 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Price, \$4; six for \$5. As a liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAVIN CURE, also "A Treatise on the Horse," book free, or address Dr. J. B. KENDALL CO., ENOSBURG FALLS, VT.

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A Few Durham Heifers In Choice

Two bulls; two bull calves; all of choice breeding. Berkshire boars; brood sows and sow pigs. Prices right.

A. J. C. SHAW & SONS, THAMESVILLE, ONT.

H. SMITH, - Hay, Ont

Shorthorn Cattle.

Two good roan bulls and a fine bunch of heifers FOR SALE.

Exeter Station on G. T. R., half a mile from farm.

Scotch Shorthorns

FOR SALE.

100 head to select from; 15 grand young bulls by Valkyrie =21806=, and cows and heifers of all ages, of the most approved breeding, served by (imp.) Diamond Jubilee =28851=, now at the head of our herd.

T. DOUGLAS & SONS, Strathroy Station and P. O. Farm 1 mile north of the town.

SHORTHORN CATTLE AND LINCOLN SHEEP.

Imp. The Baron at head of herd. Seven young bulls for sale—good ones. Also a few females. Stud rams all imported from H. Dudding, Esq.; the same blood as the 1000-guinea ram.

J. T. GIBSON,

DENFIELD, ONT.

Shorthorns and Leicesters.

Herd Established 1855.

A number of young bulls, cows and heifers for sale. Herd headed by imported Christopher 28859, and Duncan Stanley =16361=. Grand milking cows in herd. Also a number of Leicesters of both sexes, from imported foundation.

JAMES DOUGLAS,

CALEDONIA, ONT.

FOR SALE:

The roan Scotch-bred Shorthorn bull, Golden Robe 20396,

By Knight of St. John (17102); dam, Golden Bud (imp.) 23015. Having sold most of my females, I can dispose of Golden Robe. He is sure and quiet.

ISRAEL GROFF,

Alma, Ont.

SPRINGBANK FARM.

Shorthorn Cattle, Oxford Sheep, and Bronze Turkeys. Young bulls for sale.

JAS. TOLTON, WALKERTON, ONT.

PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP.

ES In writing to advertisers, mention the "Farmer's Advocate."

Tom C. Ponting & Sons, Moweaqua, Ill., at their auction sale of Hereford cattle, April 19th, sold 61 head at an average of \$243. The highest price for a cow was \$1,010, and for a bull, \$390. The lowest price was \$110 for a July bull calf.

Vol. 22 of the Clydesdale Stud Book of Great Britain and Ireland has been received from the secretary of the Society, Mr. Arch'd McNeillage, Glasgow, Scotland. It contains the pedigrees of mares Nos. 13,678 to 14,123, and stallions Nos. 10,665 to 10,950. The frontispiece represents the mare, Lady Victoria, winner of the Cawdor Cup for mares in 1899.

In addition to the Shorthorns named in a paragraph in our May 1st issue as having been purchased in Britain by Mr. Robert Miller, Stouffville, Ont., for Mr. E. S. Kelly, of Springfield, Ohio, there were several fine Scotch-bred yearling heifers from the herd of Sir John Gilmour, including Cineraria, by Brave Archer; Nettie 5th, by Fitz Barnett, and Dunmore Beauty, by Prince of Sanquahar. Mr. Kelly is a new figure in the Shorthorn world, having made his fortune as a manufacturer, and is establishing a high-class herd on the old homestead farm at Springfield.

At the Shorthorn sale, April 26th, from the herds of W. T. Miller and others at Winchester Ind., 39 head sold for an average of \$235. Messrs. Miller's 14 females made an average of \$375; 4 bulls an average of \$240, and 18 head an average of \$315. The roan 4-year-old show cow, Sallie Girl, by Royal Hero, went to W. O. Minor, Heppner, Oregon, at \$1,700. The next highest price for a cow was \$425 for Roan Marble, 2 years old, by the same sire and to the same buyer. The highest price for a bull was \$450, for the 11-months calf, Trout Creek Clan Alpine.

LEICESTERS AT Ayr SHOW.

In the aged ram class, Mr. Pollock's £90 Auchinbrain-bred ram, who was first and champion at Kilmarnock and Glasgow, repeated his victory again; Messrs. Hewitson, Ballerson, took 2nd and 3rd. In yearling rams, Messrs. Hewitson's were placed 1st and 2nd. The former stood 1st at Castle Douglas, and was sired by a Knockdon ram. After these the awards were puzzling, and the question was asked, "Are we ever to have a standard fixed in the Border Leicester breed?" Mr. Dunlop's ram, that could get no higher than 7th at Kilmarnock, was here placed 3rd; while Mr. Pollock's two, that stood 1st and 2nd at Kilmarnock and Glasgow, got 4th and 5th. Mr. Minor, Heppner, Oregon, at \$1,700. The next highest price for a cow was \$425 for Roan Marble, 2 years old, by the same sire and to the same buyer. The highest price for a bull was \$450, for the 11-months calf, Trout Creek Clan Alpine.

THE FAIRVIEW BERKSHIRES.

Mr. George Green, Fairview, Ont., renews his advertisement of Berkshire hogs in this issue. Mr. Green is one of the oldest and most successful breeders and exhibitors of Berkshires at the principal shows in Canada, and has spared no expense in securing high-class breeding stock, having imported and purchased many of the best of the breed that has come to this country. He is an excellent judge, and knows a good one when he sees it, and keeps and breeds that sort, having aimed at producing a lengthy, deep-sided type, with a good class of bone and standing well up on their toes. Parties requiring a good pig or any number will do well to write him for prices and descriptions. The present and prospective prices of hogs in the market make it an object to procure the best class for producing high-quality bacon at a profit to the producer, and in this regard the Berkshire stands second to none.

BORDER LEICESTERS AT GLASGOW.

At the Glasgow Show last month the entry of sheep was not large, but the quality was of a high order. In Border Leicesters, the 1st prize for rams born before Jan. 1st, 1899, went to Mr. John Pollock's £90 Auchinbrain-bred ram. He stood 1st and champion at Kilmarnock this spring, and is keeping his excellence of shape wonderfully well, being as squarely planted on his legs as ever. He is not a very large sheep, but is well covered with flesh throughout. He deservedly secured the championship in the Leicester section. In ram pionship in the Leicester section, Mr. Pollock secured 1st and 2nd with sons of the champion aged ram, the 1st-prize one being placed reserve for the championship. In ewes of the same age, 1st prize went to R. & J. Hunter, Foulton, for the one that was 3rd at Kilmarnock, and 2nd to Mr. R. Picken, Langside, for one which took 1st at Kilmarnock and was well brought out. Third went to Mr. Peter Houston, and there was no better-fleeced ewe hogg in the show.

THE QUEEN'S TROPHY.

In connection with the recent visit of Her Majesty Queen Victoria to Ireland, she presented to the Irish Royal Agricultural Society with a magnificent challenge trophy (value 100 guineas) to be offered under such conditions as the council considered best calculated to encourage the improvement of Irish-bred cattle. Owing to the fact that the presentation of this Royal trophy was the opening of only a few days prior to the opening of the last Dublin Show, exhibitors were quite unaware of the conditions under which it was to be offered for competition, so that the announcement made that it had been decided to give it for the best of a group of three young Shorthorn bulls (two of them at least to be yearlings) came upon admirers of "red, white and roan" in the nature of a pleasant surprise. When the conditions were announced, much speculation was indulged in as to the likely winners, but the fact that the Messrs. Armstrong, of Ennisceathy, owned the second and third prize "young yearlings, and that they also had a very good yearling, and that they carried off this much-coveted trophy for the first time very "rosy." Nor were those who fancied their claim to the honor disappointed, for the judges finally awarded them the cup, with a trio shown by Mr. W. R. Crawford, reserve.

PLEASE MENTION FARMER'S ADVOCATE.

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

IMPORTERS AND BREEDERS OF

Scotch Shorthorns and Shropshire Sheep

OFFER FOR SALE: 1 imported bull, extra good; 3 imported cows, with calves at their side and in calf again; 6 home-bred bulls, from 3 to 15 months; 40 home-bred cows and heifers. All of breeding age have been bred to imported bulls. Our Shropshires have wintered well, and our lambs this season are a strong, thrifty bunch. 5 rams carried over from last season are in good shape. Correspondence or a personal visit solicited. Catalogues on application.

Burlington Junction Station and Telegraph Office, G. T. R., within half a mile of farm.

H. CARGILL & SON, CARGILL, ONTARIO.

The largest herd of Imported Scotch Shorthorn Cattle in Canada.

SEVENTY-SIX HEAD IMPORTED DURING 1899.

13 BULLS.

63 FEMALES.

ALL imported females of suitable age bred before leaving Scotland. Catalogue free. Correspondence or personal inspection invited. Address as above. Cargill Station half a mile from barns, on Grand Trunk Ry.; 70 miles north-west of Guelph.

John Miller & Sons, BROUGHAM P. O. and TELEGRAPH OFFICE.

OFFER FOR SALE....

4 Imported Clydesdale Stallions. 10 Scotch-bred Shorthorn Bulls. ...PRICES REASONABLE.

Claremont Stn., Pickering Stn., C.P.R. G.T.R.

Correspondence Invited.

SCOTCH SHORTHORN BULLS AND HEIFERS

HERD ESTABLISHED IN 1872.

Such sires as imported Royal George and imported Warbur have put us where we are. Imported Blue Ribbon now heads herd.

A. & D. BROWN, ELGIN COUNTY. IONA, ONTARIO.

W. D. FLATT, Hamilton, Ontario, Can., Importer and breeder of

Shorthorn Cattle.



GOLDEN FAME (IMP.)—29056—(72610).

My herd is one of the largest in America, both imported and Canadian-bred. A very choice selection of both sexes always on hand for sale. Personal inspection invited. Address all communications: JAMES SMITH, Mgr., Millgrove, Ont. R. R. Station and Telegraph, Hamilton, on main line Grand Trunk RR.

Hillhurst Farm. ESTABLISHED 1861.

Scotch Shorthorns.

SIRE IN SERVICE:

Scottish Hero and Joy of Morning.

BRED BY W. DUTHIE, COLLYNIE.

Oldest Stud of Hackneys in America. Shropshire, Dorset Horn and Hampshire Down Sheep.

M. H. COCHRANE.

Hillhurst Station, Compton Co., P. Q.

8 Scotch-topped SHORTHORN BULLS 8

And a few females, sired by Revenue and Bonnie Lad, a son of (imp.) Blue Ribbon.

ROBT. DUFF, G. T. R. and C. P. R. Myrtle, Ont.

Maple Lodge Stock Farm

ESTABLISHED 1854.

SHORTHORNS—An excellent lot of young bulls, and a special value in young cows and heifers in calf to our imported Knuckle Duster.

LEICESTERS—Imported and home bred—the best.

ALEX. W. SMITH, MAPLE LODGE P. O., ONT.

R. & S. NICHOLSON

SYLVAN P. O., PARKHILL STATION.

Scotch Shorthorns, imp. and home-bred.

The Imp. Clipper bull, Chief of Stars, heads the herd. Eight extra good 2-year-old heifers for sale, in calf to Chief of Stars (72215). Inspection invited.

Shorthorn Bulls

FROM 8 to 17 months old. Red; in good condition. Also thick young cows, bred to Imp. Prince William.

R. MITCHELL & SON, Burlington Jet. Station, Nelson, Ont.

SHORTHORNS.

One red bull, 21 months old; one 6 months old; also a number of heifers.

A. P. ALTON & SON, Burlington Jet Station. Appleby P. O., Ont.

Bonnie Burn Stock Farm

Forty rods north of Stouffville station, Ont., offers for sale Shorthorn bull calves and yearling heifers, Shropshire lambs and shearings (both sexes), on D. H. RUSSELL, Stouffville, Ont.

SHORTHORNS

I have six young females for sale—three are in calf and three old enough to be bred. These heifers have four or more crosses of the finest Booth sires, on imported Marr and Gordon Castle foundation, a desirable and needed line of breeding.

D. ALEXANDER, Briggden, Ont.

HAWTHORN HERD OF DEEP-MILKING SHORTHORNS.

We are offering 5 young bulls for sale, of first-class quality, and AI breeding.

Wm. Gralanger & Son, - London, Ont.

JAS. DORRANCE, SEAFORTH, ONTARIO.

BREEDER OF

Shorthorn Cattle and Berkshire Pigs

Young stock always for sale.

FOR SALE:

Six choice young Shorthorn bulls—bargains for quick sale. A few heifers could be spared.

E. JEFFS & SONS, Bondhead, Ont.

SHORTHORNS

Cows and heifers, some of them the same family as the first and second prize cows at Provincial Dairy Show, London.

F. MARTINDALE, York P. O., Ont.

ASHTON FRONT VIEW STOCK FARM.
Four Shorthorn Bulls for sale, from 8 to 15 months old; all of choice breeding. Also Cotswolds of all ages for sale at all times. Visitors welcome.
A. J. WATSON, Castlederg, Ont. C. P. R. Station and Telegraph Office, Bolton; or G. T. R., Palgrave.

SPRING GROVE STOCK FARM
Shorthorn Cattle and Lincoln Sheep. Herd prize and sweepstake at Toronto Industrial Exhibition, 1897 and 1898. Herd headed by Tommaso—17847—, champion at Winnipeg, Toronto, London and Ottawa, 1899. High-class Shorthorns of all ages for sale. Also prize-winning Lincolns.
Apply
T. E. ROBSON, Ilderton, Ont.

5--Shorthorn Bulls--5
From 9 to 15 months. Also a few choice yearling and 2-yr. old heifers, among which are grand, thick-fleshed and choicely-bred animals, mostly solid red colors. Speak quick, for they will not last long.
STONEYVILLE STATION, G. A. BRODIE, BETHESDA, ONT.

SCOTCH SHORTHORNS and BERKSHIRES.
Choice young bulls and heifers for sale. Also Berkshire pigs of the most approved breeding. Meadowvale Sta., C.P.R. Six miles from Brampton, G.T.R. S. J. FEARSON & SON, Meadowvale, Ont.

Kicking Cows.
Stop your cows kicking, increase the flow of milk by the use of
SORE TEAT SALVE.
Positively prevents chapped teats, warts, and caked bag or udder. Price, 25c, 50c, and \$1 per tin.
WM. MOLE, Veterinary Surgeon, 443 Bathurst St., TORONTO.

GUERNSEYS.
This is the dairy breed for ordinary farmers. Large, vigorous, and hardy, giving plenty of rich milk. Several fine young bulls for sale at very reasonable prices. A few heifers can be spared.
Address—**SYDNEY FISHER,** 17-7-0 ALVA FARM, KNOWLTON, P. Q.

40 HEREFORDS
Bulls, Cows, and Heifers, for immediate sale.
Alfred Stone, 5 Douglas St., GUELPH, ONT.

F. W. STONE ESTATE, GUELPH, ONTARIO.
The first Hereford herd established in Canada by importations in 1859 of the best prizewinners of England, followed by repeated further importations, including winners of first prize at Royal Agricultural Show. Choice young Hereford Bulls for sale. Also McDougall's Sheep Dip and Cattle Wash, fresh imported, non-poisonous and reliable; thoroughly tested by over forty years' use on farms of above estate.

75 HEAD Herefords
High-quality, Early maturing
Prizewinners, Producers of Money-makers in the feed lot.
The blood of "Corrector," "Eureka," "Ancient Briton," and "Rupert," on an "Anxiety" foundation. Send for illustrated catalogue.
H. D. SMITH, COMPTON, QUE.

Herefords for Sale
Choice young bulls, from 1 to 2 1/2 years old, and show bull, 3 years. Also
Moreton Lodge Farm, Next O. A. College.
Plains Farm, Arkell, Containing from 200 to 250 acres each.
The F. W. Stone Stock Co., GUELPH, ONT., CANADA.

Wm. Willis, NEWMARKET, ONT.
BREKEDER OF
Jersey Cattle (St. Lamberts). Some fine young bulls for sale at farmers' prices, if taken at once. Also Cotswold sheep.

Big Crops of Big Potatoes
result from applying about 100 lbs of
Nitrate of Soda

per acre just after the potatoes are well up. Then, too, the potatoes are smoother and more salable. Insures a profitable crop. Our books tell about its use on potatoes and the profits produced. Send for free copies before you plant to **John A. Myers,** 12-R John St., New York. Nitrate for sale by fertilizer dealers everywhere.
Write at once for List of Dealers.

West's Fluid
Has cured Contagious Abortion in several of the finest herds of prize stock in the country; but as it would injure the reputation of the breeders, they will not give written testimonials. These statements are facts.
Write for circular on this disease, specially prepared by a V. S.
Headquarters for "STANDARD" Sheep Dip-Manufacturers: **The West Chemical Company,** TORONTO, ONT.
Agents Wanted.

LIVE STOCK AUCTIONEER.
The undersigned is prepared to conduct pure-bred auction sales. 20 years' experience. References: John I. Hobson and Alfred Stone, Guelph; Jas. Hunter, Alma, and Messrs. Boyd, Bobcaygeon. Thos. Ingram, Care Mercury Office, Guelph, Ont.

JERSEY CATTLE
That will put
Money in your pocket.
MRS. E. M. JONES, Brockville, Ontario, Can. Box 324.

FOR SALE: A fine A. J. C. C. Jersey bull, 16 months old, solid color (dark fawn), black points. Took first money as a calf wherever exhibited. Will make a fine show and dairy bull. Price, \$40, f. o. b.
GEO. LATSCH, Freeport, Ont.

ST. LAMBERT OF ARCPOST 36943
whose sire was 100 Per Cent.; dam St. Lambert's Diana 69451. Official test, 18 lbs. 6 ozs. in seven days. A few choice young bulls and heifers rich in his blood, from deep and rich milking dams, for sale at moderate prices. Tuberculin tested.
H. E. WILLIAMS, Sunnylea Farm, KNOWLTON, P. Q.

DON JERSEY HERD.
Offering choice young Bulls and Heifers by Costa Rica's Son.
DAVID DUNCAN, DON, ONTARIO. Nine miles from Toronto Market.

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

FOR SALE:
Jersey bulls from tested and prizewinning dams, and sired by our champion bull. They are fit to head any show and dairy herd. (See particulars in "Gossip" column this issue.) Also a number of young A. J. C. C. cows, and a few unregistered cows and heifers—grand family cows. Write now for prices, stating what you want.
B. H. BULL & SON, Brampton, Ont. G. T. R. & C. P. R. Stations, 20 miles from Toronto.

HIGH GROVE STOCK FARM
ROBT. TUFTS & SON, Proprietors, Tweed (Hastings Co.), Ont.
BREKEDERS OF
Jerseys—The best strains of Jersey (A. J. C. C.) cattle. Yorkshires—Large Improved Yorkshire swine. Pure-bred and high-grade stock always for sale at reasonable prices. Write for what you want.

FOR SALE:
THE 10 MOS. **Sir Pietertje Burkey DeKol**
His dam, Helena DeKol's DeKol, tested officially 352 lbs. 10 ozs. milk and 12 lbs. 7 ozs. butter in 7 days as a 2-year-old. Also Sir Pietertje Pride, calved last March. Both bulls in prime breeding form. Maggie Keys and other good ones in the herd. Correspondence solicited.
A. D. FOSTER, HOLLOWAY, ONT.

GOSSIP.
GLASGOW SPRING SHOW.
The 4th annual show of the Glasgow Agricultural Society was held April 19th. In the class for Clydesdales, Mr. John Pollock's Hiawatha was placed first in the section for mature stallions. Casabianca, owned by Mr. John Crawford, was second. Herbert Webster's Lord Fauntleroy won third prize. In 3-year-old stallions, Mr. Webster's Baron Kitchener was first, Mr. Kilpatrick's Royal Gartley's heir second, and Mr. Scott's Prince of Cowal third. In 2-year-old colts, first went to Mr. Dunlop's Sylvander, second to Mr. Clark's Pride of Blacon, and third to Mr. Park's Baden-Powell.

ROYAL DUBLIN SHOW.
At the spring show of the Royal Dublin Society, over 300 Shorthorns competed. The £100 challenge cup, presented by Her Majesty the Queen in commemoration of the visit to Ireland, was this year awarded for the best three Shorthorn bulls owned by the exhibitor, and was won by Mr. W. Armstrong, Gally House, Enniscorthy, for Landamman, Stamp of Riches, and Prince Rufus. The Chaloner plate was awarded to the roan 2-year-old bull, Royal Duke, bred and exhibited by the Queen, sired by Prince Victor, and a grand son of the Royal champion, New Year's Gift. He is described as well built, with a style about him and quality of hair and flesh that is very pleasing. The Shorthorn Society's prize of £30 for the best yearling Shorthorn bull bred in Ireland went to Mr. Armstrong for his Stamp of Riches.

THE LAUGHTON FLOCK OF LINCOLN LONGWOOLS.
Mr. J. E. Casswell, Laughton, Folkingham, Lincolnshire, reports that he has had a most successful lambing season, the fall of lambs having been satisfactory and the loss practically nil. The present crop of lambs is of a most typical character, the principal stud sires used being Laughton 235 Guineas 4613, first and champion at the Royal and Lincolnshire County Shows, and afterwards exported to Buenos Ayres; Laughton Ribby 73, a grand old ram who has now completed his eighth year of service in this flock. He is a typical specimen of the strength, vigor and constitution for which this flock has so high a reputation, his sire being Ribby Blue, who won third at Doncaster Royal, Laughton What's Wanted 3691, Laughton Style 1959, and Laughton Juryman 273, who are a grand trio, whilst Lincoln 130 Guineas 2783, sire of last year's Royal champion, has again been most successfully used. Laughton Eclipse, a specially selected home-bred shearing ram, has proved to be a first-class sire, his get being of very high merit. Amongst a strong flock of 3-year-old queys in calf, the first-prize Royal yearling ram, Pointon Royal First, who also won several other prizes, including first at the Lincoln County Show; two others from the Pointon flock, i.e., Pointon Gladiator and Pointon Gull, with Ribby General from the Pointon flock, with Ribby Rambler, a Down-bred selection from Messrs. Deans, and others of equal merit and quality. The uniformity of type and character of this grand old flock was never better, and great attention is being paid to all the essential points of the breed, in the endeavor to still further increase and improve them. A great lot of yearling sheep of both sexes for sale.

AYRSHIRES AT GLASGOW SHOW.
The quality of the Ayrshires exhibited at the spring show at Glasgow is reported as having been of a very high order. In aged bulls, Mr. John McKean's Douglassdale was selected for first place, and silver cup and medal. He is a 3-year-old, bred by Mr. McKinnay, of Hillhouse, and is a son of Douglas Chief and Snowdrop. Mr. James Howie's Kohinor, of Hillhouse, was second, and perhaps only in depth of flank could the winner be said to beat him. Mr. A. Mitchell was third with Commander, a son of First Choice. There were but two entries in 2-year-old bulls, and first went to Mr. Howie's Strongbow, second to Mr. Barr's The General. Yearlings were a strong class. First went to Gen. White, and second to Imperial Chief, both owned by Mr. Thos. Scott, and sired by Prince Imperial of Netherhall. Seven aged cows in milk were catalogued, and the Kilmarnock winner, Gipsy 3rd, bred and owned by Mr. Wm. Howie, again in precedence. Mr. F. C. Lind, of Hillhouse, had a very fine class, the competition being exceedingly keen. Mr. And. Mitchell's Mary and Mr. John McKean's Lady Montrose ran each other very closely, but after a close scrutiny by the judges, the latter was given precedence. Mr. Wardrop's Castle Douglas winner was placed third. In the 1-year-old class, Mr. Jas. Howie won the two first awards, Gipsy Girl being the leader and Dewdrop second. Both are sired by Traveller's Heir. Mr. Scott, Netherhall, was third with Lady Beatrice, a very sweet heifer by Prince Imperial.

MAPLE GLEN STOCK FARM.
Special Offer: An August bull calf, sired by Gem Pieterje Hengerveld Paul DeKol, a rich bull, bred by President Matteson, Utica, N. Y. Has for dam the sweet show heifer, Gilly Flower 2nd, an undefeated winner in 1888 as a yearling, also 1st Ottawa and 2nd Toronto, 1889, as a two-year-old, there she was also a member of sweepstake aged herd. She gave over 50 lbs. milk per day on show grounds as a two-year-old. Also a bull two years old past; dam was half-sister to our old stock and show bull. The sire of some of the best in world to-day. We still have a few females from 3 months to 6 years old for sale—one a dairy test winner, of the Teake family. Prices reasonable for quality. C. J. Gilroy & Son, Glen Buell, Ont. Brockville, on G. P. R. or G. T. R.

HORSEMAN! THE ONLY GENUINE IS GOMBAULT'S CAUSTIC BALSAM.
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPPRESSES ALL CAUTERY or FLEING. Impossible to produce scar or blanch. Every bottle is warranted to give satisfaction. Price \$1.50 per bottle. Sold by Druggists, or sent by Express, charges paid, with full directions for its use. Send for free descriptive circulars.
THE LAWRENCE WILLIAMS CO., Toronto, Ont.

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

The Annandale Farm
Holstein-Friesians.
For sale, after careful selection from my thoroughbred and grade bull calves, ages from 1 to 15 months old, from cows averaging 10,000 to 16,000 lbs. milk per year and testing 3 1/2 to 4 1/2; sired by the grand bull, COLANTHUS A. B. B. B. B. 2nd, winner of 1st prize at Toronto, Ottawa, and London, as yearling. Prices reasonable.
E. D. TILLSON, Proprietor, Tillsonburg, Ont.

RIDGEDALE HOLSTEIN-FRIESIANS
For Sale: One yearling bull, also three bull calves, all sired by "Father Tensen," and whose dams are granddaughters of "Aaltje Posch 4th," the champion milk and butter cow at the London, Ont., Dairy Show, Dec., 1899.
Shipping stations: **R. W. WALKER, Utica P. O., Ontario.** **Port Perry, G.T.R.** **Myrtle, C.P.R.**

MAPLE HILL HOLSTEIN-FRIESIANS
Three Yearling Heifers, sired by Constans Abbecker 2nd, and in calf to Daisy Teak's King (together to Daisy Meak's Queen, the great test and show cow).
Three Bull Calves, sired by De Kol 2nd's Paul De Kol Duke, the great butter-bred bull; dams, the fine show cows, Lady Aktrum 2nd, Cornelia Artis, and Madge Merton.
G. W. CLEMONS, St. George, Ont.

3 Holstein-Friesian Yearling Bulls FOR SALE.
Prices right. Apply to
WILLIAM SUHRING, Sebringville, Ont.

WE WANT TO SELL A FEW
Holstein Heifers, coming 2 years old
THEY are of the richest and largest producing strains, fine individuals, and bred to as good bulls as there are living. We have a few bull calves and yearling bulls also for sale.
HENRY STEVENS & SONS, LACONA, OSWEGO CO., N. Y.

BROOKBANK
Is headquarters for Holstein bulls. They are going fast; be quick if you want one. In writing, state age, etc., preferred.
GEO. RICE, Currie's Crossing, Ont. Oxford Co.

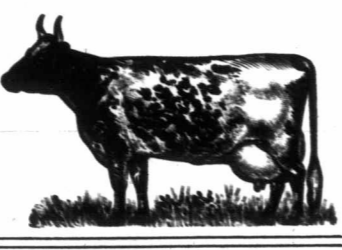
KEEP THE BOYS ON THE FARM
BY sending them to Meadowside Farm, Carleton Place, to see J. Yuill & Sons' stock. Eighty-four Ayrshires, second to none in the world for milk production. Thirty-two Shropshire ewes and two rams which are from prizewinning stock. Fourteen Berkshires of the bacon type; and a grand flock of B. P. Rocks. Also two good Collie pups, 4 weeks old.
J. YUILL & SONS, Props., Carleton Place, Ont.

AYRSHIRE CATTLE.
KAINS BROS., Byron, Ont. (R. R. London) are offering a number of grand young bulls, prizewinners; also a few choice females. Prices right.

Ayrshire Bull Calves of 1899
One bull 5 months and young calves 2 to 3 weeks, from some of our best imported cows. Will sell at reasonable prices. Address:
ROBT. HUNTER, Manager to W. W. Ogilvie. **LACHINE RAPIDS, QUE.**

Maple Cliff Dairy and Stock Farm.
Breeders of **FOR SALE:**
AYRSHIRES, 1 yearling and 6 bull calves from 2 to 8 months old.
TAMWORTHS, Boars and sows, 6 to 8 months old, and sucking pigs.
Improved **BERKSHIRES.** Booking orders for young pigs.
R. REID & CO., Hintonburg. Farm 1 mile from Ottawa. Electric cars to farm.
PLEASE MENTION FARMER'S ADVOCATE.

Ayrshires and Yorkshires.
 We now offer 2 yearling BULLS, bred of heavy milking dams, and are light-colored. A few choice Feb., 1900, bull CALVES of same breeding and in good shape. We could fill a limited number of orders for FEMALE CATTLE. In Yorkshires we offer 1 yearling boar and 2 six months old, also young pigs of either sex. Prices very reasonable to quick buyers. Correspondence solicited.
 Board's Station, G. T. R. ALEX HUME & CO., Menie, Ont.

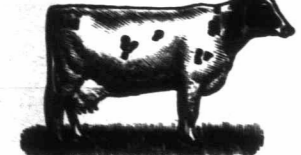


W. C. Edwards
 AND COMPANY.
 IMPORTERS AND BREEDERS
 Laurentian Stock and Dairy Farm,
 Pine Grove Stock Farm,
 ROCKLAND, ONTARIO.

Ayrshires, Jerseys, Shropshires, Berkshires.
 Our excellent aged herd of Ayrshires is headed by our noted imported bull Cyclone. Tam Glen heads the young herd, and Fawn's Son 2nd of St. Anne's heads the Jerseys. The young stock are all from line-bred dams.
 A. E. SCHRYER, Manager.
 We can be reached either by steamboat, the G. F. R., or G. A. R.; or the G. A. R. making connection with the G. T. R. at Okean Junction. Rockland is our station on all lines.
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Scotch Shorthorns and Shropshires.
 The imported Missie bulls, Marquis of Zenda and Scottish Pride, at the head of herd, assisted by British Knight. We have a few extra good young bull calves that will be ready for the coming season.
 JOS. W. BARNETT, Manager.
 We can be reached either by steamboat, the G. F. R., or G. A. R.; or the G. A. R. making connection with the G. T. R. at Okean Junction. Rockland is our station on all lines.
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Ayrshires, Guernseys, Yorkshires and Shropshires are our leaders.



ALL high-class, pedigreed stock. Those desirous of purchasing thoroughbred animals should write for particulars at once. Orders booked now in rotation for present and future deliveries. Address—

ISALEIGH GRANGE FARM, Danville, Quebec.
 J. N. GREENSHIELDS, Prop. T. D. MCCALLUM, Mgr.

WM. WYLIE,
 Importer and Breeder of High-class Ayrshires.
 The winnings of this herd last season (1899) were 37 prizes, 17 of them being firsts; also gold and silver medals at the leading fairs in Canada. The sweepstakes winners at Toronto, London and Ottawa belong to this herd, which consists of one imported bull, 13 imported females and a number of A.I. home-bred animals. A few choice cows, heifers and calves for sale at prices within reach of any farmer.
 Address— WM. WYLIE, Howick, P. Q.

EUROPEAN ADVERTISEMENTS.
HAMPSHIRE DOWN SHEEP.
 GREAT ENGLISH Pedigree Sales
 July, August, and September, 1900.



To Farmers, Stock Dealers and Wool Growers:
Licence-shire Tick and Vermin Destroyer
 It effectually destroys Ticks, Lice, Worms or Grub, to which sheep, horses and cattle are subject, and enables the animals to thrive. It will be found far superior to other preparations used for the similar purpose. The proprietors will guarantee perfect success when used according to directions, as will be found on each box. It prevents scurf and scab, and renders the wool bright and clear. It is put up in tin boxes, price 30 cents each. One box is sufficient for twenty ordinary-sized sheep. It only requires to be tried to prove itself all that is claimed for it. Sold by druggists and grocers. Manufactured by G. C. BRIGGS & SON, 31 King Street West, Hamilton, Ont.

WATERS & RAWLENCE, Salisbury, Eng.
 Will sell by auction during the season upwards of
50,000 PURE-BRED EWES, LAMBS and RAMS,
 Including both rams and ewes from the best registered prize-winning flocks in the country. Commissions carefully executed. Address—

Waters & Rawlence
 SALISBURY, ENGLAND.
 FAMOUS ALL OVER THE WORLD.
ALFRED MANSELL & CO.,
 LIVE STOCK AGENTS AND EXPORTERS, SHREWSBURY.
 BRITISH STOCK selected and shipped to all parts of the world. Write for prices to ALFRED MANSELL & CO., Shrewsbury, England, or to our American representative, Robert Miller, Stouffville, Ont., Canada.

Rosedale Stock Farm.
 CLYDE AND SHIRE HORSES. SCOTCH SHORTHORNS. LEICESTER SHEEP.
 A choice lot of Leicester ewes and rams with superior quality and as good blood as is obtainable. My motto, "The best is none too good."
 J. M. GARDHOUSE, Highfield P. O.
 Malton Sta. G.T.R. on Weston Sta., C.P.R.

J. E. CASSWELL, Laughton, Folkingham, Lincolnshire.
 breeder of Lincoln Long-wooled Sheep, Flock No. 46. The flock was in the possession of the present owner's great-grandfather in 1785, and has descended direct from father to son without a single dispersion sale. J. E. Casswell made the highest average for 30 rams at the "Annual Lincoln Ram Sale," 1895 and 1897. The 1896 rams were all sold for exportation. Rams and ewe hoggs and shearings for sale, also Shire horses, Shorthorns, and Dark Dorking fowls. Telegrams: "Casswell, Folkingham, Eng." Station: Billingborough, G. N. R.

W. W. Chapman,
 Secretary of the National Sheep Breeders' Association, Secretary of the Kent or Romney Marsh Sheep Breeders' Association, and late Secretary of the Southdown Sheep Society.
 Pedigree Live Stock Agent, Exporter and Shipper. All kinds of registered stock personally selected and exported on commission; quotations given, and all enquiries answered.
 Address: FITZALAN HOUSE, ARUNDEL ST., STRAND, LONDON W. W. Cables—Sheepcote, London.

The Danesfield Pedigree Stock
 IMPORTERS desirous of securing selections of either Shire horses, Aberdeen-Angus cattle or Hampshire Down sheep should inspect the stud, herd and flock, property of Mr. R. W. Hudson, which are kept in the highest degree of purity that care and selection can produce, at Danesfield, Marlow, Bucks, England. Specimens of horses, cattle and sheep have been largely exhibited at the principal English shows during 1899 with very prominent success. For full information, etc., apply to
MR. COLIN CAMPBELL.
 ESTATE OFFICE, DANESFIELD, MARLOW, BUCKS, who will be happy to make arrangements for inspection, or to quote prices.

GOSSIP.
 Messrs. Snell & Lyons, Snelgrove, Ont., make a change in their advertisement in this issue, which they offer choice young pigs of April litters, bred from high-class stock of the large, lengthy English type of Berkshires. The outlook for the hog trade is now so encouraging that advantage should be taken of the opportunity to improve the class and quality of stock.
 H. J. Whitteker & Sons, North Williamsburg, Ont., write:—"Please hold our ad. until further notice, as all our bulls fit for service are sold, but one, at good prices. The demand for Ayrshires is very keen, and we are booking orders for fall calves. Our Oxford ewes have produced a fine crop of lambs this spring. The picture, 'Canada's Ideal,' came in good shape, and we think it worth many times its cost price."
 At the sale of the old-established herd of Shorthorns, the property of Mr. J. C. Toppin, Musgrove Hall, Penrith, conducted by John Thornton & Co., April 26th, 50 cows averaged £35 13s. 7d., and 7 bulls £70 14s., or an average on the whole of £40. The top price of the sale was 300 guineas for the bull, Lord George, which was greatly admired and started at 150 guineas, running rapidly up to 300 guineas. Lord Polwarth bidding against Mr. Tanner, of Leicestershire, who secured him.
 At a sale of Shorthorns from the herd of Mr. Wm. Graham, Redland's Bank, Penrith, Scotland, April 25th, 51 animals made an average of £43. The highest price (125 guineas) was made by a roan cow of the Lauresting tribe, and was bought by Mr. Tanner, of Leicestershire. The next highest (90 guineas) was paid for a cow of the same family. The highest price for a bull was 80 guineas for Duke of Bolton, a roan two-year old, bought for Tasmania.
 Mr. Harland Pickering, Brampton, Ont., has purchased from Graham Bros., Claremont, the grand imported Hackney stallion, March Past, winner of 1st prize at the Winnipeg and Brandon exhibitions last year. March Past is a bay horse of big type for the breed, with grand action, fine quality and good temper, and is said to be of the same type as the sire of the high-priced horses in the Prince of Wales' sale at Sandringham last year. The farmers of Peel County are to be congratulated on having so excellent a horse brought into their district, and should not fail to avail themselves of his services.
 German farmers have taken more generally to hog-raising, and in some parts supplies have been heavy enough to admit of shipping a few to England. This is the first time in a good many years that Germany has had hogs to export. However, this shipment is of no consequence, as the supplies of live stock in the whole empire are not sufficient for the requirements of the demand. During the past year, Germany imported 325,000 cwts. of fresh beef and 217,000 of fresh pork. The former was 35 per cent. more than the previous year, and four times as much as in 1897. Pork, on the other hand, decreased nearly 30 per cent.
 A successful sale of Herefords was held at Kansas City, Mo., April 25th and 26th, at which drafts from the herds of Messrs. Armour, Funkhouser, Sparks and Logan were disposed of, 115 head selling for an average of \$353.53. The highest price (\$1,000) was for the Armour cow, imp. Prudence, bought by George Tamm, Kansas City. The top price for a bull was \$425, and the lowest price in the sale \$140. It is said the character and quality of the cattle was first-class, and the prices made were somewhat disappointing when compared with those of the Nave sale; but these are good prices and the average should be satisfactory.
 The fakir who has been several times exposed in the FARMER'S ADVOCATE as imposing on stock breeders by pretending to be a breeder and a buyer, while he is only an impudent tramp, is, it appears, still getting his board and lodging in the same old way. We read of him every few weeks turning up like a bad penny at different places. Recently he was in the neighborhood of St. Catharines, pretending to be buying pure-bred cattle for a wealthy rancher in the Western States, contracting for cattle and then trying to raise a little money by getting the farmer to advance money enough to pay for the transfers in the herd book. He is a fraud and should be treated as such.
 April 19th, a sale of Shorthorns was made from the herd of H. F. S. Polgambe, Osberton, He. Worksop, at which 57 head made an average of £37 19s. 3d., Mr. John Marr, Aberdeen, paying the highest price (100 guineas) for the 2-year-old bull, Merryman, by Leonidas, out of Merry Selina. Mr. Dudding took Bright Selina, the highest price cow, at 80 guineas. Merry Selina, dam of Merryman, was bought by George Tamm, Kansas City, for \$425, and Capt. Duncombe got Riby Maritana at 65 guineas. Archduke Leonidas, a 2-year-old by Leonidas, was offered at a reserve bid of 300 guineas, as it is intended to enter him for the Royal Show at York, and afterwards to use him in the herd; but as he failed to reach the reserve, he did not find a purchaser.
 LIVE STOCK AT THE "PAN-AMERICAN."
 We understand that, so far as plans have already matured for the live stock department at the Pan-American Exposition, Buffalo, in 1901, the dates for the exhibit of the various classes will be as follows:
 Cattle—Aug. 14 to Aug. 21
 Horses—Aug. 28 to Sept. 7
 Sheep—Sept. 11 to Sept. 21
 Swine—Sept. 25 to Oct. 5
 Poultry and Pet Stock—Oct. 9 to 19.
 The above dates are not absolutely final, but it is thought, will not be materially changed.
 Mr. F. A. Converse, Elliott Square, Buffalo, N. Y., is the Superintendent of live stock and dairy, who will furnish information.

FOR FATTER SHEEP AND MORE WOOL
DIP YOUR SHEEP IN COOPER'S SHEEP DIP
 BENEFITS THE FLOCK ERADICATES INSECTS AND DISEASE

Used and endorsed by Hon. John Dryden, Minister of Agriculture, Toronto, and leading breeders everywhere.
 Superior to all liquid Dips.

25-gal. pkt., 50 cts.; 100-gal., \$2.00. If druggist cannot supply, send \$1.75 for 100-gal. pkt. to

EVANS & SONS,
 Montreal or Toronto.
 Premiums on application to—

COOPER & NEPHEWS,
 142 Illinois St., Chicago.
 Write for pamphlet.

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

THE ORIGINAL
Non-Poisonous Fluid Dip
 Still the favorite dip, as proved by the testimony of our Minister of Agriculture and other large breeders.

For sheep. Kills ticks, maggots; cures scab; heals old sores, wounds, etc., and greatly increases and improves growth of wool.
Cattle, horses, pigs, etc. Cleanses the skin from all insects, and makes the coat beautifully soft and glossy.
 Prevents the attack of Warble Fly.
 Heals saddle galls, sore shoulders, ulcers, etc. Keeps animals free from infection.
No danger, safe, cheap, and effective
 Beware of imitations.
 Sold in large tins at 75 cents. Sufficient in each to make from 25 to 40 gallons of wash, according to strength required. Special terms to breeders, ranchmen, and others requiring large quantities.

SOLD BY ALL DRUGGISTS. SEND FOR PAMPHLET.
Robert Wightman, Druggist, Owen Sound.
 Sole agent for the Dominion.

CALVERT & DWYER CO'Y,
WOOL
 TORONTO, CANADA.
 Write us before selling your wool. It will pay you.

Shropshire Rams and Ewes
 Newly imported from the greatest English breeders. Home-bred rams and ewes of best quality. Scotch Shorthorns and Clydesdale horses for sale at moderate prices, and in large numbers, by
ROBERT MILLER,
 STOUFFVILLE, ONT.

IMPORTATION
 Of Shropshires for Fairview Farm in July. Our D. J. Campbell will select and import. Only choice rams and ewes will be brought out. 'Tis the good ones that please customers first and last.
 We breed them and import them.
 Orders can now be booked for imported stock, and some good rams are now at Fairview.
JOHN CAMPBELL, Woodville, Ont., Canada.

Shropshires...
 Ram lambs for sale, at reasonable prices.
GEORGE HINDMARSH,
 ALSA CRAIG, ONT.
 PLEASE MENTION FARMER'S ADVOCATE.

LEVELAND, O.
 ever used. Takes
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 satisfaction. Price
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 CO., Toronto, Ont.

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BRAMPTON.

le Farm
blans.
 selection from my
 several very fine
 calves, ages from 1
 averaging 10,000 to
 ing 3 1/2 to 4 1/2; sire
 S. A. BIRKBECK
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N-FRIESIANS
 bull, also three bull
 bred by "Father Ten-
 daughters of "Aaltje
 butter cow at the
 1899.

WALKER,
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 Ontario.

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 sired by Colman's
 Daisy Teske's King
 the best test and
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 red bull; dams, the
 2nd, Cornelia, Artie,
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IN THE FARM
 side Farm, Carleton
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 in the world for milk
 shire ewes and two
 ring stock. Fourteen
 and a grand flock of
 ie pups, 4 weeks old.
 Carleton Place.

CATTLE.
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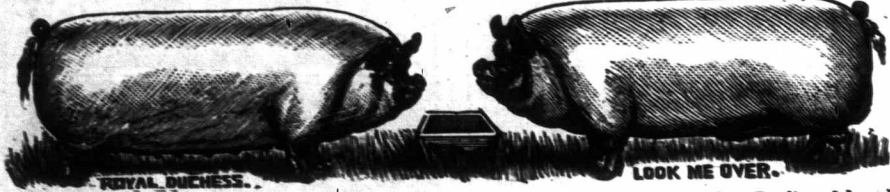
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ENTER,
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 ing pigs.
 for young pigs.
Wintonburg.
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IER'S ADVOCATE,

Summer Hill Herd HEADQUARTERS FOR THE IDEAL BACON HOG.



The largest herd of pedigreed Yorkshires of the large English type in Canada. Purity of breed, size, and general excellence is my motto.

D. C. FLATT, MILLGROVE, ONT.

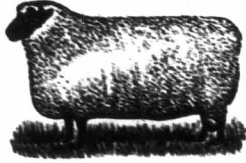
Oxford Down Sheep We lead, others follow.

Flock Established 19 Years. Animals of all ages and both sexes for sale, reasonable. Rams to head flocks a specialty.

HENRY ARKELL, ARKELL P. O., ONT. Guelph: Telegraph and Telephone.

SMITH EVANS, GOUROCK, ONT.

Breeder and importer of registered Oxford Down Sheep. Selections from some of the best flocks in England. Stock for sale at reasonable prices. Inspection invited. 6-1-y-o



DUROC-JERSEY SWINE.

We have a fine lot First-Class Stock of all ages and either sex. Address, on TAPE BROS., Ridgetown, Ont.



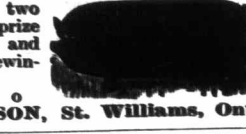
Spring Brook Stock Farm.

Two choice September pigs by imp. Whitaker Crystal, Royal winner. One choice sow in farrow. Young pigs, pairs, and trios, not akin, from imported prize-winning boars. Stock of best quality. Prices right. Write at once for prices. A. C. HALLMAN, WATERLOO CO., NEW DUNDEE, ONT.



Large English Berkshires.

HERD headed by two imported first-prize boars. Young boars and sows from imp. prize-winning sires and dams. Write for prices. H. BENNETT & SON, St. Williams, Ont.

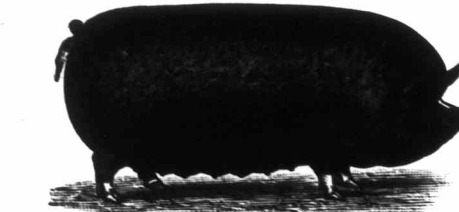
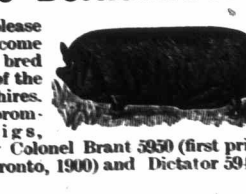


Berkshires and Tamworths

My herd has Varna Duke and Manor Lad (2nd-prize 6-months boar at Toronto, '99) at head, with equally well-bred sows. My Middleton Mimus, and O. A. C. 110 (the silver medal sow at London '98), her son Parkhill Prince, and Nimrod imp. at the head. Write for what you want. W. I. TUMELTY, Madoc, Ont.

Snelgrove Berkshires.

When others fail to please you with a good pig, come to us. Our herd is bred from the best strains of the Large English Berkshires. We now have a very promising lot of young pigs, April farrow, sired by Colonel Brant 5950 (first prize under 12 months, Toronto, 1900) and Dictator 5911. Write for prices. SNELL & LYONS, Snelgrove, Ont.



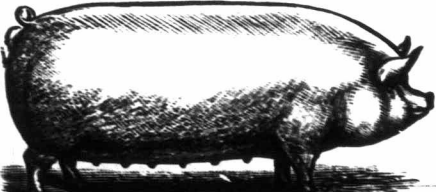
Berkshires Large, lengthy, English type. Five first-prize boars in service. Spring pigs ready for shipment. Boars fit for service. Sows ready to breed. GEORGE GREEN, Fairview, Ont.

Yorkshire Sows.

We are offering sows, due to farrow in June and July, of excellent quality, at \$12 to \$15, registered. We will book orders for Suffolk and Shropshire rams and ewes for fall delivery. Plymouth Rock Eggs for Hatching \$2 5 Settings for W. R. BOWMAN, Mt. Forest.

PLEASE MENTION FARMER'S ADVOCATE.

Oak Lodge Yorkshires have a special type of their own, and are acknowledged to be the highest class of bacon hogs.



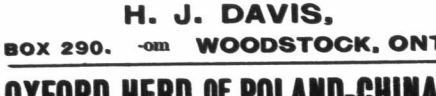
Improve the quality of your pigs by securing some of Oak Lodge blood. Quality! quality! our motto. All stock fully guaranteed. Brethour & Saunders, Burford, Ont., Can.

Yorkshires and Berkshires.

IN YORKSHIRES: Young pigs both sexes, not akin, from Cinderella and Oak Lodge Queen (imported) families. IN BERKSHIRES: Young pigs both sexes, not akin, from a Teasdale-bred sow and a Cox-bred sow. Guaranteed as described. Write for prices. JAS. A. RUSSELL, PRECIOUS CORNERS, ONT.

Large White Yorkshires.

An offering during this month a grand lot of boars and sows ready for breeding, pairs supplied, not akin, from show stock; also several sows in pig to imported boar. Young pigs from 2 to 3 months old, all of the most improved bacon type. Registers furnished. Express prepaid. Address: H. J. DAVIS, BOX 290, WOODSTOCK, ONT.



OXFORD HERD OF POLAND-CHINAS

The home winners of the Having again won the sweepstakes at Toronto, London, Ottawa, and Provincial Fat Stock Show, we are offering again young boars and sows of superior quality; bred along the same lines as our winners. W. & H. JONES, OXFORD CO., MT. ELGIN, ONT.

Ohio Improved Chester White Pigs.

Young stock ready to ship May 1st—single or in pair not akin. Bred from imported foundation stock, registered. Silver Spangled Hamburg Eggs at \$1.00 per 15. Wilson's First Choice and Great Divide Potatoes. Prices reasonable. TILMAN E. BOWMAN, Berlin P. O., Ont. Berlin, G. T. R., or Galt, C. P. R.

E. D. GEORGE, PUTNAM, ONT., Importer and Breeder of Ohio Improved Chester White Swine.

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

FOR SALE:

Tamworth sows ready to breed. March pigs, both sexes. JOHN FULTON, JR., Brownville, Ont.

TAMWORTHS

Several young sows and boars six months old, at \$10 each, and twenty fit to wean at \$5 each, registered. Also B. T. Rock and W. W. Wagonette eggs, 15 for \$1. Choice matings. Order early. D. J. GIBSON, Hazel Dell Stock Farm, Bowmanville, Ont.

GOSSIP. In writing to advertisers, mention the "Farmer's Advocate"

SCOTTISH HACKNEY SALE. The 6th annual sale of Hackneys, property of Mr. A. Morton, took place at Gowankbank, Darvel, April 26th. Snap Shot, a 5-year-old gelding, sold for 160 guineas; Fiona, a 4-year-old mare, for 200 guineas, and Cicely, a 10-year-old mare, for 300 guineas, which were the top figures. Sixteen ponies averaged £50; 32 harness horses, £87, and 11 brood mares, £80.

AYRSHIRES AT AYR. The exhibition of Ayrshires was the best seen for some years. In the Derby of April, 1900, for cows calved in 1897 there were 53 entries and 25 prizes. The first prize went to Senorita of Old Graitney, owned by A. & W. Kerr, of Greta. She is a typical Ayrshire cow of large frame, with a very good vessel and full of quality. The first prize went to Mr. John Drennan, Hillhouse, Galston, for a grand big, substantial cow. Mr. Alex. Cross, Knockdon, was 2nd with Judy, a bonnie sweet cow, whose vessel lacks the breadth and thickness of the 1st winner. Mr. Wm. Howie, Burnhouse, Ayr, was there with Gipsy 3rd, the winner at Kilmarnock. In the class for aged cows in calf, Mr. Bauchop's was a clear 1st, with Madeline II, a cow of very good quality; Messrs. McAlister were 2nd with Moss Rose, by Yellow Chief, and Mr. Drennan 3rd with white-legged cow. In 3-year-olds in milk, Messrs. Kerr were 1st with Senorita, followed by Mr. Laurie with Beauty IV., and Mr. Dunclop's Lady Mary 3rd, and Mr. Hunter's Princess 4th—all as in the Derby. In the classes for bulls, the leader in aged bulls was Mr. Osburn's Gigantic Stunner; 2nd, J. C. Howie's Kohinor; 3rd, Andrew Mitchell's Command. Two-year-old bulls—1st, Jas. Howie's Strongbow; 2nd, T. W. & R. Lindsay's (Wigtown) Gen. Buller; 3rd, Thos. Barr, Kilmarnock. Yearling bulls—1st, Thos. Scott's Gen. White; 2nd, Robt. McKinlay's Prince George; 3rd and 4th, Sir Mark McTaggart-Stewart; 5th and 6th, Jas. Howie. In the milking competition for cows, W. C. Alexander, whose cow gave 48.46 lbs. milk in the day, and the 2nd, Mr. Littlejohn's, gave 45.64 lbs. The championship for bulls went to Gigantic Stunner, and for females to Senorita.

THE SALE OF THE HILLHURST HACKNEYS. The auction sale of the Hon. M. H. Cochrane's Hackney horses at Toronto, April 28th, furnished another confirmation of the opinion we have long held, as the result of observation, that during and at the place of a show or exhibition is about the worst possible time to hold a public sale of stock. Theoretically it seems opportune to hold a sale at a time and place where people interested in the particular class will be pretty sure to be gathered, though they have not come for the special purpose of attending the sale. Reduced railway fares and everything seems favorable; but experience proves that many things that look reasonable in theory fail to work out satisfactorily in practice, and this is one of them. We have never known a successful sale or one nearly satisfactory held at the time and place of an exhibition. And so some schemes which may work fairly satisfactorily in one country may be found totally unsuitable to the conditions of another country. Mr. Cochrane's sale was extensively and judiciously advertised. His horses were of a high order of merit, and he deserved a good sale, having done his part honorably, as he always does, but anyone who knows the character of the stock offered will readily assent to the statement that they could have been sold privately for nearly if not quite double the amount realized at the sale. The magnificent imported stallion, Barthorpe Performer, in the prime of life, and for whom it is said that \$5,000 was at one time offered, was sacrificed at \$950, and 18 other high-class animals, including 3 imported mares, which must have cost \$1,000 each, were knocked down at an average of \$172. It is, however, an ill wind that blows no good to anyone, and if the seller suffered, the buyers benefited, and we are glad to know that nearly all the animals remain in the Dominion, Hon. T. R. Black, of Amherst, N. S., being the largest purchaser, and Dr. Kendall, of Sidney, C. B., securing a grand pair. Mr. Robt. Davies, Toronto, and Mr. E. C. Attrill were also fortunate purchasers. We give below a list of the animals, with prices and purchasers: Barthorpe Performer, imp., ch. s., foaled 1893, by Garton Duke of Connaught—Mr. Jackson, Buffalo, \$350. Maestic II, b. s., 2 years, by Hayton Shales—T. R. Black, Nova Scotia, \$260. Everingham, b. s., 2 years, by Hillhurst Sensation—A. Galbraith, Janesville, Wis., \$200. Strathcona, yearling, b. c., by Hayton Shales—T. R. Black, \$165. Lady Lynn, imp., foaled 1886, roan mare, by Great Shot—Robt. Davies, \$200. Nancy, imp., b. m., foaled 1888, by Matchless of Londesboro—T. R. Black, \$225. Cameo, imp., ch. m., foaled 1893, by Danegelt—T. R. Black, \$215. Lady Shales, b. m., foaled 1895, by Hayton Shales—A. P. White, Pembroke, \$190. Lady Thixenrale, b. m., foaled 1885, by Maxwell—A. T. White, \$175. Miss Lynn, b. m., foaled 1894, by Hayton Shales—Dr. Kendall, Sydney, C. B., \$190. Danish Maid, b. m., foaled 1895, by Royal Dane—Dr. Kendall, \$155. Queen Dagmar, br. f., 3 years, by Barthorpe Performer—Dr. McCoy, St. Catharines, \$300. Queen Louise, ch. f., 3 years, by Barthorpe Performer—T. R. Black, \$225. Queen Alexandra, ch. f., 3 years, by Barthorpe Performer—W. H. Comstock, M. P., \$175. Danish Lady, roan f., 3 years, by Danish Duke—Robt. Davies, \$181. Viola, ch. f., 3 years, by Barthorpe Performer—Mr. J. Carruthers, Tilsonburg, \$195. Lady Minto, roan f., 2 years, by Barthorpe Performer—Robt. Davies, \$325. Godiva, ch. f., 2 years, by Barthorpe Performer—E. C. Attrill, Goderich, \$105. Lady Melvind, b. f., yearling, by Barthorpe Performer—E. C. Attrill, \$84. Total, \$4,515; average for 19 head, \$237.64.

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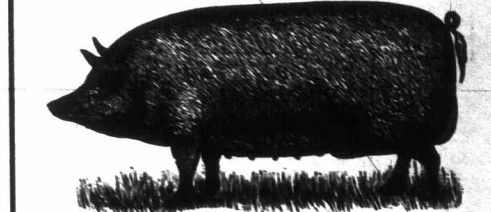
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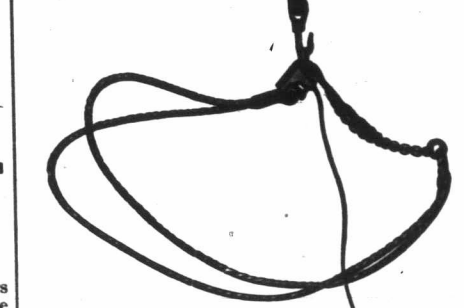
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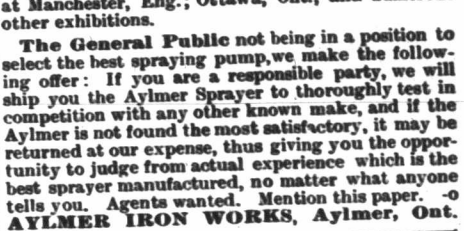
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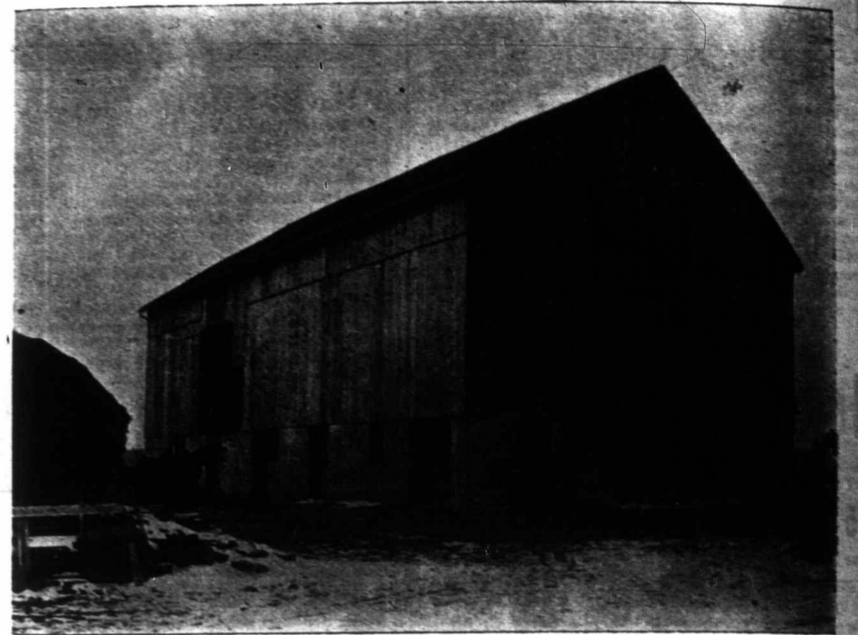
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Chicago Sheep Shearing Machine

STEWART'S PATENT. PRICE, \$15.00.

The only Sheep Shearing Machine ever invented. The day of the old fashioned hand shears is past. Over one million sheep shorn last season with this machine. Thousands of testimonials. No sheep owner can afford to shear the old way. Saves from one-half to one pound wool from each sheep. Pays for itself the first season. Be humane and don't butcher your sheep. Requires no experience to operate. Send for large illustrated circular.

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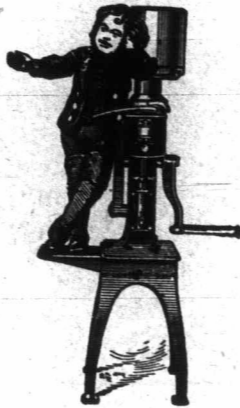
Cream Separators.

HOW IS THIS FOR

NEW CENTURY "ALPHA" DISCS ?

An Unsolicited Testimonial.

COWASSVILLE, APRIL 27TH, 1900.
THE CANADIAN DAIRY SUPPLY CO., MONTREAL, P. Q.
Gentlemen,—The Alpha Cream Separator bought from you received, and is now running in my factory. I wish to say I am delighted and surprised. I am delighted with the way the machine is running and fine work it is doing. I am surprised that any man building a butter factory could be induced to buy a Russian or Tubular separator, with the Alpha separator on the market. Two hundred dollars per year and a Russian Tubular free of charge would not induce me to take out my Alpha machine. I regret to say I have a Sharples Tubular in my factory. I am pleased to say I have an Alpha separator also in my factory. With the Alpha we can separate cream in fine shape. My butter-maker claims it does neither to his entire satisfaction. E. J. RUTER



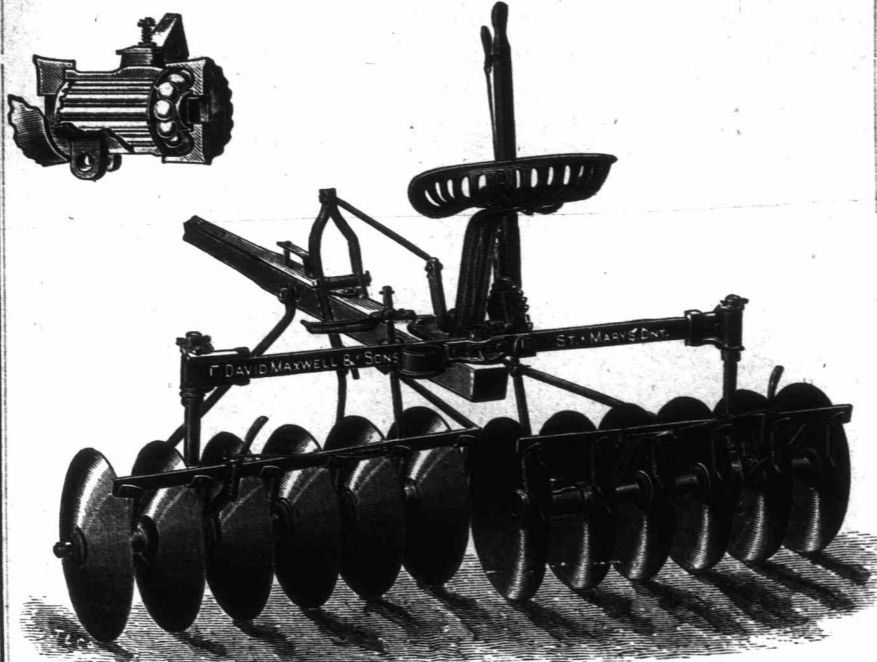
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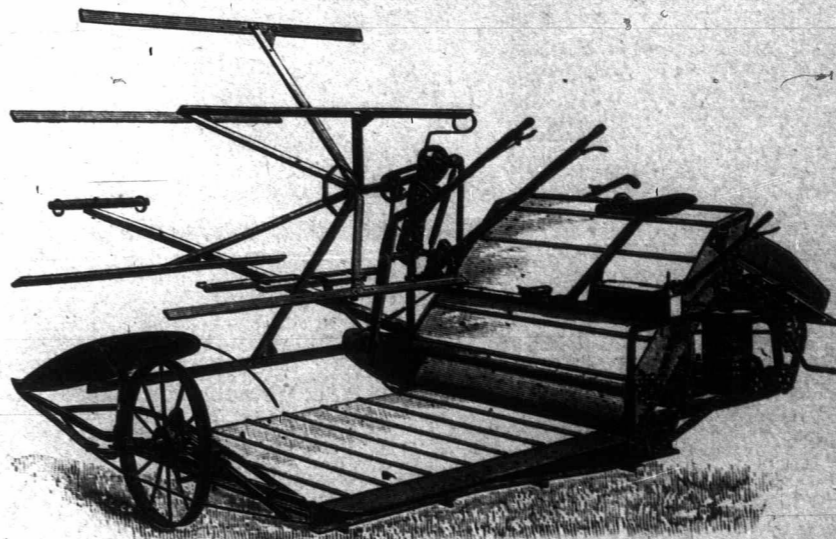
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We Guarantee the QUALITY, You Have the SATISFACTION.

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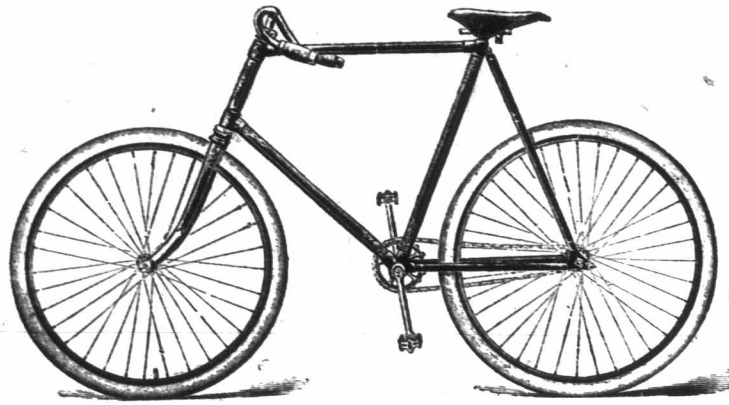
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Good housekeepers say that Blue Ribbon Ceylon Tea besides being the best is by far the most economical. Try it.

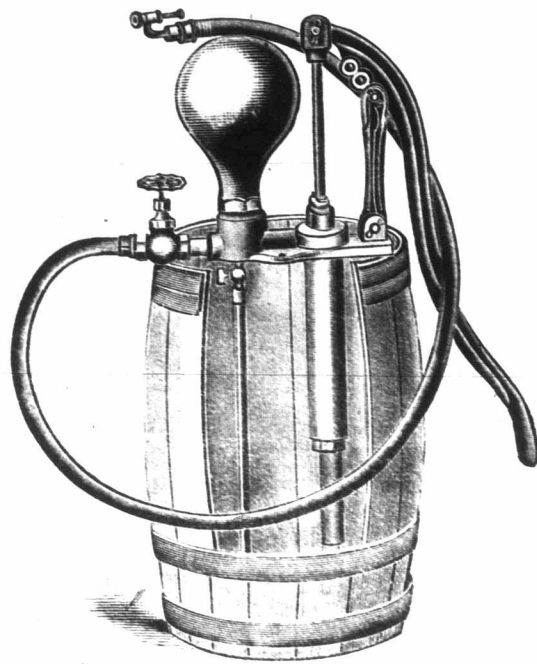
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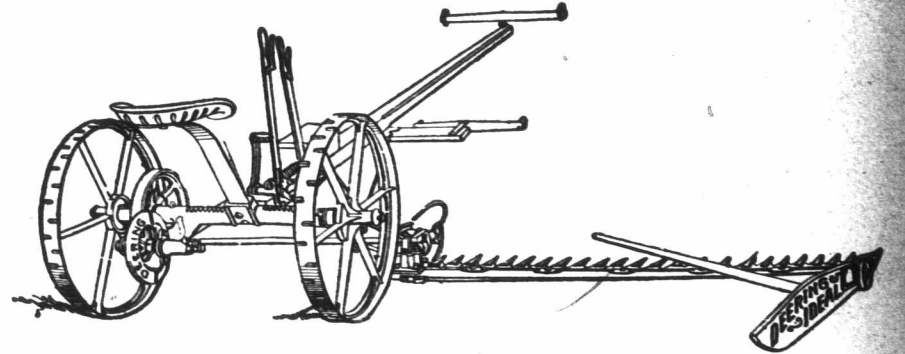
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