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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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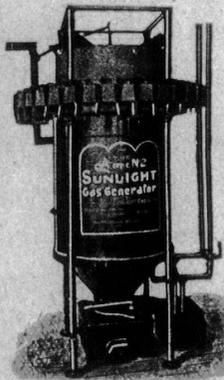
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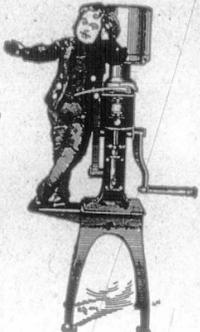
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* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.*

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Vol. XXXVI.

LONDON, ONT., AND WINNIPEG, MAN., JANUARY 15, 1901.

No. 518

EDITORIAL.

The Call for a Railway Commission.

The communication from the vigorous pen of Mr. John McMillan, for many years representative of the south riding of Huron County, Ont., in the Dominion Parliament, which appears elsewhere in this issue, we commend to the careful study of our readers and all interested in the problem of freight rates. Both as a parliamentarian and an extensive shipper over Canadian railways, both east and west, and as an exporter to Great Britain, he has had special opportunities for acquiring first-hand information upon the subject of transportation, which he has supplemented by a careful study into what has been accomplished elsewhere in the effort to regulate freight rates in the interests of the people. He makes out probably the best case we have yet seen for an efficient railway commission in Canada: first by presenting evidence to show the imperative need for such a remedy, and, in the next place, by indicating that there is good ground to believe that the means proposed will be to a very large extent effective. The time has certainly come when measures must be taken on behalf of the people of Canada, who have contributed so enormously toward the construction of railways, to prevent them from being discriminated against in favor of foreign shippers and foreign consumers, as has been and is still being done, for example, in favor of Western States produce. These discriminations have become in reality a heavy and intolerable tax upon the Canadian agriculturist, and for this reason we gladly give space to Mr. McMillan's able and informing letter. We should be glad to hear from others upon this important question, as it will assuredly demand attention at the forthcoming session of the new Canadian Parliament.

The Horse Breeding Industry.

The horse-breeding business of the present day is rapidly adjusting itself to new conditions. The surplus stock of a few years ago is fairly well worked off, and those who are now breeding and rearing horses are recognizing more than ever before that animals for special lines of usefulness are the only ones it will pay to produce. The search for remounts that occurred throughout the horse-breeding sections of Canada last year revealed the fact that it is only of the lighter class that there is a supply in excess of the demand. The little road stock, of no particular character, from trotting, pacing or running sires, have not been picked up for export because they filled no particular field of usefulness, but for sound, active stock, of suitable weight and activity for the army, good prices have been realized. In fact, it is being felt that we are on the verge of a shortage of suitable army horses, and to meet this it has been recommended to establish a Government ranch and remount depot in our Canadian Northwest, organized and operated by the Remount Department of the British Army, the British and Canadian Governments being asked to co-operate to put it into operation. This scheme has been mooted as a result of Lord Wolseley's repeated remark that the mounted infantry force must be greatly increased in order to keep pace with the requirements of modern warfare.

Such a recommendation indicates that there is a broad field for horse-breeding being developed.

The stamp of horse needed for military purposes is much after the type of the English hunter, with short legs, compact form, good shoulders, back, ribs and loins. Good weights are also necessary, and the more breeding the better. Horses of this class will pay to raise, and will sell for their full value for years to come. The plainer ones, of moderate quality, will not bring as much as the better class having higher degrees of staying power, such as strength, speed and endurance.

Besides the useful road horse, the high-class harness horse and the jumper, all of which are in demand, and will be selected from among the remount stock raised, there is the draft horse that is safe to produce and is always a seller if sound. Weight and soundness are of chief importance, and when these are combined with quality and good fitting we have a high-priced horse. It was only a few weeks ago that five geldings and one mare from Waterloo Co., Ont., sold in Chicago for three thousand dollars. These were winners in a keen international competition; but this sale goes to show that it pays to produce the best. A few years ago they would have brought little more than half the amount, as all horse values have risen. For instance, during the year ending June 30th, 1897, there were 813,670 horses sold in Ontario for \$2,700,479, whereas in the twelve months preceding June 30th, 1899, 615,524 horses brought \$3,204,006—198,146 horses less, while the total value was \$503,527 more, or a difference of about \$20 per head—an extraordinary advance in prices in two years. Nor is this advance likely to cease at an early date, as the material from which to rear good horses is not at command. This is true especially of mares, while in many sections there is a dearth of first-rate sires. It is true that many draft stallions are being imported, but the low service fee that can be collected from the average farmer who rears one or two foals does not warrant importers in bringing many of the best class of horses. Some are blemished, others have outstanding weak points, and again there are among them unsure foal-getters, so that with our best efforts we cannot hope to soon have on hand an overproduction of really good horses. It therefore behooves every horse-breeder to make the very best use of his material on hand in order to get the most out of it. The foals and young horses should be well fed and cared for, the in-foal mare should be suitably nourished and given the most healthful conditions possible, and the stallion owner should winter his horse so as to have him in best vigor by the early spring months. A certain amount of roughing it is as important as good food and comfortable quarters, while the question of ventilation, and, in fact, all sanitation, should be duly attended to. Since the best methods of breeding and rearing first-class horse stock is too little understood, we invite correspondence from horsemen who have had success in producing vigorous foals and rearing them up to be good mature horses.

The Work of a Forestry Association.

In view of the series of meetings about to be held throughout Manitoba and the West, under the direction of Mr. Stewart, head of the new Canadian Forestry Association, the following extracts of the twenty-fifth annual meeting of the Minnesota Forestry Association, furnished us by the Secretary, Mr. Geo. W. Strand, will be read with interest.

After the business session, a joint meeting was held with the Horticultural Society, Pres. J. H. Cross taking the chair. A number of interesting papers were presented, but lack of time did not permit a discussion on them.

President Cross, in his opening remarks, outlined the work of the Association, past and present, and its relation to the various other forestry divisions now carried on by the State. "Its

province is to be enthusiastic and even radical by nature. It must be continued as the organized popular power back of advanced forestry movement. As such, it must keep the people informed, prod them when they become indifferent, and appeal to them in order to awaken an earnest interest, which will react in the law-making power."

"A Lumberman's View of the Forestry Situation" was ably given by Col. W. P. Allen, of St. Paul. Among the facts brought out, he stated that the lumberman has little to apologize for, as he has done his share towards the building up of the country and the advancement of civilization. The barriers in the way of the rapid inauguration of a rational forestry system in this country will be mainly owing to the large area to be protected and difficulty of obtaining funds to meet same. Also in inducing the Government to attempt a general system of forest management. Forest areas that are left untouched are reasonably safe from destructive fires, and the Government should withdraw all its timber lands from the market. Private parties cannot hold same to advantage, whereas the Government can, and should, for the benefit of future generations, thereby regulating the sale and use of timber. Our conditions differ much from those of Germany, but their spirit is correct, and we hope to learn much by studying their methods.

Prof. S. B. Green, who spent some months the past season studying "Forestry Conditions of Germany" and other places, gave a very instructive talk on the above topic. It was not without considerable self-sacrifice that this system was established, for at one time Germany's forests suffered abuse nearly as much as ours. The value of timber, system of protection and taxation were touched upon. Although we cannot expect to adopt these methods, we can obtain many good suggestions from this source to base upon. A notable fact was, that good roads and good forests accompanied each other. Lands not suited for agricultural purposes are planted to forests. Our native jack pine is looked upon by them as one of their most valuable trees for the sandy plains, and seed of same commands a good price. It is a characteristic of the Germans not to lay out money in land unless it pays, and their foresight in the forest plantations is no exception to this rule.

Dr. Leo M. Crofts, of Minneapolis, brought out many facts in his talk on the "Wisdom of the National Park Movement" to emphasize its necessity. Aside from the practical value such a park would be as a forest reserve and the protection of our water supply, no other region presents as many points in its favor on the aesthetic side. Its diversity, beauty and accessibility as a health resort commends itself, and for these reasons something must be done at once if it is to be preserved as such.

Conditions have changed much since the time of the Association's organization, and now, instead of the main issue being the encouragement of prairie planting, it is merging into that great question which demands the best of statesmanship to handle—that of the protection and reforestation of our native timber tracts. Although much good can yet be done in all of these lines, the latter will be pre-eminent in the assertion of its rights.

After the lapse of a quarter of a century since its organization, those interested in the solution of the forestry problems have some reason to feel encouraged by its recent outlook.

The general agitation of these matters and growth of sentiment in their favor would seem to indicate that we have come to that point where the people see the necessity and should demand that forestry receive its due consideration and place. Our legislative bodies must devote more time to their consideration—they must view them fairly and with increasing favor.

The past year has brought out many facts to substantiate these statements, making a year indicative of much coming good to the forestry problems which confront Minnesota.

Chief Veterinary Inspector.

REPLY TO "ENQUIRER."—The Chief Veterinary Inspector for Canada is Dr. Duncan McEachran, Montreal, an attache of the Dominion Department of Agriculture.

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The Need for an Efficient Canadian Railway Commission.

To the Editor FARMER'S ADVOCATE:

Having given a good deal of consideration to the question of the Government of the Dominion of Canada appointing a railway and canal commission, for the purpose of regulating the carrying trade of the Dominion, I will contribute my quota to the discussion. It may be said that the Railway Committee of the Privy Council has the power, now, to regulate the business as far as preventing excessive rates from being imposed or to prevent the railways from discriminating against either localities or individuals is concerned. Clause 16, sub-section 9, of the Railway Act states that no tolls shall be levied or taken until approved by the Governor-in-Council, nor until after two weekly publications in the *Canada Gazette* of the by-law establishing such tolls, and of the order-in-council approving thereof.

Notwithstanding this clause of the Railway Act, we know that grossly extravagant rates are charged, barefaced discrimination is daily practised by our railway corporations without submitting their tariff of rates to the Railway Committee of the Privy Council, and one of the grievances which Canadians suffer under is the higher rates paid upon farm produce shipped from Canada than is charged for American produce over the same railways.

According to a circular issued by the Freight Association of the United States, and a circular issued by the Canadian Joint Freight Association, I will give a few statements of the cost of carrying goods of as near the same class as possible.

In Canada, freight is divided into ten classes, while in the United States there are only six classes of freight. The American rates quoted only apply to railways east of the Mississippi river. West of the river the classification is different. The statements are for 100 pounds for a number of miles:

Per 100 lbs.	For miles.	In the United States.	In Canada.
100	115	21 cents	38 cents
100	100	28 "	42 "
100	47.5	45 "	78 "
100	36.5	70 "	86 "

As to discriminations against different points:

Two years ago any one shipping live stock from Chicago to St. John could get a rate of 38 cents per 100 lbs., while the same rate was charged from London (in Ontario) to the same point. A farmer of my acquaintance shipped a carload of cattle from the County of Huron to North Bay, a distance of 190 miles, and paid \$190 freight. The same farmer shipped another carload from the same station in Ontario to 100 miles west of Chicago, a greater distance by about 250 miles, and paid only \$60 freight.

In shipping apples to the British market, I paid 5 cents per barrel more from Seaforth than was paid from either Wingham or Ingersoll. This amounted to \$9 per car. There are two railways at both Wingham and Ingersoll, and only one at Seaforth. I showed in the House of Commons in Canada on the 3rd of May, 1899, the following cases of discrimination by Canadian railways: From Owen Sound to Toronto, the rate on Canadian oats was 3½ cents per bushel, while the rate on American oats, including elevator and handling, was only 2½ cents, both carried over the same line of road. The grain rate from Chicago to Peterboro, by Owen Sound, is 6½ cents, while from Chatham to Peterboro the Canadian farmer must pay 9½ cents. American corn from Owen Sound to Ottawa was 6½ cents, while Canadian corn from Chatham to Ottawa was 10½ cents. At Teeswater, American corn is delivered from Owen Sound for 4½ cents per bushel, while the rate on Canadian corn from Chatham is 7½ cents. The rate on American corn from Owen Sound to Peterboro is 4½ cents per bushel—a strong contrast to the rate of 9½ cents charged between Chatham and Peterboro. These are discriminations that a railway commission could deal with.

In the fall of 1898 the railway companies enforced heavier rates upon oil coming from the United States into Canada. Here are some of the old rates as compared with some of the new ones enforced:

	Old Rate Per 100 lbs.	New Rate Per 100 lbs.
From Toronto to Brampton.....	14 cents	22½ cents
" " Southampton.....	29 "	40½ "
" " Port Hope.....	20 "	28½ "
" " Orangeville.....	17 "	27½ "
" " Peterboro.....	23 "	34 "
" " Warton.....	24 "	40½ "
" " Brockville.....	25 "	47 "

Here are increases in some instances of over 50%, and yet I will guarantee that the railway companies did not lay their increased rates before the Railway Committee of the Privy Council, as the Railway Act requires should be done.

These increases in the carrying rates on coal oil would have become general all over Canada had it not been that one or two independent railway companies would not join the combine.

Here are rates that were charged by the railways after the change took place. On coal oil, from Hamilton, in barrels less than car lots:

	On Canadian oil.	On American oil.
Hamilton to Ingersoll.....	18 cents	27 cents
" " Woodstock.....	17 "	25½ "
" " Berlin.....	18 "	27 "
" " Harrisburg.....	11 "	21 "
" " Copetown.....	9 "	19½ "
" " Dunville.....	15 "	24½ "
" " Beeton.....	20 "	28½ "
" " Cookstown.....	21 "	30 "

The Canadian oil belonged entirely to the Standard Oil Co., at whose dictation our Canadian railway companies raised the carrying rates upon oil, and the statement was made at Ottawa that the railway companies had to hand over the increased rates to the Standard Oil Co. The American oil belonged to a few independent oil companies that were sending oil from the United States to Canada.

One of my sons went to Prince Albert, N.-W. T., bought three carloads of cattle and shipped them to Montreal. He paid \$197 freight per car. While in Prince Albert he sold a carload of apples to go from Seaforth to Prince Albert, thirty miles of a shorter haul than from Prince Albert to Montreal, and yet the freight on the car of apples was \$518. I might go on and repeat a number of other instances of extravagant charge by the railways, but I will only mention a few instances as brought up at the late meeting of the Fruit Growers' Association at Brantford.

A Mr. Bunting, of St. Catharines, a fruit-grower, is reported to have said: "Speaking of express rates, these rates are altogether too high; the rate from Niagara to Montreal is 80 cents per 100 lbs. This figures out to \$160 per car. During the height of the fruit season, four or five cars is shipped by express daily from our station to Montreal. Even four cars at the rate quoted would figure up to \$640."

Mr. Alex. McNeil is reported to have said: "We are discriminated against both as fruit-growers and Canadians. As fruit-growers, the C. P. R. will bring wheat from Manitoba to the east for from \$40 to \$50 per car. The cars which bring the wheat from Manitoba east are very largely hauled back empty, but when we ask for one of those cars for the purpose of shipping our grapes to the prairies, we are told that the charge per car is nearly \$100. The grapes are really easier handled than the wheat; they are loaded and unloaded more quickly than the grain; their carriage does not invite so much risk as is involved in the case of wheat, and still we are charged double the price for the grape car that is paid for the wheat car."

"I live, as you know, close to the City of Detroit. I can put grapes on board a car at Detroit and ship them to Chicago, a distance of 175 miles, for 19 cents per cwt., but if I put them on board at Windsor and ship to London, Ontario, a distance of about 100 miles, the rate is 32 cents per cwt."

Mr. A. Boulton, the big Prince Edward County fruit packer, is reported to have said: "If you drop freight off at Halifax it will cost you 4 cents more per cwt. than it would cost had you sent it on to Liverpool." Just here it is reported that Hudson Usher a short time ago said: "It cost more to ship a barrel of cement from Queenston to Winnipeg than from Liverpool to Winnipeg." In a newspaper of Dec. 26th last, it is reported that the G. T. R. is actually charging less for hauling grain and flour from Chicago to Portland than from Ontario points.

As to the carrying rates charged in the United States, I am fully convinced that they are lower than in Canada, and that it is in a great measure owing to the influence of railway commissions. Mr. Sifton, in a speech a little over a year ago, is reported to have said that it cost the farmers of Canada at least ten per cent. more than it cost the farmers of the United States to get their produce to the seaboard.

The following is taken from a pamphlet on changes on rates charged by railroads in the United States:

In 1871 the rate per ton per mile in cents was 1.884 cts.

In 1878 the rate per ton per mile in cents was 1.296 cts.

In 1885 it was 1.011 cts.; in 1890, 0.941 cts.; in 1897 it was 0.806 cts.

A reduction in 26 years of 57% on the freight rates in the United States.

On the Michigan Central the rates charged per ton per mile in 1874 was 1.728 cts.; in 1897 it was reduced to 0.615 cts., a reduction of 66% in 23 years.

Cattle rates from Chicago to New York in 1883 were .40 cts. per 100 lbs.; cattle rates from Chicago to New York in 1897 were .28 cts. per 100 lbs., a reduction of 30% in 14 years.

The following is taken from a pamphlet termed "Railway Nationalization," giving the average receipts per ton per mile from 1882 to 1896. I will give three periods: The average freight rates per ton per mile charged in the United States in cents and fractions of cents in 1882 was 1.24 cts.; in 1889 it was 0.97 cts.; in 1896 it was 0.80 cts. This shows a reduction of 34% in 14 years.

The above quotations show that great reductions have taken place in American railway freight rates, whereas, comparatively, there has been almost no reduction in Canadian freight rates, with the exception obtained from the C. P. R. by the Dominion Government through the arrangement made for the building of the Crow's Nest Pass Railway.

As to the benefit of railway commissions in the United States (the Illinois Railway Commission), Frederick Clark says: In 1880 there were 47 formal complaints, 25 for extortion, 13 for unjust discrimination, 6 for both, and 3 for other reasons. All these were settled by the commissioners. When the railways were decided against, they promptly responded to the decision of the commission. Such was the effect of the decision of the United States Supreme Court, which, this same year, affirmed the right of the Legislature of a State to regulate rates of freight and fare by means of its commission. In 1884 the number of cases was reduced to three for unjust discrimination. In 1895 there was no record of any complaint. The bulk of the traffic was interstate, and the question was raised, "Had a State the right to regulate traffic in the absence of federal legislation?" and the Federal Court decided that the State had not the right to regulate interstate traffic in the absence of Federal legislation.

The question was then asked, "What were the results which the Illinois Commission had accomplished?" Answer—It has been largely instrumental in reducing railway rates throughout the State. The railways were even benefited, as they gained in revenue from anti-discriminating clauses more than they lost from the prohibition of the greater charges in the shorter hauls.

Then it became necessary for Congress to appoint an Interstate Commission, and as there were over 30 States that had appointed commissions, a difficulty arose with the Interstate Commission in legislating not to interfere with the legislation in any of the States. If the Federal Government of the United States had full control of all the railways, as the Dominion Government in Canada has, there would not have been the same trouble in getting satisfactory results, as proven by the reports of the Illinois State Commission.

It has been said that the Railway Commission in Britain has not given satisfaction, and that the people of Britain are disappointed. The first bill appointing a railway commission in England was passed in 1873, and did not prove very satisfactory. The law of 1873 was amended by a bill passed in 1888; and again by another bill in 1894. In 1896 what is called the "Light Railway Act" was passed. I will give two or three cases settled:

A railway corporation charged a manufacturing firm (which had a siding) 13½d. for every ton of freight shunted. They considered the charge exorbitant and applied to the railway commission, who reduced the charge from 13½d. to 9d. per ton. This is a sample of the action of the commission.

In 1898, out of 103 cases taken before the commission, 23 were settled without being tried, and in 1899, out of 114 cases, 11 were settled without being tried.

In England it has been found that the checking and control of railway building is more effective than volumes of law regulations. No railway in

England can be built until the railway commission is fully satisfied that the road is a necessity.

One great evil that a railway commission in the United States has to contend with is too many roads. There are 21 competing lines between Chicago and New York, ranging from 912 to 1,376 miles in length.

As a result of too many competing lines from Chicago to New York, out of \$1,250,000 paid by passengers between New York and Chicago in 1898, the enormous sum of \$250,000 was spent on competing offices on Broadway alone, which shows the great waste of money and also the impossibility of a railway commission dealing efficiently with the fares charged, because each agent is said to be instructed to keep trade at all hazards.

There are 28 fast freight lines on the roads, with 20 offices in Chicago to fight for tonnage regardless of rates.

The above shows the necessity of a thorough investigation whether any new road to be built is an actual necessity to accommodate the trade of the country. Where existing lines are capable of doing all the business, it is a loss to have any more lines of railway.

Now, Mr. Editor, it has been contended on the floor of the House of Commons that the powers of the Railway Committee of the Privy Council, under the Railway Act, are very defective, and that should the Government appoint a railway commission with no greater powers than are possessed by the Railway Committee, the commission would not be a success. This being the case, it shows the necessity of the Government taking action at the earliest possible moment and passing a bill for the appointment of a railway commission, and it is certainly within the power of Parliament to give the commission full power to deal with all the different phases of the difficulties under which the people of Canada suffer.

One great reason for the failure of railway commissions in the United States has been the incompetence of many of the State commissioners, and their not having power to enforce the rates and classifications they arrived at; and also the books of the different railway companies not being kept on a uniform system. Railway commissions, to be effective, must be empowered to have the books of all the railways under their jurisdiction kept on a uniform system, and must have power to call for and examine the books of the different companies. They should have power to classify and to make schedules of rates, and when the railways have had a fair opportunity to be heard, the decision of the commissioners should be considered as conclusive and binding upon all courts.

In 1899 we had in Canada 17,250 miles of railway in operation in the whole Dominion. The country has contributed over \$200,000,000 towards the building of our railroads, and yet we have no voice in regulating the rates that are charged, either directly or indirectly. I see, by the *Mail and Empire* newspaper, that what they term "chilled steel" agreements have been entered into lately to keep up railway rates. It is too bad that after the people of Canada have contributed, through the Dominion and Provincial Governments and the municipalities, more than one-fourth of the actual cost of the railways, that even the Government is not consulted; neither are the passenger and freight rates submitted to the Railway Committee of the Privy Council.

The railway rates as arranged—especially for local rates—are sometimes higher than the goods could be hauled by team and lumber wagon, as evidenced by a Toronto firm that kept several teams of horses on the road from Toronto to Hamilton, and is reported to have saved 3 cents per 100 lbs. doing the work, rather than sending the goods by rail. It is reported in the *Globe* of Jan. 4th, 1901, that the C. P. R. charged \$6.00 per ton for carrying ore 50 miles. The statement is also made that merchants have transported goods from Winnipeg to Minnedosa, a distance of 125 miles, the cost of the men and teams being less than the railway charges.

While the local rates are based on the cost of hauling by team, the rate across the continent is adjusted according to the cost of vessel transportation around Cape Horn.

I see it is stated that the Minister of Railways has notified the secretary of the Manufacturers' Association that no change will be made in the freight rates until they are notified. But there is no word of consulting the farmers, who, in my opinion, are greater sufferers from extravagant charges and unjust discriminations by railway corporations than any other class in the commun-

ity. Heavy freight rates on either farm produce or animals and their products reduce the prices to the farmer; and exorbitant carrying rates charged on implements or goods of any description increase the cost to the farmer.

There are, in my opinion, only two ways of remedying the evils under which we suffer from the railway corporations:

1st.—Government ownership of railways, which, I think, is out of the question at the present time.

2nd.—The appointment of an impartial and efficient railway commission having sufficient authority to deal with the evils now known to exist.

Let the Government appoint a commission of thoroughly competent, independent men, who will be independent of all railway corporations and free from Government influence, excepting in so far as sending in regular reports and receiving suggestions from the Railway Committee of the Privy Council is concerned.

Huron Co., Ont.

JOHN McMILLAN.

STOCK.

London Smithfield Show.

The English correspondent of the *Live Stock Journal*, Chicago, writes of the championship awards in the cattle classes at the above-named show in December last as follows:

The Smithfield Club show may be said to be the final court of appeal to which the owners of nearly the whole of the prizewinners at the other fat-stock shows send their animals, in the hope—vain though it may have been this year—that decisions of some considerable value may be obtained as to the relative merits of the respective winners at the various preceding shows. Unfortunately, the result is chaos. At Norwich we had for cham-



HIGHLAND CATTLE ON THEIR NATIVE HEATH.

pion the cross-bred heifer, and the Hereford steer as reserve, then at Birmingham a new competitor enters the arena in the form of the Queen's Shorthorn heifer, Cicely, which, with almost universal approval, is placed above both the cross-bred heifer and the Hereford steer, whilst the Norwich positions are reversed. To this no very great objection was generally made. We come to London, and, to the surprise of most people, the Shorthorn heifer is actually beaten by the cross-bred heifer in competition for the special prize given for the best heifer in the show, whilst the Hereford steer is declared to be the best of all the cattle in the show. Surprise was pretty generally expressed at the decision of the judge, who, unfortunately, is a breeder of Herefords, so that the ill-natured public naturally jumped to the conclusion that he might have been influenced in favor of the variety of stock with which he was best acquainted. This ability to discover the merits of animals of the particular breed which one has made a special study is only to be expected, and cannot be guarded against so long as the councils of the various societies will accept offers of these champion prizes, which afford not the slightest indication of the value of the different varieties of stock for general purposes, but almost invariably lead to scheming in the appointment of the judges, and increased jealousy amongst stock breeders of the various kinds of stock. Her Majesty's Shorthorn heifer won the first in her class, the cup for the best animal in the Shorthorn classes, and the challenge cup given by Her Majesty for the best animal in the cattle classes bred by the exhibitor. This cup is offered to encourage the exhibition of animals by their breeders, a practice which has been superseded to a very considerable extent by the far too general practice of moneyed men offering very high prices to breeders of the best young animals, with a view to training them on for a year in order to gain renown as the winners of prizes at the London show.

Our Scottish Letter.

A GLANCE BACKWARD.

This letter is a week or more behind time, but possibly it will not be regarded as altogether out of date. The old year and the old century are slowly dying, and ere this reaches the reader the last sands of the nineteenth century will have run out. Men had a hard fight about a twelve-month ago settling when the end of the century really came, but all tongues are hushed now, for with the first dawning of 1901 the twentieth century has certainly begun. It is no exaggeration to say that greater industrial agricultural progress was made during the nineteenth century than during the whole of the centuries preceding it in the history of this sad old world. At the beginning of the century our fathers were plowing land, sowing grain, reaping, threshing and grinding; making butter and cheese; working horses and cattle and breeding all kinds of live stock very much as all these operations were being carried on by their remote ancestors when Abraham and Lot grazed their flocks on the fertile plains of Siddim. The patriarchs would not be more astonished at the agricultural changes of the nineteenth century than would be Robert Bakewell himself, and certainly in the department of the application of mechanical ingenuity to agricultural affairs the progress has been immense.

The nineteenth century was born out of a century unsatisfactory in many respects, but not least in its ceaseless wars and almost interminable bloodshed. The nations were travelling in birth—they knew not what they bore, and least of all did the actors in the great drama of the eighteenth-century revolutions suppose that they were paving the way for a century whose greatest victories would be won in the realm of peace. The brain and

not the sword has been the dominating factor in the drama of the dying century, and the triumph of mind and heart over the materialistic is the resonant note in the swan-song of the era that fades into the past eternity. The question for the opening day is, which weapon shall dominate the years to come? Shall the twentieth century repeat the sad story of the eighteenth, or shall it witness the arrival of the time when swords and spears and the warrior's weapons shall give place to the implements of husbandry? If the omens of the dying year are to be the guide for the coming century, the lover of peace may tremble, for the nations are armed and arming, and the ancient empires of the old world are threatening to become the battlefield of the new. On the great plains of China there may yet be waged a conflict between the

powers of Europe and America, before which all previous wars have been but as the play of children. Yet, amidst it all, agriculture must flourish, men must be fed, seedtime and harvest will endure, and herds and flocks will yield their increase.

The great Smithfield show of this year, like all the agricultural events held in the capital which are dependent on what is called "society," had on it this year a kind of damper, and there was an absence of the eclat which usually attends the event. Not even the presence of H. R. H. the Prince of Wales, who does his best for all agricultural functions, could redeem the event from flatness. Society is in mourning, and cannot attend cattle shows. The closing year has been a disastrous one for the great English shows in this respect. The Royal made a loss on its York show of £3,400, and the Yorkshire Agricultural Society, which persisted in holding a show of its own in the county, although the Royal was there, has made a loss of £3,000 also, so that in Yorkshire alone the enormous sum of nearly £6,500 was lost on two great agricultural shows in 1900. Had but one been held, it is reasonable to suppose that it would have been a success. The holding of the county event has been an expensive experiment not likely to be repeated. But to return to Smithfield. Apart from the absence of "society," the show of 1900 was a very satisfactory event. The exhibition of stock was excellent, but trade was woefully slow, for which the abnormally mild weather was no doubt partly responsible. The championship for beef went to a Hereford, and a wonderful animal he is. No one challenged his right to win, and yet, at the same time, it cannot be said that the supreme honor went to the animal whose flesh would draw the highest price per pound in the market. The reserve was a beautiful cross-bred heifer bred by Mr. John Ross, Meikle Tarrel, Scotland, got by the Shorthorn bull, Ringleader, bred at Collynie, and out of a black Polled cow. She is a beauty in symmetry and levelness of flesh. Her beef

would certainly sell for more money per pound than that of the Hereford.

In the sheep section the championship went to Suffolk wethers, a pen of great sheep very hard fed and deserving their position. Whether they, again, would sell for most per pound may be doubted also. In the championship for the Longwool sheep, an absurd decision was given: the trophy went to the cheapest mutton in the show—that of the Lincolns. The great sheep of the Lincoln pens are, as a breed, as valuable as any in England. This, however, is for export and crossing purposes, and at a fat-stock show that should not count. The mutton for which the butcher will pay the biggest price should win the day, and what that is is indisputable. The Blackface or Cheviot mutton commands the highest price in the London market. The carcass competition, or, as you express it, the block test, was extremely interesting. First prize in the wether hogg class went to a very fine piece of mutton from an old Norfolk Horned wether. This was a beautiful piece of meat, and it was interesting to compare it and the meat of the Suffolk, which has been created by crossing the Norfolk Horned with the Southdown. The championship for mutton in the block test went to a Devon Longwool lamb, an old English breed of sheep which gives good mutton, and the other first-prize winners were a Blackface mountain wether hogg, a cross Southdown-Suffolk lamb, which made the highest price in the auction, and the Norfolk Horned wether hogg.

The beef championship was awarded to a cross between the Aberdeen-Angus and the Hereford, and the other first prizes went to pure-bred Aberdeen-Angus beasts. The best example of baby beef in the show was the champion A.-A. He was 22 months 3 weeks 4 days old, and weighed 13 cwt. 3 qr. 7 lb. He was also breed champion at Edinburgh, and his feeder, Mr. George Bruce, Tochineal, Cullen, deserved credit for putting such an example of early maturity on the market. A notable fact about A.-A. cattle has come to light in Glasgow. A feeder in one of the States where these cattle are found sent a lot to Chicago Stock Yards, but was offered such a bad price that he shipped them to Glasgow. They cleared £3 a head here over the Chicago price after paying all expenses, and the feeder is continuing to ship very fine cattle of the same class to this city.

All hands are delighted to hear of the success of the Clydesdale geldings at the Chicago Horse Show, and it is hoped that it will give a fillip to the Clydesdale business in the United States. The horses which did so well are owned by Messrs. Peter Walker & Son, 105 Duke St., Liverpool, England, but the whole expense and risk of exhibiting them at Chicago was borne by Messrs. A. & W. Montgomery, Castle Douglas, from whom they were originally purchased by Messrs. Walker & Son. Both parties deserve the best thanks of breeders on both sides of the Atlantic for their enterprise. "SCOTLAND YET."

Bacon Pigs.

Mr. George Valder contributes an article to the *Agricultural Gazette*, of New South Wales, in the course of which he says: "At one time the demand was for fat bacon, and store pigs were kept in lean condition until they were ten, twelve or even fifteen months old, then fed heavily with fattening foods until they reached a weight of 200 pounds to 300 pounds, and then were killed for bacon. The sides of bacon made from pigs fed in this manner generally showed a layer of fat of 6 inches to 7 inches in thickness.

"But now the taste has quite changed, and in breeding and feeding baconers we must aim at producing flesh rather than fat. The pig required by the bacon-curers must have great length between the hams and shoulders, the ribs should be long and deep, flank of good thickness, deep in the head, light in the shoulders, hams square, small and well covered down to the hocks; and, when dressed, the sides should show an even width of fat along the back of from 1 inch to 1½ inches. The meat must be streaky, not thin and poor, but firm, lean, fine in texture, and well flavored. Instead of pigs of the old small breeds of twelve to fifteen months old, the breeder now finds that the seven to eight months' pig of the large modern breeds pays best for market purposes.

"For the English market, preference is given to the Large Yorkshire, the Tamworth, and the Large Black, or crosses of the Tamworth with the Berkshire and Yorkshire. In this Colony, either the pure Berkshire or the Berkshire-Yorkshire seem to be the favorites with the curers. The pure Tamworth is not much liked, but the cross of this breed with either the Berkshire or Yorkshire is rapidly coming to the front, and at the present time Tamworth boars for crossing are greatly in demand. Some curers favor the Poland-China, but most of the pigs of this breed that I have seen show too large a proportion of fat for our requirements. Of the Yorkshires, the middle breed is most in demand here; but in England and Canada the large breed is considered to be by far the best baconer.

"The reason why the long sides are so much in request is that the 'middles' always bring a much higher price than either the 'ham end' or 'fore end,' and, of course, the longer the side the greater the proportion of middle."

A Systematic Method of Improving Our Horses.

To the Editor FARMER'S ADVOCATE:

SIR,—Now that the elections are all over and a new century commenced, would it not be in the interest of our commonwealth to start well with all important lines of trade and commerce? Under the above heading I would suggest that man's most noble animal—the horse—be reasonably dealt with, which I will undertake to do in my humble way and to the best of my ability. My suggestion is that an act of Provincial Parliament be passed, imposing a license upon all stallions kept and intended for the improvement of stock, said license fee to be the sum of say fifty dollars for each year. License to be granted subject to the following conditions: (a) Certificate to be obtained of a duly qualified veterinary surgeon that said stallion has no hereditary blemishes or defects. The owners of stallions to obtain the required license from the township secretary wherein said stallion is intended to be used or in any other township within the Province. (b) Also a certificate of registration of one of the duly recognized Studbook Associations that his stallion fulfills all the requirements pertaining thereto. The license to be carried by the groom in charge of the stallion, subject to its being read by the person requiring the services of said stallion, and the owner of stallion not permitting the groom to have said certificate in his possession to be subject to a fine. These forms for licenses to be distributed by the Department to the several township secretaries after the same manner as the hunting licenses.

Now, I have a horse myself that I could not have registered in any of the studbooks, so it may be seen that my intention is not to help in any way my own pocket or to encourage the patronage by the breeders of such an animal.

As to the manner of disposing of the proceeds of license fees when collected, I suggest returning the money to each district agricultural society each year, and where exhibitions are held the entire proceeds from licenses to be distributed by the directors of said societies as prizes for the horse and his progeny only. I know no better way to bring the attention of the Government to this scheme than through the annual reports of the several township and district agricultural societies to the Department of Agriculture, mention thereof being inserted and strong approval advocated. The Department of Agriculture will thereby have its hands strengthened and a good footing obtained for the framing of an act in accordance with the proposed plan.

By the adoption of this system the breeders will be safeguarded that no misrepresentation can be imposed upon them, and it will be optional with them to patronize a registered animal or not. Furthermore, we have right here in Canada men whose judgment in the selection of a suitable animal in any of the several breeds of horses is equal to that of any man from another country.

By the adoption of the above scheme Canada's reputation for good horses will become widespread, more first-class animals will be the result, and there will be fewer culls. T. J. G. Russell Co., Ont.

Can Pigs be Finished Too Young?

There is a medium in everything. This would appear to apply as well to the feeding of young pigs for bacon production as to most other matters. In some experiments which have been in progress in Canada during the past season it has been found that in order to obtain the finest quality of bacon, not only must certain foods be used, but the animals producing it must be allowed to reach a certain stage of maturity before they are slaughtered. If, through the use of specially suitable food rations, the animals are forced in growth at such a rate that they become fit for slaughtering at a particularly early age—say five or six months—it has been found that the quality of the bacon produced is somewhat soft in texture and in other ways defective in some of the points usually regarded as essential to a high-class cure. No definite conclusions can yet be drawn from the experiments which are being carried out on this subject, but, so far, the results go to show that it may be found advisable to deprecate the production of baconers at an age of from six to seven months instead of the nine or ten months which has heretofore been the common practice. Here at home the aim of breeders always is to have their pigs in fit condition for the bacon curer at the age of between seven and eight months, and we have never heard any complaints on the score of "softness" because of marketing the pigs at such an age.—*Agricultural Gazette, Ireland.*

NONE TO EQUAL YOUR PUBLICATION.

The William Weld Co., Limited:

GENTLEMEN,—Enclosed please find my renewal subscription for *Advocate*, 1901. I really must congratulate you on your Christmas number. It should do you good, for I know of no agricultural paper that puts out its equal: in fact, among the American farm papers I see none to equal, in my opinion, your publication for giving good practical instruction from practical men. If farmers would but read this paper for information, they could not fail to find much that would help them in their profession, the same as business men find in their trade journals. I wish you immense success. Buffalo, N. Y. GEORGE SLADE.

The Feeding and Breeding of Prize-taking Steers.

BY D. E. SMITH.

Those who had an opportunity to inspect the dressed carcasses of beef at the Fat Stock Exposition, held the first week of last December, in Chicago, must have been favorably impressed with the high quality of the product. It may be of interest and profit to inquire what breed and what feed produced such excellent results? Therefore, I will give the breed and feeding of the six prizewinners in the dressed-carcass class. I have to thank the owners of these animals for their kindness in giving me the information.

In the yearling class, the first prize for best dressed carcass was awarded to "Sam," owned by M. T. Bunker, Tipton, Ia. Mr. Bunker informs me that "Sam" was a high-grade Shorthorn steer. His sire was a pure-bred Shorthorn bull and his dam a grade of the same breed. He ran out with several other calves the same last May, when he was put on full feed on grass, and 100 days before the Chicago show was given a full ration of cracked corn and oats.

The second prize went to "Uncle John," owned by G. S. Redhead, Des Moines, Ia. He was a pure-bred Hereford. During the winter he received rough feed in an open feed lot. From June on he was stabled during the day, and ran out to pasture at night. His regular grain ration was corn, oats and bran, to which was added Maltose Stock Food.

The third prize was taken by "Budge," owned by George Leigh, Aurora, Ill. He was a grade Hereford. His sire was a pure-bred Hereford bull and his dam a grade cow. "Budge" ran out all winter, with only an open shed for shelter, and on pasture until the 1st of July, when he was put in a box stall and fed barley meal, corn and oats, ground, with a greater proportion of meal and oats than corn.

In the 2-year-old class, the first prize for best dressed carcass was given to "Jerry," owned by W. J. Miller, Metz, Ia. He was a pure-bred Polled Angus steer. He ran out to pasture, and was fed ear corn and Globe Stock Food.

The second prize was awarded to "Senator," owned by the Michigan Agricultural College. I wrote them, asking for information about the feeding and breeding of "Senator," but received no answer.

The third prize went to "Prospect," owned by G. P. Henry, Goodenow, Ill. He was a thoroughbred Hereford of excellent breeding. His ration was two parts of ground corn to one part of ground oats and one part bran, with green corn and sorghum in season. In winter, beets were added, and enough oil cake for good digestion. He ran out to pasture, except in the hot weather, when he was inside during the day and out nights.

I also asked each of these gentlemen to account for the carcasses being so beautifully marbled and such an evenness of lean and fat. The reasons they assigned were: (1) Selection of a steer of the very best quality, (2) an evenly-balanced ration, fed regularly, and (3) exercise. This seems to me to sum up the whole matter. It is certainly necessary to have a steer of the best quality in order to produce a first-class carcass, and this can only be obtained by the most careful selection and intelligent breeding. No doubt a thoroughbred male crossed on good grade cows will bring satisfactory results if these all are of the best breeds, but not if otherwise. It is surely a mistake to mix beef and dairy breeds, with the hope of obtaining first-class beef animals. The dairy interests in Canada are very important, and it is proper that they should be encouraged, but there is also room for the beef industry as well, although it has not received the attention and encouragement that it merits. In the West the beef industry has enriched many farmers, and it is ever on the increase. During 1900, Chicago sent to Great Britain 243,000 head of cattle, and the money for these went to the States near Chicago. These were worth from sixteen to seventeen million dollars. Ontario has many advantages similar to the States near Chicago, and should produce a greater number of export beef animals than she does. It is with pleasure I note the good work being done by the Fat Stock Show at Guelph, but there are other places as well that need similar encouragement. It seems to me that Eastern Ontario should have a similar show, and why should not the Maritime Provinces and the Northwest also? For choice, ripe steers, there is no place that brings a higher price than the British market, and Canadian steers could be sent there with a good profit.

Secondly.—An evenly-balanced ration. I have no hesitation in saying that a great quantity of food is wasted, on account of the foods being composed too much of one ingredient. More study should be given to the composition of our food stuffs if we ever hope to reach any degree of success in feeding. Corn, for example, is very strong in one ingredient—carbohydrates—and yet many persons feed it almost alone. It could be greatly improved by adding ground oats or bran or clover hay, as these each contain an ingredient in which corn is deficient. The rations as given in the foregoing tests contained mixtures that were evidently well balanced, as the results show. However, I was best pleased with the ration given to "Prospect." It was not only evenly balanced, but contained those ingredients that keep an animal's system in a healthy state. The stomachs of steers

were made large, so as to hold a large quantity of food; therefore, we should give them a mixture that has considerable coarse food in it, and make it open and porous, if we wish to obtain the best results.

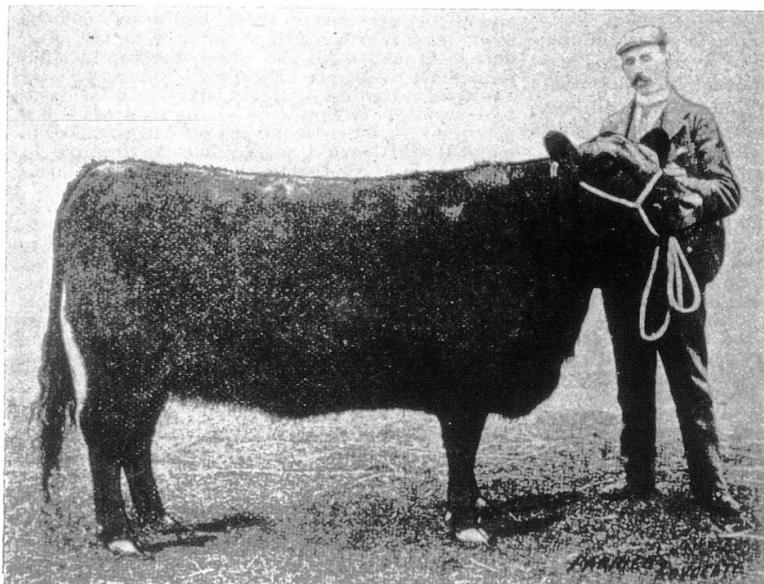
Horses in Paris and at the Exposition.

BY ROBT. HAMILTON.

At the great horse show held in Paris last August, at which there were over 1,800 horses of all breeds, the whole were divided into three classes, viz., *Sang*, *Demi-sang* and *Trait*: that is to say, Blood, Half-blood, and Draft. The blood horses consisted chiefly of English Thoroughbreds and Arabs. If I remember rightly, the Barbs and some other Eastern races were classed with the half-blooded horses. If one could judge from their pedigrees, most of the blood horses, except the

who would probably beat him, in speed and be easily beaten in endurance. The Orloff horse has retained the high spirit of his blooded ancestors, and has acquired the added speed that blood gives, whilst retaining the strong, blocky build of his maternal ancestry, features that make him a most desirable horse. There was another Russian breed of half blooded horses of about the same size and with many of the characteristics of the Orloff horse, and gray in color. The French cavalry horse, of which there was a large exhibit, is much larger than the pure Thoroughbred, and is, I believe, largely raised in the national breeding establishments, or Haras, as the French call them, and appear to be all that could be desired for the purpose. They are of good size, from 15½ to 16 hands in height, bright bay or chestnut, rarely gray or black, and full of fire and energy. This class of horses is said to have immensely improved since the Franco-Prussian war. I might say here in passing that the Arabs seemed to be of the purest blood, and were beautiful and perhaps also very delicate. They were small and mostly gray, that peculiar gray which has innumerable little brownish spots mingled with it. When they were in repose, their eyes were gaze-like and pensive, but when they were in the ring and feeling the spur, they blazed.

The horse that is most frequently seen in the Paris streets is the Percheron. I cannot recall having seen many draft horses that were not gray. They were almost always of good size and weight, and occasionally very large and heavy, and, strange to say, they were almost always stallions. Very few of the teamsters in charge could give any reason for their being stallions; i.e., why stallions were used in that



AQUILEGIA.
Aberdeen-Angus heifer; first prize, Birmingham and Smithfield Shows, 1900.
PROPERTY OF EARL OF STRATHMORE, GLAMIS CASTLE.

Arabs, were of English ancestry, and their wonderful similarity to the English horses alongside of them rendered this still more apparent. Blood will tell. They all looked well and showed their breeding. The *Demi-sang*, or Half-blooded class, included all horses, of whatever name, that had any Thoroughbred in their make-up, and they were the most numerous represented in that grand show. There were Hunters, Coach horses, English, French and German Hackneys, Cleveland Bays, besides some Russian and other national races. It is not necessary for me to say anything of the English races, that are so well known; the Russians, that are not so well known, may be mentioned here, especially the Orloffs. The Orloff *trotter*, as he is called, seems to be as thoroughly fixed in type as the Hamiltonian or United States Standard-bred horse, but is not at all like that famous race. Here resembles much more nearly our old French-Canadian breed, the old St. Lawrence, for instance. He is not as aristocratic looking as the Standard-bred, but has the air of a more serviceable animal—a more useful general-purpose horse. As they stood in their stalls, and that were quite a number of them, they looked like horses that might do a good day's work in the field and also carry their owner swiftly to church or market. They were jet black, about 15½ hands high, and might weigh up to 1,200 pounds; I think not over that weight. If I say that they are blocky horses, I would not have anyone to infer that I think them coarse: they were not. They were highly respectable looking animals. As compared with the Standard-bred, they were shorter in the head and neck, though the apparent shortness might be due to their general somewhat stouter build; the eye was fiery, perhaps rather fierce, though it was not so sweet and gentle as in the Standard-bred, and there was a good breadth between the eyes. In body, the Orloff is rounder than the Standard-bred and it is steeper in the rump, and his legs are not as fine and they are perhaps a hair's-breadth shorter. Anyone who remembers the best specimens of the Canadian trotter of the Province of Quebec of forty years ago will be able to form a good general idea of the Orloff horse. The race or breed seems to be thoroughly fixed. All the specimens exhibited conformed to one type in size, form and character. It seems strange that no one of our many enthusiastic and enlightened horse-breeders and farmers has thought of introducing these fine animals. A few years ago there was a general feeling of regret that our old French race had been allowed to disappear. It might be almost reproduced in the Orloff trotter. Without having seen him on the road, I believe that he would resemble our old Canadian pony in action. In the stall he lifts up his head and shakes his mane and looks around disdainfully and stamps his feet in his impatience. He would be more rapid and less graceful in action than the Standard-bred,

way. They did not seem to have ever given the matter any thought, but when their attention was drawn to the subject, they thought stallions might be more courageous and hardier. However that may be, they appeared to be generally very docile and willing. I rarely saw one of them balk, and in different places under heavy loads they almost always seemed to lay their shoulders to the load with good will, and if they failed at first, tried again slowly and stubbornly until they got started. Strange as it may seem, Paris streets and Paris regulations were not at all in the horse's favor. Many of the streets were paved with wooden blocks or smooth cement, and when these were wet it was very hard on the heavily-laden draft horses. I believe it was a municipal regulation for the horses to be smooth shod. At all events, a close observation of their feet seemed to show that the shoes were quite smooth; i.e., without toes or calks.

The omnibus horses—there were many thousands of them—while mostly grays and of good size, were lighter than those used for heavy draft. They were yoked three abreast; in heavy teaming they went at length. On one occasion I saw twelve horses in line, and heard of fifteen yoked in the same way. Six in line was an everyday sight. The commonest vehicle used for heavy draft was an enormous cart, with wheels of seven feet diameter and felloes of six inches thick in width and depth, and tires of an inch thickness. Yoked to these enormous vehicles were as many horses as the occasion seemed to demand, from two upward. These Percheron stallions seemed to be of a fairly good sort. Of course the old ones, that had been a long time at that heavy labor, were pretty shaggy, as might be expected, but the younger ones, those doing duty in the ordinary heavy express wagons of merchants and manufacturers, were often very handsome animals, in whom both owners and drivers took a good deal of pride. A procession I one day saw, of the horses and wagons of one of the large city establishments, could hardly have been beaten anywhere.

The cab horses of Paris were a nondescript lot. Most of them seemed to be of no particular breeding, though there were many good horses amongst them. The cabs are owned by companies. There

are four or five of these companies, whose vehicles are all uniform in make, and their drivers too have a special uniform, so that the various companies are easily recognized by the Parisians.

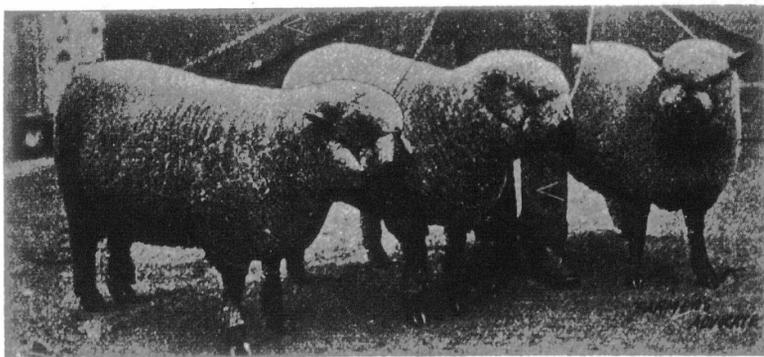
The carriage horses of Paris are very much like the cavalry horses, and probably their breeding is the same. They are of good size, 15½ to 16 hands, with plenty of action, many of them like the Hackneys, high-steppers. I think they were not Hackneys, however, but were specially trained to this kind of work.

Of course, there were other kinds of horses, notably ponies, small and very small. These were used both for riding and driving.

I thought the French were very hard drivers, and often saw them abuse their horses. There was a large class that seemed to me to be very much worse in that respect than the worst of our own people. They did not seem to have any just notion of what ought to be expected of a horse.

The Feeding of Pigs.

In the course of a paper read before the Cirencester (England) Chamber of Agriculture, by Professor Blundell, Professor of Agriculture at the Royal Agricultural College, on "The Feeding of Farm Stock," he thus referred to the feeding of pigs: "I am of opinion that it is the pig, if properly managed, that will do the most towards paying the rent. The number of pigs a farmer can keep will only be limited by the premises he has in which he can fatten them. The average life of a bacon pig of the size now required is thirty weeks, while that of a teg (yearling sheep) will be sixty weeks, and a bullock will be 130 weeks; consequently, the capital invested in the pig department can be turned over more frequently than with other stock. It cannot be too much impressed upon us that pigs, especially at the growing stage, are very susceptible to the extremes of heat and cold, far more so than is the case with sheep or cattle. The best food at our disposal for making prime quality bacon is undoubtedly barley meal, especially when it can be mixed with skim milk or whey. When wheat is cheap enough it may be mixed with the barley in the proportion of one of wheat to three of barley. Bean meal is admirable for mixing, but is usually too high in price for the purpose of making meat for the butcher. Weight for weight, there is no food for pigs productive of so much live weight as maize (Indian corn), but that, unless reduced to a small proportion mixed with barley, has the great drawback of making the bacon soft and too fat, and then you come down to the quality of the low-priced American bacon so largely imported, and which has been almost exclusively fed on maize. Wheat and rice meal have not the same objection, but these also should always be mixed with barley. In early life, when pigs are running out at grass, nothing is cheaper or more adapted for them in the growing stage than whole, sound maize or peas. I have found one pound per day, at a cost of one half-penny, sufficient, provided they have had a good grass run and a few mangels or tares. They should be put up to fatten when they are about nineteen to twenty weeks old, and will weigh 100 lbs. live weight. They should be kept clean, and not too many in one sty, six or eight at most, fed regularly three times a day, and never have more given to them than they will clear up. If well bred and fed with suitable food, they will increase from 10 to 11 pounds per week, and at thirty weeks old should



PEN OF SHROPSHIRE LAMBS.
Winners of first prize and breed cup, Smithfield, 1900.
SHOWN BY MR. PHILO L. MILLS, RUDDINGTON HALL, NOTTINGHAM.

weigh 2 cwt. live weight, and will return from 75 to 78 per cent. carcass to live weight, which is much better than the bullock, which gives 57 to 60 per cent., or the sheep, which gives only 50 to 52 per cent. For that increase the pig will require about 5 pounds to 5½ pounds of dry food per day. No other animal on the farm will give such a good and quick return for the outlay.

WILLIAM HUNTER, Underwood, Ont.:—"The Christmas number of the FARMER'S ADVOCATE received, and I tell you it's a daisy, even to the color of its cover. I think that our ADVOCATE (I call it our) shows as much advancement in its line as anything in the 19th century. I have taken the FARMER'S ADVOCATE ever since the days of the old *Genesee Farmer*, and I do not see how you can make it any better."

Annual Meeting of the Canadian Jersey Breeders' Association.

The seventh annual meeting of the Canadian Jersey Breeders' Association was held in the Walker House, Toronto, Dec. 28th, 1900. The attendance was the largest in the history of the Association, and the enthusiasm and interest manifested bespeaks for this body an influence for good among the dairymen of the Dominion.

The president, Mr. George Davies, Todmorden, in his opening address expressed pleasure in seeing such a large number present. The prospects for the Jersey breed were never better. The judging at the large exhibitions had of late tended to the establishment of a fixed type, and breeders now had a guide in their work. The demand of well-to-do people for milk and cream rich in butter-fat has caused many farmers to secure Jerseys so as to meet the increasing demand.

On motion of W. E. H. Massey, seconded by J. H. Smith, the secretary was instructed to write the Industrial Fair Board to provide a pavilion at the cattle ring for the accommodation of those interested in the judging of cattle, and that the co-operation of other cattle associations be secured.

Much dissatisfaction was expressed with the manner of conducting the dairy tests, and the regulations governing the same, at exhibitions and at the Provincial Winter Fair. The Jersey breeders present felt that the true value of a dairy cow is the net profit in a year's work, not what she can do in two days or seven days. Mr. V. E. Fuller stated that the best regulations governing a dairy test for a short period were those of the Tring Agricultural Society of England. The secretary was therefore instructed to secure a copy of these regulations for the next meeting, and Messrs. Clark and Rolph were appointed representatives of the Jersey Breeders' Association on the Board of the Dominion Cattle Breeders' Association.

Mr. W. E. H. Massey introduced the subject of improving the quality of the milk supplied our large towns and cities. He contended that milk should be graded and paid for according to the percentage of butter-fat. It is an injustice to the farmer who feeds his cows good wholesome food, keeps his stable in first-class sanitary condition, and produces milk testing 5% butter-fat, to be paid the same price per cwt. as the farmer who keeps his cows in a filthy condition and produces milk testing barely 3 or 3.25% butter-fat. Mr. Massey quoted prices paid for milk supplied some of the largest cities in United States. The largest firms in New York, Chicago, Baltimore, Pittsburg, Detroit, Cincinnati, handle no milk testing less than 4% butter-fat, for which they pay \$1 per cwt.; 5% milk, \$1.25 per cwt.; 6% milk, \$1.50 per cwt. The 1,600 cans of milk supplied Toronto annually averages barely 3.1%, and for which \$1.40 per cwt. is paid. Mr. Massey gave two reasons for this: the poor class of dairy cattle and the unscientific care and method of feeding. He urged the members present to agitate for the payment of milk according to quality, and be ready to meet the increased demand for cows rich in butter-fat.

In the afternoon the members were the guests of Mr. W. E. H. Massey, at Dentonia Park Farm, where a very pleasant and instructive time was spent in inspecting the herds of high-class Jerseys and Ayrshires, and the method of handling the milk from the time it leaves the cow until bottled for delivery to the city customers. Everything in and around the buildings shows signs of being run on scientific principles, not for recreation only, but in order to make it a financial success. Every farmer who can find it convenient should pay a visit to Dentonia, as lessons can be learned there which can be put in practice on any ordinary farm. While in the special car on the way back to the city, a hearty vote of thanks was tendered Mr. Massey, on behalf of the Association, for the very enjoyable outing. Impromptu speeches were made by Messrs. Duncan, Reid, Davies, and others, all expressing pleasure with the visit to Dentonia, and thus a very successful meeting was brought to a close by wishing each other a very Happy New Year.

Officers for 1901.—President, Capt. Rolph, Markham; Vice-President, R. J. Fleming, Toronto; Sec.-Treas., R. Reid, Berlin. Executive Committee—Messrs. D. O. Bull, Geo. Davies, H. G. Clark, W. E. H. Massey, and D. Duncan. Representatives: On Toronto Fair Board—B. H. Bull and D. Duncan; Western Fair Board—John O'Brien and W. G. Laidlaw; Ottawa Fair Board—J. Conroy and W. W. Wright. The following were recommended as judges: Toronto, R. Reid, Berlin (J. C. Snell, London, as reserve); London, H. G. Clark, Norval; Ottawa, David Duncan, Don; Winnipeg, R. Reid.

IMPOSSIBLE TO SUGGEST IMPROVEMENT.

SIR.—We received the Christmas number, and are greatly pleased with it. I thought the 1800 number was very fine, but this one is so far ahead of all the former ones that I do not think it possible that any suggestions for improvement can be made. Considering what great value the ADVOCATE gives its readers in return for their subscription, I thought that it was only doing my duty to show it to some of my neighbors and see if they would not avail themselves of this benefit also. Enclosed you will find a list of those who have subscribed for 1900. Kindly forward the ADVOCATE and Christmas number to their addresses. I wish you all the compliments of the season and a very prosperous year.

Stanstead Co., Que.

GEO. W. A. REBURN.

Abortion---Carbolic Acid Treatment.

Since writing the article, "Carbolic Acid to Prevent Milk Fever," a portion of which you quote on page 681, December issue, and in which I incidentally mention that carbolic acid is good to prevent abortion, I have had letters from breeders in New York and Ohio, as well as several in Ontario, to which I have replied, but still they come, and no doubt "there are others." This must be my reason for writing upon this subject, because I cannot say that I have had any great experience with abortion (happily). Probably this is due to following the advice of others, because it is a case where "prevention is better than cure." Some years ago one William Watson (now deceased) wrote several articles, giving his experience with and cure for abortion in several herds he had under his charge. From my scrapbook I quote his own words: "The dose is 15 drops diluted crystallized carbolic to 1 gill of water. This proportion was found most effectual in every case. We treated every cow according to her condition. Those slightly affected were drenched once a day, those in a medium state, twice a day; and those suffering most, three times a day. At first all were drenched from a common quart bottle, to make sure of every one receiving her proper dose. Later, some received their carbolic acid in slop, but many would not taste the slop, consequently those had to be drenched. At the end of every week we ceased drenching for a couple of days or so to study the effect of the medicine. The mildest cases were completely dried up by the end of two weeks and the cows returned to the pasture. In all cases there was a marked change for the better, yet drenching and slopping was renewed, and continued till the discharge ceased. By the end of another week others were cured and transferred to the pasture, and so on, till within four or five weeks every cow was released from quarantine." This is a description of a very severe case of abortion in a large beef herd, in which all of the cows seem to have aborted or been affected. My advise is, on the first appearance to treat her as described and also give a few doses of carbolic acid to all other cows that have been in the same herd that are carrying their calf between their fifth and eighth month. To wait until a cow shows signs of distress is often too late, and it is a very difficult matter to tell long before, but if a cow or heifer is dry, and commences to spring udder before she should do so, it is a suspicious sign. Giving any cow a few doses of carbolic acid will do no harm, no matter how long she may be bred, and it may do a world of good. I consider a dose of carbolic acid to be 20 to 30 drops, depending upon the size of animal and how often given, whether twice or thrice a day. I have had several twin calves, and a few with trouble at calving, owing to the calf being so large. In these cases the cow retained the after-birth, and I do not now ever attempt to remove it by hand, but simply give a few doses of carbolic acid in whatever feed they like best. Of course, the carbolic acid must be diluted in a cup or more of water; then given internally. It will search out all germs, and when the germs are removed and the system purified, then nature gets a chance. My idea is to prevent disease by keeping down the germ of disease. About all trouble in the human or bovine race is due to some germ; so that in cases of abortion, etc., we must use some disinfectant: carbolic acid, creolin, etc., or similar things under a different name. Use these internally judiciously, and externally liberally. A cheaper disinfectant, such as "West's Fluid" or other advertised germicides, should be used, as directed on their bottles, around the gutters and mangers of cattle stables. If trouble were feared while the cattle were in pasture, I have mixed diluted creolin with the salt given young heifers in pasture, in such proportion that they could not get an overdose of the medicine, because they would not eat enough of salt to harm them, and if some will not eat any, but only smell it, often it will do some good. It is better to prevent than to cure. That is the principle I want to go on.

Oxford Co., Ont.

GEORGE RICE.

Scour in Pigs.

Scour in young pigs is of very common occurrence, and is frequently responsible for the loss of a large number of suckers or weanlings. The disorder arises from a variety of causes, but in the majority of cases it is traceable to some irregularity in the milk yielded by the sow by which the youngsters are being suckled. Whenever a bad attack of scour occurs among young pigs, one of the first things to be done is to change the food which is being given to the dam, and then to administer to the latter a dose of Epsom salts to which a little sulphur and a pinch of nitrate of potash is added. It is always much better to treat the youngsters through their dams in this manner than to dose them with medicine directly. In the case of larger animals—save when scour occurs shortly after weaning—the food should be changed and one or two tablespoonfuls of the following mixture should be given daily: half ounce; powdered opium, one-half dram, dissolved in half a pint of peppermint water.

FARM.

Features of Ontario Farmers' Institute Work.

BY "SIDE LIGHT."

It is doubtful whether any other man regards his profession less seriously than does the farmer, who too often looks upon himself as a mere "tiller of soil." As a matter of fact, any man possessing the necessary physical qualifications can till soil, but every man cannot produce from it prize wheat or first-class yields. Something more is required than a blind faith in those beneficent natural laws which have wrought the miracle of the wheat kernel that, imprisoned for thousands of years in the wrappings of a mummy, suddenly shoots forth its green sprout upon being exposed to the proper warmth and moisture. Any man can plant a seed and be tolerably certain that it will grow; but the sower must take his work seriously, if he is to produce from that seed a plant that, keeping in mind human needs, shall be as near perfection as possible and yield a harvest of thirty, sixty or a hundred-fold increase. In a like sense, any man can dip a pen in ink with the assurance that when applied to paper it will leave a mark; but the framing of thoughts in words that shall make men harken is another matter.

Even in the commencement of this century of marvellous advancement there are not lacking in Canada these "tillers of the soil," men content to follow all their lives in one furrow, men who deprecate scientific agriculture as "tomfoolery." I once knew a worthy but conservative farmer who was the possessor of two hundred acres of magnificent land in West Lambton, Ont. He had grown old and gnarled like his orchard, which apple scab and hosts of codling moths had long since rendered valueless. Yet he firmly discarded the advice of his younger neighbors to prune, spray, and cultivate.

"Ain't no use hackin' and slashin' trees when they're played out," he would say. "These here new-fangled ideas about scientific farmin' and that like, such as they're crammin' into young lads down to Guelph, is all dur nonsense, to my way o' thinkin'." I notice they ain't told us yet how to grow a hundred-bushels o' wheat off'n acre o' ground."

That farmer's house, the last time I saw it, wouldn't have made a decent sheep shed. There are others like him, but, fortunately, the type stands out prominently only because it is in contrast with modern progress. In no other profession, perhaps, has a greater advance been made during the latter end of the century just closed than in that of agriculture, and in no other country has this progress been more marked than in Canada, excepting the work of the agricultural press, of which the FARMER'S ADVOCATE has been the great pioneer, and setting to one side the excellent work done by the agricultural colleges, such as the institution at Guelph, no other agency has accomplished more toward the advancement of agriculture than the Farmers' Institute. It is exactly fifteen years since the first Farmers' Institutes, spoken of as such, were organized in Ontario. A well-conducted Institute is an incentive to thinking, and that's what many of us need to do. T-h-i-n-k about our business, and then act. The recently-issued report of Mr. G. C. Creelman, Superintendent of Farmers' Institutes, deals with the year ending June 30th, 1900, and the combined membership of the Institutes of the Province to that date was 18,058. During the year, 715 meetings were held, at which 3,328 papers and addresses were read and delivered, and at which there was a total attendance of 138,982. It should be noted that a total of the most active of the bodies represented in these totals were the Women's Institutes in North Grey, South Ontario, and South Wentworth (Saltfleet). The Peel County Institute claims the largest membership, 545. The North Hastings Institute held the largest number of meetings (twenty-two) during the year, and the South Waterloo Institute had the largest total attendance to its credit, 3,875. The North Middlesex Institute also makes a most creditable showing. With a membership which on June 30th was 340, the Institute held during the year twelve meetings, with a total attendance of 3,635, or an average of about 300. At these meetings, seventy-nine papers were read and discussed, and the Institute closed the year with a substantial cash balance on hand.

The value of such an organization, for example, as the North Middlesex Institute, to the man who would be something more than a mere "tiller of soil," can only be measured by the zeal with which he enters into its work. Consider that each one of the 340 members of this Institute is a practical farmer who has worked out for himself many of the problems by which the agriculturist is confronted: can his experience fail to prove helpful to his fellow-workers, and a stimulus to renewed efforts toward perfection?

At a number of the Institute meetings last winter it was arranged to have the discussions reported in the form of question and answer, and the dissemination of the practical knowledge thus obtained, through the medium of the Superintendent's printed reports, must prove valuable. The subjects discussed by the ninety-five local Institutes during the year, as reproduced in the Superintendent's report, included the orchard, the farm proper, the dairy, stock and farm buildings.

Nor should the social sides of the Farmers'

Institute be ignored. The successful farmer is not the hermit, and the man does not live who is not healthfully stimulated and whose vision is not materially broadened by such contact with his fellow men.

The three Women's Institutes, to which reference has been made, were especially active during the year, and so long as woman holds the important position she occupies at present on the farm, the benefits growing out of such organizations will continue. The necessity for mutual benefit clubs among farmers' wives was never so great as now. In a circular sent out to enquirers throughout the Province, Superintendent Creelman puts the matter very clearly when he says that, despite the revolution wrought by modern methods of farming, very little progress has been made in that part of the homestead presided over by the wife and daughters.

"The object of Women's Institutes," according

Barn for 100-Acre Stock Farm.

When, setting about building new barns, or reconstructing old ones, the question of convenience is of chief importance after durable, suitable material has been decided upon. That the stables be well lighted and well ventilated is also of much concern, as on these the health of the housed stock largely depends. The plans we give of basement and upper floor are for the 100-acre farm of Richard Scott, Middlesex Co., Ont. They were designed by Mr. D. A. Graham, who has made a close study of the problem of convenience in feeding, and who has a handy barn of his own, that was described in the FARMER'S ADVOCATE of March 1st, 1900, page 125. Mr. Scott's barn is 75 feet long and 36 feet wide, with basement walls 9 feet high inside. Mr. Graham would recommend a wider structure, allowing space for a row of box stalls up one side as far as the horse stable. Mr. Scott favored a plan for two rows of tied cattle, which this plan allows for. The three box stalls at the back occupy the space beneath the driveway to the barn.

The arrangement for storing, preparing and administering the feed is worthy of careful observation. It will be noticed by the upper-floor plan (Fig. I.) the cut feed or chaff, the grain, bran, chop and water tank are all situated at the east end, right against the silo and well. Below (Fig. II.) is the mixing room, where all the food is prepared a meal ahead. The feed is conducted to the cattle by a car suspended on the over-

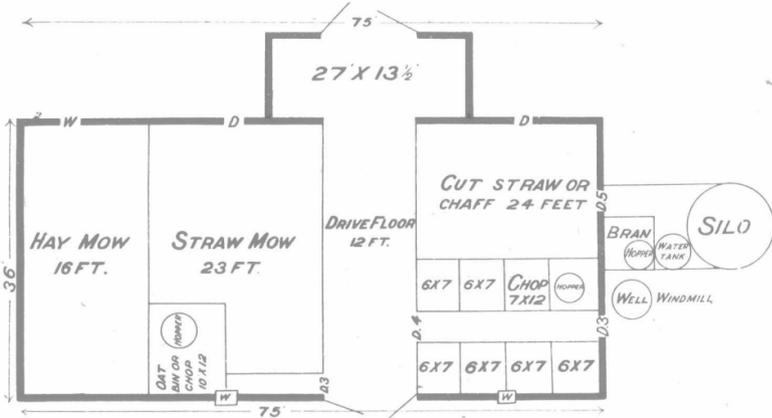


FIG. I.—UPPER-FLOOR PLAN OF BARN FOR 100-ACRE FARM.

to the rules and regulations, "shall be the dissemination of knowledge relating to domestic economy, including household architecture, with special attention to home sanitation, a better understanding of the economic and hygienic value of foods, clothing and fuel, and a more scientific care and training of children with a view to raising the general standing of the health and morals of our people."

Some of the topics discussed at the meetings of these three Women's Institutes during the year were: "Drinking-water," "Better Dairy Equipments on the Farm," "Domestic Science," "Labor," "Books—Their Place in the Farmer's Home," "Native Trees and Plants in the Beautifying of the Farm Home," "The Lessening of Household Labor," "Food and its Functions," "The Country Home," "Good Education," etc.

A comparative statement of the public cost of Farmers' Institutes in Ontario and certain of the United States, together with the work accomplished by them, is very much in favor of the former. In 1899, the last year for which figures are available, the Government appropriation for Farmers' Institutes in Ontario was only \$9,900, a sum which included the salary of the Superintendent and the expenses of his office. New York State appropriated \$20,000 for a similar purpose; Ohio, \$16,000; Minnesota, \$13,500; Pennsylvania, \$12,500, and Wisconsin, \$12,000. Notwithstanding the larger expenditure, the results obtained in these States are not nearly as satisfactory as in Ontario, the annual total attendance in New York not exceeding 75,000, and in Ohio, 98,000.

Expressions of Appreciation.

DIFFICULT TO OVERESTIMATE THE CHRISTMAS NUMBER.

To the Editor FARMER'S ADVOCATE:

SIR,—Allow me to congratulate you on the ever-increasing value of your journal as an aid to successful farming. From time to time I notice a strong plea is made for extension of improved livestock rearing, which is needed. Every issue is filled with valuable information, but the Christmas number was a very interesting one, containing many fine illustrations. It greatly strengthens the position and influence of your already high-class journal. The clear and bright descriptions and representations of Canadian homes, herd and flocks should be very much appreciated by all patriotic Canadians. The lessons, too, contained in the descriptions of how leading Canadian herds and flocks were built up should prove invaluable to the ambitious young stockmen. It would be difficult to overestimate your Christmas number, which, after all, is quite in line with your regular issue, which, for useful matter to the farmer, is unexcelled. I wish you a happy New Year and the prosperity you deserve.

J. H. KELLY.
Ackland Farm, Oxford Co., Ont.

BEST ON THE CONTINENT.

THOMAS NOTT, MacLennan, Ont.:—"I think the FARMER'S ADVOCATE the best farmers' friend on this continent, and will do all I can to increase its circulation. Enclosed find \$8 for eight new subscribers."

head feed-track. The feed car is sufficiently wide to fill the space from side to side of the passage, the top sides of the car extending slightly over the edges of manger boards, so that feed cannot fall on the passage floor. In feeding, the car is loaded in the feed room and pushed along the passage, giving the cattle their allowance as they are approached. When the feeder reaches the far end of the passage all the cattle are fed, and he is on hand to feed the horses. He can now give the cattle their chop, milk the cows, and finish the chores in a short period of time. It will be noticed that the stalls are of varying lengths, to suit cattle of different ages, which should be arranged for in every farm barn. The floors are of cement, in which there are gutters behind the cattle. These are five inches deep next the cattle, one foot wide at the bottom, with outside edge rounding off to the passage behind. The doors and windows are of good size, the positions of which are clearly shown in the plan. A boat and one horse can be used to clean out the stables. Mr. Graham suggests that if a small root-house is needed it could be built back of the three box stalls, underneath the driveway to barn.

Chess Produces Chess.

DEAR SIR,—Having seen a number of letters in the ADVOCATE about chess, I am induced to write my experience. In the first place, I do not believe that wheat, if damaged, will turn to chess any more than I believe that barley will turn to oats. Now, if wheat will turn to chess under unfavorable circumstances, is it not reasonable to suppose that it would turn back to wheat under favorable circumstances; and to prove that it will not, I at once sowed some chess and gave it good care, and the result was chess and a good healthy crop of it. Last season, when wheat was fit to cut, myself and a neighbor went into a field of wheat in which there was some chess. We selected a good root of the chess that was ripe, and pulled it carefully, cleaned off the roots to find the parent seed, and found a large shell of a chess seed.

Mr. G. C. T. Ward, in January 1st ADVOCATE, says: "Every farmer of whom I have inquired if chess is ever found except in wheat has answered 'No.' I have seen it in rye, clover and timothy three years after it was seeded down. About 20 years ago my father bought some seed oats from a neighbor, and, not thinking of chess in oats, sowed them as they were (they being clean in other ways) on new land that never had a crop of any kind except trees. The result was a good half crop of oats, the other half chess. Did the oats turn to chess or did he sow it?"

JOHN T. BROWN.
York County.

Sowing and Reaping Chess.

To the Editor FARMER'S ADVOCATE:

In reply to a question asked by Mr. G. C. T. Ward, of Lennox County, Ont., I wish to state that ten years since I planted a row of chess in my garden in the fall. During the winter my sheep ate it quite close to the root. In the spring it grew finely to about five feet in height, producing a fine crop of chess about the same quality as that sown. Ever since I have noticed that when I sow chess I reap chess, not without. It seems to be a plant that flourishes best with wheat; the same as peas and wild poppy. In Norfolk, England, where I farmed some years since, on land where I never saw a poppy grow, plant it with peas and before your peas are ripe the red blossoms of the poppy will be quite numerous.

H. J. SMITH.
Middlesex Co., Ont.

American O. A. C. Union Formed.

To the Editor FARMER'S ADVOCATE:

SIR,—The great International Live Stock Exposition, recently held in Chicago, brought to Chicago a large number of men who have been connected with the Ontario Agricultural College in some capacity. Early in the week a few of us thought it would be a nice thing to have these men meet for a social reunion. On the evening of Dec. 10th, the following old O. A. C. men enjoyed a banquet in the parlors of the Wyoming Hotel: Prof. Thos. Shaw, University of Minnesota; W. P. Carlyle, University of Wisconsin; G. E. Day, Ontario Agricultural College; A. M. Soule, University of Tennessee; W. J. Kennedy, University of Illinois; J. H. Grisdale, C. E. F.; J. J. Ferguson, State College, Mich.; and the following students: G. F. Marshall, M. C. Cumming, Iowa; W. F. Black, Ontario; Sid. Carlyle, Wisconsin, and W. M. Newman, of Illinois College of Medicine. Most of these men had been at the College, 1890-1894, and many were the good things in the shape of reminiscences of old times. Every one was most heartily of the opinion that the foundation for useful work laid at the old O. A. C. was unsurpassed. The best evidence of this is seen in the eminence already attained by many of the young men engaged in college work in so many of the leading institutions of this country. In the best sense of the term, the Ontario Agricultural College is a good place to go from.

In view of the presence of so many of our men in the United States, it was decided that a permanent organization, to include all who had ever been connected with the O. A. C., resident in the U. S., would be highly beneficial, not only in bringing these into closer touch and keeping up old friendships, but also in promoting mutual interests. This was finally effected, under the name of *The American O. A. C. Union*, with the following executive committee:

Hon. Pres., Prof. Thos. Shaw, University of Minnesota.
Pres., Prof. W. S. Carlyle, University of Wisconsin.

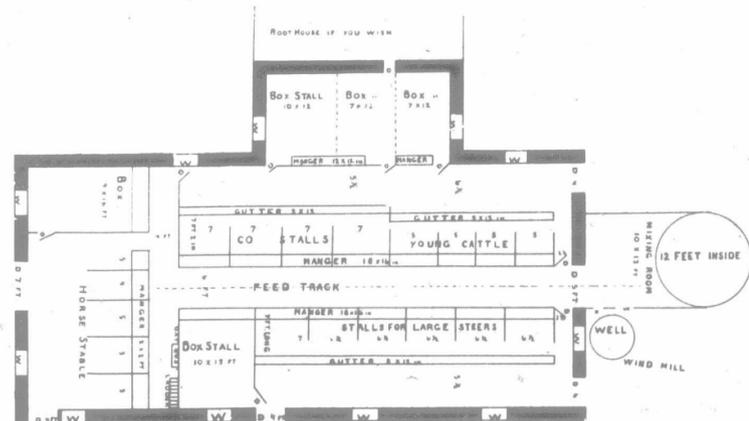


FIG. II.—GROUND FLOOR OF BARN BASEMENT FOR 100-ACRE FARM.

Vice-Pres., Prof. A. M. Soule, University of Tennessee.
Sec. Treas., Prof. J. J. Ferguson, State College, Michigan.

An annual reunion and banquet was decided to be essential to good work. The place to be Chicago, and the time, the date of the International Live Stock Exposition.

BEST I HAVE EVER SEEN.

R. H. HARDING, Thorndale, Ont.:—"Your elegant Christmas number of the FARMER'S ADVOCATE received. I have carefully looked it over, and consider it the best of the kind I have ever seen. The poem by Robert Elliott, entitled "Turn the Furrow New," and the picture, "The End of the Skein," are very appropriate at the close of the 19th century and the dawn of the 20th. The illustrations of live stock, etc., are also very lifelike. I wish you many years of success."

Roadmaking by Prisoners.

The experimenting in roadmaking by county prisoners undertaken two years ago by the Board of Supervisors of Oneida County, N. Y., has gone far enough to enable some judgment to be formed of its practical value. The second section of road built under the system has been completed, and statistics of cost are available for comparison with the cost of good macadam roads built under contract. The Oneida County Supervisors in the fall of 1899, after nearly a year of planning, purchased a road outfit, including a twelve-ton steam roller, a stone crusher and self-dumping waggons, at a cost of \$9,000, and offered to contract with the towns and villages for the construction of roads by the labor of the prisoners in the Utica jail. The county charges 25 cents a head for each day's work of eight hours actually performed, and \$2.50 a day for the services of the engineer employed for the steam roller. In addition, it requires the road district or village to furnish coal and road material and supervise the construction according to specifications agreed upon.

The first roadbuilding was undertaken in the fall of 1899, of a section seven-eighths of a mile long and sixteen feet wide, in the village of Vernon. This was not entirely satisfactory, owing to the experimental nature of the work. A large amount of preliminary labor had to be performed in developing a quarry, and the cost of the road and the time occupied in construction were unexpectedly great. After a year's wear, however, it is in perfect condition without any repairs. In May a contract was made with Road District No. 1 of the town of Whitestown for the construction of a road one and three-tenths miles in length through the village of New York Mills. The New York State specifications were adopted and strictly enforced, careful accounts were kept, and valuable data are preserved for the use of other towns and counties.

For 250 feet the road was 10 feet wide; for 4,760 feet, 16 feet wide, and for 1,900 feet, 20 feet wide. The macadam was six inches thick, with a crown of half an inch to the foot. Thirty-four prisoners on an average were employed, 2,109 cubic yards of 2½-inch crushed limestone and 703 cubic yards half-inch crushed limestone were used. The time occupied in construction of the road and on accessory drainage was fourteen weeks. The total cost of 6,910 feet of road, including wages of prisoners and all materials, was \$5,873.35, or \$4,517.96 a mile. A piece of State road adjoining, of equal length, built by contract, cost \$9,500. The *Utica Press* gives the following interesting figures of other roads built under the Higbie-Armstrong law:

Troy and Schenectady road, Schenectady County, two miles, \$16,517.51.

Deerfield, near Utica, Oneida County, two and a quarter miles, \$16,338.39.

Hamburg, south of Buffalo, Erie County, six and a half miles, about \$30,000.

Lebanon road to Massachusetts line, Columbia County, one and a quarter miles, \$9,992.87.

The Oneida County League for good roads is enthusiastic over the success of the work and hopes for the wider adoption of the plan. Mr. E. C. Walcott, superintendent of some of the factories of the New York Mills Company, the largest taxpayer in the road district, assisted in supervising the roadbuilding, and in report to the State Engineer points out some objectionable features of the present system. The law making an allowance to the Sheriff for prisoners' food and permitting him to save what he can from it he thinks should be changed. Prisoners at hard labor outdoors need more food than when in jail, and the Sheriff is under strong temptation either to feed the men inadequately or to oppose the outdoor work which cuts down his profits. The county furnishes one guard for each eight prisoners. They are entirely under the control of the Sheriff. Mr. Walcott finds that for lack of authority over them, the Highway Commissioner is sometimes unable to secure perfect discipline or exact a fair amount of work from them. These defects could easily be remedied. In spite of them, roadbuilding by county prisoners is a great success. It is good for the prisoners, and it makes possible good roads in places where the expense of other labor renders improvement hopeless. By the expenditure of the present wasted road taxes for the prison labor on the construction of permanent macadam roads, the towns of New York in a few years could obtain a fine system of highways to supplement the main thoroughfares to be built by the State. The Board of Supervisors in every county would do well to follow the example of Oneida, and turn the occupants of their jails to good use.—*N. Y. Tribune.*

Ducks Without a Pond—Spreading Manure in Winter—Golden Tankard Mangels.

To the Editor FARMER'S ADVOCATE:

SIR,—I noticed in a back number of the *ADVOCATE* parties inquiring about raising ducks without a pond. I might say I have had good success by sinking a trough in the ground so it would not dry out, and putting in a few pails of water daily.

I have read a great deal about drawing out manure in winter, which I approved of. I have had good returns from oats by top-dressing my fall plowing thinly in winter.

As for mangels, in this section the Golden Tankard is a great favorite for hogs and poultry.

Welland Co., Ont.

ROBERT CHAMBERS.

Domestic Science Session at Guelph.

In conjunction with the Experimental Union meeting, at Guelph Agricultural College, a ladies' session was held on the afternoon of Dec. 11th. Dr. James Mills presided, and welcomed quite a large audience. The speakers were Miss Laura Rose, O. A. C.; Miss B. Maddock, Guelph, and Prof. Ellen H. Richards, Boston, Mass. Mrs. Hoodless, of Hamilton, and Dr. Robertson, of Milton, were also present, and took part in the discussion.

Dress—Its Health, Influence, and Beauty—was the subject dealt with by Miss Rose. The chief consideration in dress is health, shape and fit, rather than ornaments and buttons. The sense of being well and fittingly dressed sets one mentally at ease, giving confidence in oneself. The dress should be suspended from the shoulders, rather than from the hips. Short skirts in walking or in the kitchen are altogether appropriate, whereas long skirts, except, perhaps, in the drawingroom, are a menace to society. House clothes should be chosen for their washing qualities, and be entirely innocent of frills and furbelows.

Domestic Science.—Miss Maddock, in opening, referred to the fact that this was the first session ever held at Guelph College to consider domestic science. The tendency of the rural population to gravitate towards the centers of population was touched upon, and the speaker pleaded for the making of the home life pleasant to the brother as well as the sister, and said a good word for the younger brother, which will cause the latter to rise up in his place and call her blessed. There should be no special advantage given the boy over the girl, nor *vice versa*. The mothers and sisters were urged to get out of the old ruts and to do everything possible to strengthen the family tie, so that boys and girls alike might look upon the home life as the pleasantest period of life.

Housekeeping in the Twentieth Century.—Prof. Richards, under this heading, dwelt on the necessity of study being given to the housekeeping problem. She reverted to the early days of this century and brought out clearly the active productive life of the Anglo-Saxon household and the major share which the women folk had in directing and managing it. The piles of linen, the barrels of beef, the boxes of candles, the strings of dried apples, the closets of preserves, the roots and herbs for dye pot and medicine chest, all required skill of hand, steadiness of eye, foresight, judgment, planning, and tended to develop a strong personality. The boys, as well as the girls, helped their mother in her manufacturing, but, with the evolution of the factory and the shop, the boys and men took over the main part of the old household work, the women were given their ease, stagnation of mind followed lack of occupation, women became "ladies," little girls were made to be seen, service became "common" and ignorant as the mistress lost her hold in knowledge of her materials. The energetic girls, feeling the loss that had come on them, went into their brothers' occupations, which proved a safety valve, to some extent, on the social machine.

Mrs. Richards admitted that housekeeping was somewhat of a treadmill: it was drudgery, because it was not creative, thoughtful work. It was in a transition stage, and was undeniably unsatisfactory and unsatisfying. But that need not be in the next century, if the young women would take another step and fit themselves, not only for teachers of Latin and mathematics, but for practical employers of labor and purchasers of material. To abolish friction and unnecessary work in the household machinery, to train the labor to skillful, systematic results, were worthy aims. The greatest need in the education of the 20th century housekeeper, continued Mrs. Richards, was in values—of textiles, of wood, of food. No one would study these, however, until the place of the home in the social life was re-settled, until the new product of the home was seen in the men and women, developed in them, in the character and ability, which was for the world's service, of greater value than could be obtained in any other way.

"Can the child be taught those elements of manly and womanly duty, self-control, self-sacrifice, self-restraint from a present good for the sake of a future greater good, anywhere else as well as in the family circle? Is there any other bond which will hold wayward fancies and still wild longings as firmly as the home bond? If not, then at all hazards there must be a house and home and a housekeeper whose spirit prevades the walls, the furniture, the food, the servants, the air. We are only beginning to understand the subtle influence which affects us. The food prepared by an angry cook—does it agree with us?"

"To have the new ideal house and home, we must have the real new woman with scientific knowledge and training in the use of power."

"Scientific housekeeping is what is good for us—a systematic division of the income between the different departments of expenditure; a careful balancing of the claims of each side of our nature. It is only possible in perfection in the house which the new architect shall build for us."

FARMER'S ADVOCATE BRINGS SUCCESS.

JOHN BURKE, Gatineau, Que.:—"Your Christmas number is invaluable. Please accept my sincere thanks for it, also for your valuable paper. I can safely say that I must attribute my success largely to its teaching."

Honey as a Daily Food.

Some farmers are in the habit of selling off all the best of anything raised, letting the family worry along with the leavings. It is pleasant to believe that in many cases honey forms an exception; that the farmer with two or three colonies of bees does not think of selling any of his honey, but leaves it all in the hands of the good wife, to do with when and how she will. Very wise indeed is such a farmer. Indeed, if he is wise enough, he will have honey on the table daily, even though he should be obliged to buy it.

It is good for the health to use honey. It is the product of pure air, sunshine and flowers. What could be more healthful. Many a poor mortal is today living a life of lingering torture or cruel self-denial, to whom the doctors have forbidden the use of all sugar and all foods abounding in starch. And the trouble came about from over-indulgence in sugar. This nation has a wonderfully sweet tooth. It is said that the average man, woman and child of the American Continent consumes more than a pound of sugar every week of life? Some more than that, some less; more than a pound a week is the average. Before that sugar can be worked into flesh and blood, it must be changed from cane sugar to grape sugar. When too much of this work is thrown upon the stomach, there comes trouble, sour stomach, headache, and all the varied ills that come from bad digestion. The stomach turns over the job to the kidneys, and when the kidneys have more than they can do, having no one else to turn to for help, they break down without disease.

The use of honey satisfies this craving for sweet without the dangers that attend the use of sugar. The sugar in honey is already grape sugar, all ready for assimilation. Give a child the choice between sugar and honey, and see which it will take. For too many children, bread and honey is a treat, a luxury, instead of being an article of daily food. The old man or woman of eighty, as well as the child, finds the daily use of honey both pleasant and healthful.

The average family of five persons would be considered as using a good deal of honey to use fifty pounds in a year. Many do not use ten. But the average of sugar for such a family is about 300 pounds a year. If half of that, or even 100 pounds, were replaced by honey, it would be for the betterment of the health of the family, and it is by no means an expensive luxury, the price seldom exceeding ten cents a pound, and so small a quantity satisfies, a little goes a long way. It should make part of one meal at least each day, and to our mind that should be the breakfast meal.

The Testing of the Vitality of Seed at the Central Experimental Farm.

The past season has in certain localities been unfavorable for the perfect maturing of grain. In some districts it has been injured by rain during harvest or from being stacked before fully dry, thus causing it to sprout or heat, while in other localities it has suffered more or less from early autumn frost. When exposed to either of these conditions, cereals are apt to lose a portion of their vitality or to have it so weakened as to produce when sown an unsatisfactory growth. The character of the crop is greatly influenced by the quality of the seed used, and to obtain the best results it should have its germinating power unimpaired, so that when placed in the soil the young plants may make a prompt and vigorous start. Hence it is very important that farmers should ascertain whether the grain they are holding for seed possesses the vitality necessary to produce a good crop.

By instruction of the Honorable Minister of Agriculture, provision has been made whereby the vitality of seed can be ascertained without cost to the individual, and any farmer in the Dominion, who may have any varieties which he desires to have tested, can get the information he seeks by forwarding to Dr. Wm. Saunders, Director of the Experimental Farms, Ottawa, samples of such grain or seeds. Samples may be sent free through the mail, and an ounce or two is sufficient for the purpose. About two weeks are required to complete a test. It is hoped that all who desire to avail themselves of the provision offered will send in their samples early so that the work may be completed in good season.

More About Extracting Stumps.

To the Editor FARMER'S ADVOCATE:

I notice a question asked in regard to the best and cheapest mode of removing very large pine stumps after being pulled. Our farm was covered with this class of stumps. It was timbered with beach, maple, rock elm, and basswood, with very large pine trees mixed all through the timber. Some of the stumps could not be removed after being pulled without beingsplit apart. Many of the stumps after being pulled and split made two rods of fence. We would find the weakest place in the stump, and then with a long saw cut through the curl in the bottom of the stump, and with a steel wedge and sledge split the stump in two or four pieces as necessary. In this way we could handle the largest stumps without any trouble. We have two hundred and eighty rods of stump fence made with stumps which grew on one hundred acres. J. B. STONE, Northumberland Co., Ont.

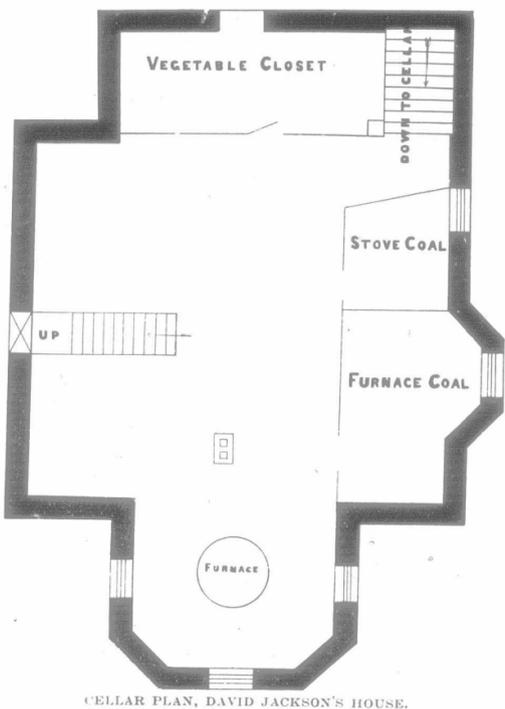
Getting Pine Stumps Off the Land.

On page 631, Nov. 1st, 1900, Enquiring Farmer asks what to do with large pine stumps. After handling a deal of such stumps, I will give him my plan: Have the stumps pulled, and all the clay cleaned out of the roots. Pay a good deal of attention to that word *all*. Pull them in September, if possible, so they will dry well. Have the stump left away from the clay, so that it won't freeze in the clay. Have it laid over so it will rest on its roots and stump end. When the first frost and snow



DAVID JACKSON'S FARMHOUSE, NEWDALE, MAN.

come, cut all the roots off one side in a straight line. Now hitch your chain to a good strong upper root and throw it down on the side you have trimmed. You want two chains, one twelve feet and one fourteen feet long, seven-sixteenth links. You also want a chain about five feet, one end in the D of your doubletree, a good round hook in the other end. You will need all three chains to cant some of the larger stumps. You will need good bellybands on your harness; point strap had better be two-ply. When your team goes to draw, let them draw; teach them by taking off some of the smaller stumps first. You want a stump boat. Get two beech or maple logs about fourteen inches in diameter, about ten feet long. Hew off each side so that they will be about six or seven inches thick. You also want three beams about six inches in diameter, five feet long. Square the ends. Cut three gains in each of your runners, one in the middle, one at each end, a foot from the end. Fit in your beams nicely. Get two round poles about four inches, ten feet long, flat one side. Lay flat side on top of runner. Bore a two-inch hole through rive beam and runner. Put in a good oak pin. Round up each end of runners, so you can hitch to either end of boat. Cut just a little notch in the middle of each end beam where you hitch to, so



CELLAR PLAN, DAVID JACKSON'S HOUSE.

that your chain will stay. Now fetch your boat sideways to the stump. Hitch to a strong upper root, and cant it on, and take it where you like. Of course, take all the bark off your runner. Make it nice and smooth. To cant it off, hitch to the same root; put chain over top of stump. Clean well and trim the roots close on the side you cut off. Two men and a good team can handle almost any stump. If you have more men and two teams, why, it will be all right. Large pine stumps are always an evidence of good land, in this section of Ontario.

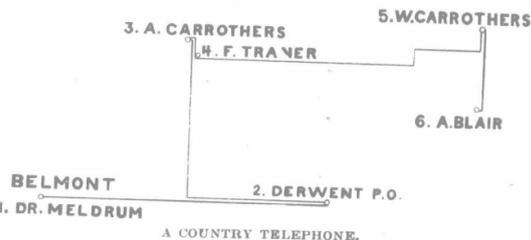
Peterborough Co., Ont.

Yours, VERITAS.

The Country Telephone.

It was thought by some that the inimitable Bengough, in his contribution to the Christmas FARMER'S ADVOCATE, had allowed his nimble fancy to get too far ahead of prospective facts in portraying the condition and methods of the 20th century farmer. While in every particular he may not have hit exactly upon the line of future achievement, yet in several cases he certainly did. In fact, in one or two instances he was only giving us the poet's vivid discernment of what has already been done. Indeed, Solomon was not literally so very far astray when he said there was no new thing under the sun. Take for example the thrifty housewife telephoning her order to the corner grocery, as Bengough depicted her. There are already plenty of country telephones in existence. Here and there we have the Bell telephone system extending its lines far out into the suburbs of cities and towns for the use of market gardeners, truck farmers and others having much dealing with townspeople. But quite independent of the general system, we find in many sections of the country small telephone lines in operation. These have often been established by country physicians for the convenience of their practice. In case of sudden illness or accident, or a bad turn in a patient's symptoms, half a dozen miles from the village, on a dark night, with highways as yet untouched by the good roads movement, how much simpler and more speedy to step to the instrument in the kitchen and ring up the doctor, who can thus reach the case in less than half the time ordinarily taken. Besides this, it can be utilized for sending many other messages by those upon the line. In some cases these systems have been erected wholly at the expense of the physician; in others, the people supply and erect the poles, while the doctor furnishes the instruments, wire, etc., and completes the rest of the work.

The accompanying illustration shows in outline an eight (8) mile country telephone system recently completed from the office and drug store of Dr. J. A. Meldrum, at the village of Belmont, in the County of Middlesex, Ont. As will be seen, there are six instruments on the line, and the calls are made by rings corresponding with the numbers



(one to six). When a call is made every instrument on the line will ring, but only the person will answer whose number is rung. The ordinary courtesy of not prying into other people's affairs is deemed sufficient safeguard in that respect. Otherwise, separate wires to each house would be required, and a more elaborate and costly system.

There being a call for information regarding the method and cost of establishing such lines as these, a few particulars will be of value to our readers. Depending upon the locality, good cedar posts about 20 feet long will cost from 25 to 50 cents each. These are put down four feet in the ground, 10 rods apart, or 32 posts to the mile. Then there will be the cost of hauling and putting them in. Porcelain insulators cost two cents each, and, in addition, small iron spikes or screws to fasten them to the posts or crosspieces. Glass insulators and blocks cost about six cents each. No. 12 galvanized iron wire will answer, and will require from 125 to 150 lbs. to the mile, costing from \$3.25 to \$3.50 per 100 lbs. Two men will put up a mile of wire per day. The instruments, which may be obtained from the Bell Telephone Company, cost \$12.50 each, besides which some insulated wire and window tubes for the houses will be required. From time to time the water in the batteries will need a little renewing. Care must be taken that the lines are kept perfectly insulated at all points.

We believe the tendency will be, where these small local telephones get in operation, that the people ere long will wish them connected with the general telephone system of the country, so as to be within call of business people and others in cities and towns.

The Sheep Carcass Competition at Guelph.

To the Editor FARMER'S ADVOCATE:

SIR.—I notice Mr. John Campbell's letter in your last issue with reference to the Winter Fair, and would like to explain with regard to slaughter test. Mr. Campbell is evidently unaware, when he claims all his wrongs were righted, and a "screaming farce" completed, when he was awarded a first prize for dressed carcass, that the winner of first prize for dressed carcass, was not slaughtered, and not in competition for dressed carcass.

Middlesex Co., Ont.

A. W. SMITH.

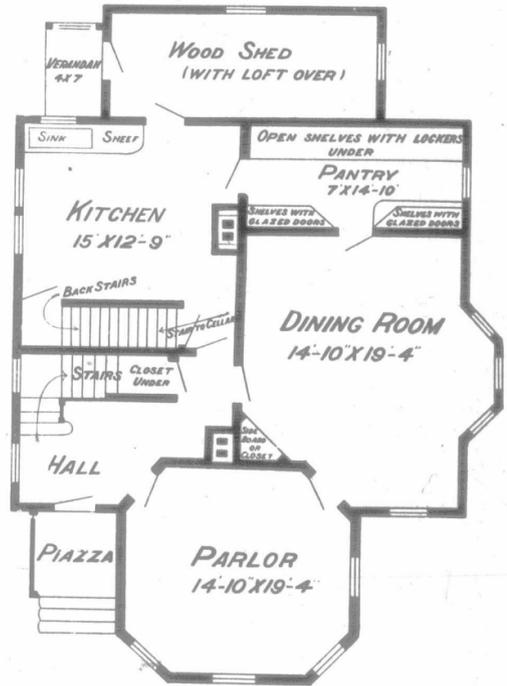
A Commodious Farmhouse.

To the Editor FARMER'S ADVOCATE:

I send you a photograph of my house, and also plans. I have not the exact figures of cost at hand, but it was about \$2,700 above the cellar. The house is all back-plastered and well built. The plans may contain some useful ideas for some of your readers.

DAVID JACKSON.

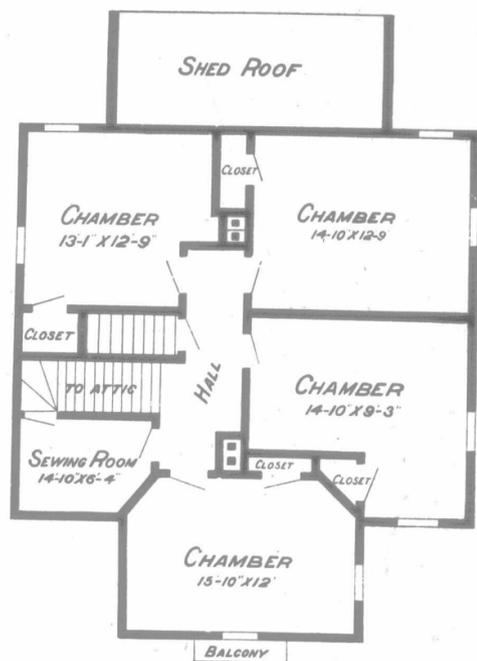
Green Hills Dairy, Newdale, Man.



FIRST-FLOOR PLAN, 48 x 34 FT. 6 IN., DAVID JACKSON'S HOUSE.

Raising Pigs on Cow's Milk.

Last fall I had a litter of nine pigs. Two died the first day. The mother then took milk fever, owing to the heat. The remaining seven tried to procure milk from her, but in vain. When they were two days old I decided to feed them on cow's milk, and, therefore, made a trough 3 ft. x 10 in. x 2 in., so that all could easily drink. I took sweet skim milk and warmed it to natural milk heat, then added a little warm water. I fed them often and little at a time. When I came to feed them they were always ready, which showed appetite



SECOND-FLOOR PLAN, DAVID JACKSON'S HOUSE.

and hunger. One was accidentally killed, another died six weeks afterwards. The remaining five are thriving. Returning to the mother, I would state that I first gave her whiskey, then eight drops aconite and four drops croton oil. I also gave her a little Barbadoes aloes. The milk did not return, but the sow was saved.

Grey Co., Ont.

C. O.

CROWNS THE YEAR.

WM. E. TAYLOR, Bobcaygeon, Ont.:—"Your paper throughout the year was fine, and the Christmas number rightly crowns all. I send you two new subscribers."

Feeding Crops.

For hundreds of years the common practice in farming has been to feed the soil rather than the crops grown on the soil. So ancient is this practice, that it has become a fixed law, and many intelligent farmers even to this day continue to enrich the soil without any considerable reference to the crops to be grown thereon. This is one of the most stubborn habits the scientific agriculturist has to contend with; still, it must be understood that the science of farming is so young that many of us will remember the rather startling propositions of Liebig and Lawes, and with what incredulity they were first received by the vast majority of even the more intelligent classes of farmers.

All this brings us back to the main point—the feeding of crops. Stated briefly, crops should be fed (fertilized) with reference to the special needs of that crop. A soil in good general condition is not sufficient of itself, just as good farmers now know there is no good general purpose in anything on the modern farm. A soil black with humus, and in excellent tilth, may answer very well for certain crops, but these are the very crops so common on such soils, and which usually are but slightly profitable. The successful modern farmer is one who quickly learns what crops are to him most profitable, and learns also how to make his soil produce those very crops, whether they are common to his neighborhood or not.

The first thing to do in most cases is to *unlearn* all the old ideas as to manures, soil heat, etc., and to confine the idea of plant feeding to the bare fact, now unquestionably fixed by thousands of scientific experiments, that plant food is not merely manure, or fertilizer, or fertilizer chemicals even, but the nitrogen, potash and phosphoric acid contained in these substances. That is the first thing to fix thoroughly in the mind, and a great deal has been gained when so much is accomplished. Next should be considered the feeding habits of plants, and these are shown largely by the chemical analysis of the whole plant substance of any crop, grain or forage, including in every case the roots, stubble and straw—all such parts as are commonly considered useless as having no sale value. It is well to look into these refuse portions of crops still more closely. While straw, roots and stubble have little crop value in the market, they take up their proportionate amount of the plant food needed for the crop; but, without these comparatively useless portions, the valuable grain, or forage, as the case may be, cannot be realized. Hence, the plant food required for a certain crop must always include an allowance for the elements contained in the comparatively useless stubble, roots and straw.

The feeding habits of the chief grain crops are shown roughly by the following table, giving the actual plant food required for crops as indicated:

	Bush. per acre.	Nitrogen.	Potash.	Phosphoric acid.
Wheat	35	60 lbs.	35 lbs.	25 lbs.
Rye	30	52 "	47 "	27 "
Barley	40	47 "	39 "	22 "
Oats	60	56 "	65 "	23 "

It is imperative, in order to realize the yields as above, that the crops should have in available form the quantities of nitrogen, potash and phosphoric acid given in the table. It is also well known that crops cannot sweep a soil clean of food, and that all plant food elements must be present in excess of the actual requirement of the crop. Knowing this, the farmer can easily balance his plant food to fit the crop.

Unfortunately, there is a tendency among farmers to use incomplete fertilizers (fertilizers not containing all three of the essential elements of plant food), and to these we must say that the laws of plant growth are inflexible: no one element of plant food can replace another. If any two are present in ample quantities, or even in excess, and one element deficient, the crop is limited by the deficient element—the excess of the other two elements goes largely to waste. In this connection, farmers will do well to scan the composition of the fertilizers offered by dealers, to see if they are not practically incomplete in the sense that one or more elements are present only in very small percentages.

Where incomplete fertilizers are used to grow a legume (plants of the clover type), the procedure is rational, as the object is to favor a heavy growth of the legume, which type of plant not only takes up atmospheric nitrogen for its own uses, but also stores up large quantities in roots and stubble which may be used as plant food for succeeding crops. In this case potash and phosphates must be used liberally, as the nitrogen cannot be assimilated unless certain quantities of potash and phosphates are present to accompany same in the vegetable substance of the crop. It must be kept in mind, however, that fertilizers for this purpose may be deficient in nitrogen only.

S. P. COX.

DROPPED THEM ALL BUT THE FARMER'S ADVOCATE.

The William Weld Co., Limited:

GENTLEMEN,—Enclosed I send you one dollar for next year. We are more than pleased with the Christmas number. It is the finest and grandest I have ever seen put out by any paper. We have been taking some other agricultural papers, but we have dropped them all but the *ADVOCATE*. It stands at the head.

North Pelham, Ont.

JOHN McCLASHAN.

Re Dry Earth Closets.

In reply to enquiry about dry-earth closets, I beg to say that after trying several kinds of boxes and drawers, I have discarded all of them, for the reason that they are not pleasant things to handle. I find the following much simpler, cheaper and better in every way: Let the back part of the receptacle below the seat consist of one movable board, the full length of the seat. Said board should be held in its place on the outside by two buttons. When you wish to clean out, just remove this board, and with shovel and wheelbarrow remove what has accumulated. If but a small amount of attention has been paid to it *daily*, you will find nothing more offensive than the removal of so much common earth or ashes would be. I have found it very desirable to let plenty of daylight into this space under the seat. If it is dark it will surely be neglected. Oh! when will our people become sufficiently intelligent to understand the first principles of sanitation, and do away with the abominable cesspools? Even in this beautifully-situated village, that might easily be made one of the healthiest places in the Dominion, the great majority of the people seem to know no better than to spread disease and death by this means. Besides contaminating the air till it is not fit to breathe, the soil being very porous, the solid part of those cesspools is carried into the wells. And the penalty is paid in disease, doctor's bills, and deaths. And then the Almighty is insulted by having it all ascribed to "Divine Providence," notwithstanding that He made known His will on this as on all other subjects in which the interests of His creature man is concerned, thousands of years ago. See Deut. 23rd: 13th and 14th. But alas! that it should be so commonly true of this as of all the preceding generations, the Almighty has still to complain, "My people doth not consider." J. E. HALTON CO.

Those Government Auction Sales.

To the Editor *FARMER'S ADVOCATE*:

SIR,—The sales soon to be held of pure-bred cattle, the scheme being hatched in the Government incubator, deserves a little attention from those who are in the business of breeding pure-bred cattle. First, I think it is outside of anybody's business but those who are engaged in it. A few well-paid men, who seem to have time to hatch schemes of this kind, can do a good deal to overthrow established and sound business principles, and by doing so gain the sympathy of a few who are in the business, but, in truth, should never have been in it, and who cannot conduct it on lines of an intelligent industry. Besides, the very men they pretend to assist in having these sales, namely, "the small breeders," we unhesitatingly say are the plague spot of the whole business, and have in many cases neither the intelligence nor discernment to supply what is needed in our country. Also, the parties who are likely to purchase at those sales are a class who do not care what they get if you can only convince them they are getting a bargain. We have often had experience of the proximity of the so-called small breeder, who, they say, is not able to advertise. He can advertise it well by a bountiful flow of language that costs little, and, I must say, his language must have had some marked effect on the men who are now started out to assist him so manfully. Not long ago a party came to our place for a young bull. We asked him \$150 for a good one. "Take off the \$100," said he, "and I will buy him. I have the offer of one for \$25, twelve months old and registered." Is it not clear to any one of ordinary intellect that such a breeder in a district is detrimental to the interests of buyer and seller? You can't satisfy the greed of many; the real worth of the article they have neither the desire nor the intelligence to know. In this case we went to see the \$25 animal and found it was dear enough. Why so much complaint all over of the poor quality of our cattle? We all know it is chiefly poor sires, produced by men that know nothing of the principles that govern in the reproduction of pure-bred animals. Our Department of Agriculture has erred mightily in thus taking by the hand men that can't hoe their own row in an intelligent and business method. The writer must be classed among the small breeders, but we scorn to be led or fed by methods so much at variance with true principles which underlie sound business, more especially when so many have invested large sums to benefit their fellow men, derive some pleasure and a fairly respectable return for the capital and intelligence devoted to it.

I hope and ask every breeder who has his own welfare and the welfare of our country at heart to stay away from those sales. Boycott them stringently in this respect, and show those men that they can't run other men's business, and all because a few can't make money at a business they know nothing of. As a business community we have stood too much interference with our interests in the matter of condemning and destroying valuable animals, simply because those men were infested with a bad that our stock required their oversight, with—as Mr. Dryden puts it—"a squirt gun and sealed ounce bottles" in their possession. Away with them, every one! We want fair play for ourselves and our stock in the 20th century. I am a small breeder, but larger than the kind needing assistance.

Yours truly,
D. ALEXANDER,
Lambton Co., Ont.

NOTE.—If more of the breeders who agree with Mr. Alexander's sentiments in regard to this mat-

ter—and we know they are many—had had the courage of their convictions, and had spoken out manfully at the proper time in protest, instead of allowing the breeders' associations to be drawn into a tacit consent to countenance this political scheme, it would have been well for all concerned. The *FARMER'S ADVOCATE* took a firm stand against it from the first, and has not changed its opinion as to the folly of the step, but fully believes that the birth of this child of the Government will prove an abortion, and that the post-mortem report will fully justify our position in regard to it.]

The Judging at Guelph.

I jest gat aye glimpe of the *ADVOCATE* from ane of yeer yang mon on the railroad, and fin' piur auld Jock Campbell is again in troovel. Noo, ye no ken Jock hee's so overflown with cheerety and purity and piety that hee's aye looking for eet in his sheep and the jidges. I ken Jock weel, hee's jist sae cheeld-like and bland that hee's no feet to clash wee the orineery exheebitor, they are o'er mony for him, but gosh, mon, hee's fair daft to reet it up. I ken but leetle o' yeer shows, but I see Jock says: "When the jidge came to class 24 he wad jist jidge that class from the consumer's standpoint." Noo, I see Jock objected, which was within his proveence, for I'll say this for the Campbell, hee's nair slaw at the objectin'. A friend who was in the cairs, a few seats ahint, came to the rescue at this time, and says he: "I can answer that. I nudged heem and saed, 'Mon, do ye nae ken this is a wether class, and can no be jidged as a breeder.'" He then spoke of Victoria County, and feenally settled doon when he had J. Campbell's screed. Hoop her up, Jock, yee've won lots more than yee've deserved, and if this weether was no what ye might ca' a breeder, hee's got as mony lambs as mony a ram yee've sauld! But this is naething to yer discreedit, as thoos guarantee naething. After awhile this auld acquaintance delivered himself: "And, moreover, Jock, I want to tell ye that ye'er gettin' auld and thae young felleys are gettin' on to yer treeks, and ye'd jist as weel gae easy as ruffle yer heer the wrang way. I weel ken Dan O'Shee, he followed all the dog shows. When hee lost, 'Bedad, the shudge bate me!' When hee won, 'The jidge hee could not bate me!' Me frien Campbell is no jist like Dan, he blames everybody, frae janitoor to jidge, hee's left heensef' but few friends, but ye must forgie heem. hee's built a new hoose, ye ken, an' it's fairly upleefed, and disna jist feel as if it was filled weeoot some blowin' and wind, and ye must jist pit up wee heem for a time. I wad advise ye to alloo him to jidge the sheep hissell, hee's a verra consentious mon, and wad no do the rang thing." In thae corner o' the cair sat a mon and he said, wi' a great noise: "Hee jidge! Hee deed it ance!" I forbear to repeat the rest of the sentence.

"Oh wad some power the giftie gie us
To see ourselves as ithers see us!
It wad frae mony a blunder free us
And foolish notion,
What airs in dress and gait wad lea' us,
And e'en devotion."

"SIMPLON SIMON."

Distribution of Samples of Seed Grain and Potatoes.

During the past twelve years samples of those varieties of grain, etc., which have succeeded best on the several Experimental Farms have been distributed on application, in 3-lb. bags, free through the mail, to farmers in all parts of the Dominion. The object in view in this distribution has been to add to the productiveness and improve the quality of these important agricultural products throughout the country, by placing within reach of every farmer pure seed of the most vigorous and productive sorts. This work has met with much appreciation and a large measure of success.

Under instruction of the Hon. Minister of Agriculture, another distribution will be made this season. Owing to the very large number of applications annually received, it is not practicable to send more than one sample to each applicant; hence, if an individual receives a sample of oats, he cannot also receive one of wheat, barley or potatoes, and applications for more than one sample for one household cannot be entertained. These samples will be sent only to those who apply personally. Lists of names from societies or individuals cannot be considered. The distribution will consist, as heretofore, of samples of oats, spring wheat, barley, field peas, Indian corn, and potatoes.

Applications should be addressed to the Director of Experimental Farms, Ottawa, and may be sent any time before the 1st of March, 1901, after which date the lists will be closed, so that the samples asked for may all be sent out in good time for sowing. Parties writing will please mention the sort of sample they would prefer, naming two or three different varieties of their choice. Should the available stock of all the varieties named be exhausted, some other good sort will be sent instead.

The samples of grain will be sent early, but potatoes cannot be distributed until danger in transit by frost is over. No provision has been made for any general distribution of any other seeds than those named.

Letters may be sent to the Experimental Farm free of postage.

WM. SAUNDERS,
Director Experimental Farms.

Ottawa, December 27th, 1900.

Railroads and the People.

BY PAUL MORTON, TRAFFIC MANAGER OF THE ATCHISON, TOPEKA AND SANTA FE RAILROAD.
(From the N. Y. Independent.)

One of three things is bound to come in the transportation business of the country: legalized pooling, concentration of ownership, or government control. Of these three, the people, if they are wise, will accept the first, and it is to their very best interests to advocate it earnestly. One-fifth of the wealth of this country is invested in railroad securities, and people owning them should be protected. Unrestrained competition would in time destroy the value of these securities, and disaster in all other lines of industry would certainly follow.

I favor legalized pooling because I believe the public can be better served by stability in freight rates than by unrestrained competition, which is naturally destructive. Pooling, if legalized, should be under the supervision of the Interstate Commerce Commission, or some other competent body, which should have the power to decide whether pool rates are unreasonably high or unreasonably low. Rates should always be reasonable; they are sometimes too high, and at other times too low. There are a great many people in this country who are violently opposed to trusts or monopolies of any kind, and yet they favor unrestrained competition without realizing that the natural result of such competition is concentration.

If the railroads of the country are to fight each other to a finish, the natural outcome will be one ownership by a few people. Personally I do not believe this would be a great calamity, but fully seventy-five per cent. of the people of this country would protest most vigorously against anything of the kind; and yet, by opposing an arrangement whereby an apportionment of traffic or earnings can be made which will enable the railroads to live, they are expediting just such a condition of affairs. Unrestricted competition means that the big shipper, the colossal industrial enterprise, the institution with the greatest tonnage, will continue to secure preferential rates, and it also means that if there are any discriminations to be made in rates, that the larger cities, as well as the larger shippers, will get the inside. Legalized pooling would protect the small shipper and the small town, and these are the bulwark of our national prosperity, hence their interests should be looked after.

Government control or ownership of railroads will probably not be attempted or advocated extensively until the public realizes that unrestricted competition has forced the railroads of the country into a few hands, and then there will be a great outcry to achieve it, notwithstanding the fact that the people themselves will be to blame for the concentration of power and proprietorship in the transportation facilities of the country.

The objections to Government ownership are many. The probable introduction of politics into our transportations as a consequence would be a very serious objection. The extravagance with which Government business is conducted is another objection. My opinion is that the post-office department, which is often referred to as an ideal Government function, is managed in anything but an economical way. The Government pays the railroads of the United States about 28 per cent. of its total earnings from the postal department, and shows a large annual deficit. Private interests control the express companies, which pay the railroads fifty per cent. of their gross earnings, and still show a profit. In a town of 20,000 people the postmaster receives a salary of three or four thousand dollars per annum, and the express agent one hundred dollars per month. The express agent is in an office that costs a thousand dollars a year. The postmaster is in the Government building, the interest on the cost of which is anywhere from six to twenty thousand dollars a year.

I hold that transportation is a public service, and to some degree a tax, and believe that all shippers and travellers should be treated alike. I think it would be just as proper for one merchant to buy his postage stamps or his customs duties for less money than another, as it is under like circumstances and similar conditions for one shipper or traveller to have better rates of transportation than another.

The rates of transportation in this country, both passenger and freight, are lower than they are anywhere else in the world, and the service rendered is far superior. The tendency of rates is still downward, but this will have to be checked. The service the railroads of the country render is in every sense a composite service. The cost of it depends very largely upon the cost of supplies and material. If the Atchison, Topeka and Santa Fé had to buy the steel rails, ties, bridges and locomotives to-day that it has bought in the last three years, they would cost the company nearly four million dollars more.

If it is fair to the people of the country to establish maximum rates on the composite service rendered them by the railroads, why is it not equally fair to the railroads to establish maximum prices on labor, steel rails, ties, coal and other component parts of the service? Is it fair to make a price on the whole, without considering the cost of the constituent parts? Transportation by rail should be considered as a monopoly, and should be supervised as such. If the Government of the United States were to have different custom houses along the coast competing with each other as to import duties, it would, in a sense, be a repetition of what is now going on in the transportation business.

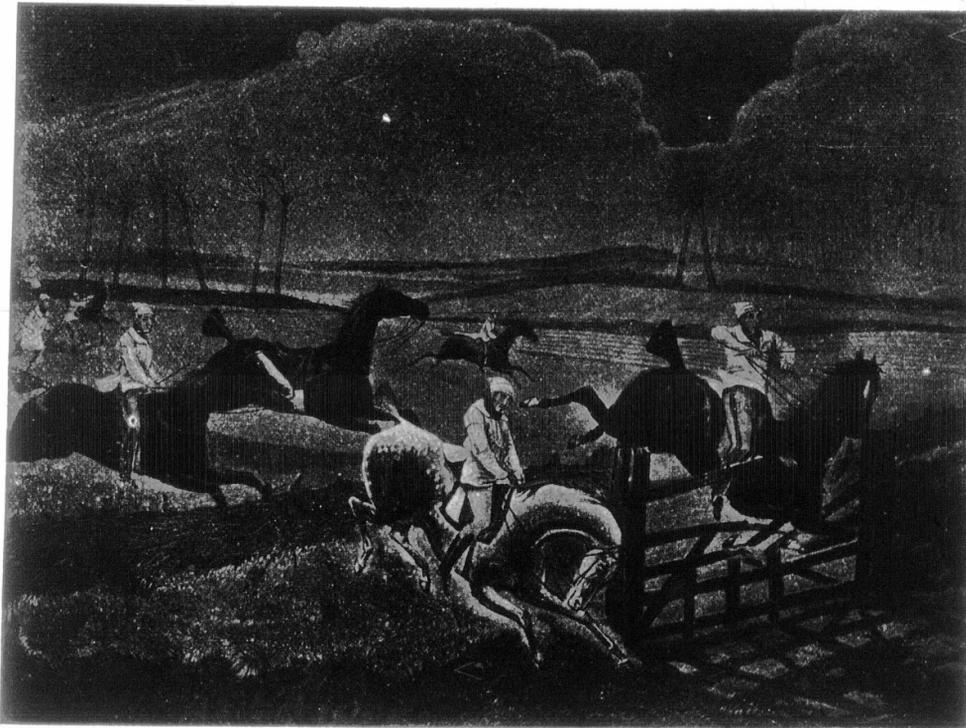
I do not believe, as is often claimed, that railroads are overbonded. Most of the Western railroads have been through a period of disaster or distress. Their bonds, in many instances, have been scaled down, as have their rates of interest, and as a general proposition the principal roads in the Western country could not be duplicated to-day for what they are capitalized per mile.

in favor of it, I doubt if the Western country is yet quite prepared for it, and advocate legalized pooling as a temporary substitute. With permission to contract with each other for a division of their tonnage or their earnings, there will not be the pressure there is now for joint ownership. The logical result of unrestricted competition is the death of competition, or consolidation.

Railroads are now generally prosperous, though there will not be much new railroad built for some time owing to the increase in the cost of material. It is estimated that the increase in the cost of supplies and material over that of a year ago or more, amounts to about \$300 per mile in maintenance, or about one-third. American railroad labor is the highest-paid labor in the world. It has had more constant and regular employment since the railroad business has improved. There has been some increase in the wages paid, and if the business continues as prosperous as it is now, it is not unlikely there will be demands made for further increase.

Labor and capital are now on a parity, both organized, and will deal with each other in respect to each other's rights. Both will be strong confederations, neither one having the upper hand.

The general situation in the railroad world is at present satisfactory. The advance in the price of supplies, the prospective demands of labor, and the prohibition of combinations to maintain reasonable charges, are the only three things in the transportation business to-day which are discouraging. The general condition of the country is the best we have ever experienced. The people of the West never owned so much, or owed so little.



ACCOMPLISHED SMASHERS, AND A RUN ON THE BANK.

Notwithstanding these arguments in its favor, I have no hope that Congress will at any time soon pass a pooling law. The fact is our public men are afraid to look this matter squarely in the face. I believe the time will come, however, when the small shippers and the small towns of the country will demand something of the kind for their own protection. The reason they have not already made this demand is because they are not fully aware of what is hurting them.

Further consolidation of railroad interests is to be expected. If it comes very soon it will be because of the inability to secure proper legislation on transportation matters. The absence of a pooling law is hurrying the ownership of railroads into the hands of a few. I do not look upon this proposed consolidation of carriers with any alarm; in fact, I believe that if all the transportation lines of the country were operated as one grand system the service to the public would be superior to that now rendered, and the charges would be more equitably assessed as between shippers, with a lower basis of rates generally. The Sherman Anti-Trust Act and the anti-trust legislation enacted by various State Legislatures have had, it seems to me, just the opposite effect to that which was desired. These laws have prevented combinations or actual consolidations of property. Competition has been so severe, and the outlook so cloudy that many manufacturers who would have much preferred to have kept their plants in their own families and have handed them down to the next generation, have been obliged to consolidate with their competitors.

While concentration of railroad ownership is making rapid progress in the East, the wave has not yet made much impression west of the Mississippi. It will undoubtedly come, and, while I am

weight and value, and the great source of revenue sought would be to those engaged in horse-breeding in Ontario and other parts of the Dominion. The war office has purchased for the South African war an immense number of horses in the United States. The Governor-General thinks from what he has seen of Canadian stock that horses of the required quality could be just as easily furnished by our breeders, and he is hopeful, with such representation as can be made to the War Office, that a remount station can be established here. Now that mounted infantry are to be more largely employed in conducting warfare, the demand for horses will be much greater than heretofore, and the opportunity should not be lost of bringing to the attention of the Imperial authorities the source of supply available in Canada. The matter will be brought before the Legislature at the coming session for such action as that body might deem wise.

Paying Prices for Pigs.

The farmer who is fortunate enough to have hogs in fit condition to market at the present time certainly is in clover. The Toronto market reports show that for well-finished baconers weighing between 160 and 200 pounds alive the price there is \$6.80 per 100 pounds, which should be satisfactory to the most exacting feeder, and there is money in raising the right sort of pigs at these figures, which with reasonable good care and feeding can be made to bring this price at from 7 to 8 months old.

Canadian Horses for the British Army.

As we go to press, a telegram from Ottawa states that Hon. George W. Ross, Premier of Ontario, has been urging the establishment somewhere in Canada, and if possible in Ontario, of a station for the purchase of remounts for the British army. On January 11th he visited Ottawa, in company with Hon. J. M. Gibson, Attorney-General, and Mr. Aemillus Irving, Q. C., and interviewed His Excellency the Governor-General on the question, and was received very graciously at Rideau Hall. The matter was placed very fully before Lord Minto, who assured Premier Ross that he would place himself at once in communication with the War Office and with Lord Lansdowne, whose former connection with Canada would naturally add very much to his zeal and interest in any question affecting the Dominion. Lord Minto fully appreciates the importance to Canada of raising horses of a recognized standard of

The Next Canadian Census.

The next Canadian census (taken every ten years) is to be taken beginning on April 1st next, and will be completed in about two weeks. All persons living at midnight on March 31st will be counted. The country is divided into census districts corresponding with electoral districts and polling subdivisions. The work is under the general direction of Mr. Arch. Blue, formerly chief of the Ontario Bureau of Mines and the Ontario Bureau of Statistics, a most capable man for the position.

The fourth schedule calls for data as to farm lands, fruits and plantations. Under this heading, the authorities will arrive at the acreage occupied, owned, leased or rented, improved, unimproved, in forest, in field crops, in pasture, in orchard, in vegetables and small fruits, in vineyard and nurseries, the number of non-bearing and bearing of apple, pear, peach, plum, cherry and other fruit trees, of grapevines and their yield, the yield of maple syrup, and number of plantations of forest and ornamental trees. A return of field products in the fifth schedule will embrace full statistics as to wheat, barley, oats, rye, corn, buckwheat, peas, beans, mixed grains, hay, potatoes and other roots, forage crops, flax, tobacco, hops, grass and clover seed, calling for area and production. The fifth schedule will elicit figures to show the number of live stock, including horses, cattle, sheep, fowl, bees, swine, the quantity of wool, homemade butter, eggs, and honey. It also calls for a table of pure-bred stock. Schedule seven is drawn up to secure a table of agricultural values, lands, buildings, rents, return from crops, value of live stock, farm implements, dairy produce, pure-bred stock, wool, eggs, honey, wax, the weeks of hired labor on farms, the payments of hired help.

Sugar Beets in Ontario.

The result of the experiments in sugar-beet culture at three points in Ontario last season, by Prof. Shuttleworth, of the Ontario Agricultural College, were outlined in our last issue. The experiments were conducted on a large number of plots, situated respectively near Newmarket in York County, Aylmer in Elgin, and Welland in Welland. Tests were made in September, October, and November, the roots being sent to Guelph for analysis. The results of the tests go to show that with proper cultivation sugar beets can be very successfully and profitably grown in the Province.

The following table shows the percentage of sugar and purity of the sugar beets grown under methods recommended for factory use, and those grown by the common methods for feeding and exhibition purposes:

	Factory method.	Common method.	Difference.
Newmarket—			
Percentage of sugar in juice....	14.9	13.1	1.8
Purity.....	83.5	79.4	4.1
Welland—			
Percentage of sugar in juice....	14.8	12.9	2.6
Purity.....	85.6	79.7	5.9
Aylmer—			
Percentage of sugar in juice....	14.3	11.5	2.8
Purity.....	85.5	78.6	6.9

In concluding his report, Prof. Shuttleworth says: "It is the former class of beets, and not the latter, that sugar-beet factories require. Such beets can be grown abundantly in Ontario by the adoption of a right method of cultivation. If the farmers would give a guarantee that they would follow the right method, and that they would cultivate at least 4,000 acres in the vicinity of a proposed factory, capitalists would quickly erect factories in our Province.

"Farmers about Newmarket report the average cost of production to be about \$25.80 per acre; those about Aylmer, \$28.35, and those about Welland, \$30.40; while the same farmers produced this year an average of 16 tons 1,845 pounds, 18 tons 772 pounds, and 14 tons 415 pounds per acre respectively."

A beet-sugar factory could not expect to obtain beets at less than \$4 per ton. Taking an evidently moderate average yield of 12 tons per acre, at \$4 per ton, the gross return would be \$48 per acre; but our experiments of this year prove that this estimate is too low; that we can count, at least, on 15 tons net per acre, which, at the low price of \$4 per ton, would realize for the farmer \$60 gross, or about \$30 net profits per acre. By the application of the most scientific and skillful methods of soil preparation, planting, cultivation and handling, the Ontario farmer, with his splendid soil and climate, could easily realize much more handsome profits than these.

Vermont, the Green Mountain State.

I notice that my subscription to the FARMER'S ADVOCATE has expired. Please send me the Christmas number, as I would not miss that for what the paper would cost me for a year. I do not have time to read half the papers I get, but the ADVOCATE has become a sort of a family paper. Its diversified, instructive and entertaining contents are read by us all with much pleasure and profit.

We are having very beautiful weather here in the Green Mountain State—cold, with plenty of snow and good sleighing. The horse stock here on the farm have gone into winter quarters in very good condition. They consist of two hundred and ten head mostly Hackneys and half-bred Hackneys, the get of the many-times champion, Matchless of Lounsbrough and Courier 2nd. The last-named horse you will perhaps remember, as he was a resident in your Province for some years and well-known in Ontario showings. He is doing yeoman service for us here. We are using him on Morgan mares and getting splendid results from him. I have just purchased fifty foals sired by him, and out of mares that are mostly of Morgan blood and that have been raised by the farmers here in this vicinity. They are a very even lot of foals, and some of them already show great action. Good horses are getting very scarce in Vermont, and these Hackney stallions are a boon to the farmers, and will do more to improve and regenerate the horse stock in this State than all other means that I know of, especially such sterling good sires as Matchless and many of his sons that are doing stud service here. Horses from these stallions can be sold at there years old, if broken, for good prices, whereas the common stock cannot be sold at any age, and if a sale is made, it is always at a small price—in most cases not enough to pay the cost of producing them. We have some very good trotting sires here, and they are getting some very fast stock, but those that are not very fast are, as a rule, small and not at all useful.

Shelburn Farm, Vermont.

Strikes a Popular Chord.

WORTH A \$1 BILL.

MR. JAMES ROONEY, a Nova Scotia reader, "would not take a \$1 bill for his Christmas number."

APPRECIATED.

RICHARD GIBSON:—"Your Christmas number is much appreciated. Your patrons owe you many thanks."

ENJOYABLE.

BENJAMIN AND HARRY STORY, Pr. Edward Co., Ont.:—"We enjoy the ADVOCATE very much, especially the Christmas number. Success to it."

SPLENDID.

J. T. FRIZELLE, Oxford Co., Ont.:—"Thanks for commission on eight new subscribers. The Christmas number is splendid. A great deal better than I expected."

EXCEPTIONALLY FINE.

T. G. RAYNOR, Rosehall, Ont.:—"Your Christmas number is exceptionally fine this year, both in design, illustration, and general matter. Should have a wide circulation."

PRACTICAL.

A. G. STAVERT, Florham Farms, Madison, New Jersey:—"The Christmas number of the ADVOCATE is to hand. It is very interesting, instructive and practical, and should be in every farm home in the Dominion."

WORTH A YEAR'S SUBSCRIPTION.

J. R. E. VERNON:—"I considered your Christmas number worth the yearly subscription itself, and I assure you my best wishes in your success in the coming century."

LIKES BOTH PEN AND PAPER.

JAMES ELLIOTT, Tilsburg:—"I received the 'Post' fountain pen all right, and was well pleased with it. We like the FARMER'S ADVOCATE very much and could not do without it. Thanking you for your promptness with the pen."

AN OLD FRIEND.

GEO. S. DOCKER, Kent Co., Ont.:—"I have been a subscriber to the FARMER'S ADVOCATE since the second year of publication, when it was small and only 50 cents a year [NOTE.—It is only \$1 yet.—Ed.]. It gives me much pleasure to receive it every time it comes."

EVIDENCE OF CANADA'S ENTERPRISE AND PROGRESS.

WM. SHERIFF:—"Please find enclosed amount, for which please send to Mr. Josiah Sheriff, Chesaving, Mich., U. S. A., a copy of the Christmas number of the FARMER'S ADVOCATE. I think this will serve as well or better than anything as evidence to our Yankee cousins of Canadian enterprise and progress. Wishing you every success."

BEEKEEPING ARTICLES APPRECIATED.

FRANK KINNAIRD, Hammond, Ont.:—"Enclosed please find \$2 to pay my last year's subscription and renewal for another year. I cannot get along without the FARMER'S ADVOCATE. It is just the paper every farmer should have. I like your articles on bee culture very well. They are just what I am interested in most."

BEATS PERFECTION.

R. L. JARVIS, Kent Co., Ont.:—"Enclosed please find two dollars (\$2.00), one a new subscriber and the other my renewal. I received the Christmas number. Must say it is a gem of sterling worth. Better this year than ever before, if that is possible, for we looked on it last year as perfection, so you see we consider it a notch above that. May your circulation increase be my best wish. Please send as my premium the picture called 'Canada's Glory.'"

UP-TO-DATE.

N. McLEOD, Kirk Hill:—"Accept my sincere thanks for your Christmas number. It is a beautiful edition. The F. A. is a valuable farm paper, and one which every farmer should read. He will find ample information regarding farming and stock-raising. I consider it an up-to-date journal. Hoping your paper may continue to flourish, and wishing you and your staff the compliments of the season and a prosperous future, I am, yours truly, in haste."

NECESSARY TO GET ALONG.

RICHARD TAFFE, Puslinch, Ont.:—"Having taken your paper for three years, I think we could not get along without it. We think the Christmas number is excellent. We have secured one new subscriber. Please send 'Canada's Glory' as premium."

CAN'T BE BETTERED.

GEORGE MCINTOSH, Ontario Co., Ont.:—"You have my grateful thanks for sending me the latest Christmas number. We value it very much for its beauty of design and for the interesting and valuable information which it contains. I have been well pleased with the ADVOCATE this last year, and have profited much from reading it. I cannot make any suggestion to better your paper. I intend getting them bound, as I do not wish to lose a single number."

MAKES FARMING A PLEASURE.

A. E. BRAMMAR, Newmarket, Ont.:—"The Christmas number more than met my expectations. It is simply grand. I think if every farmer would take the FARMER'S ADVOCATE and read it thoroughly, that farming would be a pleasure, instead of a drudge as it is to many. I expect to get some more new subscribers as soon as I get time to go around a little. Trusting you will send my new subscribers a Christmas number at an early date."

DOING THE BEST WORK.

ROBT. HAMILTON, Argenteuil Co., P. Q.:—"I would like to remark that I know of no agricultural paper, either foreign or native, that is doing as good work as yours for the well-being and advancement of all that pertains to agricultural progress. Your Christmas number is beyond all praise. I trust the FARMER'S ADVOCATE may continue its enlightened and progressive course during the new century."

HOW HE LEARNED TO FARM RIGHT.

JOHN MCLEOD, Bruce Co., Ont.:—"I am in receipt of the Christmas number of the FARMER'S ADVOCATE, and like all the rest of the paper, it is first-class. It is the only paper I ever got my eye on that taught me how to farm right. I was very much in need of an instructor. I had worked in the woods and on the railroad nearly all my life till five years ago, when I purchased a farm."

YOU "DO US PROUD."

W. J. MAYBERRY, Newdale, Man.:—"Your Christmas number is something every farmer should be proud of."

A PLEASURE.

J. H. KINNEAR, Souris, Man.:—"Enclosed you will find \$1.00 to pay my subscription for 1901. It is with pleasure I send my renewal."

ECLIPSES ALL PREVIOUS NUMBERS.

WILLIAM CHALMERS, Hayfield, Man.:—"Received Christmas number of ADVOCATE on time this year, and think it eclipses all former numbers."

WORTH DOUBLE THE COST.

W. UMBRICK, Virden, Man.:—"I was very pleased with the ADVOCATE. I would not be without it for double the price, and I recommend it as a good farmers' journal."

PERFECT.

A. H. SNYDER, Castairs, Alta.:—"The Christmas number of the ADVOCATE received, and I am highly pleased with it. I think it is perfect. Your paper is the best I know of for the farmer."

GIVES PRACTICAL KNOWLEDGE.

COLLES & DEWINTON, Shoal Lake, Man.:—"We have been a subscriber to your paper for some years. We derive much benefit and practical knowledge from reading the FARMER'S ADVOCATE."

KNEW SIR TATTON.

RICHARD WRIGHT, Oak Lake:—"I received Christmas number, and am very much pleased with it. The contents are excellent, especially the article on 'Sir Tatton Sykes.' I knew the old gentleman in England."

BEST CHRISTMAS BOX.

R. J. TAYLOR, Hartney, Man.:—"I received the Christmas number last night, and consider it the best Christmas box I received. I would be pleased to endeavor to secure some new subscribers for you."

DAIRY.

Risk of Judging Cows by Their Looks.

The best looking cows are not always the best performers in the dairy. A striking illustration of this was afforded by the recent experience of a well-known Jersey breeder. This gentleman had for years made the dairy qualities of his cattle a subject of special study, and prided himself upon the fact that he possessed a thorough knowledge of the proportionate values of the various cows owned by him. With the intention of weeding out some of the worst members of the herd, he recently proceeded to single out several of them, but before finally deciding in the matter he had the milk of these cows analyzed, with the result that one of them, which he had priced among the very lowest, was found to be yielding at the rate of 16 pounds of butter per week, though her reputation prior to that only credited her with producing about half that quantity.

Fast vs. Slow Milking.

In a recent issue of the *Farmer's Gazette* reference was made to the relative merits of fast and slow milking. As bearing upon this subject, an experiment recently carried out with the object of determining to what extent the milk capacity of cows was influenced by quick or by slow milking will doubtless be of interest. Five cows were milked for the period of a month by two persons, one of whom did his milking in the usual way, while the other was informed of the fact that an experiment was in progress, and was requested to milk the cows as thoroughly as he could and in the shortest possible space of time. The two milkers were given the cows for periods of a fortnight each, with the result that in the case of the one who was unaware of the experiment the yield of milk of the five cows for the two weeks during which he milked them was 86 gallons, while the same cows in the charge of the man who was aware of the experiment, and who milked them as rapidly and completely as he could, amounted to 112 gallons in the fortnight. There was thus a gain of 26 gallons in favor of the man who adopted the more rapid and thorough system.

Dairying in the New Century.

We enter upon the new century with all the advancement of the past and an ever-increasing determination to still further improve our methods. In the competition some are leaving their fellows in the race, and the methods of these men are worthy of imitation. Among dairymen we find those who are making money and are satisfied with their lot, while others, equally strenuous in their efforts, have more or less to discourage them. We cannot hope to find out everything for ourselves; nor is it necessary, as successful men are invariably sufficiently broad-minded and unselfish to tell out the good things they have learned in their own experience. There are many such successful men keeping cows, and it is to them we address the following questions which an "Old Dairyman" has answered according to his own experience. Let many others who are doing a profitable dairy business send us answers to these questions for publication, that we may learn from one another. The questions answered by "Old Dairyman" are these:

- 1st.—Kindly outline your method of improving your milking herd, having reference to breeding, selection and development of heifers; also testing cows and discarding the unprofitable ones?
- 2nd.—How do you feed and care for your milking cows? Kindly refer to kinds of feed, how prepared, how and when fed, method of stabling, watering, exercise, cleanliness, etc., which you find give you most satisfactory returns? (Health of cow included.)
- 3rd.—What do you find to be the best use to make of skim milk? In case of calves and pigs, respectively, should it be fed sweet, sour, warm or cold, alone or mixed with other substances?
- 4th.—What have you found the best substitute for the cream removed from the milk and the best method of feeding it?
- 5th.—How long should dairy cows go dry, and what do you find the best season to have them come in?

AN OLD DAIRYMAN'S WAY OF DOING.

(1) In my dairy operations, recognizing that on the character of the cow mainly depends the

success of the business, I have made it a point to improve and increase the working capacity of my cows, weeding out the worst performers, turning them into beef and replacing them with purchased cows showing the indications of good workers at the pail, and by raising the heifer calves from my best milking cows, being careful to breed only from a bull whose dam was known to me to be a deep milker and descended from a heavy-milking family. I make it a rule to have the milk of any cows which do not give a fair quantity tested by use of the Babcock test, and unless the percentage of butter-fat is high enough to offset the lack in quantity, I plan to dispose of them as soon as a favorable opportunity offers. I breed my heifers to produce their first calf at about 2½ years old and milk them for nearly a whole year if they will hold out so long, breeding them to produce their second calves not sooner than one year from the date of their first. This, I find, tends to fix the habit of persistent milking for a long term.

(2) In winter I give, each day, one or two feeds of good hay (clover preferred), a liberal supply of a mixture of ensilage, pulped roots and chaff or cut straw, mixed and allowed to stand 12 hours before feeding. Feed this twice a day, with a moderate grain ration composed of a mixture of bran, ground oats and peas, corn or barley, in about equal quantities by weight; about one gallon of the mixture twice a day. Feed hay last thing at night. My stabling is a stone-wall basement, with concrete cement floor, and well lighted and ventilated. Cows are turned out once a day to drink at a trough, water being pumped by hand as required, and cows are allowed exercise in yard only during the time they are drinking, or a few minutes longer on fine

flaxseed may be fed to advantage with the milk if given in moderation. By eating dry feed, which is mixed with the saliva of the mouth, digestion is perfected and health and thrift is maintained. When calves get to be three months old and have learned to eat freely, if milk is scarce, or is needed for other purposes, warm water may be added and the quantity of milk reduced, and the calves will hardly miss it.

(5) As to how long a cow should go dry before calving, I think it depends a good deal on the cow. After the first year, if she is disposed to go dry three months before she is due to calve, let her go. She will do better work when she comes in again than if she had been milked longer. But if a cow continues to milk well up to within a month of the time she is due, I would milk her, and in an exceptional case, where she shows little or no tendency to go dry, I would milk her right up to calving rather than force her dry, as I have known not a few cases of cows milking steadily for years without going dry, and doing a much better year's work than many that were willing to quit work three or four months before calving. As a rule I prefer to let a cow dry about six weeks before she is due to calve again. I prefer to have most of my cows to calve in the fall, from October 1st to January 1st, as I feed my cows liberally during the winter months to make them do their best work while butter brings the best price and calves can be most advantageously fed. Then I find that when the cows go out to grass in spring they flush up in their milk and make a good record at the cheese factory while the pastures are fresh, and will keep it up pretty well through the summer if a supply of ensilage has been carried over to be fed to them

once or twice a day when pastures fail and flies worry the cows. If we have not ensilage, we find it pays to cut some green feed to carry to the cows during this period, or even to feed some bran and meal to keep up the milk flow, as when once allowed to shrink it costs more to bring them back to their former work, if, indeed, it can be done in that year. The fall calves will have grown and learned to feed so well before grass comes in the spring that they will do without milk and will be ready to find for themselves when the grass comes. Of course, we cannot always manage to have all the cows come fresh in the fall, and there is an advantage, especially in buttermaking, in having an odd cow come in fresh in the spring and summer months. It makes the butter churn quicker, and the fresh cows, giving a larger flow, help to keep the supply of milk up to a more uniform quantity. I think late spring and summer calves do better kept in a shed or box stall the first summer.

My methods may not be up-to-date in all particulars, as I have not all the latest improvements; but my wife makes good butter, and lots of people want it and are willing to pay a good price for it, a good deal better than the market price. I hope others will write of their ways of doing, as I think none of us are too old to learn, and we ought to be willing to tell what we know. OLD DAIRYMAN.

Calves which are reared by hand are more subject to digestive disorders than those which are allowed to run with their dams. This, however, is only to be expected. When suckled by their dams, calves lead what may be described as a natural method of living, as they are enabled to obtain their milk supplies in small quantities and at as frequent intervals as they feel disposed. On the other hand, when artificially fed, the periods between meals are much longer than under the natural system, and in addition to this the food is given very often at irregular hours and not always in the same quantity or at the same temperature. When the calf feeds off its dam, the milk which it imbibes is always of the natural blood heat, and the quantity taken is just as much as is necessary for immediate requirements, the calf knowing by instinct that when another supply is necessary, it has its dam's udder to resort to and procure it. It is different when the calf is fed by hand. Under this system the animal soon gets to know that the lapse of time between the hours of feeding is comparatively long, and it is therefore tempted to consume a larger quantity than may be good for it. The result is that digestive derangements of various kinds are created.



WHOOOP AND AWAY! THE FIRST STEEPLECHASE ON RECORD.

days, while stables are being cleaned out and feed placed in mangers.

(3) I feed the skim milk to calves as far as required and the balance to pigs. Feed the separated milk alone to calves while warm, or skim milk warmed to blood heat upon the stove or by the addition of hot water. If fed to young pigs in cold weather it is warmed in same manner and given as a drink, meal and shorts being fed dry in separate trough. In warm weather the meal and shorts mixed with the milk and the milk fed to pigs, sweet preferably, and to calves invariably sweet.

(4) I feed the calves for first three weeks whole milk fresh from the cow, in small quantity, three times a day for first two weeks, twice a day from that time, and for the fourth week a mixture of skim milk and new milk, with a slight increase in quantity. After fourth week all skim milk. By this time, if clover hay and a little bran and ground oats has been kept in reach, the calf will have learned to eat a little, and a small proportion of ground oil cake, nutted size, should be added to the dry meal and bran, of which the calf will eat sufficient to make up for the lack of fat in separated milk, and with the addition of some sliced roots fed regularly every day, will grow and thrive, which is all that is necessary in a dairy calf, since it is not wise to make them fat, and is indeed injurious as a preparation for the career of a dairy cow. I believe more calves are lost or spoiled by feeding too much milk or by feeding it when cold than by giving them too little, and I have little use for the feeding of porridge, and none for raw meal with milk, believing it is very often the cause of indigestion and scouring of the calves. Boiled

Betty's Record Reviewed.

To the Editor FARMER'S ADVOCATE:

SIR,—In your issue of Jan. 1st, I noticed the record of "One Cow," owned by Mr. William Taylor, Strathroy, and was impressed at low cost of her food. Isn't \$2.50 per ton a very low estimate for marsh hay and straw? Here in N. B. \$5 per ton is a low, but we will say fair, price for either. Roots are worth at least 50 cents per barrel, and oats are considered very low at 3 cents per bushel. I see winter feeding commenced Nov. 25th, fully a month later than we stable here in the case of dairy cows, but our summer period begins about 15th of May, as with Mr. Taylor. Even our smallest cows require considerably more than one and a quarter tons of hay in that period. Her calf was sold when six months old, for \$12. I presume it cost something to feed it during that time, but nothing is charged against it. Betty is no doubt a good cow, but hasn't she a little too much money to her credit?

King's Co., N. B.

E. O. CLARKE.

Eastern Ontario Dairymen in Convention.

The twenty-fourth annual convention of the Eastern Ontario Dairy Association was held in Smith's Falls, on Jan. 9th, 10th and 11th. It was formally opened by His Excellency the Earl of Minto and the Countess of Minto, who were pleased to honor the occasion by their presence. To an address presented by Pres. Derbyshire, His Excellency replied fittingly, setting forth the important relation dairying holds to successful agriculture in Canada. Among other things, he pointed out that Canada had increased her output of cheese during the last ten years by over \$10,000,000, while the export of butter has grown during the same period from \$340,131 worth in 1890 to \$5,122,156 in 1900.

President's Address.—The President, Mr. Daniel Derbyshire, Brockville, in an admirable and comprehensive address covering the salient features and needs of the dairy industry, and pointing out that this was a favorable opportunity, at the commencement of the century, to resolve to do better in all lines of dairy operation. With the present opportunities for education and instruction, there will be no excuse for any factory employing an ordinary maker, nor for having anything but a strictly up-to-date factory, suitable for making the finest class of goods.

The exports of cheese from May 1st to Nov. 1st, 1900, was 2,077,000 boxes, with 323,000 boxes on hand, worth in all \$2,500,000 more than in 1899. The exports of butter will be \$2,000,000 less than in 1899. Our butter and cheese for 1900 will bring the sum of \$25,000,000—\$20,000,000 for cheese and \$5,000,000 for butter. By intelligent effort, the export of cheese and butter for 1901 can be increased by \$5,000,000.

One of the duties of the dairy associations for the present year must be the securing of better transportation facilities—quicker carriage, clean, well-ventilated cars, and cheaper freight rates. Occasions were cited where coal cars had been used to carry cheese, reducing its value two cents per pound. These things must be remedied this year. Mr. Derbyshire called for more perfect co-operation among patrons, makers, and all concerned, in order that we take another step in advance of all other competitors in every part of the world.

Hand Separators.—Prof. H. H. Dean, of Guelph Dairy School, delivered an interesting address on the plans and uses of the hand separator. The two essential parts of the separator are the bowl and the gearing. A bowl twelve inches in diameter, running at the rate of seven thousand revolutions per minute, exerted a pressure of twenty-one tons on every square inch of surface. It was therefore important that it be made of the finest quality of seamless steel, and that it be carefully run at not too high a speed. The chief requirements of a first-class separator are: 1st, ease of running; 2nd, that it will skim 350 to 500 pounds per hour; 3rd, ability to skim closely; 4th, must give smooth cream; 5th, ease of cleaning bowl, etc.; 6th, wearing parts must be durable and easily replaced; and, 7th, that it cost not more than \$100. The advantages of a hand separator were pointed out, as well as their evils, in the development of the dairy industry.

The advantages of the hand separator are to the private dairy farmer who needs the skim milk in the rearing of stock. As a cleanser of milk, it has a wonderful effect. The inside of the separator bowl reveals this after milk has been run through. It enables the private dairyman to get more and better butter than by the gravity system of creaming. It gives a better quality of skim milk. Patrons of Guelph Dairy School are enabled to receive good skim milk by all the whole milk being pasteurized before being separated at the School, and after separation it is quickly cooled by a Lister cooler. Milk thus treated keeps sweet a long time, even in hot weather. The hand separator is particularly useful in cream-gathering creameries.

Among the evils of the hand separator, it was pointed out that creameries supplied by patrons skimming their own milk could not make a uniform quality of butter, especially where cream is gathered only once or twice a week. In all creamery practice, the hand separator is a disadvantage. It tends to make patrons careless with cream and perhaps to neglect to wash the separator well after each skimming. The proper method for creamery patrons is to have all the milk hauled to the creamery and skimmed there.

Facts Which Bear on Profitable Dairying.

Dr. Wm. Saunders, Director of the Dominion Experimental Farms, addressed the convention on this broad subject. Two essentials in profitable dairying are high-producing cows and cheaply-produced suitable feed for them. Such crops should be grown as do not deplete unduly the fertility of our soils. Speaking of maintaining fertility of farms, upon which continued success depends, the value of humus and means of supplying it were gone into. Humus retains moisture, and this is all-important, because plants take in all their food in liquid form. Good mechanical condition of soil is also necessary, in order that the rootlets may easily ramify. Plant rootlets, in their search for food, exude an acidulated moisture that dissolves plant food to be taken up later. The industrious farmer, that works his land well, thus gains a great advantage over those who are careless and lazy. It was shown that dairying is not exhaustive to the soil, especially butter dairying.

Referring to the best foddere to grow, the most suitable varieties of corn for the silo were indicated. For six years, Red Cob Ensilage, Giant Prolific, Thoroughbred White Flint, and Selected Leaming—each gave a yield of some twenty-four tons of whole crop per acre. These are dent corns, and do not mature as early as Longfellow and Angel of Midnight, which gave twenty-two tons per acre. These latter were preferred.

In preserving fertility, barnyard manure should be preserved from fermenting or leaching, and, if practicable, applied in the fresh state. Artificial fertilizers are useful only as adjuncts to yard manure, since they provide no humus. The plowing down of clover was also highly recommended.

Co-operation.—Mr. H. S. Foster, President of Bedford District Dairy Association, spoke strongly in favor of co-operation between dairy associations and dairy farmers. Only in this way can equitable freight rates be secured from the railway companies. It was shown that the present rates charged are not uniform, and therefore are unjust to many districts. He also considered much could be saved and better results obtained if factory equipments were all purchased co-operatively.

Winter Cheese a Menace to the Trade.—Mr. Arthur Hodgson, Montreal, representing the dairy produce exporters, spoke emphatically against the practice of making cheese in November and later months. The little gain made just at the time will be lost many fold at the opening season next spring. It was estimated that some 80,000 boxes of cheese were made in Ontario in November. These cannot be as good as summer cheese, and will seriously injure our reputation, and also store up a surplus that will be in the way next spring. He also spoke against making fodder cheese in April. He advised dairymen everywhere to turn their attention to buttermaking during the cold months.

Evolution of Canadian Dairying.—Prof. H. H. Dean traced the growth of dairying in Canada. The process is one of education, largely through experience, observation, reading, etc. The dairy farmer is slow to improve, but he is in a complex situation. It has become necessary in some sections in times of drought to feed and stable cows in two or three summer months the same as in winter. Silage and bran must be used by the progressive dairyman. The average record for twenty-two cows in the College herd is 7,000 pounds of milk per year, for 1900. Apples, rape and turnip tops were experimented with. Cows fed Virginia Cattle Food gave good-flavored milk when fed rape and turnip tops.

The buttermaker must read, study and think in order to advance. By heating milk to 185 degrees for separating, the best butter was made, having good flavor and good keeping quality. Pasteurization is therefore a great advantage in winter dairying. Pasteurization destroys cream rising by gravity.

Moisture in butter was experimented with. The more salt used, the less moisture is held. Working also expels moisture. The overrun in buttermaking ranges from ten to fifteen per cent., as found in Guelph Dairy School.

The cheesemaker is steadily improving. Curing at a temperature between 60 and 65 degrees saves one pound on 100 pounds of medium-sized cheese, also improves the quality. Washing curds between 90 and 110 degrees improves flavor of bad-flavored curds, causing loss of one pound of cheese in every 1,000 pounds of milk. Higher temperature gave better cheese, but caused greater loss. Between 90 and 100 is the best temperature to wash at. Milk aeration has been found to give no increase in yield of cheese and no improvement in quality when milk is good to commence with. It is generally harmful to aerate in the barnyard. If patrons will cool milk below 50 degrees, and the maker uses cultures wisely, he can prevent gas in curds.

Development of Modern Agriculture.—Prof. C. C. James, Deputy Minister of Agriculture for Ontario, said seventy-five years ago homes were being cut out of the forest. The products then were timber, ashes, grain and furs, from which a livelihood was gained. Fifty years ago live stock commenced to come in from Britain, and raised the status of agriculture. Twenty-five years ago co-operative dairying had its commencement. Also has come great development of the fruit industry. The great points now needed are: 1st, development of butter industry; 2nd, development of great bacon industry; 3rd, development of

poultry industry; 4th, development of fruit industry; 5th, development of pure-bred stock. The first four to be assisted by Government and by the people for themselves. Government should distribute helpful information, such as aiding conventions, speakers, reports, etc. The individuals should take advantage of these things and thus help themselves.

It was thus pointed out that if towns would bonus creameries or other farmers' industries instead of factories, a more permanent advantage would be gained to that town. The growing interest in agriculture was dilated upon. The work of Prof. Pasteur was instanced as one of the most important and interesting features of not only the medical profession, but that of agriculture as well. The souring of milk, the curing of cheese, the prevention of many deadly diseases, etc., were understood through the studious efforts and discoveries of this scientist. Such men as these have evolved new grains, fruits, etc. Many illustrations were presented to prove this statement that agriculture is full of peculiar interest and increasing importance, and upon this the future development of this country mainly depends.

Experimental Agriculture Conducted by the Dominion Government.—Dr. William Saunders dealt with the establishment and conduct of the Dominion Experimental Farms, with which readers of the FARMER'S ADVOCATE are already familiar.

Prof. Hart, Kingston, gave a talk on general dairying. Among other things, he remarked that cheap production must be considered. To this end the feeding of silage was recommended. Bad flavors from silage feeding come from inhaled odors from the silo, rather than from the silage eaten. The closing of many creameries the past autumn was attributed to the fact that they are cheaply equipped, and therefore unsatisfactory. The floor should be of cement. A really first-class wooden floor kept oiled will wear out in about five years. Machinery runs better on a firm cement floor. For walls, have masonry up at least to window sills. This should be lined with cement. The machinery should be the best obtainable, as it economizes the product and the labor. At Kingston Dairy School the milk is pasteurized at very high temperature, even nearly up to the boiling point, and no cooked taste is observable. Better results are thus obtained with the butter, also with the skimmed milk; butter has a better keeping quality. In ripening the cream, it is cooled down to 65 degrees, and starter added, then cooled down, after ripening, before churning. Losses in skim milk and buttermilk are less with pasteurized cream. Separating at high temperature increases the capacity of the machine and skims closer. Ripeness of the cream is determined by alkaline tablets.

In a discussion it was brought out that mottles in butter, so common in winter, can be prevented by careful distribution of salt, and by having the butter sufficiently moist to dissolve all the salt. R. M. Ballantyne, Montreal, recommended the washing of all curds, so as to have uniform products throughout the season.

Cheesemaking.—G. G. Publo, of Kingston Dairy School, spoke on conditions necessary for the making of fine cheese. A good building, in which the temperature can be controlled, and suitably equipped, is necessary; good sweet milk from healthy cows fed on good food. Patrons must be clean, especially when milking the cows. A growing evil is that of shipping cheese too green—making cheese that will pass at a few days old. Such a practice will ruin our cheese trade. A soft, fine cheese is necessary, but it should not be ready to ship at less than two weeks old. The cheese hurriedly shipped will never make first-class cheese. An essential in good cheesemaking is pure water; therefore have no possibility of soakage into the well. He advised patrons strongly not to feed turnips, rape or other strong-flavored food. The milk belongs to patrons, and they should do all possible to produce it in best possible condition.

The manufacturers were advised to engage only first-class makers, and give them sufficient salary that they may engage enough first-class help of ability to make proper cheese.

Prof. Ruddick followed Mr. Publo, and urged Canadians not to be satisfied with past achievements. Other countries have great natural advantages, and are putting forth strenuous efforts to produce the best possible product. Some of the defects of Canadian cheese were presented. An ideal cheese was described. Prominent defects are openness in cheese, due to lack of sufficient acid and firm pressing. High piling of curds is a common fault. A weak cheese possesses an extreme of openness, with an excess of moisture. Not clean in flavor is common, due to filthy stables, bad food and water, and unclean cows. Off-flavored cheese is due to wrong temperature in curing. Acidic cheese are those slightly sour, due to overripeness of milk and unwise use of starters. Fruity flavor is becoming more common, and is considered due to bacterial origin; occurs throughout the whole season, but more common in fall. Pasty cheese is due to too much moisture left in curd. It should have been heated higher.

Flavor is the most important quality in cheese. All conditions in milk and manipulation must be high-class to obtain it. Ill-fitting, too light, damp boxes were strongly condemned, as they cause serious loss every year, especially from some districts.

Mr. Alexander, Montreal, a cheese exporter, complained that he could not always bring back

enough money from England to come out even. He stated that Canadian cheese have gone back during the last five years. Too much cheese is shipped out far too green. Mr. Alexander stated that he had representations of every stink in Canada in the cheese in his storehouse. He urged the doing away with small factories and with the making of late fall, winter and spring cheese.

Mr. Arthur Hodgson pointed out that cheese is not finally disposed of till two or three months old, so that all cheese should be made with that fact in mind. Much ground has been lost by too fast ripening, that will do permanent damage. The last season has been the worst for our reputation, inasmuch as too meaty, moist cheese has been turned out. Too much whey has been sold. Many instances were cited of deliberate attempts at deception in making and shipping cheese. All cheese of a factory should be uniform in weight, etc. Bad boxing was bitterly complained of.

Hon. John Dryden, in his accustomed interesting manner, addressed a most attentive audience. He urged the earnest co-operation of the patron, the maker, the exporter and the Government in doing the best work. He deplored the fact that the men who most need the instruction will not come to these meetings. The education must be carried to these men. The farmers must be shown a more excellent way in order that they may do better. The \$2,000 fines this year is a serious matter, indicating a wrong appreciation of a present apparent gain. He urged the taking of the next convention to Ontario County, that the farmers there may get the advantage of such valuable conventions as this. The man who hopes to get along must have integrity of character.

Curing Cheese.—Mr. Ruddick dealt with this subject. Three cheese that were made and cured in an experiment were exhibited on the platform. They were made in an ordinary factory and cured in varying temperatures, one in proper curing room, a second in a less perfect curing room, and the third in a poor room, such as too many factories have. A committee from the Montreal Cheese and Butter Association reported on these cheese, as follows: Those cured in best room were worth 10 cents per pound, the next grade 9½ cents, and the lot made in the poor room were worth only 9 cents per pound. These were made in summer months. The matter of shrinkage is important. In room No. 1, where temperature went no higher than 65 degrees, the shrinkage in from three to five weeks was 2.53 per cent., while in the room at 85 degrees it was 3.35 per cent., while in the poor room, where the temperature ran up to 91 degrees, the shrinkage was 4.14 per cent., so that loss occurs in quality and quantity by curing cheese under poor conditions.

The Dairy Outlook.—Prof. Robertson, in a comprehensive speech, expressed the belief that one hundred years hence we will have a population in Canada of 65,000,000 people, and their position and happiness would largely depend on the Canadian people during the next twenty years. It is a fact that there are increasing difficulties requiring more knowledge and care. Knowledge and ability are both necessary to success, and not always found in the same man. Progress will not come through pap feeding. Every man is as lazy as he can afford to be, so that to have to exert ourselves is our salvation.

Intelligence, practical ability and co-operation have enabled us to increase enormously in the output of our cheese, butter and bacon during the last ten years. In 1896, the export of six chief food products from Canada amounted to \$37,000,000 worth, compared with the exports of the same lines in 1900 of \$69,000,000 worth. A thorough understanding of why we do things aids materially in making the best of every effort put forth. This is exemplified by the effects of best crop rotation. Clover, corn and a cereal crop in succession helps each one, and gives three big important crops for dairying. It is well to understand the reason for the advantages found in this rotation. Two bottles of peas were shown from crops selected for three years, one bottle from largest peas produced from the third year's selection and the other from the smallest peas selected three years in succession. The difference is that each of the large peas weighed twice as much as the small ones. Both lots started from the same pod three years ago. The same holds good in selecting all seed grains. The same principles applied to cattle give similar results.

The question of keeping dairy products was discussed. Milk four hours old, above 70 degrees, is liable to develop bad flavors. In butter, fermentation goes on at high temperature. It should be held at temperature below 34 degrees. The speaker sold June butter in December for 28 cents per pound. It had been kept in cold storage.

Referring to the curing in cheese, sub-earth ducts were recommended instead of ice for the curing room. Those in conjunction with insulated curing rooms, double windows and doors, will give a temperature of 63 degrees in hot weather. This is like the English climate, in which the highest-riced cheese is cured.

The Dairy Cow.—Ex-Governor Hoard, of Wisconsin, talked of the importance of improving the class of cows kept, and deprecated the lack of intelligent interest in this feature of the dairy business. He illustrated, by figures from a cow census taken of the States of Iowa and Wisconsin, the folly of dairymen resisting the influence of a knowledge of the truth. According to this census,

it was shown that 5,507 cows, managed by 667 farmers, in one year brought themselves in debt to the amount of \$25,000, the loss occurring from lack of information and of thoroughness in work, inferior cows, and wasteful methods in feeding and care.

Bacteriology in Relation to Cleanliness in Butter and Cheese Making, by Dr. Connell, of Queen's University: Bacteria are microscopic plants requiring favorable temperature, air and other conditions. All have some function in nature, as putrefaction, decomposition, etc. They also cause fermentations and many diseases. They grow only on substances suitable to them. Milk and its products supply suitable cultures for certain species. Cream-ripening and cheese-curing depend on bacteria. Abnormal condition of milk may be ascribed to abnormal species of bacteria. Filth is dangerous, since it contains dangerous bacteria. By cleanliness, the abnormal species can be excluded. Manure particles contain enormous quantities of bad bacteria. Road dust also contains the same bad species. A good lactic starter will largely overcome harmful species. The trouble can be best overcome by prevention in the form of strict cleanliness. Carrying home whey in the cans is not a cleanly habit. Flies can seed milk to a greater extent than is often supposed.

Cleanliness in the Dairy.—Mrs. Yuill referred to the need for education of farmers' wives and daughters. Milk cans should be washed, scalded and rinsed every time they are used. Have milk-stand away from swill barrel. In cleaning the cow's udder, do it with a brush and damp cloth. The use of tobacco while working with cows was strongly condemned. Strain milk through flannel cloth. She honored the cheesemaker and butter-maker who will send wrong milk home. Butter should not be made on the farm at all, but the burden of thoroughly cleaning all the utensils belongs still to the farmers' wives and daughters. She recommended the patron who has milk sent home to be diligent in learning the cause of the trouble and rectifying it.

Change Your Methods.—Ex-Governor Hoard talked straight business under this heading to the patrons. The best cow will not do well in a cold stable and having ice water to drink. The cow must be treated according to her physical condition. The frugal, industrious, studious man will improve with every opportunity, while the man who would not change himself over to suit a cow—who would not furnish his mind—will fail to keep up in the race, but will go down and drop out.

By study of food, prices and values, the cost of milk can be much reduced. This can be done by weeding out the poor cows and putting good ones in their places. A monthly test will greatly help to size up her value. The mother cow must have suitable care. Her system is relaxed, and she cannot stand exposure. These things must be studied and understood. There is money in a knowledge of foods and methods. The development of the heifer is important. She should have good dairy ancestry. Prevent the growth of fat. Breed her at 15 months old. Feed liberally of milk-producing food, to develop the udder. A cow trained to make tallow cannot make butter-fat profitably. If a cow yields a balanced milk abundantly, she must have a well-balanced food to do it with. Millet, flax and oats is a good combination crop to grow.

Use only a true dairy cow, give her the right sort of food, use skill in feeding, give attention to the production of the right sort of food, and the right care and handling of the cow. Produce milk at less cost. We must make milk by the acre, the cow, and the 100 pounds. We must learn to make as much profit with milk at 85 cents per cwt. as we use to at \$1 per 100 pounds. Modern ideas will do it. Good calculation and good energy will bring progress and profit.

Inspectors' Report.—Seven inspectors and instructors reported their season's work. They visited the factories asking for them in their respective districts, and even then could not get around as often as they should. Each one reported improved conditions in some portions of their fields, but still too many poor factories and curing rooms in others. Considerable time was spent in testing milk, and every inspector found tampered milk. For this cause, some \$4,000 in fines were collected from patrons for watering or skimming milk. At the end of this report there was a very spirited discussion, in which many took part. The general contention was that the inspection and instruction should be done by separate classes of men. It was held by several that the makers and patrons should know when to expect the instructor, that they may be prepared to get the most out of his visits. Paying for milk by Babcock test was urged and recommended as a means of stopping tampering with milk. Ex-Governor Hoard spoke on the use of the test. He said the farmers are not aware of the justice of the test method. He claimed that the cheesemaker thinks he has not the time to conduct the test, so that both patron and maker are against its use. In six months after the test method was applied to the Hoard creameries, the average butter-fat rose from 3.97 to 4.36 per cent. The use of the test in the cheese factory will stop tampering with milk and cause a general improvement in the cheese. The patron should receive the full value for his milk, and the maker should strive to get that for him.

Officers Elected for 1901.—President, D. Derbyshire, Brockville; First Vice-President, John McTavish, Vancamp; Second Vice-President, L. L.

Gallagher, Wilton; Third Vice-President, John Echlon, Carleton Place. Directors—Division No. 1, Edward Kidd, North Gower; Division No. 2, William Eager, Morrisburg; Division No. 3, John R. Dargavel, Elgin; Division No. 4, James Whitton, Wellman's Corners; Division No. 5, T. B. Carlow, Warkworth; Division No. 6, Henry Wade, Toronto. Secretary, R. G. Murphy, Elgin. Treasurer, P. R. Daly, Foxboro. Auditors—Morden Bird, Stirling; F. W. Benton, Belleville. Official Stenographer, T. McGillicuddy, Toronto.

Masculine Character in Dairy Bulls.

In a recent issue of the *Jersey Bulletin*, Mr. L. S. Hardin discusses the subject above named in an able article, in which he refers to a contribution to the same paper some months ago on the same subject by Mr. F. S. Peer, calling attention to the absurdity of making a scale of points for a cow fit a bull, in these words: "The following are some of the points required, and by which bulls as well as females are judged: 'Head small and lean; eyes full and placid; neck thin and rather long and not heavy at shoulders; barrel deep at flank; hips wide apart; disposition quiet.' It will be seen that in applying this scale of points to bulls the most effeminate bull in the class must necessarily be the winner."

The fad now prevailing about rudimentaries or embryo teats on bulls gets its share of disclaimer at his hands. Indeed, he can see no more in the rudimentary fad than in any other of the numerous marks and signs that sanguine but narrow natures find sticking out on cows and bulls, crying for tyros to come and read them. But it is stretching this superstition pretty far when we transfer a female's characteristics to a bull's form (or vice versa) in order to produce a given result.

If any one thinks this matter easily settled he should have been present when the old Solons, the master breeding minds of the American Jersey Cattle Club, wrestled with this mighty subject. I remember the final conclusion was that, as the purpose was to create a female, we had better select a female-looking bull to produce females. The idea was to get effeminate animals to produce female animals. I went home thoroughly imbued with this idea, and bought Living Storm, that looked more like a steer than a bull.

Records of performance were not kept in those days, and there is no telling what the result of his breeding was. I soon gave him up for an imported, bully-looking bull.

The result of this prevailing fad was the present scale of points of the American Jersey Cattle Club—a decree that no one has had the courage since to attack at the meetings of the Club. The old saw that "like produces like" was the father of the idea that prevailed in making up this scale of points of which the female occupies all the foreground, with a minute description, and the bull is dismissed with these words: "For bulls, omit points Nos. 11, 12 and 14, which refer to udder and milk veins."

Drummond, in his "Ascent of Man," tells us the object of sexes was to create variety in the species, for it is by departure from the type that evolution takes place. If the rule was absolute that like produces like, we could not make an improvement in the offspring. As Mr. Peer says, a manly man does not put whiskers on his daughter's face, but he does add to the manliness of his son's form; and the reverse of this rule would be pitiful with the breastless and hipless daughters of the effeminate father.

Under these grotesque conditions, what are we to do about the form of the bull? It is impossible to follow the A. J. C. C. scale of points without danger of destroying the constitution of the breed, fining it out to absolute imbecility. Let us hope the Club members can be induced to remodel the scale, and in the meantime take as our model these beautiful specimens that are being brought over from the Island of Jersey. They are certainly beautiful to look at, and with plenty of butter in their pedigrees they should suit the most skeptical, whether they possess any of the boasted signs or not. It is enough to know that nature made a bull bully and a cow cowy.

Why Cows Should be "Clean Stripped."

It is a well-established fact that careless stripping is one of the most fruitful causes of making cows go dry. Experiments have conclusively demonstrated that cows which are stripped quite dry at each milking, not only continue longer in milk, but produce a greater quantity of milk, with exactly the same feeding, than if the animals are carelessly stripped and a certain portion of the milk left behind at each milking. For this reason alone dairy farmers should always insist upon their cows being milked thoroughly dry. There is another reason, too, why complete stripping should be insisted on. It is a well-known fact that the last-drawn milk is considerably richer in butter-fat than what is known as the fore milk or that first withdrawn from the udder. So far as the presence of butter-fat is concerned, it has been well said that half a pint at the end is worth a quart at the beginning, because it has been repeatedly shown that the strippings contain from four to five and six times more butter-fat than that portion of the milk which is first drawn.

S. P. FRENCH, JR., Vernon, B. C.:—"I look forward with eagerness to the arrival of your paper from issue to issue, and there are very few papers that I read with as much pleasure and profit."

GARDEN AND ORCHARD.

Successful Fruit Growing.

WHAT TO PLANT AND WHAT TO DISCARD.

The Board of Control of the Ontario Fruit Experiment Stations met at the Parliament Buildings, Toronto, January 2nd, to receive the reports of the experiments and to plan work for the new year. There were present: Dr. James Mills, O. A. C., chairman; L. Woolverton, Grimsby, secretary; Prof. H. L. Hutt, O. A. C., official visitor; and Messrs. A. M. Smith, St. Catharines; W. M. Orr, Fruitland, and W. Boulter, Picton, representatives appointed by the Ontario Fruit Growers' Association.

After routine business, Prof. Hutt reported on his tour of inspection during the summer of 1900, from which we cull a few paragraphs:

The Gooseberry Station.—Experimenter, Stanley Spillett, Nantyr. Visited July 12th.

Mr. Spillett has about two dozen varieties of gooseberries under test, most of which have been out four or five years. Red Jacket, Pearl and Downing have proven to be the most satisfactory varieties, and are free from mildew. Most of the other varieties have mildewed, more or less badly, in spite of repeated sprayings with Bordeaux mixture, particularly on heavy soils, while the few varieties on light soils have escaped altogether. Of the English varieties, Green Chisel is the most promising. The bushes are small, but they are well loaded with beautiful large berries, quite free of mildew. Nearly all of his bushes are mound layered to make plants for another year. Mr. Spillett is taking good care of his bushes, and they are well pruned, sprayed and cultivated.

The Simcoe Station.—Experimenter, G. C. Caston, Craighurst. Visited July 13th.

This section of the country has had plenty of showings, and nearly all of the crops and fruits are looking well. Mr. Caston has an extensive collection of apples, pears, plums, cherries, and small fruits, all of which are well cultivated, pruned and sprayed. Some of the Japan plums, such as Wickson, have proven tender in this section. Good work is being done at this station.

The Huron Station.—Experimenter, A. E. Sherrington, Walkerton. Visited July 17th.

Mr. Sherrington has been testing a large number of varieties of raspberries for a number of years, and he is now ready to discard a great many of them and confine his attention to a few of the best. Cuthbert he finds to be still the most satisfactory of the reds, while Hilborn and Conrath have made the best showing among the blacks. For all of these fruits he has a good local market, and can sell at good prices much more than he is producing. The experimental trees of plums and cherries set out three years ago have made a fine growth, and some of them began bearing last year. There will be little or no fruit from many of them, however, this year.

Burlington Station.—Experimenter, A. W. Peart, Freeman. Visited July 24th.

In previous reports I have referred to the fine collection of fruits growing at this station, and the excellent work being done there.

This season the crop of nearly all kinds of fruits, with the exception of plums, was all that could be desired. Mr. Peart has been giving special attention to raspberries, currants and blackberries, and has given carefully-prepared notes on these in his annual reports. Of the red currants, he finds the Cherry and Wilder most satisfactory, while the Collin's Prolific has proven to be the best black and White Grape the best white currant. In raspberries, the Marlboro, Cuthbert, Miller and Loudon are the best red varieties to date. Kansas has made the best showing among the blacks. Among the blackberries, Mr. Peart finds Western Triumph, Agawam and Kittatanny the leading varieties so far. Mr. Peart is also making a number of experiments with commercial fertilizers on various kinds of soils and for different fruits, and will be able to give some valuable data on these in the course of a year or two.

The South-western Station.—Experimenter, W. W. Hilborn, Leamington. Visited August 1st.

During the severe winter of 1898-99 over 90 per cent. of the peach trees in this section of the country were destroyed. Plums suffered nearly as much, and many other trees, such as pears and cherries, were also severely injured. Wherever trees escaped, it was mostly on moist land or where the ground was covered with weeds or a cover crop. The most of the peach trees saved on Mr. Hilborn's place were in the experimental plots, where there are now about 100 trees, of 25 or 30 kinds, fruiting this season. Mr. Hilborn is in no way discouraged, but is planting again as quickly as possible, and has about 86 acres re-planted. In the experimental plots he has a good collection of varieties started again.

The Wabigoon Station. Rainy River District.—Experimenter, A. E. Annis. Visited August 21st.

A year ago last spring a few of the hardy apples, plums, pears, cherries and small fruits were sent to this Station for the purpose of finding out what fruits could be grown in this northern section. Nearly all of the trees perished last winter, when it was unusually cold, with but little or no snow on the ground. Among the small fruits, the black currants have stood the best, while the red and white varieties have done poorly. The Downing gooseberry has made a fair growth, but the White-

smith and Industry have failed, or made no progress. The black and purple raspberries have not been tried, but the red varieties, such as Marlboro, Miller, Loudon and Turner have made a good growth this season, although the tops were frozen nearly to the ground last winter.

The Algoma Station.—Experimenter, Charles Young, Richard's Landing, St. Joseph's Island. Visited August 24th.

The progress made at this Station has been remarkable, and nearly all of the trees and plants sent for testing have lived and made a fine growth. About the only failure at all was among some of the Japan plums, which could hardly have been expected to stand the winter in this northern section, although some of the Japan varieties have come through the winter uninjured. In one case we noticed, where the top had been frozen back, that there was a strong growth from the root upon which the plum had been worked, which in this case happened to be peach. There is little danger of root-killing in this section where the ground is usually covered with deep snow for the whole winter.

The Georgian Bay Station.—Experimenter, John Mitchell, Clarksburg. Visited August 27th.

At this Station may be seen one of the finest collections of plums in the country, but the crop this year is a total failure, which Mr. Mitchell thinks was due to the unusually warm weather in February, when the buds were forced into growth and afterwards checked by severe weather. All of the trees, however, are vigorous and thrifty, and promise well for a crop next year. There may also be seen at this Station quite a number of peach trees which have not yet shown any signs of injury from winter-killing. Some of them were fruiting this year. Mr. Mitchell is a thorough cultivator, and his trees show that they have received good attention. Notwithstanding the severe drought for the greater part of the season, the cultivation given had retained the soil moisture, and the trees showed but little injury from the drought.

The East Central Station.—Experimenter, R. L. Huggard, Whitby. Visited August 30th.

Most of the apple trees set out at this Station were planted during 1896-97, and quite a number of them are now beginning to bear. In the older trees there is a good crop of fruit, but plums are a failure, as in most other sections, this year.

The Bay of Quinte Station.—Experimenter, W. H. Dempsey, Trenton. Visited September 1st.

Mr. Dempsey's orchard is well cultivated and thoroughly sprayed, and this year he has a fair crop on his bearing trees, which he expects will yield about 2,000 barrels. The fruit is somewhat undersized, because of the extreme drought, but all of the apples are clean and free from worms and scab. The young trees set out in the experimental orchard in 1896 have done well, and several are this year bearing fruit. One of these, Western Beauty, is loaded with fine, large apples, much like Wealthy in appearance. Many of the scions grafted on bearing trees during the past three or four years are now bearing, and fruit from many of these was shown this year at the Toronto Industrial.

Mr. Dempsey has in all about 170 varieties of apples in bearing, 100 of which were shown this year at Toronto.

The St. Lawrence Station.—Experimenter, Harold Jones, Maitland. Visited September 3rd.

The soil upon which Mr. Jones has planted this experimental orchard is a deep, rich, black, sandy loam, and most of the trees have made a remarkable growth, some of the new growths measuring five and six feet in length. Most of the kinds planted have done well, and are now beginning to show signs of fruiting. Some varieties show signs of being worthless for this section, and have been injured by sun-scald. In the young orchard planted in 1896, there will no doubt be many kinds of apples, pears and plums in fruiting next year. In Mr. Jones' bearing orchard he has his usual fine crop of Snows and Scarlet Pippins. The fruit is of good size and free from scab and worms. In this section they have not had the severe drought which has so reduced the crop farther west. From this orchard of four acres, Mr. Jones has sold fruit during the past three years to the value of \$3,682. Last year his crop was about 500 barrels, which brought him in round figures \$1,300. The crop this year will be quite as heavy. These facts alone speak for the care and attention which the trees at this Station receive.

The Niagara Station.—Experimenter, M. Burrell, St. Catharines. Visited September 13th.

We have been unfortunate at this Station in losing Mr. Burrell, who has sold out and removed to British Columbia. The place is now in the hands of Messrs. C. F. White and A. Allan, both young Englishmen, who have but limited experience in fruit-growing. The experimental plots of peaches and tender fruits had been planted with corn, and were sadly neglected. A number of the trees had been killed during the past two winters, which were torn out without saving the labels, and there is no record of the trees left; so we can hardly expect any more reports from this Station.

The Grimsby Station.—Experimenter, L. Woolverton, Grimsby. Visited July 2nd and Sept. 14th.

The fruit to which Mr. Woolverton has been asked by our Board to give special attention is the cherry. He has now in his collection 62 varieties, and most of these being planted five years ago, are now coming nicely into bearing. The orchard is on dry, sandy loam, which is well cultivated, and has been fertilized with wood ashes. There is a

great difference in the habit of growth of the different varieties of cherries, but all look thrifty and vigorous, and some of the sweet varieties have made remarkable growth. At the time of our first visit, in July, most of the trees were loaded with fruit, and they presented a sight well worth going to see. An excellent illustrated article on the trees and fruits in this orchard was given in the August number of the *Canadian Horticulturist*, and a full report on the different varieties will appear in Mr. Woolverton's annual report. Mr. Woolverton has also an extensive collection of peaches, European and Japanese plums, and tender fruits, and since we may look for no more reports from Mr. Burrell, I have thought it might be well to ask Mr. Woolverton to report also upon peaches, plums and the tender fruits in the Niagara district.

The Wentworth Station.—Experimenter, M. Pettit, Winona. Visited September 14th.

During the last six years, 150 varieties of grapes have been planted at this Station. All have been trellised, and are well cared for. Since they have come into bearing, Mr. Pettit has had a good opportunity of studying the varieties, and has found that many of them have not been sent true to name, and out of the whole lot there are but few new ones of value for commercial planting. Mr. Pettit says that eight or ten varieties at the most would be all that are worthy of a more extended trial. We would suggest, therefore, that those varieties which are of little or no value be grafted with some of the better kinds, and thus save Mr. Pettit the expense of continuing the work with varieties known to be worthless. In a new vineyard set but last spring, Mr. Pettit considered it advisable to plant only such old standards as Agawam, Lindley, Wilder, etc.

The Strawberry Sub-Station.—Experimenter, Rev. E. B. Stevenson, Guelph. Visited October 5th.

Mr. Stevenson is a Methodist minister, now stationed at Jordan, Ont. From the itinerant nature of his calling, he cannot well carry on extensive experiments where he resides, but he grows most of his plants at Guelph, where he has many kinds under test. Mr. Stevenson has made the strawberry a life study, and he makes it a point to try nearly every new variety as soon as plants of it can be obtained. He is, therefore, up-to-date on strawberry matters, and probably more familiar with the hundreds of varieties of strawberries than any other man in Canada.

At this meeting there was also presented the reports from these various Stations, giving in detail the results of the work of the year, and every year these reports will be of increasing value to the Ontario fruit-growers as the varieties planted begin bearing, the object being to guard the fruit-growers of Ontario against purchasing the new and much-lauded varieties which, upon trial, prove to be worthless, or not equal to the older and well-tried kinds. These subjects will be dealt with in detail in the published report of the Ontario Fruit Experiment Stations. The Secretary, L. Woolverton, also gave an account of the experiments in the export of peaches, and grapes made in Great Britain under the instructions of the Department of Agriculture, Toronto. Four shipments were made, of about one carload each, and provision was made by the Department for the carriage of these fruits from Grimsby to the port of shipment in a special refrigerator car, after the Hanrahan patent, and from thence in a special compartment, constructed on the same plan, on the Manchester Liner to the port of Manchester. The first shipment was made on the 25th of August, by the Manchester Trader, and consisted chiefly of Astrachan and Duchess apples and Clapp's Favorite pear. These apples are among the most difficult to carry a long distance, as they will keep only a few days in our own markets, but they landed in Manchester in excellent condition and sold for a good price, proving that we have in the English market an outlet for these surplus varieties which now glut the Canadian markets. One case of peaches was included in the shipment, and sold for \$1.46. On the 15th of September a large shipment of Bartlett pears was made by the Manchester Commerce, which also arrived in fine condition, and sold at prices ranging from 4 to 7 shillings per half-bushel case, a most satisfactory experiment. This proves that our fruit-growers are not to be confined to the Ontario markets, which are often glutted with the Bartlett pear. It is a very tender variety, and becomes soft and worthless if kept a few days at a high temperature. It is grown very extensively in Ontario, so that notwithstanding its excellent quality, it is impossible for our markets to take up the crop as fast as it is harvested. That we should succeed in landing such a tender pear in Great Britain in prime condition is a great triumph for the Hanrahan system of cold storage. The third shipment was made by the Manchester Trader when Bartlett pears were past their season, and the shipment was made up of fancy apples, Rogers' red and black grapes, Louise and Duchess pears, and a few peaches. The grapes were at first received very doubtfully, and sold for only about one cent a pound, which, of course, brought great loss to the Department, but the last sales were made at 5 cents a pound, showing clearly that if a continuous shipment could be made, prices would soon reach a paying basis. Louise and Duchess pears were sold at from \$1.25 to \$2.50 per half bushel case, which prices are most satisfactory. The same pears in our home markets. Not only that, but the fruit brought

the highest compliments from English growers as to its beauty and excellent quality. The fourth shipment was made by the Manchester Trader on the 20th of November, and consisted of fancy apples, Keiffer pears, Rogers' grapes, and quinces. The apples sold for about \$1.50 per bushel box, but the pears and grapes were held too long before shipment, and consequently did not bring satisfactory prices.

On the whole, the experimental shipments made under Mr. Dryden's directions during the past year have proven conclusively the importance of this trade to the fruit-growers of Ontario.

The Board of Control took this report into careful consideration, and recommended to the Hon. John Dryden that during the year 1901 arrangements be made for weekly shipments during the months of August, September and October, and that vigorous measures be taken to push forward this business, until the trade has become so established as to win the confidence of every intelligent fruit-grower.

Dominion Regulation Re Importation of Nursery Stock.

By an Ottawa order-in-council, dated January 5, exemption from the operation of the San José Scale Act is granted to nursery stock from any country or State to which the Act referred to applies. Importations will be permitted to enter only at the customs ports of St. John, N. B.; St. John's, Que.; Niagara Falls and Windsor, and Winnipeg, between 15th March to 15th May in the spring, and 7th October to 7th December in the autumn of each year, and at Vancouver during the winter months only, from 15th October to 15th March. At the above-named ports the stock will be thoroughly fumigated with hydrocyanic acid gas by a competent Government officer. All shipments made in accordance with the above will be entirely at the risk of the shippers or consignees, the Government assuming no risk whatever. Packages must be addressed so as to enter Canada at one of the ports of entry mentioned, and the route by which they will be shipped must be clearly stated upon each package. Well matured and thoroughly dormant nursery stock may be safely treated, but that there is danger of serious injury to the trees if fumigated in the autumn before the buds are thoroughly dormant, or in the spring after the buds have begun to unfold, all the stock which, when received, is immature or too far advanced for safe treatment, will be refused entry and held at the risk of the shipper.

Awards of Medals, etc., for Canadian Fruit at the Paris Exposition.

All our Provinces had a noble record of fruit exhibits at the Paris Exposition, and we shall await the full and complete report of the prizes awarded when the commission has completed its labors.

In the meantime, Mr. Robert Hamilton, of Grenville, Que., who was at Paris during a great part of the season, sends us an incomplete list of our awards from memory, explaining, at the same time, that he could give far more information only for the unfortunate loss of all his papers, photos, etc., on shipboard.

The following is Mr. Hamilton's list:

- June 27—Awards for natural fruit—old apples—to Provinces and the Dominion—a gold medal to each: Dominion of Canada, British Columbia, Ontario, Quebec, Nova Scotia; a silver medal to New Brunswick; a bronze medal to Prince Edward Island.
- July 11—Natural fruit disallowed on this occasion. Fruit, preserved, non-edible—a gold medal and grand prize to the Dominion of Canada; a gold medal to each: British Columbia, Ontario, Quebec, and Nova Scotia; a gold medal to the Northwest Territory of Canada; a gold medal to the Experimental Farms of Canada.
- July 25—Natural fruit, 1899. Awards to Fruit Growers' Associations; a gold medal and grand prize to the Dominion of Canada; a gold medal each to British Columbia, Ontario, Quebec, Nova Scotia; a silver medal to New Brunswick and a bronze medal to Prince Edward Island.
- Aug. 8—Natural fruit, old, 1899. Awards to local Fruit Growers' Associations: To Grimsby, Ont.; Burlington, Ont.; Montreal, Que.; L'Islet, Que.; Abbotsford, Que.; Nova Scotia, and British Columbia, a gold medal to each.
- Aug. 22—Natural fruit, old, 1899. Awards to Provinces: A gold medal each to British Columbia, Ontario, Quebec, Nova Scotia, New Brunswick; a silver medal to Prince Edward Island.
- Sept. 5—Natural fruit, old, 1899. A gold medal was again awarded to each of the Provinces—British Columbia, Ontario, Quebec, Nova Scotia, New Brunswick.
- Sept. 22—Natural fruit, new (a few old). The fruit arrived late, but a committee of the jury made the awards on arrival of the fruit. A gold medal was awarded to Ontario, Quebec, Nova Scotia, and to Linus Woolverton; a silver medal was awarded to Robt. Brodie, St. Henri, Montreal, and to J. W. Bigelow, Wolfville, N.S.
- Oct. 10—Natural fruit, new, 1900, and also of 1899. A gold medal was again awarded the Provinces—Ontario, Quebec, and Nova Scotia.
- Oct. 31—New fruit, 1900. Other awards were made, but I had left before this date.

Treatment for the San Jose Scale.

The United States Department of Agriculture has recently issued a circular on controlling the San José scale, a summary of which is presented herewith. It starts out with the admission that the insect is now so widely disseminated and so firmly established that its extermination is not possible, and that fruit-growers must recognize it as a factor to be permanently dealt with. The effective method of digging up and burning trees is advised only in cases of very recent introduction on nursery stock. If it has passed even one entire season in an orchard it will have spread much more widely than any inspection can discover, and very likely will have gained a footing on wild and ornamental plants, from which it will re-introduce itself into neighboring orchards or new plantings, in spite of the most thorough attempts to eradicate it. The value of repressive and remedial treatment has been so well demonstrated "that it is certainly very unwise and wasteful to dig up and burn a large proportion of an orchard because it is infested with this scale insect." For the Eastern range [And that would include the Province of Ontario.—Ed.] the methods of treatment, in order of their satisfactoriness, are given as follows:

1. Whale-oil-potash soap.
2. Coal oil.
3. Crude petroleum.
4. Mixtures of coal oil or crude petroleum with water.

These remedies are applicable when the trees are in a leafless condition. The soap, in the strength of 2 pounds to the gallon of water, can be sprayed on hot with an ordinary spray pump. The wholesale price quoted is 3½ to 4 cents per pound. The coal oil should be applied, on a bright, dry day, with a pump making a fine mist spray. The same careful precautions are necessary with Nos. 3 and 4. The lime-sulphur-salt wash is effective in California. The earlier experiments made with this remedy in the East were unsatisfactory, but some later ones have been successful. The circular states that if ten or fourteen days of dry weather elapses after the treatment, it is likely to give satisfactory results, if properly made and applied. The preparation recommended is: Unslacked lime, 30 pounds; sulphur, 20 pounds; salt, 15 pounds; water, 35 gallons. Boil with steam for three or four hours, dilute to 60 gallons, and spray preferably hot. In dry climates, the limy coating remains on the trees and retains its insecticidal value for months.

POULTRY.

Poultry Raising in Assiniboia.

THE WINTER CARE AND FEEDING OF A SMALL FLOCK FOR PROFIT.

To the Editor FARMER'S ADVOCATE:

I have been doing for so many years just what most of our farmers and their wives do—that is, keeping poultry in a sort of desultory way, without regular methods, without proper means, and without really being able to see clearly where I lost or gained—that I fully realize my lack of knowledge and disability to write on the above subject which you have suggested to me, but I will do my best.

I am aware that there are many farmers who keep and raise cattle, hogs and horses in this same shiftless manner. They never know exactly the cost of feeding, and it altogether depends on their feelings at the time of talking on the subject whether they consider their stock has paid or not. When they have made a sharp bargain, it pays; when the other men have been the sharpeners, it does not pay. Most of these men at the same time are thoroughly convinced that hens do not pay. They do well enough to consume the waste on the farm, and the cooking cannot well be done without eggs, but pay? Of course not. Now, to divide my text into sections, as the old-fashioned preachers used to do, I will begin at, firstly:

Winter Care.—As I am writing in Assiniboia, I take for granted that on or about Nov. 1st we shut up our fowls. I am also writing for the benefit of people in moderate circumstances; therefore, I will consider, if possible, what care can be given in such cases. Any farmer, if he has the will, can build or provide a warm henhouse. This is essential. When fowls are kept in a place so cold that their combs or feet are in danger of freezing, they may exist, but they will not thrive, and certainly will not pay. The building should be large enough to allow convenient room for feeding without too much crowding, and without having to pick the food from under the roosts. There also must be light, plenty of it, if possible from the south. Not too large windows, but enough to show light in every corner, from sunrise to sundown.

I do not approve of a place at the back of the horse and cow stable for hens. It is not good for either the animals or the poultry, and though the fowls may get some of their living from picking around the other animals, they are apt to be stepped on and maimed or killed. Then, in stables where no better provision is made for fowls, there is not likely to be a window from which they can get a ray of sunlight. A good henhouse can be built adjoining the stable and not opening into it. Now, supposing we have settled about the building,

we ought to keep it dry and clean. Once a week, in our hard winter weather, a thorough cleaning is necessary. If there comes a thaw, it must be done oftener to be at all comfortable. A large box should be placed where the light during the greater part of the day will fall directly upon it, and kept two-thirds full of dry dust for the hens to roll in. They enjoy this quite as much as a healthy baby does its morning bath. Ashes, especially coal ashes, will answer this purpose very well, but they must be changed frequently, for as soon as they become damp their efficacy ceases. From coal ashes the fowls get cinders enough to supply the grit which grinds their food, and from wood ashes they pick bits of charcoal, which greatly assists their digestion. Of course, it goes without saying that the ashes must be cold before carrying to the box, or you may some day see the whole business go off in smoke.

Drink.—Good pure water they require every day. Fowls do not drink as much in winter as in summer, but they must have it always. I have known people who threw in a shovelful of snow once in a while, and thought because the chickens picked at it they were satisfied. I wonder if those same people ever tried for even one day eating snow instead of drinking! The drinking vessels may be of whatever pattern is most convenient, but they should be so arranged that they cannot be spilled, and so that the fowls cannot get their feet wet. I have found small pickle pails answer the purpose very well, when they can be obtained. If the house is warm enough to keep water from freezing, the fowls will live and do well.

Feeding.—This is a much vexed question. There is such a diversity of opinions on this matter that I scarcely know how to approach it. But as I know of no kind of fowl that will live without food, I presume we are bound to consider ways and means. I have found that with the average farmer this is where the shoe pinches. He recognizes that his horses need straw, or even hay, and, yes, oats, even in winter. There are a few men, I regret to say, who think if a horse works not, neither shall he eat, but these men are few and far between, for which I am sure the equine race are truly thankful.

Any farmer knows that his cattle will not come through a winter and be of service the following summer on scanty and poor food. He also sees that his stock hogs have enough to eat; but the one thing he does not see, is why hens must be fed when he is getting no eggs. He begins this theme early in the fall, as soon as the "nasty, ragged-looking things" are going about "eating their heads off." Perhaps the poor, misguided being does not know that if the bird is cared for better than usual during moulting season it will feather out all the sooner and be better prepared to face the cold. Well, we give him this information just now and here. Then when we have them comfortably housed for winter, they must be fed regularly and with a variety of food. Now and then we see a generous farmer who believes in feeding his hens, not because they pay, but for the reason that he will not have any starved animals around his place. He will throw a paulful of wheat down in a heap, perhaps twice as much as the flock can eat at a meal, and when remonstrated with, replies: "Well, if they do not eat it now they will some other time." This is not proper feeding. If at all possible, have the feeding floor covered with chaff or some loose litter, then scatter the grain so the hens must scratch for it. You will at once hear their cheerful, busy conversation, as they keep up the exercise. This is healthful feeding. Once a day, I prefer at noon, give them cooked food. Where there is stuff such as pigweed seed, potato parings, and scraps of food of any kind, cook it all together and see how eagerly they will gobble it up. I have disposed of bushels of pigweed seed in this way, when I have known of farmers who were burning it up to get it out of their way. For Northwest feeding of fowls, I would like wheat for morning meal, cooked food at noon, and oats at night. Oats are stimulating and not so fattening as wheat, therefore for fowls which have no outdoor run in winter, and from which we hope to get some eggs, I prefer one meal of oats. About once a week throw them a half dozen whole raw turnips. They will enjoy them immensely.

Now, I think I hear someone say, "But she is forgetting the thirdly—for profit." Not at all. Just let me ask a question or two. Can some of you farmers tell me what is the use of throwing away feed on all those cows that give no milk in winter? I can easily see why you feed chop and hay in the spring, when you get the full pail, and when there is a nice little calf to raise. And that old sow! Is she not a perfect nuisance, always grunting for more, just when it is so icy that you slip every time you carry her a pail of slops? "Why," you say, "this woman must be crazy, if she is a farmer's wife, not to see the ridiculousness of these questions." Not a bit of it. Your hens will pay for their proper winter care all next spring and summer, just as surely as will your cows and hogs. Try it this winter and see. Grain, this winter, is a high price, but for good eggs and poultry there is always a ready market, and even with the high prices of grain, I am sure, if properly managed, hens pay. I have not said a word of who is to care for the fowls on the farm in winter. That is according to circumstances, but women can do it all, if in moderate health and if so inclined. I think it is healthful and cheery work for women on the farm in winter.

Central Assiniboia. MRS. A. NEVILLE.

Brooders and Brooding.

Having raised chickens by both natural and artificial means, I have settled definitely in my mind the fact that we can raise better poultry and more of it by the brooder than by the hen. I mean by this that we can raise not only a larger quantity, but a better quality. Brooder-raised chicks are superior in growth, development, shape and plumage to those raised by hens, and I can give many reasons why this is so, reasons which cannot help but be apparent to the unprejudiced poultryman. I consider an incubator superior to the hen for hatching, yet I think a good brooder superior to the hen, for raising chicks, in a greater degree.

Let me caution all against buying cheap brooders, for they prove very expensive in the end. Out of the many brooders made and advertised, there should be no trouble to select a good one. I do not advocate any particular make of brooder, yet I will try to give a few points which a brooder must contain to make it a success. I have no use whatever for an outdoor brooder, unless it is used indoors, and then why not use an indoor brooder, because it is cheaper, and there are some requirements in an outdoor brooder that are unnecessary and would only be obstructions if used indoors. During the month of March, when we ought to raise the bulk of our chicks, an outdoor brooder cannot be used at all; and in April and May there are some days when it is impossible for chicks to run outdoors. Imagine confining 50 to 100 chicks in a brooder three by four feet, for two or three whole days when the weather is stormy, and expecting them to do well. And during these days the feeding would have to be done in the brooder, which is absolutely a bad idea, for the brooder should only be used for supplying sufficient warmth for the chicks, and not a place for feeding them.

In a properly constructed brooder the floor should be built as near the ground as possible. It should be capable of supplying sufficient heat. The heat should be mainly top heat, with just sufficient bottom heat to keep the floor dry. The temperature under the cover should be 90° for the first week, and after that should be gradually reduced, but not too quickly. The chicks will tell you if you have the temperature incorrect, for if they are too cool they will huddle together, and if too warm they will crowd to the door with their mouths open, gasping. And if the door is open they will get out of the brooder altogether. But if the temperature is just right they will go around chirping, happy and content. Remember that overheating is just as injurious and will cause bowel trouble just as quickly as will a chilly atmosphere.

I have made a small house, 6x10 feet, with windows enough to admit sufficient light. In a corner of this house I place the brooder, and after the chicks are three days old I give them the run of the house. On fine days the chicks are allowed the run of the yard at the back of the house. In stormy weather the chicks are kept in the house. At the end of six or eight weeks the brooder is removed and roosts placed in the house, about a foot high. For roosts for the first two weeks, I use bread soaked in milk (squeezed as dry as possible), millet seed, cracked wheat, and rolled oats. Fine grit and water are kept before them all the time. After the second week I feed them a mash composed of bran, shorts, oatmeal and corn meal damped and mixed into a crumbly (not sloppy) condition, wheat, oats, and cracked corn. Be careful not to overfeed. Small chicks will commence to scratch as soon as hungry, and they should be kept at it.

It is needless to say that attention to details is necessary to success. Clean the brooder frequently, and keep the surroundings in a sanitary condition. Get the chicks out on the ground as soon as possible, if but for a few minutes every day.

Perth Co.

PERRY F. DOUPE.

Fresh Eggs in Winter.

The farmer's wife who goes out to the henhouse and carries in her apron full of fresh eggs feels proud, and justly so, for her good management, for she has solved the question, "How can I make my hens lay in winter?"

We hear people say sometimes, "I don't know what is the matter with our hens—we feed them well, they have a warm house, and yet they won't lay." My friend, don't blame the poor hens, just blame yourself. There is some reason why they don't lay. Perhaps your henhouse is situated where the beautiful rays of the sun never penetrate. Or perhaps you think it is too much trouble to look after them right. But when eggs are from 20 to 24 cents a dozen in the market, it pays to take a little trouble.

What a treat is a fresh egg in winter, and what an amount of nourishment it contains! The invalid cannot afford to do without eggs, even though they are scarce and dear. If properly cooked they will agree with a very delicate stomach. A soft-boiled egg is very digestible. One way to cook an egg nicely is to pour boiling water into a tin dish, put in the egg, stand the vessel on the back of the stove, where it will not boil, for five minutes precisely. Then your egg is just delicious.

But to come back to the question, "How do you manage to make your hens lay in winter?" Well, it is not very hard if you just know how, and are not afraid of work. You must have patience, perseverance and grit. The hens must have grit too, though not of the same quality. You must give them lime and ground bone to make shells for the eggs. Give them plenty of

clean water, and a dish of warm skim milk every morning. You must feed them regularly even if the weather is stormy. Buckwheat and wheat are good for them. You must have some ashes or road dust where they can gain access to it without going out in the cold, for them to take a bath in. They need some vegetables also. They are very fond of cabbage. Give them a sheaf of wheat occasionally; let them thresh it themselves. Watch how they enjoy it, how actively they go to work. Now, I want to give the women a little advice; the men need not read this, it is for women only. I suppose you have a quarter of beef at least, hanging in your shed, and some more salted down in the barrel. Of course your husbands are good providers. Now, when you go out to get a piece of cook for dinner, don't be miserly. If there are six in the family altogether, cook enough for seven or eight; who knows but a stranger may drop in. Well, you cook your meat and sit down to your dinner, but the visitor fails to appear. Never mind, the meat won't be wasted, though there is some left. When you go to clear off the table, gather up every scrap of meat you can find; take a sharp knife and cut it up in small pieces. Now take it out to your feathered boarders, and it will do you good to see how they enjoy it. They will almost try to thank you for it, though their language is a little hard to understand. They just love meat. Some one may say, the men especially, that it is a waste to give meat to the hens, that it would be more economical to warm it up for the next day. I answer: It is not wasted, the hens will pay you for it in fresh eggs. Doesn't it seem as if our feathered boarders are a little fastidious or touchy? If we don't vary the bill of fare sometimes, if we don't give them their hash or mash—warm and well seasoned with pepper—if we don't keep their rooms warm, well lighted and very clean, what happens then? Why, they refuse to pay us. Our egg supply is cut off. If we want eggs we must give biddy a variety of food, a good large place for scratching or taking exercise in, and neither overfed nor underfed her.

MRS. ANNIE RODD.

Prince Edward Island.

Winter Production of Eggs.

SUMMER CONDITION THE SECRET OF SUCCESS.

Can hens be made to lay in cold weather? How often we hear this question asked. My answer is yes, if you surround biddy with everything you can to make it look like summer to her. Then laying is easy, and you will have hardly a day without eggs. In summer, insect life, green food, grit, sunshine, dusting and exercising places are all free as pure air. You have all seen hens trudge behind a plow waiting for worms or grubs to turn up for her. During winter all such supplies are replaced by pork or beef scraps, or livers, hearts and lungs bought from the butcher, cooked and chopped up, and fed once or twice a week. Raw meal is more laxative and requires closer watching. Milk and linseed meal are good substitutes for meat, but the latter when not laxative is very fattening. Sweet milk can hardly be overdone, though if it should form her exclusive diet, biddy's eggs would have pale and clouded interiors. Be "megum" in all things, as Josiah Allen's wife says.

[ED. NOTE.—Last winter the writer's flock was doing fairly well in turning out eggs, when someone recommended feeding skim milk. We took the advice, and in less than a week every hen had stopped laying. We were told by many poultry-keepers afterwards that they had learned the same lesson. Since that time we have fed milk sparingly if at all to laying hens. It is all right for the growing chicks.]

Every third day vegetables are boiled and fed warm. My usual combination is potatoes, with a few carrots and onions, a pepper pod, and slice of salt pork. My chicks think they are getting their beloved onions, but I know they are also getting carrots to help secure those golden yolks, just as popular and beautiful as golden butter. When cooked, the vegetables are skimmed out and mashed, have their liquor added, and the whole thickened with shorts or mixed meal. Clover chaff is fed dry or placed in a pail on top of my mixed meals, where it gets first benefit of my scalding water. Then the whole is allowed to steam a few minutes. It is surprising how green the chaff particles become, and what a strong odor of hay tea even such simple treatment yields without any trouble of boiling. Biddy needs grit as much as human beings do, only hers is of a different kind. My grit for chicks comes from the lake shore, the small gravel. Coal ashes with their clinkers rapidly disappear before my hens. To give our hens appetite, many substances not directly valuable may become indirectly so by creating a desire for something that is more essential. So much food goes to create animal heat, that it is much cheaper to provide some heat. This you can easily do by warming their grain in the oven. A soft, warm, easily-digested mess is given early in the morning, meal being the basis one day, vegetables the next, and meal with clover chaff and ground scraps every third. Oats, barley and wheat ground together can be highly recommended as pudding material.

I know a man, rather well-to-do, but not posted on hens, who lost many one winter. Being asked what he fed, he replied "corn." "Do you warm it?" "No, but I shovel in lots to them." That is a good way to kill hens. Put plenty of straw on the floor for them to scratch in, and be sure to have plenty of

windows to let the sunshine in. If they are dirty and fly-specked, wash them. A neighbor once asked me, "What do you wash your henhouse windows for, anyway?" "To let in the light, of course."

The roosts are painted with kerosene or rubbed with onions. Dust or plaster should be scattered over droppings, which should be often removed, and sulphur occasionally shaken into the nests. When biddy surveys a vermin-infested house, we can imagine her saying, "Give me liberty or give me death." A request which must and will be answered one way or the other before long. Many times have I labored over the problem of keeping poultry and their quarters clean, till my mind and both arms ached. Such is the close connection of organs that activity of one helps activity of the other. A hen scratching around till dark is the one that will drop an egg next day. An eastern writer gave chopped straw as the main secret of winter egg production. This drew out some discussion on how he fed it, till he explained that the straw only covered the scattered grain and made the hens scratch for it.

Leghorns closely resemble those wild fowls still found in Java, and yield, by unanimous assent, most eggs in a year.

If you will follow these few instructions you will not be without eggs in the coldest weather. Your hens must be young, free from disease, and kept in a clean house. They will twitter and sing all day long. You feel like saying with Uncle Jacob, "De singin' of birds am sweet, but de cacklin' of hens on yer own roosts has a heap mo' expression."

FARMER'S WIFE.

What the Press Thinks of the Farmer's Advocate.

"It is a magnificent production."—*Clifford Express*.

"Read with delight and profit."—*Leamington News*.

"We congratulate the FARMER'S ADVOCATE upon its success."—*Toronto Star*.

"Nearly everything is embellished with beautiful engravings."—*Welland Tribune*.

"One cannot be surprised at the strong hold the FARMER'S ADVOCATE has upon the people everywhere."—*Charlottetown, P. E. I., Guardian*.

"J. W. Bengough, the inimitable, turns the X rays on the 20th century farmer and puts the whole country in good humor."—*Stratford Beacon*.

"The souvenir Christmas number of the FARMER'S ADVOCATE is one of the best all-round farm journals we have ever had the pleasure of perusing."—*Creemore Star*.

"We often hear of works of art! If the Christmas number of the FARMER'S ADVOCATE (Canada) doesn't come under this category, we are anxious to see the paper that does."—*Wool Markets and Sheep, Chicago*.

"Apart from its incomparable strength in regular issues as an agricultural paper, the Christmas issue goes to every regular subscriber of the FARMER'S ADVOCATE without extra charge."—*Newmarket Era*.

"The FARMER'S ADVOCATE Christmas number is a credit to that old, reliable and enterprising firm. It is beautifully gotten up and profusely illustrated with cuts of stock, farm scenes and prominent agriculturists in various parts of the Dominion and elsewhere."—*Markdale Standard*.

"The souvenir Christmas number of the FARMER'S ADVOCATE appropriately begins with a study in human progress, based on the history of the 19th and previous centuries, followed by contributions from many of the brightest minds on the continent, like principal Grant and Hon. J. W. Longley, recounting the greatest achievements of the past one hundred years and indicating the course of future success."—*Barrie Gazette*.

"The FARMER'S ADVOCATE has issued a Christmas number that, typographically and artistically, is a credit to the leading organ of the Canadian agricultural community. The character of the preparation matter evidences painstaking work in its preparation, and the fine class of paper and the cuts which profusely illustrate the number show that expense has not been spared in putting it in the subscribers' hands in a most attractive form."—*Montreal Gazette*.

"The Wm. Weld Co. have issued a very handsome Christmas number of the FARMER'S ADVOCATE, that excellent farm journal published in London and Winnipeg. It is printed on fine book paper, and contains many portraits of eminent agriculturists in the Dominion, as well as views of well-known stock farms, groups of live stock, etc. The letterpress is also of exceptional interest and altogether the number is a credit to its enterprising publishers."—*Chronicle, Ingersoll*.

"The Christmas number of the FARMER'S ADVOCATE for a number of years past has been one of the best and most interesting numbers that reaches this office, and we feel certain that the thousands of readers of this excellent farm journal will agree with us that this year's Christmas issue beats all previous ones in many ways. It is full of interesting and instructive articles from the pens of some of the best writers and deepest thinkers on the continent, touching almost every subject, and the illustrations are particularly numerous and fine. There is no extra charge for this issue to regular subscribers of the ADVOCATE, and this issue alone is worth the full price of a year's subscription."—*Aylmer Express*.

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.

SIDEBONES IN MARES.

FARMER, Waterloo Co., Ont.:—"Mare seven years old appears slightly tender on front feet. About a year ago last spring I consulted a V. S., who said she had sidebones, and gave us a blister which only blistered her slightly. I do not think it helped her any. She has small, hard lumps on the sides of her feet about one inch above hoof. Seems more tender when travelling on the hard road. Is gradually getting worse. What can we do for her? Was first treatment right? Your Xmas number was a splendid number."

[If your mare really has sidebones there can practically be nothing done more than keeping the feet soft by poulticing. In sound horses you can feel at the heel on each side, just above the hoof, what are called the lateral cartilages. They can be felt under the skin, and are quite flexible. Sidebones consist in a conversion of these cartilages into bone, and then they can be felt more readily, but they are inflexible and generally enlarged so as to be noticeable to the sight. When once established, little can be done, as we cannot cause a conversion into cartilage again. The treatment adopted was correct. If the trouble be ringbone, appearing only on the sides, which is sometimes the case (and is sometimes wrongly called sidebones), it is probable fring and blistering by a veterinarian will effect a cure. Of course, the lameness can be removed, but the disease not cured, by an operation known as neurotomy—removing the nerves. This can be performed only by an expert, and the after-results are often unsatisfactory. J. H. REED, V. S.]

WOUND IN FRONT OF HOCK.

J. S. K., Dundas Co., Ont.:—"I have a colt that got cut with barb wire, on July 4th, in front of the hock, and I cannot get it to heal, as I am like the story of the man and the ass: I have tried everything that anybody told me, but I do not seem to succeed, as it still stays a raw sore. I have tried lime, Kendall's Spavin Cure, bluestone, electric oil, carbolic acid and lard, and some medicine I got from the vet. But none seem to do it any good, so I am applying to you."

[Wounds in this region are very hard to heal, as the flexion of the joint at each step causes the wound to open and close. No doubt by this time there are unhealthy granulations in your case—the sore has become chronic. But I think you can get it to heal by the following treatment, but it is probable there will be a narrow space across the joint in which the hair will not grow: Get ½ oz. butter of antimony, and with a feather apply a little to the raw surface once daily for 3 applications. After that, apply twice daily the following ointment: Boracic acid, 4 drams; vaseline, 2 ozs.; carbolic acid, 10 drops; mix well. Keep the colt as quiet as possible, and feed light, easily-digested food, and if at any time the sore should appear to have what is known as proud flesh, the healing operations cease, apply a little butter of antimony again. J. H. REED, V. S.]

MARE LOSING FLESH.

J. C., Saskatoon:—"I have a young mare four years old. I have not used her any these last three months. She is failing in flesh. I am feeding good, well-cured hay and oats twice daily and boiled grain once a day. Legs swell or stock. We have no vet. here. Is it likely to be the fever that is so prevalent in this part of the West? She does not appear to be feverish, and feeds well. Kindly prescribe."

[Your mare's ailment may possibly be the so-called "malarial fever," especially as it appears to be prevalent in your locality, but with the limited description of the case which you have furnished it is impossible to give a decided opinion as to its true nature. I would advise you to give the following aperient: Barbadoes aloes, four drams; calomel, forty grains; ginger (pulv.), two drams; syrup sufficient to form a ball. Before giving the ball, feed exclusively on bran mash for at least sixteen hours. Do not give any fodder until after medicine has ceased to operate. Follow up by giving, morning and evening, in food for two weeks: gentian (pulv.), two drams; nitrate of potass., one dram; chlorate of potass., one and a half drams; sulphate of iron, half a dram. W. A. DUNBAR, V. S., Winnipeg.]

WORMS IN COLT.

P. J. D., Hillesden, Assa.:—"Will you kindly let me know, through the Veterinary column of the ADVOCATE, how to treat a 7-months-old colt for worms? The colt has been running on the prairie, but is now taken from the mare and is fed in the stable, but is very dull and not thrifty, and passes worms."

[Give on empty stomach, in small bran mash, four mornings in succession: Santonin, 30 grains; calomel, 15 grains. Follow by giving 6 ounces of raw linseed oil and 1 tablespoonful of turpentine. After the foregoing treatment, give, morning and evening, in food for one week: Gentian, pulverized, half a dram; nux vomica, pulverized, 12 grains; soda bicarb., 1 dram. W. A. DUNBAR, V. S., Winnipeg.]

TOBACCO POISONING.

H. L., British Columbia:—"I should be very much obliged if your veterinarian would tell me, through the FARMER'S ADVOCATE, what killed two steers? I went out in the morning and found two 2-year-old steers dead, or nearly so. They had a little froth coming out of the nostrils. Occasionally a large bubble would come out. One bled on being cut in the nose, but I couldn't find any other signs of life. They were considerably bloated. I let the wind out of one, but it did no good. The day before they got into the shed where the tobacco was curing and ate some of the leaves that had been frozen before being cured, and were in a rotten state. I opened one and found the large stomach very full of food, also pieces of tobacco leaves. The kidneys were rather spongy-looking (I am not sure if that is normal). The intestines were nearly empty. There was a bluish tinge at the top of the lungs. Everything else seemed all right. The animals were in good order. They were running in a field with other cattle, and were in good health the day before. None of the other cattle were ill, and as far as I know did not get any tobacco. In the one we opened, I should say not more than a dozen leaves were in the stomach—perhaps not so many. If you think tobacco killed them, what part did it effect, and could anything have been done to save them if they had been found earlier? The animals did not get cold for hours after apparently dead; in fact, the one I opened was warm the next day."

[Tobacco is a narcotico-acrid poison. It has a paralyzing effect on the brain, but the opposite, or tetanizing, effect on the spinal cord. The symptoms of tobacco poisoning in cattle are: Elevated temperature, quickened pulse, breathing more or less oppressed, coldness of the extremities, dilatation of the pupil, grinding of the teeth, great restlessness, stomach distended with flatus, groaning, convulsions. The antidotes for tobacco poisoning are: The stomach pump; diffusible stimulants, such as alcohol and ammonia; nux vomica, judiciously administered. It is quite probable that the tobacco caused the death of your steers. W. A. DUNBAR, V. S., Winnipeg.]

Miscellaneous.

POUNDS OF FOOD TO RAISE A HOG.

J. C. G.:—"How many bushels, and what kind of grain, would it require to raise and fatten a hog, commencing when weaned, about eight weeks old, and finishing it off at about 180 lbs. This hog is to be raised in the cheapest and most improved manner?"

[So much depends on the thrift of pigs, the comfort of their quarters and the wisdom with which they are handled and fed in order that they may make the best of their food, it is impossible to answer this question in a manner to correspond with the practice of every good feeder. A hog may go a little wrong in his digestion and cease to gain, or may even lose weight. All the food he consumes at that time, and for a period following, gives his owner no returns. Again, we find some hog-raisers getting gains as high as 1.75 pounds per day from birth till the hogs weigh nearly 200 pounds each. Some time ago, Mr. Wm. Rennie conducted an experiment, at Guelph Agricultural College Farm, to learn the cost of producing pork. He fed 24 pigs from weaning time up to about 200 pounds each, at a cost of food per pig as follows: Roots, 34 pounds; middlings, 45 pounds; bran, 100 pounds; mixed chop, 61 pounds; skim milk, 137 pounds; ground flax, 14 pounds. This is the result of one experiment carefully carried out. Repeated experiments have proved that under favorable circumstances it requires about 4½ pounds of mixed grain, such as middlings, eorn, barley and peas, for each pound of gain made in thrifty pigs during the first six months. Eight pounds of mangels give results about equal to 1 pound of grain. Skim milk, too, saves grain where fed in conjunction with grain; for instance, 100 pounds of corn gives an increase of 10 pounds of gain, and 100 pounds of skim milk gave a gain of 5 pounds of weight. When the corn and milk were fed together, 100 pounds of each produced 19 pounds live weight. The cost of pork production is an intricate problem that will bear much investigation.]

BIG GAIN IN PIG FEEDING.

W. B., Wellington Co., Ont.:—"I would like to know how R. M., Lennox Co., fed those pigs that made such an unusual gain. I think it would be a great boon to us farmers to get the recipe. I hope he will make it public."

[In reference to the above, our genial friend, G. W. Clemons, St. George, Ont., writes:—"I see in your Jan. 1st issue that a subscriber claims to have pigs which gained 1.75 lbs. per day from birth, and notice your suggestion that he tell how they were fed. For my part, I would hazard the guess that they were fed on elephant's milk, as we all know the story of the baby who gained five-pounds daily when fed on elephant's milk, but it was the elephant's baby."]

FOR CRIBBING HORSES.

C. O., Grey Co., writes:—"A simpler cure than that in your last issue is as follows: Take sheepskin and tack it on the manger and all parts where a horse can get his teeth to. He will not touch sheepskin, and will thus be entirely cured in a short time. My neighbor cured his horse by this simple method. It is probably the cheapest and easiest way of effecting a cure."

CANADIAN AUTHORS.

STUDENT, Perth, Ont.:—"Being greatly interested in Frank Lawson's article in your Christmas number, upon 'Canadians who Have Added Luster to 19th Century Literature,' I desire to follow up the subject still further, and would be glad if you would indicate a few of the principal volumes which these writers have published."

[The Canadian poets mentioned in Mr. Lawson's article, such as Chas. G. D. Roberts, Frederick Geo. Scott, Bliss Carman, D. C. Scott, Archibald Lampman, W. W. Campbell, Dr. W. H. Drummond, Jean Blewett, E. Pauline Johnston, Ethelwyn Wetherald, Chas. Sangster, J. W. Bengough, have each published one or more volumes under various titles. Among the prose writings are: Grant Allen—"Physiological Ethics," "The Evolutionist at Large," "Anglo-Saxon Britain," "Charles Darwin," "What's Bred in the Bone," "This Mortal Coil." Robert Barr—"In a Steamer Chair," "The Face and the Mask," "In the Midst of Alarms," "The Mutable Many." W. A. Fraser—"Mooswa of the Boundaries." C. W. Gordon—"Black Rock," "The Sky Pilot." Haliburton—"Sam Slick." Wm. Kingsford—"History of Canada." Wm. Kirby—"The Golden Dog," "Annals of Niagara." D'Arcy McGee—"History of Ireland." Gilbert Parker—"The Seats of the Mighty," "Pierre and His People," "The Chief Factor," "Battle of the Strong," "An Adventurer of the North." Chas. G. D. Roberts—"History of Canada," "The Forge in the Forest," "A Sister of Evangeline," "Heart of the Ancient Wood." Ernest Seton Thompson—"The Biography of a Grizzly," "The Trail of the Sandhill Stag," "Wild Animals I Have Known." Goldwin Smith—"England and America," "The Irish Question," "William Cowper," "Political History of England." Sir John W. Dawson—"The Origin of the World," "Story of Earth and Man," "The Dawn of Life." Catherine Parr Trail—"Backwoods of Canada," "Pearls and Pebbles." Dr. Daniel Wilson—"Life of Chatterton," "Caliban." Dr. Withrow—"The Catacombs of Rome," "History of Canada," "Barbara Heck," "Our Own Country."]

PRUNING GRAPEVINES—NEGLECTED LINE FENCING.

X. Y. Z., Norfolk Co., Ont.:—"1. What time of year is best to trim grapevines?"

"2. What is to be done where neighbor keeps neglecting to fix his share of line fence, and stock break in year after year?"

[1. Grapevines may be pruned at any time during the winter. From November to late in February is a good time to prune. The sap flows very freely from cuts made in spring and early summer, causing what is termed as "bleeding" from the wood. The vine is cut off an inch or two beyond the last bud which it is desired to leave, in order to avoid injury to the bud from the drying out of the end of the cane.

2. It is open to the injured party to take advantage of the provisions of the Line Fences Act (Revised Statutes of Ontario, 1897, chapter 284), and so compel his negligent neighbor to keep up and repair his portion of the fence. The Revised Statute respecting Pounds (R. S. O., '97, c. 272) also provides appropriate, although only temporary, relief in such cases. In addition to the proceedings above suggested, or in lieu thereof, the party complaining may take legal proceedings against the neighbor as for trespass and obtain damages and an injunction requiring him to do the necessary repairs as required by the Line Fences Act; and it is probable that a letter to him calling upon him to do such repairs forthwith, and warning him that in case of further default on his part such action would be taken, would have the desired effect.]

MANGELS FOR COWS—WHOLE OATS FOR STEERS.

JOHN DOUGHTY, Norfolk Co., Ont.:—"1. How many pounds of mangels should be given to milking cows per day, and at what time of day is the best to give the same—morning, noon or night?"

"2. Is it as profitable to feed whole oats to fatten steers as to chop them? We feed whole oats morning and night and chop at noon."

[1. About forty pounds of mangels in two feeds, morning and evening, is good feeding for a mature cow in milk.

2. While we have never made a test of feeding whole oats to fattening cattle, nor heard reports of such a test, we feel confident that it will pay well to have the oats ground. In fact, cattle make rather slow gains on oats alone for grain, and do much better on a mixture of corn, peas, barley or oil cake with the oats, half and half, all ground rather finely and fed on ensilage, cut hay or pulped roots, or a mixture of these.]

SAWDUST ON LAND.

WILLIAM HALLIDAY, Lanark Co., Ont.:—"I am using sawdust (mixed hardwood, pine and hemlock) for bedding cattle, and putting it on the land direct from the stables. Some of my neighbors tell me it will injure the soil. Kindly give me your opinion on the subject through the ADVOCATE, and oblige?"

[There is no manurial value in sawdust, and it physically injures the water-holding power of the soil. An application of sawdust to heavy, tenacious clay may do it good by making it more open in texture, but this same effect on loam or light soil would do harm, inasmuch as it would cause it to dry out badly. However, the limited quantity that would go on the land in the case mentioned would not, in our opinion, have any noticeable injurious effect.]

CEMENT WALLS AND FLOORS FOR SHEEP HOUSE—CHANGING MILKERS—SEEDING FOR SHEEP PASTURE.

OSWALD WALKER, Perth Co., Ont.:—"In the next issue of the *ADVOCATE* would you kindly answer the following questions? From the experience you have had, would you recommend putting in cement walls for a sheep house? Would it be dry enough? Would it do to floor the sheep house with it? Which would be the cheaper, brick or concrete, for the walls?"

"2. I have noticed some women milk their cows in this fashion: start one, get up and leave her, start another, and then go back to the first one. The idea was to let their milk come down. What results might one expect?"

"3. What kind of seeds, and what amount, would you advise one to sow per acre for seeding down a sheep pasture?"

[We know of no more suitable material for sheep-pen walls than cement, as it is cheap, dry, and durable. It is more substantial than a brick wall, and does not require an expert to build it. Except, perhaps, in places where brick is exceptionally cheap, cement will cost less for material and labor. For a sheep-pen floor, we have never found anything more suitable than clay, where it is well underdrained, or the ground in shed is higher than that outside. If a floor of some other material is desired, cement would be our choice, as it possesses all the requirements of a satisfactory floor.]

2. With quiet cows, well acquainted with their milkers, we believe, under ordinary circumstances, no material ill effects will follow starting to milk and then leaving the cows for a few minutes for the milk to come down. Of course, this is of advantage only in saving time while the milk flow is scant or when the cows are approaching the dry season. Prof. Carlyle, of Wisconsin, tested the Agricultural College herd last year in the matter of changing milkers, and found that no loss occurred, but rather that the cows seemed to respond favorably to the change. What have dairymen to say about this question?

3. The writer has tried various seed mixtures for hay and pasture, but no other seems to give the same satisfaction as timothy and blue grass along with a mixture of clovers. We would recommend for an acre of finely-worked soil four pounds of timothy, four of blue grass, four of red clover, four of alsike, and two of white Dutch clover. This should produce a thick stand of first-class sheep pasture, that will improve for years, if not cropped too closely.]

CONVEYING WATER BY SIPHON.

J. L., Grey Co.:—"What size piping is required and what is the best kind to convey water about twenty rods, from well to barn, the water to be raised 11 feet up out of the well and then have a gradual fall of 12 feet 6 inches to barn? What is the best system of conveying water out of a well with that much of a raise, without pumping. I intend to have the piping run through a 3-inch tile, 3 feet underground."

[I should judge that the size and kind of pipe best suited to this purpose would be 2-inch or 1-inch galvanized iron, the size depending on the quantity of water required. The only system for conveying water, in these circumstances, without pumping, is that of the siphon. The pipe should extend as far into the water in the well as possible without danger of sucking up sediment; it must be air-tight throughout its whole length, and the end at the barn should be kept as low as possible, the difference of a foot and a half being a small motive force to run a siphon. To start the siphon, it would be necessary to fill the pipe by some means. The easiest way, perhaps, would be to attach a pump to the pipe at the barn end, and draw the water from the well through the pipe. When once filled, it will continue running, if the above conditions are observed.]

J. B. REYNOLDS,
Ontario Agricultural College.]

GRAIN MIXTURE FOR GREEN CROP.

H. B., Leeds Co., Ont.:—"I have about four acres of thin land, beside my pasture. What can I sow on it to produce the most green feed? The pasture gets dry about July 1st. Is there such a thing as spring rye?"

[There is such a grain as spring rye, but it is not much grown. The most satisfactory crop to sow in spring for green feed in July is oats and peas, two bushels of the former to one of the latter per acre. It is well to sow at three or four intervals, ten days apart, so as to prolong the season for cutting the food green. Lucerne should do well on this soil if it has an open subsoil. It should be sown alone in spring, about eighteen pounds per acre, on clean land. The crop would not yield much the first season, though on rich land it may be cut once the first year, but the second and following years two or more cuttings should be produced, and it holds in the land for several years. We would recommend a trial on a small area.]

CEMENT FLOORS FOR GRANARY.

THOS. STAGDILL, Lambton Co., Ont.:—"I want to ask your opinion about cement floors. Would a cement floor do for a granary floor, and would it do for drive floor in a barn?"

[If the ground beneath the granary is well drained, so that water would not stand as high as the floor, a cement floor would answer well, as it is smooth, dry, durable and rat-proof. We have seen it used with marked success in driving barns, and we have no hesitation in recommending it for the drive floor of an ordinary barn.]

MAINTAINING FERTILITY—ENSILAGE VS. DRY FODDER—SHEEP ON STRAW—FATTENING CATTLE.

ENQUIRER, Prince Edward:—"1. Can we retain the fertility of our soil by growing a crop of clover every second or third year? Some of our neighbors by this method raise first class crops. It is certainly cheaper and easier than to bother with cattle for manure."

"2. Occasionally we see a silo built and then abandoned, and hear of many more treated the same way. If corn is put up in the field in large shocks so that it retains its nice green color, is it as good, or better, than ensilage?"

"3. Can sheep be wintered at all successfully on wheat, barley and oat straw, with a grain ration added?"

"4. Is it possible to fatten cattle without hay or corn, just straw and grain and some roots, and what kinds of grains and how mixed would you suggest?"

[1. The system would no doubt give good results for a time, as the clover would collect nitrogen from the atmosphere, and there is usually enough phosphoric acid and potash in soils to last a considerable time. But, sooner or later, the phosphoric acid and potash will become so reduced that crops will not grow satisfactorily and the farmer will find it necessary to make large outlay in commercial fertilizers containing those substances of which he has robbed his soil.]

2. We seldom hear of abandoned silos in Ontario, and the number of silos is constantly increasing. Results of experiments, on the whole, show an advantage in favor of silage over dry corn fodder, though good corn fodder is a very satisfactory food.]

3. Would not care to winter sheep in the manner described, though no doubt they could be pulled through. A few roots or a little silage added to ration would be a wonderful help. Would not use barley straw, however. The awns, or beards, would be a bad thing in a sheepfold.]

4. Yes, quite possible. The kinds of grain available should have been stated, in order to answer this question intelligently. A few pounds of oil cake would be a great help to the meal ration. This could be mixed with any kinds of grain available, the greater the variety the better. A rather heavier meal ration will be necessary than when hay is used. If this correspondent would furnish a list of available foods, with prices, a more satisfactory answer could be given.]

G. E. DAY, Agriculturist.

O. A. C., Guelph, Ont.]

RATION FOR CALVES.

W. J. MATHIESON, Wellington Co., Ont.:—"What sort of mixed ration would be best suited to take the place of the new cow's milk for calves after they are one month old? If flaxseed were mixed with wheat—two pounds to one of flaxseed, and ground together—what proportion would you advise to mix that with peas or oats, or any of the other grains grown on the farm, so as to give the most gain in growth and flesh; separator skim milk taken into account, of course?"

[Separator milk, fed warm from the separator, three quarts at a feed three times a day for two months after the calves are one month old, will keep them growing well. From three to six months old they may have four to five quarts twice a day. In addition to this, allow access to fresh clover hay, pulped roots—what they will eat up clean; also a mixture of bran, two parts; ground oats, four parts; ground wheat, two parts; and oil meal, one part. This mixture may be varied occasionally, substituting peas or corn chop for wheat. It is not well to feed grain to calves in porridge form or mixed with their milk, as digestion is better accomplished when the chop is eaten dry and thoroughly masticated.]

DURHAMS AND SHORTHORNS AGAIN—MISSED HIS FARMER'S ADVOCATE.

GEO. McTAVISH, Ontario Co., Ont.:—"1. Are the Shorthorn and Durham cattle the same, and can they both be registered by Hy. Wade in the same herdbook at Toronto? 2. Having profited so much by reading the *FARMER'S ADVOCATE*, I wish to have the past year's copies bound, but lack one issue; can I obtain it?"

[1. Yes. See answer to similar question, page 20, Jan. 1st issue. Hy. Wade is the Registrar for Shorthorn cattle. 2. Advise us the date of the missing number. For months past, owing to the demand for extra copies by new subscribers, the supply of most issues has been completely exhausted. We would advise our readers not to delay in writing us if any issue of the paper does not reach them through the mails in good time, otherwise it may not be possible to secure same.]

CAN THE WELL BE CEMENTED?

LESLIE G. TROUP, Welland Co., Ont.:—"Would you or some of your readers answer a question for me? I have a well dug twenty feet deep, four feet in diameter, stoned up loose, drilled ten feet in the rock. Could I cement it up, and get it tight, to keep the surface water out? The water rises one foot above the rock, and can be pumped out."

[We leave this question for our readers to answer. It is important from a sanitary standpoint, and we hope to receive clear descriptions of how to line a well so as to exclude surface water.]

GROWING CLOVER SEED.

F. C., Bruce Co., Ont.:—"Would you please give to your readers a full treatise on clover-seed growing: How to prepare the ground, how to sow, how much seed per acre, the best time to cut, and way to harvest? How to thresh and market? The most profitable kind to sow—whether alsike, common red or Mammoth?"

[In some districts and on some classes of land the growing of clover seed is a profitable line of agriculture. Usually where common red does well alsike does well also. Mammoth clover seed is not much grown in Canada, so that we can say very little regarding it as a profitable crop. The growing of red clover seed differs materially from alsike seed culture, as the latter is produced from the first crop in the season, while the former plant does not produce seed from the first crop of blossoms. The reason for this is that it requires the bumble bees to fertilize the blossoms of the seed-bearing plants. This they do by going from plant to plant in their search for nectar to carry to their nests. The act of fertilization consists in depositing pollen from one head into the blossom of another head. Without this pollen no seed can be produced. Honeybees and other insects cannot reach the nectar of red clover blossoms, because their tongues are too short. When the first crop of blossoms are out, the bumblebees are not sufficiently numerous to fertilize the crop. By the middle of July, however, they are sufficiently numerous to visit most of the heads of a clover field.]

Both red and alsike clover seed are sown alike in spring on well-prepared, clean, fertile soil, usually along with a thinly sown grain crop. About twelve pounds of red or six pounds of alsike is a fairly good seeding. It is well to sow it after the drill, and harrow it in with a light harrow. If the land to be sown with clover now bears fall wheat, the clover seed can best be sown late in March or early in April, preferably on a light snowfall, during the time of freezing nights and thawing days. This is usually the surest way of getting a good catch of seeds. After the grain crop is harvested in the summer.]

The best crops of red clover seed are generally obtained from a field which has been pastured in the spring up to about the 20th of June. Then if there are many heads of the first crop coming into bloom, it is well to run the mower over the field to destroy these, as the midge will breed and work in them. If it is desired to take off a crop of hay first, it should be cut early—not later than July 1st if possible, so as to give the second crop time to ripen before frost comes.]

ANALYSIS OF SOILS.

F. R., Brant Co., Ont.:—"I have often thought, in looking over experiments and their results in using various fertilizers, that they can not be of very much guide unless an analysis of the soil be made first, for perhaps on a different soil, differing in composition from that upon which the experiments were carried out, entirely different results might be produced. Perhaps you might be able to give a little light on the subject. Is there any inexpensive way by which an intelligent farmer could get a rough idea of the amount of the three chief plant foods in his soil, so that he might add that which was lacking, and not throw away hard-earned money by applying what was then already in sufficient quantity. The price of fertilizers is so great that for ordinary farmers it is hardly possible to make any profit by their use, unless they be applied with the greatest care."

[About the only practical method of arriving at a knowledge of the requirements of soil is to make a test by applying to plots upon which similar crops are growing, nitrate of soda, superphosphate, muriate of potash, and a mixture of the three. In this way a fairly accurate judgment can be arrived at as to the needs of the soil in question. Even a chemical analysis of soil is an unsatisfactory guide as to what manures are most needed, because much of the elements shown to exist by the analysis is in a condition that plants cannot feed upon it.]

STUMPING WITH SALTPETRE.

D. F. KIDD, Simcoe Co., Ont.:—"I read with interest a late article in your paper with regard to the removal of stumps by means of explosives, and would like to hear of your experience, or that of any of your readers, as to their removal by treating with saltpetre and burning. Can pine stumps be removed in this way? If so, would you give details of procedure?"

[In our April 16th, 1900, issue, page 235, we published references to an experiment with saltpetre in burning out stumps, which shows the plan to have no virtue. Massachusetts Experiment Station treated fifty stumps by burning them, and inserting saltpetre in the holes, in December. The following July the holes were filled with coal oil, but even then the stumps could not be made to burn.]

SPIDERS ON SPRUCE TREES.

JOS. CARLAW:—"You will find enclosed two small bags, I suppose you would call them, containing an immense number of insects, which I discovered on a spruce tree. Is this what is injuring our spruce trees?"

[The little brown, tough bag, resembling a dried puffball, is simply a spider's nest, and the insects within it are young spiders. They are quite harmless to the spruce tree on which they happened to be found.]



A DECLARATION OF INDEPENDENCE.

BY SOPHIE BRONSON TITTERINGTON.

It's a good many year since the Britishers found out that the folks on this side of the water meant business when they sot up for themselves. Other folks since then has hed to declare independence, and fight fur it, too. I've got a story to tell along that line.

It all come through them turkeys. The question wuz about partnership. What air partners? Kin a man an' a woman be partners, when the woman is pardner only when she's got somethin' worth sharin', while the man is pardner the hull livin' time? That wuz the pint that bothered me. It don't bother me now, though.

The way of it wuz this: Me an' Elnathan Jacobs hev bin married a leetle over twenty-five year. We didn't hev an acre to start on, but we rented a farm, an' by hard work, airy an' late, we got a bit ahead every year, till we bought a farm fur ourselves. Elnathan wuz stiddy an' industrious, while I wuz willin' to work, an' willin' to pinch, an' did my full share of it. Them wuz happy days, in spite of tiredness an' poverty.

Elnathan, he got so in the habit of savin' an' pinchin', he didn't seem to think we could do any other way, leastwise in the house, even when we wuz puttin' money in the bank every season. He could buy farm machinery, an' fine stock, but there the spendin' stopped. We wimmen folks could do without, when conveniences wuz talked about.

But I started out to tell about them turkeys. You see, when we begun, the eggs an' chickens an' butter went to the store fur groceries an' clothes. That wuz all we had to buy 'em with, an' I wuz glad to do that way. As we got forehanded, I felt as if I ort to hev the chicken an' egg money, seein' as how I tuk all the care of the chickens. Malviny—she's our darter, an' a mighty purty, clever one, if I do say it as ortn't to—wanted leetle fixin's sech as other girls hed. The young fellers liked to shine up to her, an' I didn't blame 'em a mite, but she wuz that proud-sperited she wouldn't ax 'em into our parlor, it wuz so bare an' old-fashioned.

"I wouldn't care, ma," she said, "ef pa wuz poor, an' couldn't afford anythin' better. But everybody knows he is makin' money, an' I'm ashamed to hev folks see sech a lookin' room."

"Why, Malviny," says I, more to comfort her than anythin' else, fur I wuz a good deal of her way of thinkin', "the parlor carpet wuz new two year ago, an' it's real bright an' cheerful lookin'. It's got some of your Grandma Jacobs' dresses in it, a strip of your Great-aunt Jane's apron, an' a scrap of my weddin' dress. I should think you'd put considerable store by it."

"Pshaw, ma!" she spoke up, "I don't think much of puttin' the relics of our ancestors' clothes under foot to be walked on. There's some sense in puttin' 'em into a quilt, but not into a rag-carpet. They're all right in their place, an' real homelike, but not in the parlor."

Now this made me feel powerful bad. I telled Elnathan about it that night, an' begged him to let me buy a store carpet fur the parlor.

"Foolish pride! foolish pride!" he said. "Why, that carpet is nice enough fur anybody. I want to buy that quarter-section of Baker, an' won't have no money to spend on gim-cracks. Malviny will be glad enough if I can leave her an' Jim each a nice farm."

I knowed it wa'n't no use to say any more, but I did a mighty lot of thinkin'. If Malviny could hev a pleasant home an' nice company while she wuz young an' lively, 'would do more fur her than a farm when the bloom an' joy she missed out of her life hed made her old, an' soured, an' lonesome.

Then another thing happened. We went to church in Jacobsville when it wuzn't too cold, or too warm, or the horses hedn't been workin' too hard. The wimmen hed a sewin' society, an' I hed bin to it onc' or twic' an' liked it very much. But one day, in the fall, the parson's wife, she said to me, says she—

"Sister Jacobs, some of us has bin a talkin', an' wishin' we could hev the Society out at your place, some time. We love to go into the country onc' in a while."

I wuz struck all in a heap. This wuz wuss an' more of it. I could hed see that parlor, so different from the other parlors where I hed bin to Society. There it wuz, in my mind's eye, with the rag-carpet on the floor, the wooden cheers, an' the old wooden rocker we kept in there to help fill up, an' because it wuz so hard an' straight we didn't like to set in it.

"Sister Taylor," says I, "I ain't jest fixed fur the Society yet. Wait a while, an' I shall be very glad to hev ye all come."

"All right," she said, in a pleased sort of way, an' begun talkin' about somethin' else.

Now, as I told you afore, I hed lived with Elnathan Jacobs fur twenty-five year, an' in all that time I hedn't once fairly made up my mind. It wuz his mind that wuz allers made up, so to speak. But now I wuz that riz up, an' determined that things hed got to be different. That parlor wuz goin' to hev a new carpet, an' new furniture, an' lace curtains, like what I hed seen at Society. There was goin' to be a new set of dishes, an' whatever wuz needed to make a table look nice. Elnathan wuz a good provider in the eatin' line, 'cause his own stummick wuz very dear to him. I knowed if I hed the dishes, I could set as good a table fur the Society as they'd find anywheres.

I rode my high horse of determination home, though I purty nigh tumbled off in wonderin' how I wuz goin' to carry out all my fine plans. But I grit my teeth an' stamped my foot an' said to myself, "Sary Ann Jacobs, you've got to do it, or die. You've passed your word to the parson's wife, an' Malviny's frettin' her soul out, an' that's got to be stopped."

Jim's our boy—we've only got the two children—an' he's good to his mother. He's eighteen year old, an' his pa's kept him at work, an' give' him mighty little money. "You'll git all the more in the end," he telled him, as if that wuz much comfort to a lively lad! So Jim couldn't help me much, but it wuz a comfort to talk it over with him, an' he wuz right in fur doin' all he could.

"See here, ma," he says, "I wuz over to Mis' Haines this mornin', an' her hired girl has gone off an' left her. She's weakly, you know, an' she says to me, 'Jim, if I could only git your mother to bake my bread, I b'lieve I could manage.' You've got too much to do now, ma, but it would be a chance to airn somethin'."

"I'll do it," I said. "You git up the old mare, an' I'll go right over. Malviny kin git supper."

Mis' Haines wuz orful glad to hear that I would make her bread. Fur my bread is known all over Hawkings County. Calm facts is not boastin'. In makin' the bargain, I wuz keef-ful.

"Now, Mis' Haines," I says, "I want you to furnish the flour. I'll make the bread an' biscuit jest as you want them, but it will be out of your flour, not mine."

She looked a leetle surprised, but she agreed to it, an' to the price I axed her. You see, I wa'n't givin' any pardner-

ship mixed up in this dicker. If we hed furnished the flour, Elnathan would hev wanted his pay, an' my share would hev bin slim. Well, it worked fast-rate. I made Mis' Haines' bread all winter, an' by spring hed quite a good many dollars hid away in an old chany pitcher on the north-east corner of my top pantry shelf. Elnathan would ax once in a while if Mis' Haines kept me paid up fur my work, but all the answer he got wuz that we hed fixed that between us.

I knowed that bread-makin' alone wouldn't airn near enough money to get half what I needed. Before this, I hed tried time an' time agin to coax Elnathan to buy good stock to improve our poultry. Our old hens were small an' runty, a poor lookin' lot. But he never would spend a cent fur anythin' better, although he paid fifty dollars fur jest one pig. He sed a hen wuz a hen, an' you couldn't make nothin' else out of her. He didn't seem to see the same reason would apply to a pig or a cow. He said eggs sold fur the same whether they wuz small ones or big ones, an' one kind of hen laid jest as well as another. Wimmen folks wuz allers easy imposed upon. Fowls wuz bragged up to sell high, when they wuzn't worth any more than common stock. If the hens wuz small, set more eggs, an' fry more of 'em at a time.

I knowed he wuz wrong, fur Mis' Haines wuz tellin' me of how much money her darter Sally, who married an' went near a big town, wuz makin' out of her poultry. She hed two kinds, Mis' Haines said—one small kind, they jest shelled out the eggs in the winter, when they wuz high, an' a big kind to sell fur market. She kept 'em apart all the time. Then her turkeys wuz profitable too. She made two hundred dollars jest on turkeys the fall I begun makin' bread fur Mis' Haines. They wuz a big kind, an' she made lots by sellin' eggs at high prices for other folks to set.

Turkeys! They wuz what I would hev. In the spring I would send fur settin's of eggs from Sally Haines. I didn't ask Elnathan, fur, mind you, this wuzn't no partnership affair.

Through Mis' Haines, who went to Sally's visitin', I got a lot of eggs; not jest turkey eggs alone, but of big chickens too. I took jest as good care as common of the farm fowls—the partnership ones—yes, more than common, an' it seemed as if they never done so well. There wuz plenty of eggs fur the grocery bill an' lots an' lots of chickens.

The hens that sot on my fine eggs, that I paid my bread money fur, did well too. I hed them out in the orchard, 'way off from the rest. Elnathan didn't know a thing about it till he saw the little turkeys runnin' around. Then he didn't object, 'cause he thought they would bring in more partnership money. I didn't say nothin' to the contrary fur the time, fur I didn't want an argymen't lastin' all summer. One, short an' meanin', wuz enough.

I hed good luck all the season, an' the turkeys an' chickens in the orchard wuz somethin' to be proud of. Thanksgivin' time I hed a lot of turkeys an' big roosters to sell. Elnathan wanted to take them to town fur me, but I telled him I would take them myself. Then he said:

"I'll go with you, Sary Ann, 'cause I want the money fur the next payment on Baker's land."

"Where's the cattle an' hogs you was goin' to sell?" I axed.

"Oh, I'm nct quite ready to sell, an' when I am, that kin go in the bank toward what I am layin' fur a rainy day."

The time hed come. The clock of Destiny hed struck, an' I struck too. I wuz calm outside, fur I wuz battlin' fur duty an' justice—duty to Malviny, an' my own rights to my own airn's.

As I said, I wuz calm outside, but inside I wuz worked up to the pint that I felt I could be eloquent an' convincin'. Leastways, I wuz determined that afore I got through Elnathan Jacobs should be convinced that the wife of his buzzom meant business.

He wuz a settin' in his rockin' cheer, with the hen-feather cushion in it he likes so well, while I towered over him in my consciousness of right.

"Elnathan," says I, "them turkeys an' chickens in the orchard are mine. You ain't got a lean-to on 'em at all. Did you make the bread that airned the money that bought the eggs? Wuz it your back that ached a kneadin' it, when you wuz all wore out with your own home work? Wuz it your hands that turned it out of the oven, light, an' white, an' sweet-smellin'? No, sir! I did it all myself, an' whatever comes from that work is a goin' down into my pocket!"

Elnathan hedn't never seen me so cantankerous. In a soft tone, coaxin' like, he said:

"Why, Sary Ann, ain't this farm our'n? Ain't your name onto the deed as well as mine? Didn't we airn it together?"

"Yes," I said in a tone that made him scringe, "we did airn it together. It wuz my hard work along with your hard work that bought it. But you allers talk of 'my farm,' 'my cattle,' 'my hogs.' If I ax you for a cent over what will keep us barely decent, or make home pleasant an' convenient, you say you can't afford to give it to me. But you kin afford machines fur makin' your part of the work easy, you kin afford fine cattle an' hogs. You say this house is mine as well as your'n. The money the crops and stock brings is mine as well as your'n, but you keep back my share. Partnerships means both sides. Where is the cow and the six hogs my father gave me on our weddin' day? The calves an' pigs hev never brought me a cent to use as I please. You claimed them all, an' the money went where you chose to hev it go."

Elnathan opened his mouth in surprise. I couldn't help thinkin' of how the Britishers must hev felt at the Declaration of Independence. I knew very well how the colonies felt. But mine wuz jest bein' declared, an' I proceeded to go on.

"This house—mine as well as your'n accordin' to your own tellin'—is goin' to be fixed up pleasant an' comfortable. These turkeys an' chickens will do part of the fixin' up. When you sell your cattle an' hogs, the price of the best steer an' six hogs is comin' to me. After this, I will hev a share in the profits or know the reason why."

I stood there, calm as an iceberg, an' determined as an iron wedge. My noble look impressed him, as I meant it should.

"Hain't I bin a good wife?" I went on. "Hain't I done my share? Look at these hands, all rough, an' brown, an' horny. A woman works more hours in a day than a man. Hasn't she a right to a fair share of what she airns?"

I wuz gettin' sorry fur Elnathan. He looked as if an airthquake hed skaired him an' shuk him all to pieces. But I dassen't give in till I hed won the battle. I waited a minute or two, an' then axed in solemn tones:

"Elnathan Jacobs, air them turkeys an' chickens mine—or your'n?"

It wuz powerful hard fur him to give up. But my eye wuz on him, an' the hole it made in his feelin's kept gittin' bigger an' bigger. I stood silent, lettin' the idee work in his mind. The stillness worried him, fur he wriggled wuss than ever, an' the clock ticked so loud it seemed to be sayin': "Mine—your'n! Mine—your'n!"

At last he stopped wrigglin', an' a pleasant look stole into his face. He got up out of his cheer, an' come up to me an' said so soft-like that it sounded like the Elnathan that courted me twenty-five year ago.

"They ain't your'n, Sary Ann, an' they ain't mine; they're our'n. The farm, an' the house, an' the cattle, an' the hogs, an' the money in the bank—they're all our'n. You shall hev a check-book, Sary Ann, an' draw what you want any time. I kin trust you." An' if you will believe it, he up an' kissed me!

I'm goin' to hev the Sewin' Society next week. Malviny has company in the parlor every Sunday night, an' it looks as if Frank Haines would claim her one of these days. The old clock-ticks away, but it doesn't say "Mine—your'n" any more. It says in a softer way, "All—our'n!" I think it's lots better than to hev things mine an' his'n.

Perry Patettic (in the road)—W'y don't you go in? De dog's all right. Don't you see him wagg'n' his tail? Wayworn Watson (at the gate)—Yes, and he's growlin' at the same time. I dunno which end to believe."

A Canadian Girl in Dresden.

DEAR NELL,—

It seems a long time since I said good-by to you all at the Toronto station, and now that I am settled in the third etage of Frau Bohn's family pension, I shall fulfill my promise of telling you something about my journey and the life here. In the first place, Dresden is simply lovely, and I wish there was a whole year, instead of six months, to be spent in it, and two months have already slipped past.

The voyage was pleasant, but uneventful, from which you may infer that there were no nice men on board. The women passengers as a whole were "more interesting than strictly beautiful," and they were all very nice to one another—a fact which may be explained by the absence of men. There was only one really disagreeable person on board, a girlish old thing, of about fifty summers, who made the captain's life a burden with her veiled attentions. She always spoke of herself as "mercifully spared," as if matrimony were a pestilence. I heard the captain mutter something about a "bilious wasp" one day when she had been particularly attentive.

We landed at Nordenham, and took a train there for Bremen. It was my first experience of Continental traveling, and the novelty quite compensated me for any discomforts. The engine and coaches are very small, and it seems to take a dozen men, with queer little shrill whistles, to start one train, and then it goes so slowly that the guard can walk along a narrow platform outside the coaches and collect tickets through the windows! The country between Bremen and Berlin is flat, and sparsely settled, but everything is neat and regular. Even the forests have been planted in row upon row, reminding me of our own nursery gardens. The fields were being plowed as we went along. The plow was drawn by oxen, and a woman following, smoothing the ground with a rake. In every field there were about three women to one man—stunted, thick-waisted, short-skirted, unattractive females. It was a damp, cold day, and the poor creatures all looked half frozen. As a contrast, let me tell you that every cow—pretty little Holsteins—wore a nice warm blanket. They treat the old "moolies" well over here, currying and combing them as carefully as the horses. Of course, there were windmills in plenty, and dear little thatched houses, with funny windows, that seemed to say: "Oh!" But the thatched roofs are becoming rare, because they cannot be insured against fire. The first thing that struck me in the German villages was their warmth of color. The red roofs, and the good strong blue they are not afraid of using, the gay costumes, and the rich green of the tree trunks, which seemed to be all covered with moss, made a much finer picture than a Canadian village of the same size.

We stopped at Berlin over night, and though nearly midnight when we arrived, we took a walk past the Imperial palaces and up the Linden strasse before going to the hotel, where everything was very comfortable, except the beds. They use no double beds, and the covering consists of a feather mattress, which is just long enough to reach from neck to ankle, and it is very hard to decide which end of one's anatomy can best stand a chill. Fortunately, in the Bohn "pension" they conform to Western ideas of comfort, and give us bedclothes of ample length.

Alice Young, the girl who shares the etage with me, is American, very pretty, as bright as a dollar, and well endowed with the national candor. She doesn't approve of my clothes, and said the only fit about them was the fit she got when she looked at them. When I explained that they were all homemade, she said the information was unnecessary. There is no use in being angry with Alice, so I agreed that if she would give me a few hints about dress I would undertake to improve her manners. Frau Bohn lent us her "mahsheen" (bicycle)—"A mahsheen so good, oh! so lofely, a mahsheen from Herr Singer!" she explained. It was probably Herr Singer's virgin essay in the mechanical line—my legs were stiff for days after using it.

We are having fine skating in the splendid outdoor rinks. The Germans skate beautifully, though their skates are something like a "dug-out" with a steel keel. The rinks have a band pavilion in the center, and waiting rooms and beer stalls at the corners, and everyone, even tiny children, drinks the lager.

Dresden is full of historical interest, and I spend days prowling about in the quaint old narrow streets; but it would take another letter to tell you of all the lovely places I have already seen. The city was very gay at Christmas, and for a week beforehand the great market-place was occupied by a fair. Peasants flocked in from the country, and I longed for a kodak or an artist's pencil to fix the quaint, absurd costumes in my memory. You could buy anything in that wonderful fair—boots, dolls, lace, pottery, hot cakes, beer—the ever-present beer—and live stock, and hundreds of Xmas trees, ranging in size from well-grown trees down to tiny bushes, all stuck into wooden pedestals, and looking very like the dear little stiff trees we used to have in our "Noah's arks."

The small boy of the establishment—Alice says he looks as if he didn't know any more than the law allowed—is waiting to take this to the post. When I give it to him he will courtesy as if an invisible hand had struck his knees from behind.

Poor child! he has a chronic cold in the head, and that reminds me of a funny thing I learned about Dresden the other day; but I'll tell you of that again. Good-by, dear old girl.

Affectionately yours, FANNIE.

THE QUIET HOUR.

The Responsibility of Knowledge.

"To the giver shall be given:
If thou wouldst walk in light
Make other spirits bright:
Who seeking for himself alone ever entered Heaven?
In blessing we are blest,
In labor find our rest:
If we bend not to the world's work heart and hand and brain,
We have lived our life in vain."

Samaria had been besieged for three years, and the inhabitants were reduced to the lowest state of hunger and misery. One woman had even been driven to the horrible crime of killing her child for food. Our sympathy has been lately roused by the hardships endured in the besieged towns of South Africa, cut off from the rest of the world for a few months. Think of the awful suffering in Samaria after three years of starvation. The enormous price of provisions may be estimated from the fact that the head of an ass sold for eighty pieces of silver.

There were four miserable lepers at the gate who, rendered desperate by starvation, resolved to throw themselves on the enemy's mercy. They reasoned that to stay in the city meant certain death, while it was just possible that their lives might be spared by the Syrians. To their astonishment, they found the camp deserted. With eager haste they went into one tent and did eat and drink, and carried thence silver and gold, and raiment, and went and hid it. This was natural enough, for hunger is apt to make a man think only of himself; but they soon remembered that the knowledge of good news was a responsibility as well as a privilege. Then they said to one another, "We do not well: this day is a day of good tidings, and we hold our peace: if we tarry till morning light, some mischief will come upon us: now therefore come, that we may go and tell the king's household."

They knew that it was not only selfish, but actually criminal, to secure plenty of good food for themselves while their fellow-townsmen were left in the darkness of despair and famine. To wait until the morning, to be slow in spreading the good tidings that would turn misery into gladness, was a terrible sin. God's swift judgment was to be feared in such a case. He had led them into the camp of plenty, not for themselves alone, but that they might be His messengers to those who were ignorant that rich treasures were lying there—treasures for all who could take them.

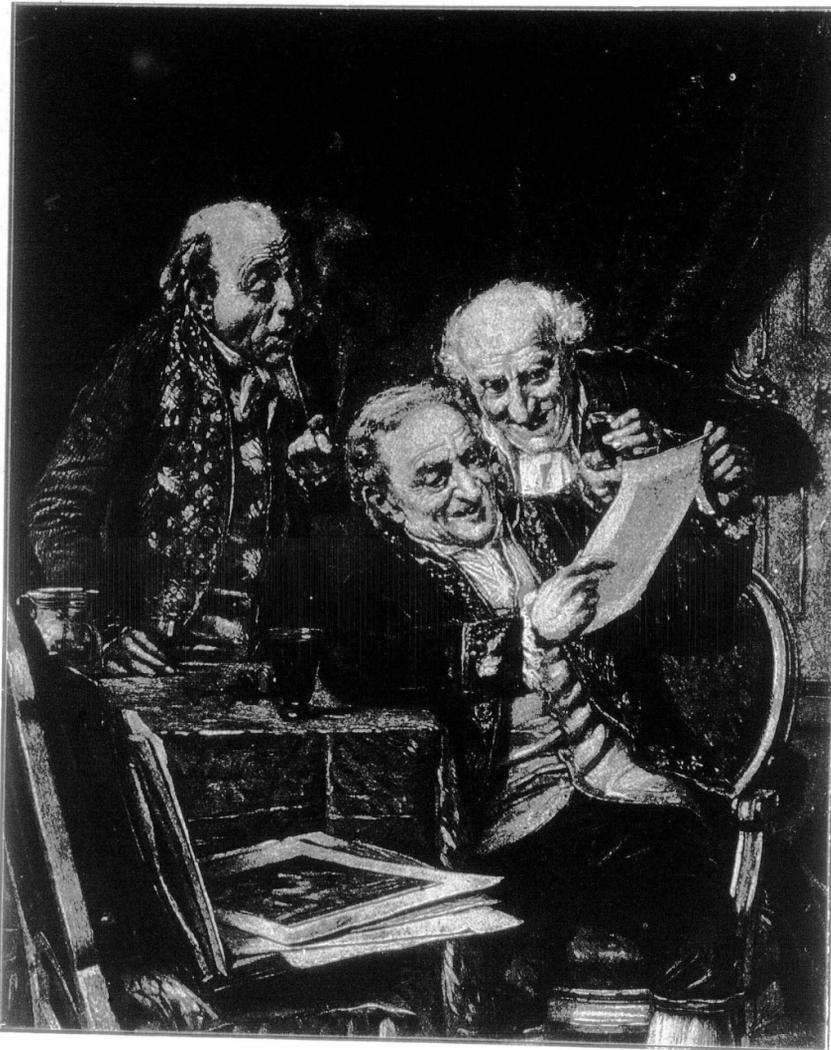
It seems to me that this old story is a wonderful parable. People talk so much about missionary work being of little or no use. Some even say that the heathen are better if left alone. They sit down comfortably, after making such remarks, feeling that the matter is settled, and that they are quite free from responsibility. They are thankful to know that a loving Father is watching over them. They can accept even pain and trouble as a blessing in disguise, knowing that He has sent it for their good. They can face the last great enemy fearlessly, knowing that death is only the gate of a fuller and more abundant life. They can even feel the thrill of the marvellous Life that for the nineteen centuries have inspired men to suffer and to die.

They rejoice in the good tidings and, so far, they resemble the four lepers, but how few seem to realize the responsibility of their knowledge. How few fear that punishment will follow if they leave others in the darkness of doubt and uncertainty without any real effort to enlighten them. We say that souls are of more consequence than bodies, but any of us would act as the lepers did, and eagerly proclaim to a starving city the good news that bodily food was to be had in plenty. Spiritual food is another thing. We don't really believe that the heathen suffer much for the want of it, or we couldn't be so indifferent. How could we face death calmly, for ourselves or our friends, if we knew absolutely nothing about the after life? God has given us the good news that He loves not only the human race, but also each individual man, woman and child. Will He not

call us to account if we fail to publish this good news? We have no more right to withhold it than those lepers had. Do we realize our responsibility as they did? Certainly the latter half of the nineteenth century was more fully awake to its duty in this respect than most of the ages preceding it. This new era of the world's history will probably show still greater activity: for the civilized world has awakened to the fact that "no man liveth to himself," and that God has made each, to a large extent, his "brother's keeper." But is the gift of a little money to a mission fund all that is required of us? Any kind of knowledge is a stewardship and we are bound to use it for the good of others. It is like seed grain—to hoard it up means to waste it. Every servant of God is bound to witness for Him. Missionary effort is not always preaching to savages: it is more often letting the light of a holy life glorify God before men.

It is a solemn thought with which to begin this century, that we are certain to influence the ages yet to come. We cannot help influencing others for good or evil, and surely that influence must go on through all eternity.

"Thou must be true thyself,
If thou the truth wouldst teach:
Thy soul must overflow if thou
Another's soul wouldst reach."



(From the original painting by P. C. Gilardi.)

"THREE CONNOISSEURS."

It needs the overflow of heart
To give the lips true speech.
Think truly, and thy thoughts
Shall the world's famine feed:
Speak truly, and each word of thine
Shall be a fruitful seed:
Live truly, and thy life shall be
A great and noble deed."

HOPE.

"Three Connoisseurs."

A picture of three elderly ladies surrounding a table, drinking tea, or engaged in any pastime in which they showed a zestful interest, would probably be entitled "Three Gossips." But the trio in our picture are gentlemen, and they are not drinking tea; they are connoisseurs. What they would be if they were not looking at pictures, it is not for us to say. They might, however, remain connoisseurs all the same, for they are very knowing old fellows. Evidently they have seen life in all its phases and tasted all of its pleasures, and have a rich fund to draw upon in the stories with which they enliven the hours which they pass over their wine and cigars, and cards and pictures. No doubt they are connoisseurs in all these things; and it would be quite rash to suppose that any one younger than themselves could give them any

points touching the amusements of an elegant and elderly leisure. Their present occupation recalls a scene in a French circulating library. A lady enters and intimates to the librarian her taste in reading. The appreciative librarian, understanding at once what is wanted, calls to the assistant: "Marie, a novel for a middle-aged lady." The works of fiction were spiced to suit the period of life. In the present picture we have a portfolio to suit elderly connoisseurs of the epicurean school.

Signor Gilardi excels in conversation and genre pictures, with accessories—and frequently with subjects—taken from an earlier century. In his costumes and other details he displays the knowledge of an antiquarian. Of his skill in composition and his mastery of expression our picture is a signal proof.

Ingle Nook Chats.

M. K.—Many thanks for your good wishes to myself and the "Nook"—success to the latter can only come through the united efforts of our many readers. Does it interest you to know that I understood the initials on the corner of your envelope, and use the same myself sometimes?

SHOREY, Assa.—Lucky boy you are to have a library of 400 vols. at your command. I hope you will continue to visit the Nook.

OUR COMPETITIONS.

At present writing (Jan. 5) only a few papers for contest V., "The Book I Like Best," have reached me, and as I should like to have the views of a large number of our readers on this subject, I shall extend the time to February 1, instead of January 20, as previously announced. I hope a great many little people will enter this contest.

Contest VI., "My Ideal—My Aim in Life," should bring some good essays from our more thoughtful readers. To give our mirth-loving guests an opportunity to have a little fun, I announce

CONTEST VII.—CONUNDRUMS.

Three prizes are offered for the best sets of five conundrums (original or selected, as the writer chooses), sent in on or before March 5th. Competitors to be divided into three classes as before, and one prize given in each class. We reserve the right to use any conundrums sent in. Hurrah! for some hearty laughs! "A merry heart goes all the day,—your sad one tires in a mile-o."

THE HOSTESS.

"Ingle Nook Chats,"

Pakenham, Ont.

Rules for the Children.

1. Shut every door after you, and without slamming it.
2. Don't make a practice of shouting, jumping or running in the house.
3. Never call to persons upstairs or in the next room; if you wish to speak to them, go quietly to where they are.
4. Always speak quietly and politely to everybody if you would have them do the same thing to you.
5. When told to do or not to do a thing by either parent, never ask why you should or should not do it.
6. Tell of your own faults and misdoings, not of those of your brothers and sisters.
7. Carefully clean the mud or snow off your boots before entering the house.
8. Be prompt at every meal hour.
9. Never sit down at the table or in the sitting-room with dirty hands or tumbled hair.
10. Never interrupt any conversation, but wait patiently your turn to speak.
11. Never reserve your good manners for company, but be equally polite at home and abroad.
12. Let your first, last, and best confidante be your mother. Have no secrets from her.

A lady, who advertised for a girl to do light house work, received a letter from an applicant, who said—"Her health demanded sea air, and she would like to know where the lighthouse was situated."

A minister spending a holiday in Shetland asked the landlady to give him eggs to breakfast. On her querying "How many?" he answered "Oh! maybe sixpence worth." To his surprise, eight eggs were set down to him, the landlady saying, apologetically—"The ither ten are on boiling, and will be ready sune: my pan couldna haud them a' at ae time."

Spare the Innocents.

(A PLEA FOR OUR WOODS.)

In these days we hear much about the cruelty of wearing birds in our hats, and often one reads descriptions of how these poor little innocents are killed—even *tortured*—if all tales be true—in order to give the best possible results. For example, the feathers of the egret, if plucked whilst the victim is still alive, are more brilliant, but, of course, our "aigrettes" must look as well as possible! Although one may shudder in horror at reading of such atrocities, yet few seem to realize the wholesale slaughter which, under the name of "sport," goes on year in and year out. The wild buffalo of our country is well-nigh extinct, and if "sport" (so called) goes on for many years longer, there will be an extinction of all the living creatures which used to be the characteristic dwellers in our woods.

Look at our beautiful, frisking little black and gray squirrels—with their twinkling glance and their bushy tails—watch them hopping—climbing—scrambling and "scuttering" affrightedly away, or, perhaps, warily eyeing you from some safe and lofty point. Why—oh! why should they die? Then, those richly plumaged birds we used to watch (for there are but few left). The scarlet, yellow and orange tinted orioles and other beauties, fluttering their gorgeous wings and casting a halo of flashing colors around as they flew in search of good quarters for their nests—often building them quite close to us, as though they knew they were safe in our love and protection. Alas! that their trust has been so abused. Have our hearts grown harder—our eyes and ears saturated with all these beauties of the forest? Surely not.

"Sport" is a fascinating—an exciting pastime; but do its followers clearly define the difference between "sport" and "destruction"?

To exterminate pests—enemies to the farmer—is often absolutely necessary. Take for example the rabbits of Australia, the gophers of our Northwest Territories, the destructive rice-birds, etc.—these and many others have to be fought off; but spare—in pity's name—our lovely forest pets—our own Canadian "birdies" and "beasties"—and don't let them die out. In the near future will there be no merry chatter—no sweet songs—no glossy, furry little scamperers—no fluttering, glorious plumage to remind us of God's beautiful gifts to our dear Canadian woods?

Unless a country's natural characteristics are absolutely harmful to progress, they should be preserved, and all who love their country should help towards this end, and so to the title—

SPARE THE INNOCENTS.

Recipes.

TRY.

Warming crackers in the oven before using.
Dipping sliced onions in milk before frying.
Rubbing tough meat with a cut lemon.
Steaming a stale loaf to freshen it.
Heat the dry coffee before pouring on the water.
Bacon for frying chicken and game.
Hard-boiled egg salad, made like potato salad.
The juice of an orange and some nutmeg in lemonade.
Lemon and orange peels to flavor sauces.

COFFEE CREAM.

Two teaspoons granulated gelatine, $\frac{1}{4}$ cup cold water, $\frac{1}{2}$ cup sugar, $\frac{1}{2}$ cup strong coffee, $1\frac{1}{2}$ cups cream or $1\frac{1}{2}$ cups rich milk. Soak the gelatine in the cold water until soft. Then add the hot coffee and the sugar. When the gelatine is dissolved strain into an earthen or granite ware dish, place in ice water to cool. Stir occasionally. When it acquires the consistency of thick syrup, add the cream either plain or whipped. Stir until it becomes thick, not hard, then pour into a glass dish.

CORN-MEAL MUFFINS.

Cream one-third cup of butter, add one-fourth cup of sugar, a well-beaten egg and three-fourths cup of milk, alternately, with one cup and three-fourths of corn-meal flower sifted with three teaspoonfuls of baking powder and one-fourth teaspoonful of salt. Bake in a buttered pan about twenty-five minutes.

SHEPHERD'S PIE.

Cut the remains of cold beef or mutton into small pieces. Slice $\frac{1}{2}$ onion for each 6 ozs. of meat; put meat and onion into a dish, in alternate layers, and pour over a seasoning of catsup, salt and pepper, and a little good gravy or stock. The pie dish should be full up to about half an inch of the top. Now mash some potatoes with a good bit of butter or dripping. Fill up the dish with these, level the top firmly with a knife, then cross with the prongs

of a fork, and bake in a moderate oven for about forty-five minutes—less if a small pie. An egg beaten up and added to the potatoes is an improvement, and a little of it may be saved to brush over the top of the pie before putting it in the oven.

THE CHILDREN'S CORNER.

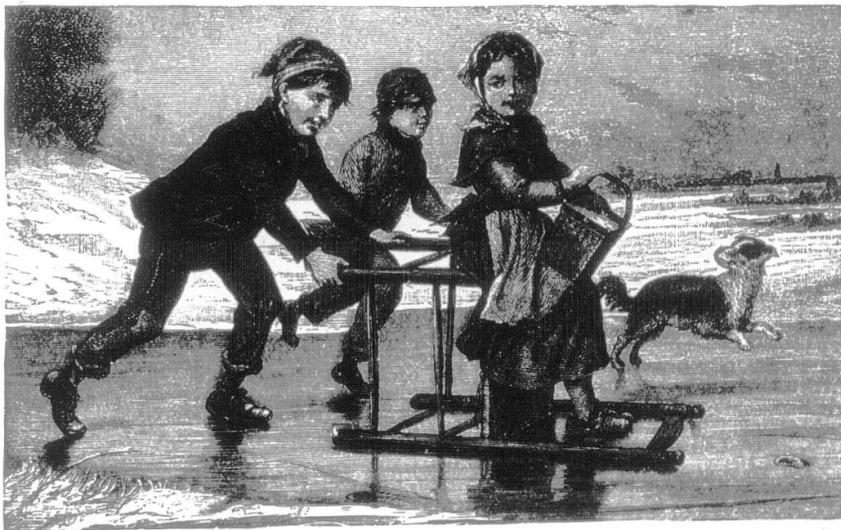
A Sleigh Ride.

"I wish we had a sleigh," cried Molly one day.
"So that I could go for a ride."
Said Harry and Dick, "Put on your things quick!
We'll give you a jolly good slide."
You will quite understand that it must have been grand
To ride on an overturned chair:
The boys were so kind they pushed from behind—
Oh, don't you wish you had been there?
They had only begun to enjoy the fun
When they came to a hole in the ice:
Quite unable to stop, they went in with a flop—
Such a bath is not very nice.
But they climbed on the chair, and old Rover was there
To help them with hearty goodwill:
Then home they all sped and were hurried to bed—
Let us hope there were none of them ill.

C. D.

Between Ourselves.

Well, children, you are probably anxious to hear the result of our last competition, but really I am almost overwhelmed with the number of stories sent in. It will take quite a long time to judge them properly. Four prizes will be given this time, as there are so many competitors. One thing that pleased me very much was that many of the stories were sent in by children only eight or nine years old. One little girl of eight, and her brother who is only seven, wrote out the stories they had chosen very neatly indeed. It is a great pleasure to find out I have so many small friends, and I only wish you could all win prizes; but of course when fifty or sixty are



A SLEIGH RIDE.

competing, that is impossible. I will let you know the result next month, but long before that time the winners will receive their prizes.

Two more volunteers have joined the Lookout Regiment, Dorothea Salter and Martha Kelleher. You are very welcome, girls. Jemmie Matchet—with an eye to promotion—is acting at present as a recruiting sergeant. I wish you good luck, Sergeant Jemmie! "Company A" in West Montrose was preparing to play Santa Claus when the last report came in to the War Office, and I feel sure their kind plans were as successful as they deserved to be.

And now, my dear children, what if you are busy. Or have to mind baby the whole blessed day. Don't say, "What a bother!" and look cross and sulky; But try to be jolly, light-hearted and gay. Be watchful for chances to help one another. And seek the bright lining to every dark cloud— A true "Lookout" soldier should always be cheerful— If duties are tiresome don't grumble out loud.

I once heard of a boy who stepped into an office and asked for a situation. As he already had work, he was asked why he wished to change. His answer was, "Oh, I want an easier place." They didn't engage him. No one wants to employ a boy or girl who is anxious to do as little as possible, and is afraid of working a moment longer than he is paid for. Don't shirk all the hard bits of work, or you will soon find that you are not wanted. If you are bound to have an easy place, you had better go to bed and stay there. The world has no use for loafers, they are only in the way.

COUSIN DOROTHY.

During a discussion at a meeting of the Trinity College Historic Society upon the slight consideration attached to life by uncivilized nations, a speaker mentioned the extraordinary circumstances that in China, if a man were condemned to die, he could easily hire another man to die for him, "and," the debater went on, "I believe many poor fellows get their living by thus substituting."

Tit for Tat.

Said a young and tactless husband
To his inexperienced wife:
"If you should give up leading
Such a fashionable life,
And devote more time to cooking—
How to mix and when to bake—
Then perhaps you might make pastry
Such as mother used to make."
And the wife, resenting, answered
(For the worm will turn, you know):
"If you would give up horses
And a score of clubs or so,
To devote more time to business—
When to buy and what to stake—
Then perhaps you might make money
Such as father used to make."

Whistle an' Sing.

Wad ye hae a cheerfu' heart, my lad?
Then whistle yer troubles awa'!
There's mair than double o' needless trouble
That maun be whistled awa'.
Wad ye hae a bonnie face, my lass?
Then sing yer froons awa'!
There's mony a frown that bears ye doon,
That maun be sang awa'.
Then whistle an' sing, my lad, my lass,
Whate'er yer trials maun be:
A heart bowed doon, or a face wi' a frown,
Is a pitfu' sight tae see!
For ilka ane hae his troubles, my dear,
Wi' nae time tae waste on yer ain',
But a bonnie smile will yer care beguile,
An' lichten anither's pain.

A Transformation.

"My brother Will, he used to be
The nicest kind of girl:
He wore a little dress like me,
And had his hair in curl.
We played with dolls and tea-set then,
And every kind of toy:
But all those good old times are gone—
Will turned into a boy.
Mamma has made him little suits,
With pockets in the pants,
She cut off all his yellow curls
And sent them to my aunts;
And Will, he was so pleased, I b'lieve
He almost jumped for joy:
But I must own I didn't like
Will turned into a boy.
And now he plays with horrid tops
I don't know how to spin,
And marbles that I try to shoot,
But never hit or win:
And leap-frog—I can't give a "back"
Like Charley, Frank or Roy—
Oh, no one knows how bad I feel,
Since Will has turned a boy!
I have to wear frocks just the same,
And now they're mostly white:
I have to sit and just be good,
While Will can climb and fight.
But I must keep my dresses nice,
And wear my hair in curl,
And worst—oh! worstest thing of all—
I have to stay a girl!"

Good Health.

For simple hoarseness, take a fresh egg, beat it, and thicken with pulverized sugar. Eat freely of it, and the hoarseness will soon be greatly relieved.

Those who suffer from a sensitive skin, subject to frequent irritation and roughness, should never wash in hard water.

Boiled water will often prove of benefit to delicate complexions.

When the ankle has been severely sprained, immerse it immediately in hot water, keeping it there for fifteen or twenty minutes. After it has been taken out of the water, keep it bandaged with cloths wrung out of hot water.

Isn't it queer that some people care more for what they eat than for how they feel?

Another strange thing is that when people know that re-breathed air is an active poison, many have a horror of pure air in their homes, and especially in their bedrooms.

Also queer, that while all people have a horror of disease, they are so long in finding out that the only sure way of avoiding disease is by keeping every organ in the body perfectly well.

So queer that while we are so deathly afraid of germs, microbes, bacteria, etc., we live in such a way that our bodies become deficient in resisting power to these same germs, and when they are present, expect in some miraculous manner to have them expelled.

Queer that while we all want so much to enjoy life, with all its comforts, pleasures, and happiness, we are so apt to forget that upon health these all depend, that

Health is the vital principle of bliss,
And exercise of health.

Apply the following to the hands and face after bathing: To one ounce of glycerine add one-fourth ounce of liquid camphor, one quarter ounce of extract of white rose, and four ounces of rosewater. Shake thoroughly before using. This preparation is good for almost any complexion trouble, but is particularly good for cracked skin.

MARKETS.

Toronto Markets.

BIG BOOM IN THE PRICE OF HOGS—CHOICE EXPORT CATTLE SELL WELL—DECLINE OF EXPORTS.

	Comparative prices, Jan. 11, 1901.	2 weeks ago, Dec. 15, 1900.	Same date last year, Jan. 11, 1900.
Export cattle.....	\$ 5 00	\$ 4 60	\$ 4 50
Butchers'.....	4 25	4 40	4 40
Bulls.....	4 25	4 00	3 00
Stockers.....	3 25	3 00	2 75
Feeders.....	4 25	3 90	4 00
Sheep.....	3 50	3 35	3 75
Hogs.....	6 50	5 75	4 50
Lambs, each.....	4 50	3 50	4 00
Milk cows.....	45 00	52 00	45 00

The general trade at the Western Cattle Market has been remarkably good for the past two weeks, the best export cattle being scarce. Four hundred cattle were shipped through from Chicago, including some very good Shorthorns and Polled Angus weighing from 1,500 to 1,800 lbs., said to have cost \$6.50 per cwt. at Chicago. The following table shows the great decrease in our export cattle trade since the year 1897:

	Cattle.	Sheep.	Horses.
1900.....	92,180	34,838	2,832
1899.....	81,800	58,277	4,739
1898.....	99,049	34,991	5,827
1897.....	117,237	60,638	10,051

The number of cattle show an increase of 10,300 head last year over 1899, but these must be credited to Manitoba and the Northwest. Sheep show a decrease of 4,232, and horses a decrease of 507, but this does not include the shipments made to South Africa on account of the war, which amounted to 1,369 head, mostly from Ontario. A proposition is now being considered by the Army Remount Department to loan stallions in Canada for the purpose of breeding horses suitable for the Army.

Export Cattle.—The market was active, the supply not large, but a few choice animals were on sale that had missed the Christmas trade. Prices ranged from \$4.25 to \$5.00 for the choicest loads. Light export sold at \$4.25 to \$4.50 per cwt. Messrs. Dunn Bros. were the chief operators. They purchased six loads, consisting of some choice 1,300-lb. exporters, bringing \$5.00 per cwt.—one steer, the best on the market, weighing 1,740 lbs., at \$4.75, and one bull weighed 1,570 lbs., at \$4.00 per cwt.

Butchers' Cattle.—The demand good for best class; those weighing 1,000 to 1,100, not heavy enough for export, sold at \$4.25 to \$4.50 per cwt. Good to choice cattle sold at \$3.75 to \$4.00 per cwt. Common inferior rough cows, heifers and steers sold at from \$2.40 to \$3.25. The market is likely to be steady for the next two weeks. Several lots of cattle offered to-day were too light for export. Messrs. Halligan & Rowntree bought two loads of butchers' cattle, 1,125 lbs. average, at \$4.00 per cwt. Mr. Alex. Levack bought two loads of good cattle at \$4.50 per cwt.

Export Bulls.—Heavy export bulls sold at from \$4.00 to \$4.50; light at from \$3.50 to \$3.75 per cwt. Bulls for the byres, 1,100 lbs. average, sold at from \$2.75 to \$3.25 per cwt. Messrs. Beall & Stone sold two bulls, 1,415 lbs. each, at \$4.00 per cwt; two fat cows at \$48.50 each, average 1,300 lbs. in weight.

Feeders.—Steers weighing from 800 to 900 lbs. sold at \$3.00 to \$3.20 per cwt. Heavy well-bred steers, weighing from 1,000 to 1,150 lbs. average, sold at \$3.60 to \$3.90 per cwt. Short-keep feeders, weighing 1,100 to 1,200 lbs., good quality for furnishing at the byres, met ready sale at \$4.00 per cwt.

Stockers.—Trade in Buffalo stockers not brisk. Yearlings weighing 800 to 800 lbs. average sold at from \$2.25 to \$3.00; black

and white mixed colors, poor quality, sold down to \$1.75 to \$2.00 per cwt.; offerings larger than present requirements.

Sheep.—The market has regained some of its lost ground and prices are higher. There is a fair demand for export ewes, at \$3.00 to \$3.40 per cwt., but supplies are limited. The drovers report most of the small stuff cleaned up from the country districts.

Lambs.—Spring lambs sold at \$4.00 to \$4.50 per head, and at \$1.50 to \$1.80 per cwt. Mr. James Harris bought 150 lambs at \$4.50 per cwt.

Calves.—Only a few on offer—not very choice—at from \$3.00 to \$7.00 per head.

Milk Cows.—Only fifteen on offer. Choice cows would sell. Top price for the day, \$45.00. They sold from \$30.00 to \$45.00 per head. Mr. W. Armstrong bought four at \$40.00 per head. Mr. James Armstrong bought six at \$44.00 per head. Mr. Jas. Ryan bought four at \$40.00 per head.

Hogs.—Packers are bidding high for hogs, and there seems to be a war amongst all the outside houses for supplies. Small offerings have again advanced the price to \$6.80. There is some talk that the price will go again to \$7.00, but our opinion is that they will not go beyond \$6.85 next week, unless there is a great shortage. The drovers all report a great dearth of hogs in the country. We do not get the large supplies we did last year at this time. Should the Liverpool market hold, the price will go up to \$7.00 for choice singers scaling 160 lbs. to 200 lbs. live weight, unfed or watered off cars. Market strong, prices steady and advancing.

Grain Market.—Receipts of grain on the street market were 3,200 bushels, as follows: 2,300 bushels of wheat; white at 70c., red at 70c.; goose at 65c., and one load of spring wheat at 70c. per bushel.

Barley.—Four hundred bushels sold at 42c. per bushel.

Oats.—Four hundred bushels of oats sold at 30c. to 31c. per bushel.

Rye.—One load only, at 51c. per bushel.

Hay.—In farmers' loads, at \$12.00 to \$13.50 per ton; baled hay in ton lots, at \$9.50 per ton.

Straw.—Loose straw (five loads) sold at from \$9.50 to \$10.50 per ton; baled straw in car lots, at \$4.75 per ton.

Dressed Hogs.—Bright stock steady at the advance, \$8.25 per cwt. in car lots; on track, \$7.00 per cwt. Sows quoted, by request, at from \$3.75 to \$6.00 (according to age and quality) per cwt.

Hides.—No. 1 green, 8½c. lb.; No. 1 cured, 9c. lb.; calfskins, 8c. lb.; lambskins, 90c. each; horse hides, \$2.50 each; deer-skins, 10c. lb.; wool, pulled, super, 10c. lb.; wool, fleece, unwashed, 9½c. lb.; wool pulled, extra, 2½c. lb.

MARKET NOTE.

Mr. F. Keswick was on the market to-day, and reports great increase in the quantity and quality of the range cattle this year. He is ranching at Calgary, Alberta.

Chatty Stock Letter from Chicago.

[BY OUR OWN CORRESPONDENT.]

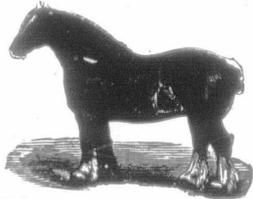
A good many cattle being marketed at present are of the short-fed kind—been on feed 90 to 100 days. Some of them are selling for less than they cost when taken out, being poor cattle poorly handled. Others, again, are being bought by countrymen and sent back to be finished. Most of these short-fed cattle, however, are too inferior to bother with in a feed lot. Steers of the dairy breeds, and "crooked," unthrifty young cattle, do not pay to finish out even if they occasionally pay for being short-fed. A man from Atlanta says the long-fed cattle are all gone from his country, and the supply of fat steers for the immediate market rather scarce.

Veal calves are selling 50c. higher than a while ago, mostly at \$6.25. This seems high, especially when dressed calves are selling at 9c. on South Water street. A year ago veal calves were selling at \$8 to \$8.50, with veal "on the street" at 13c. and skins at 12c. Now skins are only 11c., which makes a lot of difference.

THORNCLIFFE Stock Farm

The largest stud of Clydesdales in Canada, headed by the Champion Stallion of all ages,

"LYON MACGREGOR."



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.

A visit to Thorncliffe will well repay you

ROBT. DAVIES, Thorncliffe Stock Farm, TORONTO.

W. H. BEATTIE, Wilton Grove, Ontario, IMPORTER AND BREEDER OF

Shropshire sheep, collie dogs, White Holland and Mammoth Bronze turkeys, and Barred Rocks.

FAIRFIELD LINCOLNS.

The largest flock of imported Lincoln sheep in America, and contains more Royal first-prize winners than any other on this continent. Sheep of this flock won the first prize for the best flock at Toronto, 1900, and all the first prizes for rams at the International Show at Chicago, including the championship and progeny of a sire. Imported and home-bred rams and ewes for sale. Fifty imported ewes in lamb to first-class English rams. Write for prices or come and see. J. H. & E. PATRICK, Iderton, Ont.

G. W. Clemons, St. George, Ont., in holding a change in his advertisement of Oberstein cattle, writes: "Sales are very good. Enquiries are coming in shoals. The result of the food test at the Dairy Show, at Guelph, has made many friends for the 'black and whites'."

PLEASE MENTION FARMER'S ADVOCATE.

A red 3-year-old Shorthorn bull is advertised for sale in this issue by Robert Moorhouse, Cairo, Ont. He is a son of Caihness, a noted show bull, and on his dam's side is from one of the best milking families of Shorthorns in the Dominion.

Mr. James Boden, manager of the Tredinock herd, of Ayrshires of Mr. Reford, St. Anne de Bellevue, Quebec, writes:—"Will you please change our advt. for a little and state we have sold out all our bulls, but will part with a few heifers. We have had so many enquiries after good young bulls. Our cattle are doing splendidly and milking well. The cross with Napoleon of Auchrain on Glencairn heifers has every appearance of making great dairy cows. They are great-tented heifers. Will have no young calves before March from Lord Dudley, but if he gives us the same kind as was after him in Scotland we will be pleased, for they were good ones. Will have 36 head to calve before September, so will be able to fill a few orders. Have five No. 1 Shropshire ram lambs that will sell reasonably. They are good ones."

J. M. Gardhouse, Highfield, Ont., writes: "Our flock of Leicester sheep are doing nicely on their plain rations, and for the good time they had at Chicago Show, where they not only won first and third prizes for the best ram and four ewes any age, and best ram and ewe prizes any age, also the champion ram and ewe prizes. At Toronto they won first prize for the best flock bred and owned by exhibitor, and first-prize pen at Ottawa. This we consider a good record for 1900. Our sales have been good, sheep going to Quebec, Manitoba, and Ontario. We breed the best, buy the best, and sell our best. The Shorthorns are doing nicely. The young imported bull, Loyalty, now heading the herd, is doing nicely and promises to speak for himself. His sire is Prince Charlie (73233), by the Marr Clipper, Criterion, g.-sire Matadore (67461), by the Duffie bull, Prince of Fashion (5487), which is half-brother to the champion Marengo and to Brave Archer. Have just sold to Mr. R. Gibson, Delaware, Lord Chancellor, sire imp. Brawith Bull, Gravesend, dam a Crimson Flower. This is a good calf and selected by a good judge. To Mr. Geo. R. Clayton, Peepabun, Ont., the strong red bull, General Kruger, by imp. Prime Minister, dam by imp. Guardsman, the sire of a number of winners, among more bulls for sale, ready for service, among them being a twin to the Crimson Flower bull sold to Mr. Gibson. Our three-year-old Clyde stallion, King of the Clydes, is looking fine, and promises to go on and win some more of the red ribbons. He has improved rapidly since the September show. He has size, substance and quality, without roughness, and that is what we want to improve our stock. King of the Clydes has been pronounced by men who have made a success of the horse business as being a horse which is hard to find his equal. I was very much pleased with your Xmas number. It is nicely illustrated and very interesting."

PLEASE MENTION FARMER'S ADVOCATE.

Make Life Miserable

IT'S THE LITTLE THINGS THAT DO SO.

How frequently you hear people complain of "only a slight case of piles," often claiming that the trouble is merely temporary, induced by costiveness or sedentary habits.

It may be some satisfaction to console yourself in this way, but it is much better to check the trouble at once. You can't do it too soon.

In time these little rectal tumors will grow from the size of a grape seed until a knot of them results as large as pigeons' eggs.

These become inflamed and tender to the touch, and cause itching, stinging and throbbing pain. Thus the disease continues from bad to worse until the patient can bear the annoyance no longer.

The Pyramid Pile Cure is a perfectly safe and certain cure for piles in any of these stages. It goes to the very source of the trouble and drives out all inflammation, causing the tumors to subside and the membranes to resume their normal healthy condition.

Piles lead to too many complications to trifle with every remedy that comes along. People have found it pays to use a standard remedy like the Pyramid Pile Cure, which for ten years has been tested in thousands of cases.

Physicians use the Pyramid Pile Cure in preference to surgical operations, because they know it contains no cocaine, morphine or poisonous drug, and because it is no longer an experiment.

The Pyramid Pile Cure is in suppository form to be used at night, and causes no detention from business, is painless, and costs but 50 cents at any drug store in the United States and Canada.

SCOTCH-BRED 6 Shorthorn Bulls

from 6 to 12 months old, good size and quality, at two-figure prices. Also a few heifers. Scotch collie pups from registered stock. Write—

L. K. WEBER, HAWKESVILLE, ONT.

Shorthorn Bulls

TWO excellent young bulls: one 2 yrs. in May, and one 1 yr. in Mar. Bred straight from high-class Scotch-bred bulls and Scotch-topped cows, of good milking families. Write for prices, or come and see for yourself.

GEO. MILLER, Markham, Ont.

D. Alexander, Bridgen, Ont., advertises in this issue young Shorthorn bulls for sale. Mr. Alexander has excellent strains of cattle, and breeds good ones. Write him for particulars, or see them.

Our Farmer's Library

A RECENT bulletin prepared by Prof. J. B. Reynolds, of the Ontario Agricultural College, gives a list of meritorious books on Agriculture, Live Stock, Dairying, and Fruit Growing, from which we have made a selection and added a few others. How to obtain, see below :

SOIL AND CROP.

- THE FERTILITY OF THE LAND.—*Roberts*. 372 pages. \$1.25.
- A BOOK ON SILAGE.—*Woll*. 185 pages. \$1.00.
- SOILS AND CROPS.—*Morrow & Hunt*. \$1.00.
- FORAGE CROPS.—*Thos. Shaw*. \$1.00.
- SOILING, ENSILAGE, AND BARN CONSTRUCTION.—*F. S. Peér*. 247 pages. \$1.00.

LIVE STOCK.

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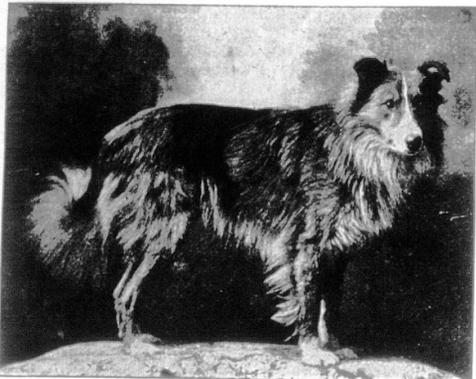
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TO ANY SUBSCRIBER sending us the names of 12 NEW yearly paid-up Subscribers we offer a young COLLIE, six weeks old or over, eligible for registration, and bred by Mr. R. McEwen, Byron, Ont., whose stock has been so successful in the leading shows in Canada and the United States.

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

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Would retail at from \$3 to \$4. We will send (carefully packed, post prepaid) this Bible to anyone sending us the names of TWO NEW SUBSCRIBERS to the FARMER'S ADVOCATE at \$1.00 each.

Handsome Curb-link Silver Bracelet with Padlock and Key.



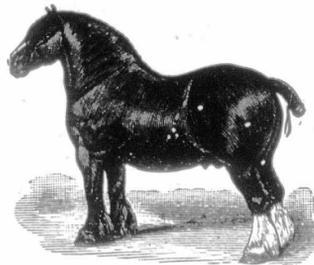
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Write for a sample copy of the Farmer's Advocate, and begin to work for these premiums right away. In every case cash must accompany the new names.

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Third consignment will arrive about January 1st, 1901.



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SOMETHING THAT EVERY MAN, WOMAN,

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It is a wonderful tribute

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THE PRICE OF THE POST IS \$3.00. IT CANNOT BE PURCHASED UNDER THIS PRICE ANYWHERE.

The patentee has a hard-and-fast agreement with the trade and agents that \$3 shall be the lowest retail price. By a special agreement we are in a position to make

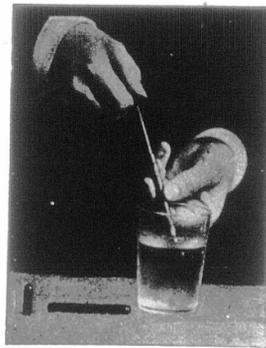
A Great Offer: We will send one of these pens to anyone who sends us three new subscribers, accompanied by \$3.00 in cash.



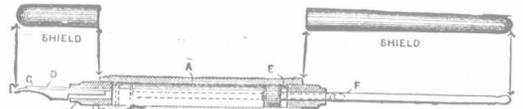
General Lew Wallace, the author of the greatest book of the age, "Ben Hur," also "Prince of India," "Commodus," etc., says in a letter in his own handwriting: "The fountain pen, Post, was received, and I have taken the liberty of trying it thoroughly. Please accept the excuse for failure to acknowledge sooner. "I have tried every pen of the kind on the market, and now unhesitatingly give the preference to the Post. It not only feeds itself with less care, but has the immeasurable advantage of re-supply without inking the fingers. I do all my work with it."

Lew Wallace.

TO show our confidence in this pen, we will send you one on trial for a week upon receipt of \$1.00, which, if not entirely satisfactory, you can return to us and we will refund you the \$1.00 paid us. If satisfactory, you must send us the names and addresses of the three new subscribers and \$2.00 additional cash.



THE only self-filling and self-cleaning pen, manufactured in the world. To fill the pen, put the nib in ink and draw the piston rod up. To clean, put the nib in water and draw the piston rod backwards and forwards a few times.



A, Barrel; B, Nozzle; C, Pen; D, Feed; E, Plunger; F, Rod.



The world's greatest singing evangelist, who has thrilled thousands and tens of thousands, now raises his voice in praise of the Post Fountain Pen.

Mr. Sankey sends the following characteristic letter: "I have used the Post pen for some time, and have had great satisfaction with its use. It never fails or gets cranky. One can at least have clean hands by using the Post, whatever the heart may be."

Wm. Sankey.

ADDRESS—

THE Wm. Weld Co., LTD.,
LONDON, ONTARIO.

Hereford Breeders Meet.

The Hereford Breeders' Association held their 10th annual meeting in Guelph on Dec. 12th. Among those present were Messrs. Philp and McKellar, Brandon, Man.; Alf. Stone, Guelph; W. W. Hammell, Beeton; A. S. Hunter, Durham; H. Reid, Mimosa; W. W. Black, Amherst, N. S.; J. A. McDiarmid, Stayner; Henry Wade, Toronto.

In the absence of the president, Mr. W. H. Hunter, on motion, Mr. A. S. Hunter, Durham, took the chair.

Mr. H. Wade, secretary, read the minutes of the last annual meeting and presented the financial statement, which showed a balance on hand of \$114.50.

Moved by Mr. W. H. Hammell, Beeton, seconded by Mr. A. Stone, Guelph,—That in the opinion of this Association the cattle-breeding industry is seriously menaced by the tuberculin test as applied to cattle purchased for importation or sold for export; that the test is misleading and of no real value in detecting the disease: Therefore we respectfully ask the Hon. the Minister of Agriculture for the Dominion of Canada to discontinue the use of the test in such cases so far as within his power.—Carried.

Moved by Mr. W. Reid, seconded by Mr. W. H. Hammell,—That this Association is of the opinion that the existing regulations as to the Northwest Territories should be amended, and that the amended regulations should make it obligatory for all parties running cattle on the ranges to have a range of 20 acres per head for every animal run; That the annual rental of 2c. per acre be materially reduced; That all animals run on ranges should be subject to an annual tax of 50c. per head, where the owner of the brand is not a leaseholder; That home-steads be not granted in ranging districts; That any American cattle fit for shipment, found on Canadian ranges, be shipped to Canadian markets, and the duty and annual tax be held and deducted from the prices obtained; That leaseholders be given liberal privileges of purchasing blocks of land within their leaseholds; That the breeders of cattle on the ranges should be encouraged by wolf bounties; That a sufficient part of the revenue derived from the ranching industry be applied to the establishing fire-guards; That the running of scrub bulls be limited.—Carried.

A resolution of condolence was passed. It says: We have had the misfortune to lose our President, Mr. Walter McDonald, Toronto, who has dealt largely in Hereford cattle. He was elected President at the last annual meeting. His loss has been severely felt by both his family and the Hereford world at large. His courteous manner and upright business capacity has endeared him to all of us.

Officers elected: President, W. H. Hunter, The Maples; Vice-Pres. for Ontario, Alf. Stone, Guelph; Vice-Pres. for Quebec, H. D. Smith, Compton, Quebec; for Manitoba, A. E. Philp, Brandon; Maritime Provinces, W. W. Black, Amherst, N. S.; Directors—A. H. Rawlings, Forest; A. S. Hunter, Durham; A. H. O'Neill, Southgate; Mossom Boyd, Bobcaygeon; J. A. McDiarmid, Stayner; W. H. Hammell, Beeton; H. Reid, Mimosa; Asa Warwick, Kainswick.

Points of Excellence.

A FEW REASONS WHICH ARE RAPIDLY MAKING A NEW CATARRH CURE FAMOUS.

Stuart's Catarrh Tablets, the new Catarrh cure, has the following advantages over other catarrh remedies:

First: These tablets contain no cocaine, morphine or any other injurious drug, and are as safe and beneficial for children as for adults; this is an important point when it is recalled that many catarrh remedies do contain these very objectionable ingredients.

Next: Being in tablet form, this remedy does not deteriorate with age, or on exposure to the air, as liquid preparations invariably do.

Next: The tablet form not only preserves the medicinal properties, but it is so far more convenient to carry and to use at any time that it is only a question of time when the tablet will entirely supersede liquid medicines, as it has already done in the medical department of the United States Army.

Next: No secret is made of the composition of Stuart's Catarrh Tablets; they contain the active principle of Eucalyptus bark, red gum, bloodroot and Hydrastin, all harmless antiseptics, which, however, are death to catarrhal germs wherever found, because they eliminate them from the blood.

Next: You cannot cure catarrh by local applications to the nose or throat, because these are simply local symptoms and such treatment can not possibly reach the real seat of catarrhal disease, which is the blood; for this reason, inhalers, douches, sprays and powders never really cure catarrh, but simply give temporary relief, which a dose of plain salt and water will do just as well.

Catarrh must be driven out of the system, out of the blood, by an internal remedy, because an internal remedy is the only kind which can be assimilated into the blood.

Stuart's Catarrh Tablets do this better than the old form of treatment, because they contain every safe specific known to modern science in the anti-septic treatment of the disease.

Next: The use of inhalers and spraying apparatus, besides being ineffective and disappointing, is expensive, while a complete treatment of Stuart's Catarrh Tablets can be had at any drug store in the United States and Canada for 50 cents.—Advt. om.

GOSSIP.

Mr. W. E. Wright, Glasnworth, Ont., commenced advertising Mammoth Bronze turkeys early in the season, with the result that he sold nearly all of his 1900 crop before the cold weather arrived. He is fully persuaded that it pays well to advertise in the FARMER'S ADVOCATE. Mr. Wright showed sheep and hogs at Guelph Fat Stock Show, on which he won thirteen prizes, including two sweepstakes in sheep and 1st-on export bacon hogs in Chester White class.

Messrs. W. G. Pettit & Son, Freeman, Ont., report the following sales in December to Mr. E. W. Bowen, Delhi, Ind.: The (imp.) 5-yr.-old cow, Blossom, of the celebrated Cruickshank Orange Blossom family, by Star of Morning, a bull whose reputation as a sire is well known to the whole Shorthorn world. Cinderella 2nd (imp.) of the Uppermill Roan Lady family. This young cow is a grand breeder. We are retaining her bull calf of this year, imported with her, for use in our own herd. He is by Scottish Prince, of the popular Princess Royal family. Daisy 2nd (imp.), by Prince Horace, a beautiful roan yearling of the low-down, thick kind. She should make a good one. Mr. Bowen also selected four beautiful red home-bred heifers, all coming 3 years old and carrying their first calves to (imp.) Blue Ribbon. To Mr. Manson Campbell, Chatham, Ont.: The 14-months (imp.) bull, Scottish Clansman, bred by Alex. Watson, North Auchincroft, Aberdeenshire, Scotland, and got by Clan Alpine, a pure Cruickshank, and acknowledged to be one of the best sires in Scotland; dam Madge, of the popular Matilda family. To A. H. H. Baird, Elmside, Que.: One red bull calf 12 months old. To Thos. Robertson, Marshville, Ont.: Red bull calf 12 months old. Our herd now numbers 108 head, and we have 30 cows (mostly imported) yet to calve in the next few months. We can spare a few more and still have some left.

The twelfth annual meeting of the American Leicester Breeders' Association was held in Guelph, Ont., December 13th, 1900. President D. C. Graham, Cameron, Ill., presided. The Sec.-Treas. report showed a cash balance on hand of \$555.73. A resolution of condolence to the family of the late John Laidlaw, Wilton Grove, Ont., was unanimously passed. It was resolved that Buffalo, N. Y., be the place, and during the sheep exhibit at the Pan-American Exposition (which will be from Sept. 23rd to Oct. 5th) the time, for holding the next annual meeting of this Association. Election of officers: President, D. C. Graham, Cameron, Ill.; Vice-President, A. W. Smith, Maple Lodge, Ont.; Secretary-Treasurer, A. J. Temple, Cameron, Ill.; Directors—John Kelly, Shakespear, Ont.; James Snell, Clinton, Ont.; C. E. Wood, Freeman, Ont.; J. M. Gardhouse, Highfield, Ont.; J. W. Murphy, Cass City, Mich.; Honorary Vice-Presidents—W. A. McCoy, Mercer, Penn.; A. L. Wingate, Avon, Ill.; M. H. Parlee, Sussex, N. B.; A. Whitelaw, Guelph, Ont.; S. P. Goudey, Yarmouth, N. S.; A. D. Gamley, Brandon, Man.; J. W. Mooney, Inverness, Que.; James Truesdale, Maryland; John Marshall, Cass City, Mich.; Wm. Clark, North Wilshire, P. E. I.; W. L. Scribner, Schoharie, N. Y.; Robert Taylor, Abbott, Neb.; J. W. McKinney, Salem, Oregon; H. D. Harriman, Saxonville, Mass.; C. S. Nevius, Chiles, Kan. At a meeting of the Board of Directors it was unanimously resolved that the following special prizes be offered at Pan-American Exposition, Buffalo, N. Y.: For best ram and 3 ewes, 2 years old and over—1st prize \$20, 2nd prize \$15. Best shearing ram and 3 ewes, 1 year and under 2 years old—1st prize \$20, 2nd prize \$15. Best 4 lambs, 2 rams and 2 ewes, bred by exhibitor—1st prize \$18, 2nd prize \$12. At Ontario Provincial Winter Fair, Guelph, Ont.: Best 3 ewe lambs—1st prize \$12, 2nd prize \$8, 3rd prize \$5. Open only to exhibitors that have never won prizes at a Provincial Fat Stock Show.—A. J. TEMPLE, Sec.

A Good Improved Half-Section.—G. P. Collyer, London, Ont., offers for sale in this issue and fully describes a farm of 320 acres. Mr. Collyer has his chief business interests in Ontario, and will sell his Manitoba farm at a bargain. See the advertisement for location, improvements, etc., and write Mr. Collyer for full terms, etc.

320-ACRE FARM FOR SALE.

South half Sec. 6, Tp. 16, R. 29, w. 260 acres thoroughly fenced and subdivided with three wires; 150 acres under cultivation; 56 acres summer-fallowed the past season, and 15 acres of fall plowing, ready for wheat in the spring. The farm has been worked on the 3-year rotation system, summer-fallowing one third every year, and land in first-class state of cultivation, yielding from 40 to 45 bushels wheat per acre. There is quite a large portion in virgin prairie, with bluff of good young poplar on it. Frame house, lathed and plastered twice, making two dead-air spaces, and well-finished in every respect. Main part, 20 x 30 ft., containing dining-room, kitchen, pantry, and hall, downstairs; 4 bedrooms and linen cupboard upstairs; and a lean-to on north side, 10x30 ft. There is a good stone cellar, with brick partition, under house. House cost \$1,200, not counting labor of drawing sand, stone, etc., and finishing. Stable, 26x40 ft., concrete; hayloft above, and frame implement shed, 15x40 ft., on north side. Henhouse, frame; pigpen, frame. Page-fence yard. Granary, 22x31 ft. All shingle-roof buildings; one frame stable, 22x15 ft., with sod roof. There is also a never-failing well. Seed and feed can be bought by purchaser at market prices.—Situation: 17 miles from Moosomin; 3 miles from church and school. The N. W. C. R. R., whose present terminus is 25 miles east, is expected, during the coming summer, to run within 3 miles of the farm. This is undoubtedly one of the best opportunities of obtaining a grand homestead at a moderate price. For further particulars apply to G. P. COLLYER, London, Ont.

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By the champion winners, Baron's Pride, McGregor, Flashwood, Prince Alexander, Prince of Carruchan, etc.

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By the leading sires of the day, all combining size, color, quality and action.

Fourteen first prizes and six second prizes won at the recent State Fairs of Illinois, Iowa, and Wisconsin, in the very hottest competition. Inspection cordially invited.

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THOS. GOOD, Richmond P. O., Ont.

R. R. Station, Stittsville, C.P.R. om

Rosedale Stock Farm.

CLYDE AND SHIRE HORSES. SCOTCH SHORTHORNS. LEICESTER SHEEP.

Six choice Shorthorn bulls, Scotch and Scotch topped, from 11 to 13 months (red and roan), good quality. Prices right.

My motto, "The best is none too good."

J. M. GARDHOUSE, Highfield P. O. Malton Sta. G.T.R. om Weston Sta., C.P.R.

Clydesdales--Hackneys.

WEIMPORT, breed, and develop the highest class of stock from the best studs in Scotland, Canada, and the United States. Clydesdales headed by Lord Charming and Prince Delectable; Hackneys headed by Square Shot.

A Few Choice Yearlings of Either Breed can be spared.

D. & O. SORBY, GUELPH, ONT.

IN WRITING PLEASE MENTION FARMER'S ADVOCATE.

HORSEMEN! - THE ONLY GENUINE IS

GOMBAULT'S CAUSTIC BALSAM.

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPERSEDES ALL CAUTERY or FIRING. Impossible to produce scar or blemish. Every bottle 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.

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A. J. MORGAN, MFR., LONDON, ONT.

Farm Foreman, Manitoba.

Working foreman, married, able to take charge; 400 acres crop, 30 milk cows, cream shipped. A small Shorthorn herd. House, barns, etc., all modern appliances. Permanent engagement and percentage preferred after first year. Wife to board men. Scotchman profers. Apply giving references and salary. GEO. H. GREIG, Box 1372, Winnipeg, Man.

FOR SALE: Clydesdales and Shorthorns.

Young stallions and fillies bred from imported sires and dams. Also a choice bunch of Shorthorns, of both sexes and all ages, including a few extra choice young red and roan heifers and bulls. JOHN BRIGHT, Myrtle, Ontario.

90 HEAD Herefords

High-quality, Early-maturing, Prizewinners. Young bulls, cows, heifers. 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.

THE HERD of upwards of 90 head of registered animals contains the blood of the best English herd with imported True Briton and Likely Lead at the head. Stock of both sexes and all ages for sale. Correspondence or a personal visit invited. A. S. HUNTER, DURHAM, ONT.

JOHN DRYDEN, BROOKLIN, ONTARIO,

OFFERS SIX YOUNG SHORTHORN BULLS, ready for service, at reasonable prices. Strong, active, masculine.

GOOD QUALITY AND CHOICE BREEDING.

R. MITCHELL & SON, Burlington Jct. Station, Nelson, Ontario,

Breeders and importers of SCOTCH SHORTHORNS, Offer for sale:

- 12 Canadian-bred females. 11 Imported females. 4 Imported bulls. 7 Canadian-bred bulls.

SHORTHORNS FOR SALE, or will exchange my 4-year-old stock bull, Olmedo 24390, having 4 excellent Scotch top crosses on a Crimson Flower dam, for one equally well bred. Young bulls and heifers and Shropshires for sale. GEO. RAIKES, BARRIE, ONT.

Pure Scotch Shorthorns for Sale. Two bulls and fifteen months old, and three two-year-old and two one-year-old heifers. All right. Good ones. Meadowdale station, C. P. R. S. J. PEARSON & SON, Meadowdale.

8 BULLS, from 6 to 18 months old. Also stock bull, Kinnell of York = 24504 =. Cows and heifers of good milking strains. Prices right. F. MARTINDALE, York, Ont.

ASHTON FRONT VIEW STOCK FARM.

Six 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.

PLEASE MENTION FARMER'S ADVOCATE.

OAKLAWN FARM

AS ALWAYS, VASTLY IN THE LEAD. PERCHERONS, FRENCH COACHERS, SHIRES.

ON HAND, HOME-BRED AND IMPORTED 270 STALLIONS, 235 MARES.

The greatest collection of stallions ever brought together. Our two large, recent importations for this year included the Principal Prize Winners at the

WORLD'S EXPOSITION, PARIS, and at the Government Shows at Amiens and Mortagne, and the Tops, first choice, purchased from the leading studs of France and England.

The superiority of the Oaklawn Percherons was also shown at the

INTERNATIONAL LIVE-STOCK EXPOSITION at Chicago, December, 1900, pronounced by press and public the greatest live stock exhibition ever seen, where Oaklawn's Exhibit was awarded

Three 1st Prizes, three 2d Prizes, three 3d Prizes, two 4th Prizes and two 5th Prizes in the three stallion classes; Championship, any age; Championship, mare, any age; 1st and 2d Prizes for collections; \$100 Gold Medal best group, five stallions; \$100 Gold Medal, best group, three mares.

Catalog on application. Prices reasonable. DUNHAM, FLETCHER & COLEMAN, WAYNE, DU PAGE CO., ILLINOIS.

HOGATE & CO., OF TORONTO, ONT., IMPORTERS OF

Clyde and Shire Stallions.

Large importation just arrived. Can show you more Clyde stallions of breeding ages than any firm in Canada. Prices from \$700.00 up. Don't fail to see our horses before you buy. Have had fifteen years' experience, and can save you money. All horses guaranteed to be reasonably sure getters. We are stabling our horses at Woodstock this winter, and can be seen at our barn there.

FOR FURTHER PARTICULARS WRITE—

E. R. HOGATE, WOODSTOCK, ONT.

TROUT CREEK HERD OF SHORTHORNS.

Since our Chicago sale we have imported sixty-two head, including some Royal winners; they were pronounced in Scotland superior to past importations. We try to import the best, believing that this is one of the ways to assist in improving the breed on this side of the water. Being thoroughly convinced, also, that a bull of the right sort is even more than half the herd, we have decided to keep the following choice ones:

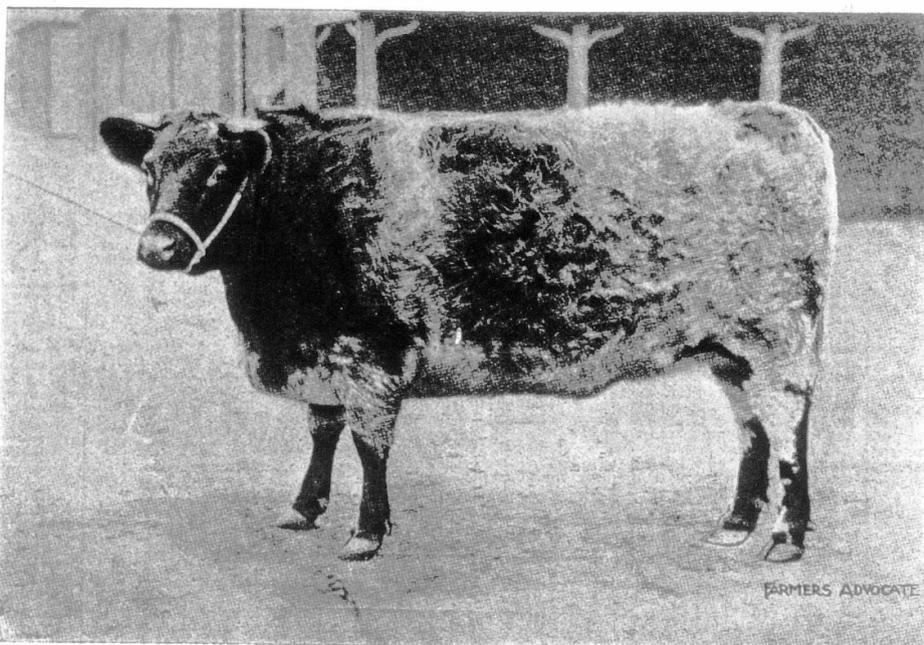
Imp. Lord Banff,

Bred by A. Watson; of the Campbell Bessie family.

Imp. Consul,

Bred by J. D. Fletcher; of the Campbell Claret family. Consul was awarded first at Edinburgh, first and champion at Provincial Union, first and champion at Creiff, and second at the Highland. His sire, Watchword, bred by Wm. Duthie, was first at the Highland in 1895 and 1896, and got by Scottish Archer. Watchfire, by Watchword, was first at the Highland, 1897. Consul is the highest-priced bull imported to Canada.

Hamilton is a city of over 50,000 inhabitants, located on main line of Grand Trunk Railway, between Chicago and Buffalo; also connected by Canadian Pacific Railway and Michigan Central Railway—branch lines.



CICELY.

Bred by Her Majesty the Queen; undefeated in her class and many times champion; imported by W. D. Flatt.

Imp. Silver Mist,

Bred by Wm. Duthie; of the famous Missie family. He had many friends for first choice at Messrs. Marr and Duthie's sale. Mr. Beck, representing the Prince of Wales, made next to last bid.

Imp. Wanderer's Last,

Bred by W. S. Marr; also of the Missie family. Is the last calf got by that renowned Cruickshank bull, Wanderer. Mr. Marr considers this youngster very promising.

We keep in our herd a choice lot of both imported and Canadian cattle, of both sexes, from which to make selections. Personal inspection invited. Parties desiring to see the herd will be met on arrival of trains at Hamilton if notice is given. Visitors always welcome.

W. D. FLATT,

378 Hess St. South.

HAMILTON, ONT.

Jas. Smith, Manager.

SHORTHORNS

140 HEAD

SCOTCH IMPORTED

140 HEAD

NINETY of the females are either in calf or have calves at foot. The majority of the calves are imported in dam.

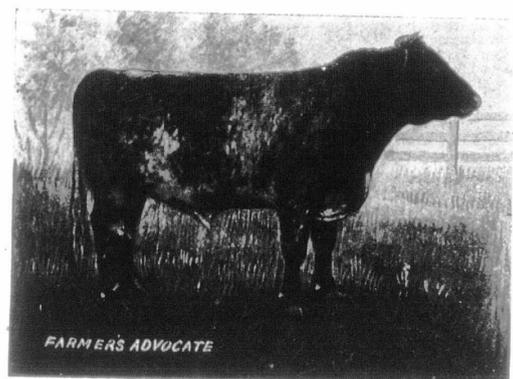
Some of the families represented in the herd are as follows:

AUGUSTAS
CLARAS
NECTARS
GOLDIES
JENNY LIND
VICTORIAS
MATILDAS

BESSIES
CROCUS
ROSEBUDS
BRAWITH BUD
LANCASTERS
MAYFLOWERS
AMARANTHS

BUTTERFLY
CLIPPERS
EMMAS
BROADHOOKS
MEDORAS
MINAS
VILLAGE MAIDS

BEAUTY
MISS RAMSDEN
FLORAS
RAGLANS
LUSTRES
GEM OF THE VALE

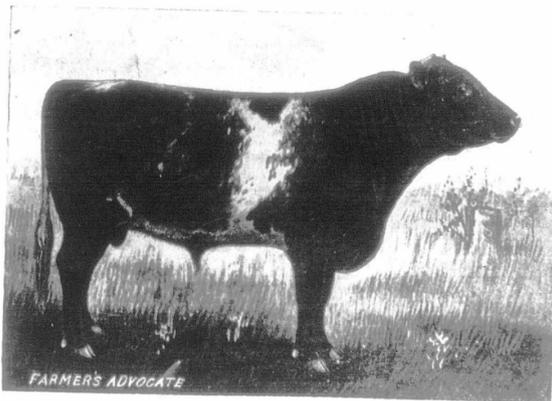


FARMER'S ADVOCATE

IMP. FASHION'S FAVORITE.

FIVE EXTRA GOOD IMPORTED BULLS and A NUMBER of VERY promising BULL CALVES, imported in dam, **FOR SALE**

HERD headed by the IMPORTED BULLS, Golden Drop Victor and Prince Bosquet.

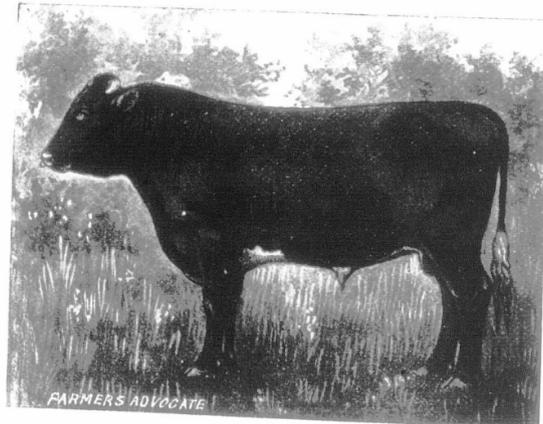


FARMER'S ADVOCATE

IMP. CLAN McKAY.

CATALOGUE FREE.

If interested, come and see us, or write—



FARMER'S ADVOCATE

IMP. PALERMO.

H. CARGILL & SON,
CARGILL, ONTARIO, CANADA.

The Army of Health.

THE ARMY IN THE PHILIPPINES INSIGNIFICANT COMPARED WITH THIS ONE.

If all the people in the United States, Canada and Great Britain who make daily use of Stuart's Dyspepsia Tablets could be assembled together it would make an army that would outnumber our army of one hundred thousand by at least five to one.

Men and women who are broken down in health are only a part of the thousands who use this popular preparation: the greater number are people who are in fair health, but who know that the way to keep well is to keep the digestion perfect and use Stuart's Tablets as regularly as meal time comes to insure good digestion and proper assimilation of food.

Prevention is always better than cure, and disease can find no foothold if the digestion is kept in good working order by the daily use of Stuart's Dyspepsia Tablets.

Mr. Thomas Seale, Mayfield, Calif., says: "Have used and recommended Stuart's Tablets because there is nothing like them to keep the stomach right."

Miss Lelia Dively, 4627 Plummer St., Pittsburg, Pa., writes: "I wish everyone to know how grateful I am for Stuart's Dyspepsia Tablets. I suffered for a long time and did not know what ailed me. I lost flesh right along until one day I noticed an advertisement of these tablets and immediately bought a 50-cent box at the drug store. I am only on the second box and am gaining in flesh and color. I have at last found something that has reached my ailment."

From Mrs. Del. Eldred, Sun Prairie, Wis.: "I was taken dizzy very suddenly during the hot weather of the past summer. After ten days of constant dizziness I went to our local physician, who said my liver was torpid and I had overheated my blood; he doctored me for two weeks without much improvement. I finally thought of Stuart's Dyspepsia Tablets (which I had used long before for various bad feelings), and the first three tablets helped me. "They are easily the best all round family medicine I ever used."

The army of people who take Stuart's Tablets are mostly people in good health, and who keep well by taking them regularly after meals. They contain no opiates, cocaine or any cathartic or injurious drugs, simply the natural peptones and digestives which every weak stomach lacks.

Stuart's Dyspepsia Tablets are sold by druggists everywhere in United States, Canada and Great Britain—Advt. om

Clover Leaf Lodge HERD OF Shorthorns

A number of choice young bulls, heifers and cows, excellent milking strains. Correspondence invited. R. CORLEY, Belgrave P. O., Ont., and G. T. R.; Wingham, C. P. R.

SPRINGHURST SHORTHORNS.

The herd is largely of Cruickshank and other Scotch sorts, and is headed by the Inverquhomery-bred bull, Knuckle Duster (imported) (72793). Herd has furnished the Fat Stock Show champion three times in the last five years.

Choice young stock (both sexes) FOR SALE.

H. SMITH, HAY, ONT. Exeter Station on G. T. R., half a mile from farm. om

YOUNG SHORTHORNS FOR SALE

Our present offering includes several choice young bulls fit for service, sired by "Scotland Yet," and out of Warfare (imp.) dams; also bull calves, from Blue Ribbon (imp.), and out of Royal George cows. Inspection and correspondence solicited.

A. & D. BROWN, M. O. RAILWAY. om IONA, ONTARIO.

Shorthorns and Shropshires FOR SALE.

Red bull (1 yr.) by Collynie Archer (imp.) from Rosebud family. Roan bull (1 yr.) from imp. Countess family. Red and white bull (17 mos.) from Rosebud family. Eight Shropshire ewe lambs, well covered.

WM. D. DYER, COLUMBUS, ONT. BROOKLIN STATION, G. T. R. om

Good Young Bulls

Of best Scotch breeding, and a desirable lot of HEIFERS

of the low-down, blocky type. Royal Prince = 31241 = (bred by J. & W. B. Watt), a worthy son of Imp. Royal Sailor = 18959 =, heads the herd.

H. K. FAIRBAIRN, Thedford P. O. and Station, Ont.

For sale

10 Shorthorn bulls, 20 Leicester and South-down rams. A lot of Berkshires. All choice. Send for catalogue.

E. JEFFS & SONS, BOND HEAD. om

SHORTHORNS FOR SALE, bred from imported Lavinia and Barrington foundation, upon which have been employed such sires as Janitor 21385, Scarlet Velvet 21446, and Chief of Clan 31123. Young bulls for sale, from 7 to 15 mos. old. Also a few choice young females, reds and roans.

JAS. SMITH & SON, INGLIS FALLS, ONT. om

JAS. DORRANCE,

SEAFORTH, ONTARIO, BREEDER OF

Shorthorn Cattle and Berkshire Pigs

Young stock always for sale. om

HAWTHORN HERD

OF DEEP-MILKING SHORTHORNS.

We are offering 8 young bulls for sale, of first-class quality, and AI breeding. om

Wm. Grainger & Son, - Lonsdale, Ont.

GOSSIP.

OFFICIAL RECORDS OF HOLSTEIN-FRIESIAN COWS FOR NOVEMBER AND DECEMBER, 1900.

This class of records are made uniformly, under supervision of State Experiment Stations, at the homes of the owners of the cows. They are for seven consecutive days, and the fat is determined by the Babcock test. The equivalents of butter are calculated by the Superintendent of Advanced Registry from reports sent to him from these stations. Eight reports were received in November and eighteen in December. The largest record of butter-fat is 18,441 lbs., equivalent to 23 lbs. 0.8 oz. butter at 80 per cent., or 21 lbs. 3.2 ozs. at 85.7 per cent. fat to the pound. Summarized, these tests show the following results: Nine full-age cows, average 7 years 8 months 10 days, 32 days after calving, butter-fat 14,033, equivalent butter 80 per cent. fat 17 lbs. 8.6 ozs., equivalent 85.7 per cent. fat 16 lbs. 5.9 ozs.; five four-year-olds, average 4 years 5 months 14 days, 17 days after calving, butter-fat 12,938 lbs., equivalent butter 80 per cent. fat 16 lbs. 2.8 ozs., equivalent 85.7 per cent. fat 15 lbs. 1.5 ozs.; four three-year-olds, average 3 years 4 months 15 days, 28 days after calving, milk 349 lbs., butter-fat 11,678 lbs., equivalent butter 80 per cent. fat 14 lbs. 9.6 ozs., equivalent 85.7 per cent. fat 13 lbs. 10 ozs.; eight classed as two-year-olds, average 2 years 5 months 4 days, 41 days after calving, milk 273.1 lbs., butter-fat 8,674 lbs., equivalent butter 80 per cent. fat 10 lbs. 15.5 ozs., equivalent 85.7 per cent. fat 10 lbs. 1.9 ozs.

The cows by ages making best records are as follows: Roxie Wayne 25207, age 9 years 8 months 21 days, 34 days from calving: Milk 599.9 lbs., butter-fat 18,441 lbs., butter 80 per cent. fat 23 lbs. 0.8 oz., butter 85.7 per cent. fat 21 lbs. 8.2 ozs.

Anggie Cornueopia 3rd 34026, age 7 years 10 months 7 days, 20 days from calving: Milk 496.4 lbs., butter-fat 16,717 lbs., butter 80 per cent. fat 20 lbs. 14.3 ozs., butter 85.7 per cent. fat 19 lbs. 8 ozs.

Lady Flossy's Grace 2nd 984 W. H. B., age 7 years 2 months 27 days, 13 days from calving: Milk 475.9 lbs., butter-fat 15,905 lbs., butter 80 per cent. fat 19 lbs. 11.1 ozs., butter 85.7 per cent. fat 18 lbs. 8.9 ozs.

Jarie Pauline De Kol 2nd 44931, age 3 years 3 months 1 day, 30 days from calving: Milk 449.2 lbs., butter-fat 15,387 lbs., butter 80 per cent. fat 19 lbs. 3.7 ozs., butter 85.7 per cent. fat 17 lbs. 15.2 ozs.

Grace Amy Bobbet 4714, age 3 years 4 months 6 days, 15 days from calving: Milk 372.3 lbs., butter-fat 10,505 lbs., butter 80 per cent. fat 13 lbs. 2.1 ozs., butter 85.7 per cent. fat 12 lbs. 4.1 ozs.

Fricka 4th's A 48872, age 3 years 10 months 9 days, 49 days from calving: Milk 300.1 lbs., butter-fat 10,506 lbs., butter 80 per cent. fat 13 lbs. 2.1 ozs., butter 85.7 per cent. fat 12 lbs. 4.1 ozs.

Belle Rose Duchess 47244, age 2 years 11 months 5 days, 28 days from calving: Milk 298 lbs., butter-fat 10,111 lbs., butter 80 per cent. fat 12 lbs. 10.2 ozs., butter 85.7 per cent. fat 11 lbs. 12.7 ozs.

Rena C. Koningen 46172, age 2 years 11 months 1 day, 30 days from calving: Milk 330.5 lbs., butter-fat 9,783 lbs., butter 80 per cent. fat 12 lbs. 3.7 ozs., butter 85.7 per cent. fat 11 lbs. 6.6 ozs.

Manor De Kol's Clothilde Lass 43390, age 2 years 9 months 1 day, 91 days from calving: Milk 277.9 lbs., butter-fat 8,662 lbs., butter 80 per cent. fat 10 lbs. 13.2 ozs., butter 85.7 per cent. fat 10 lbs. 1.7 ozs.

Aaltje Salo Reka 49337, age 1 year 11 months 15 days, 10 days from calving: Milk 266.6 lbs., butter-fat 8,399 lbs., butter 80 per cent. fat 10 lbs. 8 ozs., butter 85.7 per cent. fat 9 lbs. 12.8 ozs.

Kate Jacob 49112, age 2 years 3 months 8 days, 10 days from calving: Milk 262.6 lbs., butter-fat 8,328 lbs., butter 80 per cent. fat 10 lbs. 6.6 ozs., butter 85.7 per cent. fat 9 lbs. 11.5 ozs.

Edgerly Frena 2nd 49454, age 2 years, 70 days from calving: Milk 245.3 lbs., butter-fat 7,947 lbs., butter 80 per cent. fat 9 lbs. 12.9 ozs., butter 85.7 per cent. fat 9 lbs. 2.5 ozs.

S. HOXIE, Supt. of Advanced Registry, Yorkville, N. Y., January 1st, 1901.

Frost & Wood's Extension. — The enterprising firm of Messrs. Frost & Wood, of Smith's Falls, Ont., commenced extension of their commodious shops in 1899 by erecting a large warehouse 68x140, four stories high. They have just now completed other extensive buildings—a new blacksmith shop, 75x110, with extension 50x75 for plow shop; one entirely new building, three stories, 60x160, ground floor for machine shop, second story for carpenter shop, and third floor for paint shop. An addition of 80x160 feet was also made to the moulding shop. This looks like being ready for the new century with its demands for high-class farm machinery.

SPRINGBANK FARM.

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

JAS. TOLTON, WALKERTON, ONT. om

SHORTHORN CATTLE AND LINCOLN SHEEP.

Imp. Prime Minister 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.

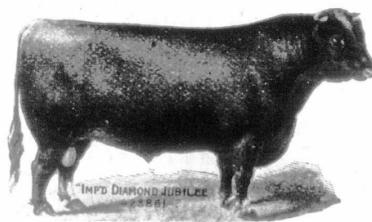
J. T. GIBSON, DENFIELD, ONT. om

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 = 16364 =. Grand milking cows in herd. Also a number of Leicesters of both sexes, from imported foundation.

JAMES DOUGLAS, CALEDONIA, ONT. om



T. DOUGLAS & SONS, STRATHROY, ONT. BREEDERS OF..

Scotch Shorthorns

100 HEAD TO SELECT FROM.

Offer for sale 20 young bulls, and cows and heifers of all ages, of the most approved breeding, bred to (imp.) Diamond Jubilee = 28861 =, at head of herd. Farm one mile north of town, om

J. & W. B. Watt, SALEM, ONT., (Post and Telegraph Office.)

BREEDERS OF Clydesdale horses, Scotch Shorthorn cattle, Leicester and Oxford sheep, Berkshire pigs.

Our SHORTHORN herd was founded over 30 years ago, and contains such tribes as the Village Buds, Matchless, Missies, Mildreds, Stamfords and English Lady, upon which we have employed such bulls as Barnpton Hero 324, Young Abbotsburn 6236, Challenge 2933, Perfection 9100, Lord Lansdowne (imp.) 2712, Clan Stuart 14381, Canada 19536, Sittlyton Chief 17060, Royal Sailor (imp.) 18959, Royal George 28513, Clipper King 16293 and Judge 23419, all of which have been first-prize winners wherever shown. Royal Victor 34681 and Royal Wonder 34682, by Royal Sailor (imp.), and out of English Lady and Mildred dams, now head the herd, assisted by Roan Cloud 31317, by Lord Gloster 26995, and out of Melody 21992, a descendant of the Buckingham family. We are now offering young bulls, cows and heifers for sale, of Scotch type.

Farm 2 miles from Elora Station, G. T. R. and C. P. R., 15 miles north of Guelph.

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

IMPORTERS AND BREEDERS OF Scotch Shorthorns and Shropshire Sheep

OFFER FOR SALE:

- 20 Imp. bulls.
40 Imp. cows and heifers.
6 Home-bred bulls.
30 Choice Home-bred heifers—1, 2 and 3 years old.
25 Ewe lambs.

Our importation of this year arrived home August 17th, and is one of the largest made this year. Selected by ourselves from the leading herds in Scotland.

Our new Catalogue, with full information, is now ready to mail.

Burlington Junction Station, Telegraph and Telephone Offices, within half a mile of farm. om

FOR SALE.

FIFTEEN OR TWENTY young Scotch Shorthorn cows and heifers. Also 10 bulls, 6 to 24 months; good ones at right prices. om

DAVID MILNE, ETHEL, ONT.

SHORTHORNS AND BERKSHIRES.

Young bulls, six to twelve month old; cows and heifers. Berkshires (various ages, either sex), and Embden geese. om

MAC CAMPBELL, Northwood, Ont.

SHORTHORNS FOR SALE.

Including my imported stock bull, Royal Member 17107, and a few choice bred females in calf to him. Also young things of both sexes.

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

Shorthorn Bulls

Three fine roan bulls, about 15 months old, large and well formed, of strong Booth breeding. Able and well enough bred for anything. om

D. ALEXANDER, Brigden, Ont.

Shorthorn Bull for sale: CRUSADER (27121).

Red; calved March 3rd, 1897. Bred by Jas. S. Smith, Maple Lodge, Ont. Selling to make room for an imp. Scotch Shorthorn. om

ROBT. MOORHOUSE, Cairo, Ont.

Standard Sheep Dip (OIL OF TAR.)

Non-poisonous, cheap and effective. Destroys Scab, Lice, Ticks, Foot Rot, etc.

Write for Testimonials and Circulars.

Manufacturers: The West Chemical Company, om TORONTO, ONT.

For Contagious Abortion use West's Fluid.

SHORTHORNS FOR SALE.

Two young bulls and a few young females, carrying Isabella, Kirklevington and Kinellar strains. All in good form and health. om

JAS. S. FLEMING, Gill, Ont.

9—SHORTHORN BULLS—9

From 7 to 18 months old, Of the Fashion and Lavender tribes; well-developed, healthy, and thick-fleshed; red and roan animals. Golden Robe now heads the herd.

WM. G. HOWDEN, Columbus, Ont. om

SHORTHORNS FOR SALE

Young stock of both sexes, reds and roans.

JOHN R. HARVIE, ORILLIA, ONT. om

Center Wellington Herd Scotch Shorthorns

was founded in 1892 on Marr-bred descendants, to which have been added the Mistletoe and Matchless tribes, with Lord Stanley 4th 22678 at the head. Young cows and heifers for sale. Farm 1/2 mile from town and 14 miles north of Guelph. om

Box 66. H. B. WEBSTER, Fergus, Ont.

Bonnie Burn Stock Farm

Forty rods north of Stouffville station, Ont., offers 5 Shorthorn bulls and some heifers, 30 Shropshire rams and ewes from imp. and Canadian-bred sires, at reduced prices. om

D. H. RUSSELL, Stouffville, 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, om MAPLE LODGE P. O., ONT.

Shorthorns FOR SALE:

- 12 young bulls.
10 yearling heifers and heifer calves.
16 2-year-old heifers and young cows,

several well advanced in calf to Precious Stone (imp.). Prices moderate. Write for particulars, om

G. A. BRODIE, Stouffville Station, Bethesda, Ont.

Shorthorns and Tamworths FOR SALE.

Our choice, dark red, 8-mos. bull. Also a few 4-mos. boars of extra quality, with Nimrod blood.

COLWELL BROS., Newcastle, Ont.

ARTHUR JOHNSTON

Greenwood, Ontario, Canada.

HIGH-CLASS SCOTCH SHORTHORNS

(First Importation Made in 1874.)

(My recent importation of 30 head has just arrived home from quarantine. Herd now numbers over 120 head.)

OFFERS FOR SALE

- 40 Imported Cows and Heifers,
40 Home-bred Cows and Heifers,
11 Imported Bulls and Bull Calves,
13 Home-bred Bulls and Bull Calves.

Railway stations—Pickering, on main line of Grand Trunk Railway, 22 miles east of Toronto, and Claremont, 23 miles east of Toronto, on the C. P. Railway. Catalogues on application. om

PLEASE MENTION FARMER'S ADVOCATE

Ferry's SEEDS

Ferry's Seeds are known the country over as the most reliable Seeds that can be bought. Don't save a nickel on cheap seeds and lose a dollar on the harvest.
1901 Seed Annual free.
D. M. FERRY & CO.,
Windsor, Ont.

A QUICK, SHARP CUT
hunts much less than a bruise, crush or tear
Done with the
DEHORNING KEystone KNIFE
at the safest. Quick, sharp cut. Cuts from four
sides at once. Cannot crush bruise or tear.
Most humane method of dehorning known.
Took highest award World's Fair. Write
for free circulars before buying.
Owned and Manufactured by R. H. McKenna, V.S., Picton, Ont.
THE LATE A. C. BROBIUS' PATENT.



R. & S. NICHOLSON

SYLVAN P. O., PARKHILL STATION,
IMPORTERS AND BREEDERS OF
SHORTHORN CATTLE.

- OFFER FOR SALE
7 Imp. cows.
3 Imp. heifers.
7 Yearling heifers.
7 Yearling bulls.
9 Cows.

High-class Shorthorns and Yorkshire Pigs.
One very superior bull, about 17 months old; three
bulls about 5 months old, from imp. stock; cows and
heifers due to calve this fall. Forty Yorkshire pigs, 2
months old, from imp. stock; imp. boar, 2 years old,
and sows due to farrow soon. Write, or come and
see us.
JAS. McARTHUR, GOBLE'S, ONT.
Goble's Station, G. T. R., 10 miles east of Wood-
stock, 2 miles from farm. Visitors met.

SPRING GROVE STOCK FARM

Shorthorn Cattle and
Lincoln Sheep. Herd
prize and sweepstake at
Toronto Industrial Ex-
hibition, 1897 and 1898.
Herd headed by Topeman
—17847—, champion at
Winnipeg, Toronto, Lon-
don and Ottawa, 1898.
High-class Shorthorns of
all ages for sale. Also
prizewinning Lincolns.
Apply
T. E. ROBSON, Ilderton, Ont.



PURE AND SCOTCH-TOPPED SHORTHORNS FOR SALE.

Ten red bulls, between 6 mos. and 2 years, by Imp.
Prime Minister, Strathallan, Hawarden. Also
females. A. P. ALTON, Burlington Jct.,
Appley, Ont.

5 SHORTHORN BULLS... 5

My five lusty, well-fleshed, red Shorthorn bulls
range in age from 5 to 15 months old. The are all
for sale. JAS. BROWN, Thorold, Ont.

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-y-o ALVA 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.

FOR SALE.

6 YEARLING JERSEY BULLS.
sired by Brampton's Mon-
arch (imp.), and from
tested cows; also regis-
tered and high-grade
springer.

B. H. BULL & SON, BRAMPTON, ONT.

SUNNYLEA FARM.

For sale: Jerseys—6 yearling bulls; females
any age. Tamworths—30 hours and
sows, different ages. Shropshire sheep—rams and
ewes of good breeding. Prices reasonable.

H. E. WILLIAMS, Knowlton, P. Q.

GLEN ROUGE JERSEYS.

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

Butter Jerseys

FOR SALE:

A granddaughter of Louise of H, the great cow
whose yield and cost of feed were published in F.A.,
8 months old; a son of Bella of H, full sister in
blood to Louise, 7 months old; a great-granddaughter
of the famous cow, Massena (900 lbs. butter in one
year), 19 months old, and in calf.

MRS. E. M. JONES,
Box 324. Brockville, Ont.

W. R. Bowman,

Mt. Forest, Ont.
We have five choice
young bulls of vari-
ous ages, also a
few in-calf heifers
and cows from prize-
winning stock,
which we will dis-
pose of at reason-
able prices. We also
offer for sale sixty
Shropshire and
Suffolk Down ewes of excellent breeding and quality,
at from \$10.00 to \$15.00 each. All stock regis-
tered.



HOLSTEINS

FOR SALE.

I AM now offering 4 royally-bred Holstein bulls:
Regulator DeKol, Pompons DeKol, Jessie 3rd's
Inka DeKol, DeDicker's DeKol. All from heavy-
milking dams, closely related to DeKol 2nd and
Netherland Hengerveld, the greatest of Holstein
cows.
J. A. CASKEY,
Madoc, Ont.

RIDGEDALE HOLSTEIN-FRIESIANS

Two young bulls of choice breeding for sale; also
some heifers. Prices reasonable. Write for particu-
lars, or come and see them. R. W. WALKER,
Shipping stations: Utica P. O.,
PORT PERRY, G. T. R.; MYRTLE, C. P. R.

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.

Maple Glen Stock Farm.

The home of officially tested, Advanced Registry, dairy
test and showing-win. A grandson
ning herd of Sylva HOLSTEINS, of Carme-
Sylva now for sale. Price is in keeping with breed-
ing and performances.

C. J. GILROY & SON,
Brockville, on C.P.R. or G.T.R. Glen Buell, Ont.

Riverside Holsteins.

6 BULLS, from 2 to 18 months old, sired
by our famous stock bull, Victor DeKol
Pietertje. Some are from imported or
officially-tested dams. Also a few heifers
for sale.

M. RICHARDSON & SON,
Haldimand Co. Caledonia, Ont.

Maple Hill Holstein-Friesians

SPECIAL OFFERING:
Four bull calves, born in August and September,
sired by the great bulls, Count Mink Mercedes and
Daisy Teake's King, and out of prizewinning and
producing dams. They are show calves, about the
best I ever bred. One yearling bull, the first-prize
calf at Toronto, 1900. Also a nice yearling heifer—a
bargain.

HARRISBURG STN., G.T.R. G. W. CLEMONS,
GALT STN., C.P.R. ST. GEORGE P.O., ONT.

SHOW AYRSHIRES FOR SALE.

As we are not going to show any cattle at the fairs
this year, we will sell the imported prizewinning
bull, Napoleon of Auchenbrain, champion and head
of first-prize herd at Toronto, 1898. Also first-class
2-year-old bull and three choice bull calves of last
fall. These are all fit for the showing, as we kept
them for that purpose. For prices and particulars
come and see, or write. James Boden, Mgr.,
St. Anne de Bellevue,
Quebec.
Farm close to St. Anne Station,
G.T.R. & C.P.R., 20 miles west of Montreal.

Ayrshire Bulls:

Write to J. YUILL & SONS,
Carleton Place,
for special prices on Ayrshire bulls from 11 years to 6
months. Four over 15 months, fit for service, from
special milking stock. Sired by prize bull, Jack of
Burnside—1684—, also females of all ages. Shrop-
shire sheep of all ages; a number of fine ram lambs,
Berkshire pigs of either sex, of the best bacon type.
B. P. Rocks.

PLEASE MENTION FARMER'S ADVOCATE.

The Breed THAT FIRST MADE Hillhurst Famous

FIVE GRAND YOUNG SHORTHORN BULLS FOR SALE, 9 to 12 months old—
registered; bred from milking strains; hardy and active, having been reared in a natural
manner on pasture. Prices moderate. Special inducements to clubs. A choice lot of

SHROPSHIRE

Ram and Ewe Lambs, by imported rams of Mansell's and Harding's breeding. HAMPSHIRE, THE
GOLDEN-FLESHED, Ram Lambs all sold. Next crop due January, 1901. Ready for service in August.

M. H. COCHRANE,

HILLHURST STATION. COMPTON CO., P. Q.
117 miles from Montreal, on Portland Div. Grand Trunk Ry.; 12 miles from Lennoxville, C. P. R.

Isaac Usher & Son, QUEENSTON, ONT.,

Manufacturers of QUEENSTON CEMENT. Proprietors of

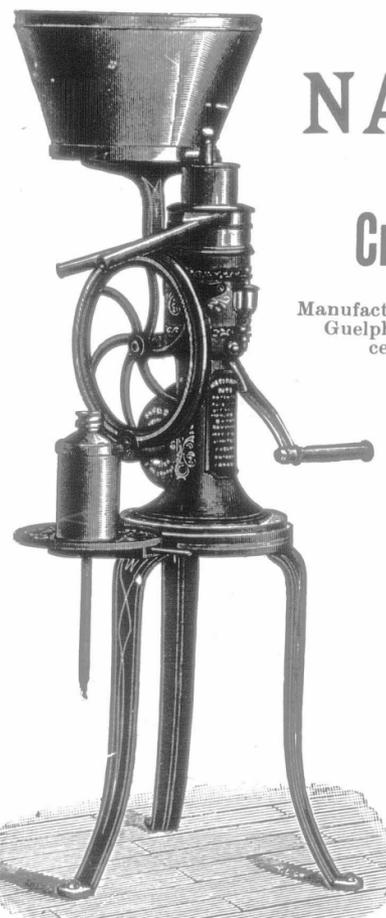
Queenston Heights Stock Farm.

Shorthorn Cattle.

Herd headed by Lord Gloster (26995), by Abbotsford. We have for sale seven young bulls, 4 to 20
months; also young cows and heifers. Stock offered for sale sired by or bred to such noted bulls
as imp. Guardsman, Royal Standard, Abbotsford, Lord Gloster, Indian Count.

P. O., TELEGRAPH AND TELEPHONE, QUEENSTON, ONT.

FARM 3 MILES NORTH OF NIAGARA FALLS.



THE NATIONAL FARM Cream Separator

Manufactured by the Raymond Mfg. Co. of
Guelph, Limited, manufacturers of the
celebrated Raymond Sewing
Machines.

THE National is an up-to-date machine,
leading all others in separating cream
by centrifugal force. It is the farmers'
choice, because it runs easy, skims fast and
clean, and makes a perfect cream, contain-
ing any per cent. of butter-fat desired. It is
also easier to clean than any other. The
National is built of the very best material
suitable for the construction of a high-speed
machine, and with proper care should last a
lifetime. The bearings are interchangeable
and easily adjusted. Every machine is guar-
anteed to do good work, and a trial of the
"National" is solicited before purchasing
any other. The already large sale of the
"National," and the growing demand for it,
shows how much the Canadian farmers ap-
preciate a Canadian-made machine that does
its work so easily and well, and at the same
time returns such a large profit on the small
investment. Ask for the "National"; try
it and buy it.

THE CREAMERY
SUPPLY CO.,
GUELPH, ONT.,
General agents for Ontario.

W. G. GLENN,
469 ONTARIO ST.,
LONDON, ONT.,

Agent for the Counties of Middlesex and
West.

"NATIONAL" NO. 1 HAND POWER.
Capacity, 330 to 350 lbs. per hour.

The Raymond Mfg. Co'y of Guelph, Ltd. GUELPH, ONT.

Please Mention Farmer's Advocate.



To produce the best results in fruit, vegetable or grain, the fertilizer used must contain enough Potash. For particulars see our pamphlets. We send them free.

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



"Making Fast Time"

We are making a great record. No other fence can compete successfully with the "Page." We now make our own wire and so get just the peculiar quality we need. Hence, we now furnish a still better fence than ever. Prices lower this year. Better look into it. Not room here for prices. We also manufacture lawn fences and gates. High in quality and low in price.

The PAGE WIRE FENCE CO. (Ltd.)
WALKERVILLE, ONT.

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.

W. WILLIS & SONS, Newmarket, Ont.,
Breeders of Jerseys (St. Lamberts).

Offer for sale, cheap, 2 very fine young bulls, fit for service, out of prizewinning cows, to make room for more coming.

Maple Cliff Dairy and Stock Farm.

FOR SALE:

Ayrshires—6 yearling bulls, females any age.
Tamworths—40 boars and sows of different ages.
Berkshires—3 boars, a number of sows.

R. REID & CO., Hintonburg.

Farm 1 mile from Ottawa. Electric cars to farm. om

GOSSIP.

R. H. Harding, Thorndale, Ont., writes: "To those who are raising cross-bred lambs for the butcher or drover, allow me to say that the 2nd and 3rd prize winners in a class of eight in the dressed-carass competition (at the International Live Stock Exposition, Chicago, Ill., Dec. 1st to 8th) were half-bred Dorsets, and the ewe lamb that won 2nd in the live competition in a class of eight or nine, at the Provincial Winter Fair, Guelph, Dec. 11th to 15th, also won 1st as dressed lamb carcass in a class of eight, and was close after the sweepstakes carcass, was also a half-bred Dorset. So much for the Dorset sheep."

Mr. John Campbell, Woodville, Ont., writes: "The year 1900 was a record one for the Fairview flock of Shropshire sheep. The winnings at the fairs since Sept. 1st, 1900, total \$1,300, which indicates its standing when matched against competitors at home and abroad. While a somewhat similar amount was won in 1893, when the World's Fair winnings were \$1,000, the record of that year was excelled in 1900, as in customers' hands Fairview Shropshires were remarkable winners in Manitoba, Nova Scotia, P. E. Island, Iowa, Minnesota, Wisconsin, Indiana, Michigan, and many parts of Ontario. The demand all through the season has been steady, and while no extraordinary prices have been realized, the average was satisfactory. At the International Live Stock Exposition, Chicago, last month, orders for over \$1,000 worth were booked." On page 71, Mr. Campbell offers a few good ewes and Barred P. R. cockerels—good birds at medium prices.

THE SYLVAN SHORTHORNS.

Messrs. R. & S. Nicholson, Sylvan, Ont., write, under date of January 5th:—"Our eight head of imported Shorthorns arrived home from quarantine on the 24th of November last. They consist of the following animals: From Mr. John Marr, Cairnbrogie, *Butterfly 4th*, of A. Cruickshank's family of that name. She was two years old last March; sired by the W. S. Marr bull, Prince Horace; he by William of Orange, dam Princess Royal by Athabasca; and although she had a calf the month she was two years old, and is not fat, still she has an even covering of natural flesh of the right fiber, she is large and symmetrically formed. Her calf, a beautiful roan, sired by Mr. Duthie's Royal Standard, came out with her. Four crosses have been added to this pedigree since it left Amos Cruickshank's hands—two by bulls bred by W. S. Marr and two by Cruickshank bulls, and amongst the best they ever bred. There are no better bred Butterflies living. From the same gentleman we also secured the grand two-year-old heifer, *Marietta 2nd*, of the popular Miss Ramsden tribe; a solid red; sired by Prince Horace. She too had a heifer calf before she was two years old, sired by Golden Robin; he by Spicy Robin, dam by Athabasca. We did not see a better heifer and calf in Scotland than these. If fitted, they are good enough to go into any ring. We asked their late owner how the brigade of exporters that just preceded me came to miss them. The answer was that they wanted lower priced stock. From that veteran breeder, Mr. A. Crombie, Woodend, New Macher, we purchased the following: *Sunflower 17th*, a red three-year-old. She is due to drop her third calf two months before she is four years old, and although her growth has been somewhat retarded, and she is not in high flesh, still she shows fleshing qualities of a high order. She is a beautiful cow, full of Shorthorn character. She was sired by Coldstream by Cumberland, dam Cyclamen by Roan Gauntlet. She is from the same cow as the noted bull, Denmark, a bull that made Mr. A. Stell's (Nether Angustown) herd, after which he went to Ruddington Hall, where he was equally successful. *Daisy 6th*, one year old, a Diamond, sired by Prince of Cushine, as good a bull as Mr. Crombie ever used. Her dam was by Coldstream. *Lancaster Rose*, a yearling, sired by Czarowitz, a straight Cruickshank; dam Lancaster Fame, by the W. S. Marr bull, Melampus. She is as well-bred a Lancaster as exists. With one exception, these were the best yearlings we saw in Scotland. Mr. Crombie had refused some tempting offers for them, but refused to sell. They were just what we wanted, so we bought them. *Augusta Bruce*, bred at Inverquhony; dam *Augusta 30th*, by Clear the Way; a full sister to the noted bulls, Bendigo and Banululae. Her sire is Luxury, a Rosewood, bred by Mr. J. Bruce. He is a full brother to the white steer that won the championship at the London 'Smithfield' in 1899, and nearly a full brother to the noted Silver Plate, now chief stock bull at Bapton Manor. We have seen it stated that the Augusta family have won more prizes at the 'Smithfield' than any other. In Mr. Bruce's sale catalogue of 1899 we find an appended list of prizes won by animals from his herd. Along with the champion of '99, ten are credited to the Rosewoods and eight to the Augustas. The excellencies of both are centered in this superb heifer. In fact, we doubt if there is a female living that can boast of such a concentration of prize-winning blood. Exclusive of the calves, they are all in calf to high-class bulls bred by Marr and Duthie. The imported heifers, *Estelle 3rd* and *Pineapple 2th*, have produced to the service of Blue Ribbon (imp.) (74077) (Shepherd's), the former a red heifer, the latter a red bull. If these calves are a sample of Blue Ribbon's stock, his owner (Mr. D. Birrell, Greenwood) has a first-class stock bull; for they are extra good ones. The yearling heifers advertised for sale in this issue are the best all-round lot we ever had. The yearling bulls are equally good, being robust, large and natural fleshers. The whole herd (over eighty head) never was so good as it is now. Any animal in the herd is for sale, but not the whole herd, as we are not going out of business, and if we sold all we would have to pay higher prices than we are willing to sell for. We will sell at the lowest possible margin. The stock-loving public are cordially invited to inspect this herd, irrespective of whether they wish to buy or not. Parties will be met at station by appointment."

IT PAYS TO ADVERTISE IN
THE FARMER'S ADVOCATE.

W. C. Edwards
AND COMPANY,
IMPORTERS AND BREEDERS

Laurentian Stock and Dairy Farm,
NORTH NATION MILLS, P. Q.

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 time-tried dams.

A. E. SCHRYER, Manager.

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 C. P. R., or C. A. R.; the C. A. R. making connection with the G. T. R. at Coteau Junction. Rockland is our station on all lines. 7-1-y-om-

Ayrshires, Guernseys, Shropshires, Yorkshires for immediate sale.

SOME fine Ayrshire bull calves. A few Shropshire ram lambs. A few choice Yorkshire pigs.

Kindly note that Mr. T. D. McCallum has no further connection with this farm, either directly or indirectly. All correspondence should be addressed to

ISALEIGH GRANGE FARM, Danville, Quebec.
J. N. GREENSHIELDS, Prop.

Rapids Farm Ayrshires.

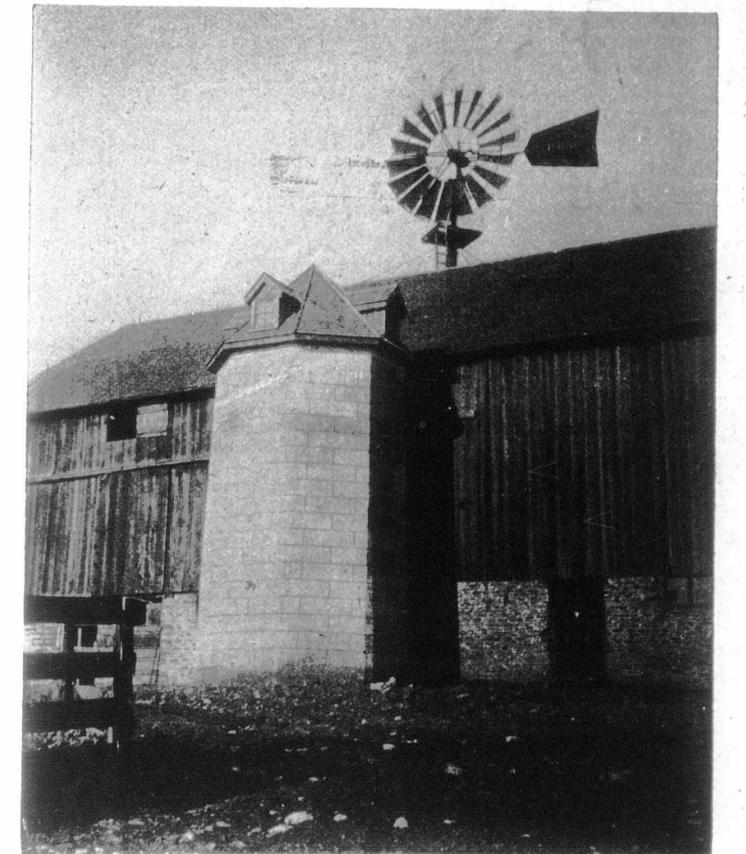
REINFORCED BY A RECENT IMPORTATION of 20 cows, 2 bulls, and a number of calves, selected from noted Scotch herds, and including the male and female champions at leading Scottish shows this year. Representatives of this herd won the first herd prize at the exhibitions at—

Toronto, London, and Ottawa, in 1900.

Come and see or write for prices. Young Bulls and Heifers for Sale, bred from High-class Imported Stock.

Robert Hunter, Manager
for W. W. Ogilvie Co., Lachine Rapids, Quebec.

A MODEL SILO
BUILT WITH 86 BARRELS OF
THOROLD CEMENT.



Barn of A. C. Pettit. Silo built with Battle's Thorold Cement. Dimensions 30 feet high and 12 feet in diameter. Driving-house floor 26 x 36 feet.

Burlington, Ont., December 12, 1900.

ESTATE OF JOHN BATTLE, Manufacturers of Thorold Cement, Thorold, Ont.:

GENTLEMEN.—Enclosed you will find a picture of my silo, built by your man, Mr. Ward Hagar. It is one of the most durable and looks the best of any make in our part of the country. I used 86 barrels of your cement to build the silo and lay a driving-house floor 26 x 36 feet, which is as hard as stone. Size of my silo, 30 feet high and 12 feet in diameter. I would advise all parties intending to build silos to get your man, Mr. Hagar, and construct them with your Thorold Cement.

Yours truly,
A. C. PETTIT,
Importer and breeder of Scotch Shorthorn cattle.

Estate of JOHN BATTLE, Thorold, Ont.

EPPS'S COCOA

GRATEFUL COMFORTING
Distinguished everywhere for Delicacy of Flavour, Superior Quality, and Highly Nutritive Properties. Specially grateful and comforting to the nervous and dyspeptic. Sold only in 1-lb. tins labelled JAMES EPPS & CO., Ltd., Homoeopathic Chemists, London, England.

EPPS'S COCOA

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 at Toronto, London and Ottawa belong to this herd—one imported bull, 13 imported females and a number of A1 home-bred animals. A few choice cows, heifers and calves for sale at moderate prices.
Address— **WM. WYLIE, Howick, P. Q.**

EUROPEAN ADVERTISEMENTS.

HAMPSHIRE DOWN SHEEP.

SPLENDID MUTTON, GOOD WOOL, GREAT WEIGHT.

THIS HIGHLY VALUABLE

English Breed of Sheep

Is unrivalled in its rapid and wonderfully early maturity, possessing, too, a hardness of constitution adapted to all climates, whilst in quality of mutton and large proportion of lean meat it is unsurpassed. Full information of

JAMES E. RAWLENCE,
SECRETARY HAMPSHIRE DOWN SHEEP BREEDERS' ASSOCIATION,
SALISBURY, ENGLAND.

HENRY DUDDING, RIBY GROVE, STALLINGBOROUGH, LINCOLN, ENGLAND. Breeder of Lincoln Longwool Sheep and Shorthorn cattle. The Riby Flock of upwards of 1,400 Ewes holds an unequalled record for true type, merit, and quality. Its produce and their descendants have won the highest honours at all the principal exhibitions and shows throughout the world; its wool exhibits being unbeaten. Established upwards of 140 years. Its produce leads the way from the fact that satisfaction is given. The Riby Shorthorn Herd of upwards of 300 selected specimens of Booth, Bates, Cruickshank, and Scotch strains, is one of the largest Herds in Great Britain. Its principal Stud Bulls are: "Pride of Fortune" 7324, s. "William of Orange" 50694, d. "Flora 2nd," s. "William of Orange" 50694; "Golden Robin" 8718 (rich roan), s. "Roan Robin" 57992, d. "Golden Sunshine," by "Royal James" 54972; "Prompter" (Vol. XLV.), by "Royal James" 69255, d. "Risington Lass," by "Umpire 13th," 1st and champion at Ombersley, 1898; "Rosario" s. "Wiltshire Count" 69824, out of "Rose Blossom" (G. Harrison). This bull, his sire and dam, won 84 prizes, including first and champions. Telegrams: "Dudding, Keelby." Rail Stations: Stallingborough, 3 miles; Great Grimsby, 7 miles.

J. E. CASSWELL, Laughton, Loughborough, 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 20 rams, at the "Annual Lincoln Ram Sale," 1895 and 1897. The 1896 rams were all sold for exportation. Ram and ewe hoggs and shearlings for sale, also Shire horses, Shorthorns, and Dark Dorking fowls. Telegrams: "Casswell, Folkingham, Eng." Station: Billingboro, G. N. R.

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.

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.

GOSSIP.

In this issue of the FARMER'S ADVOCATE will be noted Mr. Robert Duff's (Myrtle, Ont.) change of advertisement, in which he offers the imported bull, Royal Member, so long at the head of the Cargill herd of Shorthorns. This will afford another excellent opportunity to obtain a splendid sire. Mr. Duff also has a few females carrying calves to him among his offerings. Note the change.

THOMAS CUDMORE & SON'S SHORTHORNS.

At Hurondale, Ont., about midway between Hensall and Exeter stations, on the London & Wingham branch of the G. T. R., a useful herd of Shorthorn cattle is maintained by Messrs. Thomas Cudmore & Son. The herd was founded some twenty years ago on a family of Victorias, tracing to imp. Daffodil = 102 =, bred by Mr. E. L. Betts, Preston Hall, England, a family characterized by deep milking as well as good feeding qualities, upon which high-class bulls have been used, having had the benefit of the services of such well-known and successful sires as imp. Mariner = 2720 =, of the Kinellar Mina tribe; Lord Kirklevington = 3435 =, by imp. Oxford 2nd, out of imp. Kirklevington Empress 4th.; Royal Judd = 17499 =, by Vice Consul, by imp. Neptune, and from the Kinellar Ruby Hill family; imp. Sultan Selim = 4129 =, of the Sittytton Secret tribe; New Year's Gift = 2234 =, by imp. Rantin Robin, of the Bracelet tribe; and the present bull, Grenadier = 26251 =, a rich roan son of Sultan of Riverside, and tracing to the good Scotch Medora family, being out of Medora 9th, by imp. Lord Ythan. Added to the herd by recent purchase is the red 5-year-old cow, Mayflower, by Hopewell, by imp. Hospodar, and tracing to imp. Lady Jane, by Sir Walter. This cow has a handsome red bull calf, 10 months old, by imp. Kinellar Stamp, and is again due, Feb. 1st, to the same bull. There are at present 15 cows and heifers in the herd, besides the stock bull and 3 good young bulls rising a year, and most of the cows will be due to calve again before May. There is, as might be expected following the use of such high-class sires, a uniformity of excellence in the herd, the animals being of the thick-fleshed, good feeding sort, and the cows generally good milkers. Note the advertisement of this firm in this issue, and write or call on them.

Champion, Breed Cups and Special Prizes at the Smithfield Show, 1900.

CATTLE.

Silver cup, value £50, for the best steer or ox.—John Wortley (Hereford steer, Lord Roberts); r. Capt. H. L. Townshend (cross-bred steer, Cock o' the North).
Best heifer.—W. E. Learner (cross-bred, Lady-smith); r. H. M. the Queen (Shorthorn, Cicely).
Champion plate, for best beast in the show.—John Wortley (Hereford steer, Lord Roberts); r. W. E. Learner (cross-bred, Lady-smith).
The Queen's Challenge Cup, value £150, for the best beast in the show, bred by the exhibitor, and gold medal to the holder but not final winner of the Cup.—H. M. the Queen (Shorthorn heifer, Cicely); r. Earl of Strathmore and Glamis (Aberdeen-Angus heifer, Aquilegia).

Breed Cups.

Best Hereford.—John Wortley (Lord Roberts); r. H. M. the Queen (steer).
Best Shorthorn.—H. M. the Queen (Cicely); r. Earl of Roseberry (Talisman).
Best Aberdeen-Angus.—George Bruce (Cock o' the North); r. Earl of Strathmore (Aquilegia).
Best Galloway.—Sir John Swinburn (Scottish Queen 3rd); r. Earl of Antrim (Sam 3rd of Minnidow).
Best Cross-bred.—W. E. Learner (Lady-smith); r. Capt. H. L. Townshend (Cock o' the North).

SHEEP.

Champion plate, value £50, for the best pen of three Longwooled sheep or lambs.—John Pears (Lincolns); r. H. Dudding (Lincolns).
Champion plate, value £50, for the best pen of three Shortwooled sheep or lambs.—Earl of Ellesmere (Suffolks); r. Duke of Richmond and Gordon (Southdowns).
The Prince of Wales' Challenge Cup, value £100, for the best pen of three sheep or lambs bred by the exhibitor.—Earl of Ellesmere (Suffolks); r. J. Pears (Lincolns).

Breed Cups.

Best pen of Leicesters.—E. F. Jordan, and r. Best pen of Border Leicesters.—Earl of Roseberry; r. J. Douglas Fletcher.
Best pen of Cotswolds.—F. Craddock, and r. Best pen of Lincolns.—J. Pears; r. H. Dudding.
Best pen of Southdowns.—Duke of Richmond and Gordon; r. W. Wright.
Best pen of Hampshire Downs.—Thomas Fowell Buxton, and r.
Best pen of Suffolks.—Earl of Ellesmere; r. H. E. Smith.
Best pen of Shropshires.—Philo L. Mills; r. P. L. Mills.
Best pen of Oxford Downs.—H. W. Stilgoe; r. Miss Alice de Rothschild.
Best pen of Dorsets or other pure Shortwools.—J. Toop; r. W. J. Horn.

PIGS.

Champion plate, value £20, for the best pen of two pigs.—R. Fowler (Berkshires); r. Earl of Roseberry (Large Whites).
Champion plate, value £5, for the best single pig.—Earl of Roseberry (Large White); r. N. Benjafield (Berkshires).
The Duke of York's Challenge Cup, value £50, for the best pen of two pigs, bred by the exhibitor.—R. Fowler (Berkshires); r. Earl of Roseberry (Large Whites).

Breed Cups.

Best pen of Small Whites.—Hon. D. P. Bouverie; r. A. Hiscock, Jr.
Best pen of Middle Whites.—Hon. D. P. Bouverie; r. N. Benjafield.
Best pen of Large Whites.—Lord Roseberry; r. A. Hiscock, Jr.
Best pen of Blacks.—N. Benjafield; r. G. Pettit.
Best pen of Berkshires.—R. Fowler; r. A. Hiscock, Jr.
Best pen of Tamworths.—D. W. Philip; r. G. Atkins.
Best pen of Cross-breds.—A. Hiscock, Jr.; r. A. Brown.

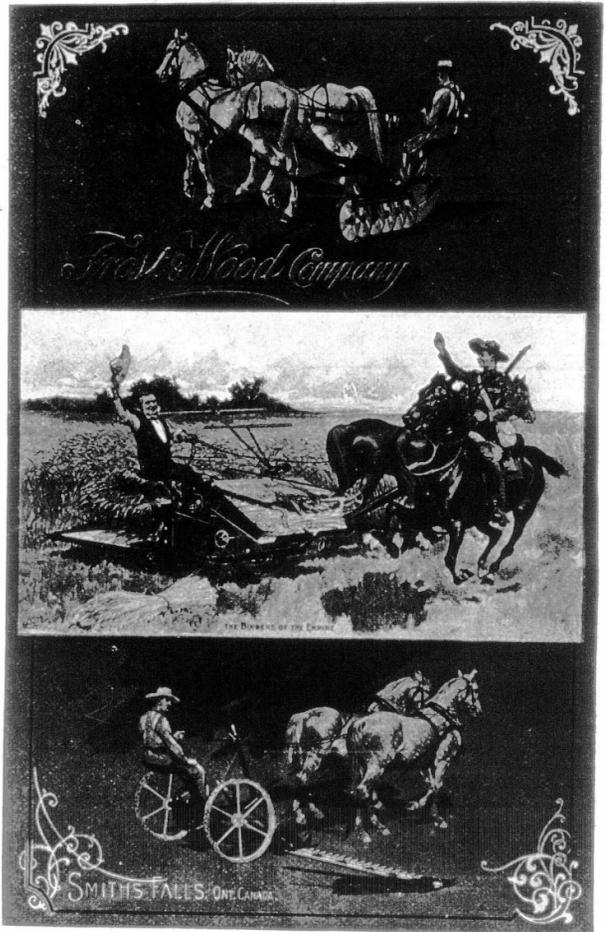


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Suitable for ANY POWER, great or small. Will do MORE WORK with SAME POWER than ANY OTHER.

I started the Grinder with six horses on a Sweeney Power, and am pleased to say the machine is everything you represented it to me to be.

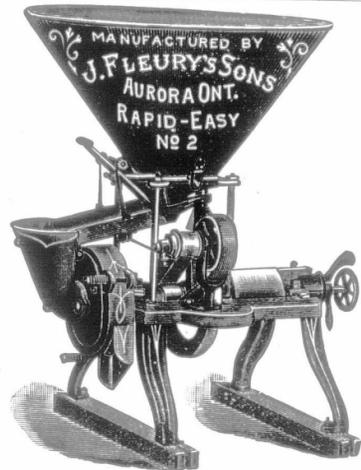
HUGH DUFF.

Walford Station, December, 1900.
The "Rapid-Easy" Grinder I bought from your agent drives lighter than ANY OTHER grinder made. We use only two-thirds of the fuel required to drive the grinder we previously had. Our customers speak VERY HIGHLY of the work done by the "Rapid-Easy." Besides this, the machine runs with less vibration than the other one, and the plates are much more durable. I do not think its equal can be bought for ANY MONEY.

Knatchbull, November, 1900. S. AGNEW.

We shall be glad to have your enquiry by letter or card. On application, we will send a lithographed hanger showing our "Rapid-Easy" Grinder No. 2.

J. FLEURY'S SONS, Aurora, Ont.
Medals for Plows: Chicago, '93; Paris, 1900.



DRAFT HORSEMEN MEET.

The fourteenth annual meeting of the Dominion Draft Horse Breeders' Society was held at Clinton, Ont., Dec. 19th last, with a good attendance of members and a keener interest than has been shown for some years past. The annual reports showed an improvement in the amount of work done, and no impairment of the excellent financial condition which has marked the society since its formation, the balance on deposit in the bank being over \$800.
The old officers and retiring members of the board were re-elected for 1901, and a large amount of routine business transacted. Among the matters of general interest discussed was that of obtaining the reduced transportation rates on stock shipped for breeding purposes. The committee on that behalf will continue

their efforts. Messrs. Alex. Innes, Clinton, and James Henderson, Belton, were appointed delegates to the Canadian Horse Breeders' Association, and Messrs. D. McIntosh, Brucefield; J. E. Blackall, Clinton, and John McDiarmid, Lucknow, to the Western Fair, London.

Mr. Innes gave notice of motion at next annual meeting to raise the standard for registration from four to five accepted registered crosses, and arrangements were made for the publication of a number of photographs of selected animals, showing the Clyde and Shire crosses, with accompanying reading matter on draft-horse breeding. The executive officers of the society are: John McMillan, Constance, President; D. McIntosh, V. S., Brucefield, Vice-President; P. McGregor, Brucefield, Treasurer; James Mitchell, Goderich, Sec.

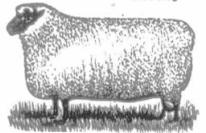
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Shorthorns—A fine lot of young bulls and heifers; sire, 20th Duke of Sylvania. Oxford Down—Both imported and Canadian-bred. A few ewes in lamb to imp. Bryan 125. Prices reasonable. **HENRY ARKELL, Arkell, Ont.**

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THE largest flock in America. The most celebrated prizewinners at the Columbian Exhibition and Canadian exhibitions. Contains more Royal winners than any other. Awarded 5 out of 8 first prizes at Toronto, London and Ottawa in 1900. Flock of 300. Stock for sale always on hand. **John A. McGillivray, Uxbridge, Ontario.**

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SOUTHDOWN SHEEP (IMPORTED AND HOME-BRED), ALSO DEXTER-KERRY CATTLE. A USEFUL LOT OF SOUTHDOWN RAMS NOW FOR SALE. APPLY TO—

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BROAD LEA OXFORDS.

Sheep of both sexes for sale, many of which are bred from the famous imported ram, Royal Warwick 3rd. Correspondence solicited. Visitors welcome. **Henry Arkell & Son,** Phone and telegraph, Teeswater, Ont.

MANSELL'S Dispersion Sale Shropshires

Andrew E. Mansell, Harrington Hall, Shipnal, England, who is settling in Tasmania, will sell by auction, without reserve, on Thursday, August 29th, 1901, his unrivalled flock of Shropshires. Sheep bought for America and Canada will, if desired, be sent in charge of Mr. Robert Mansell. Particulars and catalogues obtained from Alfred Mansell & Co., Auctioneers, Shrewsbury, England. Commissions carefully executed.

Fairview Shropshire Ewes

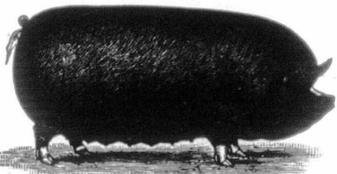
12 Choice imported, 1 and 2 years old, bred to our best rams. From such ewes the first crop of lambs have made far more than cost of ewes. Write or come for prices and circulars. Barred P. Rock cockerels also for sale. **JOHN CAMPBELL, Woodville, Ont., Can.**

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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.**

FRESH BERKSHIRE BLOOD. Have secured the first choice of the champion gold medal herd of America (which won over 400 prizes, cups and medals), including the \$400 show sow, Elphick's Matchless (never beaten), and other sweepstakes sows in the United States. Also 15 April, May and June boars and 15 sows of the same age, and 3 fall litters, selected to meet the best Canadian demand, being long, low, and extra good through the heart. Farm within 10 minutes' walk of electric R. R. terminus on Kingston road. **DURHAM & CAVAN, East Toronto, Ont.**

SNELGROVE BERKSHIRES

We have for sale some promising young boars and sows of different ages. Boars fit for service, sows large enough to breed. Young pigs from 4 to 8 weeks old. These pigs are got by the prizewinning boars, Colonel Brant 5950, Court Master 7710, and Gallant Prince 7691. Our herd is bred from the best strains of Large English Berkshires. Write for prices. **SNELL & LYONS, Snelgrove, Ont.**



Large English Berkshires

YOUNG boars and sows from imported stock. Registered Leicester ewes and ram lambs. B.P. Rock cockerels from prizewinners. Write for prices. **H. BENNETT & SON, St. Williams, Ont.**



FOR SALE.

A FEW choice Tamworth pigs, of both sexes, about five months; eligible for registration. **WILLIAM AITCHISON, Erindale P. O., Toronto Township, Ont.**

Yorkshires and Berkshires of the most approved type: sows safe in pig, boars fit for service and sows ready to breed, young pigs ready to ship. Guaranteed as described. Prices reasonable. **JAS. A. RUSSELL, Precious Corners, Ont.**

Improved Yorkshires

FOR SALE, of the most popular families. All ages and both sexes now ready for immediate shipment. Write for what you want. Prices reasonable—consistent with quality. **E. DOOL, Hartington, Ont.**

YORKSHIRE SWINE AND POULTRY. We are offering 20 pigs, from 2 weeks to 2 mos. old, from O. L. White Rose 5th and Summerhill Queen. These pigs are richly bred, and trace directly to imported foundation. All sold out of fowls except B. P. Rock cockerels, M. B. turkeys and Pekin ducks. Summerhill Queen weighs 674 lbs. at 20 mos. old. **AM. B. ARMSTRONG, CODRINGTON, ONT.**

Large White Yorkshires.

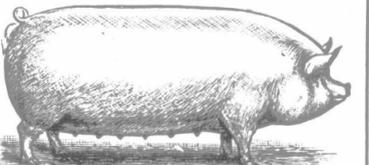
An offering during this month a grand lot of boars and sows ready for breeding; pairs supplied, not skin from show stock; also several sows in pig to imported boar. Young pigs from 2 to 3 months old, all of the most improved bacon type. Registers furnished. Express prepaid. Address: **H. J. DAVIS, BOX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



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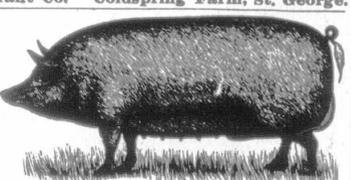


The largest herd of imported and Canadian-bred Yorkshires in America. Out of 121 exhibits at the leading shows in '99 and 1900, including Toronto and London, we gained 116 awards. Expert judges both at London and Toronto were unanimous in pronouncing our herd far superior to that of our strongest competitors. Won most of the best prizes offered, including first prize for best pen of pure-bred bacon hogs, also grand sweepstakes over all breeds in a class of 13 entries. The foundation of our herd was laid by personally selecting the choicest stock from the most noted breeders in England and Scotland. We have the ideal bacon type—size without coarseness, and easy feeders. Pigs of all ages for sale at moderate prices. Write us for particulars. Telephone, Millgrove, Ont. Telegraph 254 Bay St. S., Hamilton, Ont. **D. C. Flatt & Son, Millgrove, Ont.**

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LARGE YORKSHIRE AND ESSEX SWINE. We have some nice young boars and sows fit for service, for sale. Also one imported boar, 8 months old, and have 9 imported sows in farrow and 2 more to be bred for June litters, besides a number of home-bred sows. Our imported stock was selected personally from the well-known herds of Philip Ascroft, Rufford; T. Heuson, Peterboro, Yorkshire; D. R. Daybell, and Sir Gilbert Greenhall, Bart., Walton Hall, Warrington, England. Correspondence solicited. Streetsville P. O. and Telegraph.

The Coldspring Herd of TAMWORTHS won the sweepstakes at Toronto last year, and as we have made no preparation to exhibit this year, we can ship exceptionally choice things of both sexes and all ages. **NORMAN M. BLAIN, Brant Co. Coldspring Farm, St. George.**



One hundred Tamworth and Improved Chester White Spring Pigs of a true bacon type, our herd having won the best prizes offered at the leading exhibitions throughout Ontario and Quebec for the past ten years. Stock for exhibition purposes a speciality. We pay express charges between stations, and guarantee safe arrival of all stock shipped. Pairs furnished not akin. Write for prices. **H. GEORGE & SONS, Crampton P. O., Ont.**

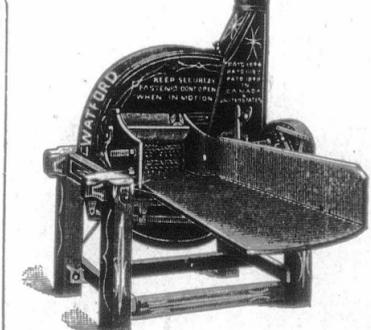
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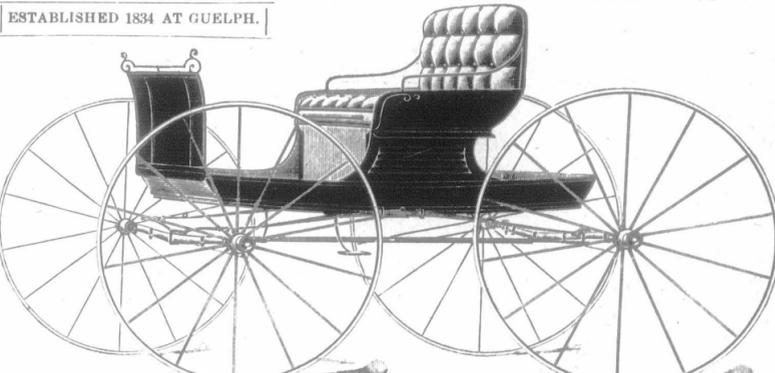
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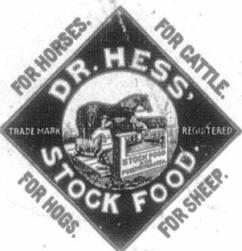
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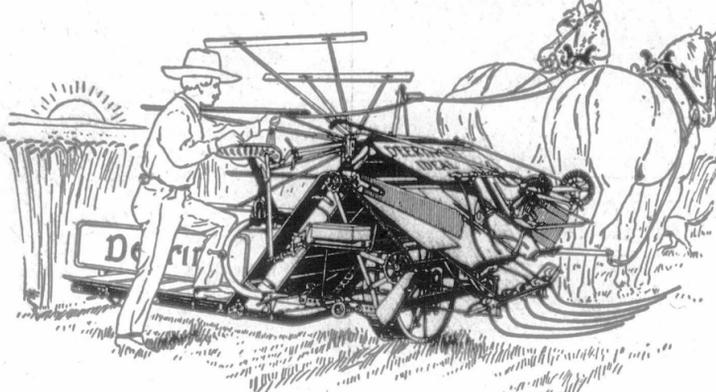
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