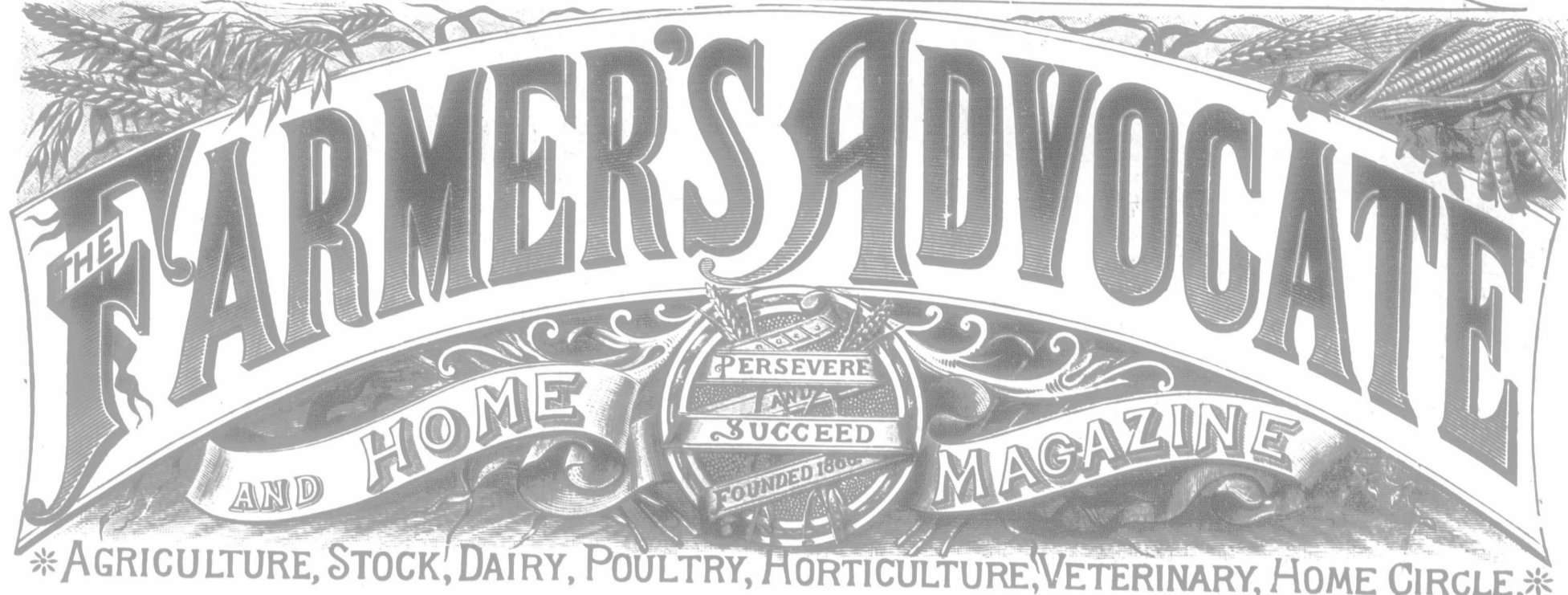


J H Gristdale z t feb 20, 1901
Exp Farm, Ottawa

MANITOBA AND WESTERN EDITION



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Vol. XXXV. LONDON, ONTARIO. MARCH 20, 1900. WINNIPEG, MANITOBA. No. 498

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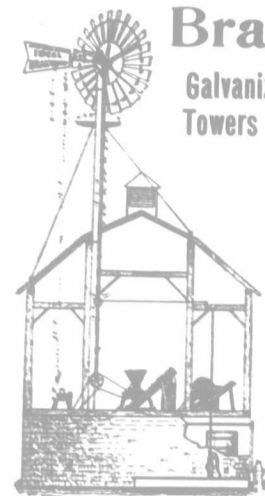
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Vol. XXXV.

LONDON, ONT., AND WINNIPEG, MAN., MARCH 20, 1900.

No. 498

Agricultural Problems in Manitoba--An Interview with the Chemist of the Dominion Experimental Farms.

In an interview which we had with Mr. Shutt, Chemist of the Experimental Farms, as he passed through Manitoba on his return from British Columbia last month, he told us that he had been able to spend a short time in this Province, enquiring into some of the agricultural problems which to-day confront the Manitoba farmer. The season of year was not, of course, the most favorable, nor was the time at his disposal sufficient to allow him to consider these as fully as he would have wished, but he had been able to arrive at a knowledge of certain questions of importance which would assist him in conducting the laboratory work which would be necessary in order to obtain definite information on certain doubtful points.

Mr. Shutt said that at the present time he considered the question of the conservation of soil moisture for the use of the wheat crop was of first importance. An acre of wheat required at least 300 tons of water to bring it to perfection, and this water was more especially needed during the early period of the plant's growth. In districts subject to drought it was incumbent that the previous year's rain should, as far as practicable, be stored up in the soil. This could be brought about by deep plowing, summer-fallowing and keeping the soil well cultivated. Deep plowing increases the absorbent capacity of the soil for moisture, and constant cultivation provides a thin layer of dry earth mulch, which arrests evaporation. We shall have to study out the best system of soil treatment with this object in view, for undoubtedly at present the wheat yield is more dependent upon climatic conditions, among which water plays the most important part, than any other factor. The question is one that concerns the Territories more than Manitoba, but is, nevertheless, one of great consequence in many districts of the latter Province. To this end, Mr. Shutt intends to determine at certain seasons the amounts of moisture in soils under different systems of cultivation.

Another matter of considerable significance is the partial exhaustion of the land by successive cropping without any return of the plant food. The system, if such it can be called, must have led to a depletion of available plant food and of the humus or decayed vegetable matter in the soil. Many farmers have already noticed a decrease in yields, which must be due to this fact. Mr. Shutt considers that the growing of clover as a preparation for wheat should be tried, especially on the higher and poorer lands. This will not only add much nitrogen—an element specially required by the wheat crop—and prepare mineral food (phosphoric acid and potash) for succeeding crops, but also improve the water-holding capacity of such soils by the humus it furnishes.

Nitrification, or the conversion of organic nitrogen in compounds (nitrates) that are available to crops, is also an important question. Mr. Shutt is of the opinion that summer-fallowing does much useful work in this direction, and he proposes, as time permits, to conduct some experiments to ascertain to what extent this may be true.

The leaching of the valuable nitrates, in Manitoba and the Territories, during the winter is a matter upon which something has been written of late, both here and in Great Britain. Mr. Shutt does not think there can be any appreciable loss from this cause, as stated by a prominent agriculturist in England, as there are no winter rains practically, but he intends to find out the facts, and for this investigation has enlisted the co-operation of the superintendents of the Experimental Farms at Brandon and Indian Head in this important work. In this connection it is also proposed to try

the effect of dressings of nitrate of soda in the early spring.

The solution of these and other closely-related problems will involve a considerable amount of careful chemical work, but as the results are likely to prove of the greatest value to the farmers of the great Northwest, we hope the Dominion Government, through its Agricultural Chemist, will be able to give us the necessary assistance. If through the possession of such knowledge as comes from scientific and chemical investigations we can increase the yield of wheat per acre, if only by a bushel or two, the expense of the work will be as nothing compared to the benefit to our Province and the Dominion at large. And in this connection it is well to remember that no true and permanent progress can be made unless founded upon results obtained by scientific research.

Keep the Soil in its Virgin Condition.

As this season of the year is not an exceptionally busy one, it is a proper time to compare notes regarding the past and future of our farm work. Regarding the maintaining of the fertility of the soil, I feel quite sure there are few countries, if any, that have so great a uniformity of soil as this Province. There is hardly an acre of land, with proper cultivation, but is capable of growing from fifteen to thirty bushels per acre in a good fair year, or an average of sixteen bushels for ten years.

The question then arises, how long can this yield be maintained? Just so long as we do our duty to the land. Be liberal in the treatment of the land and it will come back every time. To this end keep the land as near its virgin state as possible, never letting the humus be all exhausted. Some lands will hold it longer than others. Heavy clay loam and black alluvial soil will stand twice as much cropping as sharp, gravelly soil, which has not an over-abundance of humus in it to start with. On the latter take no more than two crops, then sow something to plow under, such as spring rye or oats, as a summer-fallow. Green manure on such land lasts longer than barnyard, or a coat of twelve loads of barnyard manure to the acre might be given. Such land should not be plowed deep; keep the manure near the surface; take one crop wheat, one of barley, and seed down to Brome grass with the barley. Next year it would keep colts or sheep, as they will live where cattle would starve.

This season of the year is a good time to determine what kind and how much stock should be raised and kept this present year. There is no question but stock of all kinds pay well, horses especially, and likely to be so for a few years with increased emigration and larger areas under cultivation and extension of railroads. From \$80 to \$100 for a colt coming three years old pays remarkably well. I consider colts are more cheaply raised than calves. When hay is not plentiful, oat sheaves or common barley, cut on the green side (just when it commences to color), makes splendid feed for any kind of stock—so does Brome grass. In this section we can get pasture at reasonable prices. With stock we will be better able to keep up the fertility of the soil, which should never be lost sight of. In applying manure, when practicable draw from stable to field and spread it from vehicle instead of putting it in heaps, as it is a waste of time and cannot be as evenly done, and by so doing it is ready for the plow and it loses nothing by evaporation, because it does not get a chance to heat. If I was where I could get plaster of Paris or salt, I would cover every heap of manure I had to keep it from heating. Some think it should be rotted to kill the weeds, but this is a mistake; the cultivator or harrow will kill them when from half to one inch high. In a manure pile a few in center may be killed by heating, but not near the outside.

I was speaking about horses paying well, and so do cattle at the present values: cows, \$40 to \$50 for very common stock; good grade calves, say a 8- or 9-months-old calf, bringing \$20 each. I would advise keeping calves in the stable all summer, giving them plenty of water and some milk and one sheaf of oats per day, and it will pay every time.

Arthur Municipality. J. S. THOMSON.

The Problem of Self-Government in the N.-W. T.

BY JOHN HAWKES, REGINA.
(Continued from last issue.)

ESTABLISHMENT OF VILLAGES.

The subject would be insufficiently treated if something were not said of the problem of urban organization. The objection to municipalities was by no means confined to the country districts in these bygone days. It was found that quite considerable towns and villages on the lines of railways refused to become town municipalities. They had, therefore, practically no sanitary organization, and all improvements were more or less voluntary—dictated chiefly by the self-interest of property-owners. Refusing to blossom out into towns with a full regalia of mayor, council, town clerk, assessor, and collector, or to become the center and part of a rural municipality, it was felt that something should be done to make it easy for these places to have some sort of organization; hence the Village Ordinance, which was at first optional with the community, but at the last session of the Assembly an alteration was made by which the Commissioner of Works could erect any district containing ten dwelling houses (the ordinance, by the way, does not specify that the dwelling houses are to be inhabited) into a village. The Commissioner's action, however, is nullified if within thirty days a majority of the residents petition against the formation of the village. A fight was put up by the Opposition against the proposed change; but the change carried. The governmental machinery of a village under this ordinance is simple. The ratepayers meet and elect an overseer, who is the only paid officer. His duties are to assess all the property in the village, prepare an assessment list, strike a rate which must not exceed ten mills on the dollar, collect the rate and expend it. He may incur any debt not exceeding \$100 for village purposes, pending the collection of taxes. A poll tax may be imposed, also dog tax, and a fee of \$5 may be charged hawkers and peddlers. Estimates of expenditure for improvements, etc., are presented and passed at the annual meeting. The Village Ordinance has been taken advantage of to a considerable extent.

SYNOPSIS OF THE LOCAL IMPROVEMENT ORDINANCE.

A brief synopsis of this ordinance may perhaps be given with advantage. It may be stated that the old title of Statute Labor Ordinance was for the purposes of euphony changed to the Local Improvement Ordinance, certainly a slight "improvement" in itself. It was found that "statute labor" grated.

All owners or occupiers of land over 18 years of age, corporations, companies or partnerships are liable to the tax. The overseer holds office for a year. The annual meeting of the residents of the district must be held between the 15th of March and 7th of April. At this meeting the overseer is elected by a poll. In the event of no election, the Commissioner of Public Works may appoint. The annual meeting also elects an auditor and decides what improvements are to be made and implements purchased. The work decided on may include not only fireguards or road improvements, but the destruction of noxious weeds on unoccupied lands in or adjoining the district. The overseer in case of emergency may spend a sum not exceeding \$25. The assessment is at the rate of \$2.50 for the first 100 acres and 62½ cents for each 40 acres over or above. The overseer has to prepare a proper assessment roll, and the original must be open for inspection at his residence. The tax may be commuted by labor. Persons wishing to thus commute must give notice to the overseer, who will then notify when and where to do the work. If within five days the work is not done, the defaulter is liable to pay \$2.50 more over and above the original taxes. No person can be compelled to work more than three miles in a direct line from his house, unless he has given his consent thereto in writing. The overseer can require a cart, wagon, plow or scraper, with a pair of horses, mules or oxen, and a man, from any person having the same within his district who has been assessed \$2.50 or elected to commute. A day's work is eight hours. The returning officer receives a fee of \$5. The overseer works out his own assessment in overlooking, and receives \$2 a day for each additional day. All works affecting roads, culverts, drains, bridges, etc., must be performed in accordance with a manual of instructions issued by the Commissioner of Works. All the labor in the district must be performed previous to the 21st of July; but work can be done at other periods of a year, if so decided by a two-thirds vote

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of the annual meeting. Unpaid taxes are a special lien upon the land and have priority over all other claims. Taxes may be recovered by suit in the name of the overseer. Levy may be made for unpaid taxes after two months on the goods of the defaulter, and nothing stands between the levy. The overseer is required to make certain returns, under penalties. All overseers are ex-officio fire guardians.

SUMMARY AND CONCLUSION.

We have seen that the Territories started on the basis of the conventional municipal system; that the people as a whole would not have that system, and the Government did nothing to enforce it; that the system of providing for public improvements by Federal grant, expended by Assembly members, has been succeeded by a system under which the whole of the grant is expended by the Government; that this grant has been supplemented by taxation under what is now known as the Local Improvement Ordinance; and that with these two in connection it is intended not to revert to a municipal system, but to work out a system as simple and inexpensive as possible in accordance with the needs and conditions of the Territories; and that up to the present the experiment has been in the main successful. But in order to give a just impression of the situation it is necessary to state that the scheme is just now being subjected to a severe strain. There has been a large increase of population, necessarily calling for increased expenditure all round, for schools, public improvements and administration. The grant from Ottawa has been practically stationary. This increased expenditure was provided for by the liquor revenue derived from the Yukon before the Yukon District was severed from the Territories. Nothing further can be hoped for on this line. The Government claims that additional money for the public services must come from somewhere, or improvements and the extension of education must be more or less abandoned. The Premier and Commissioner of Public Works, with the Deputy Commissioner of Works, are now in Ottawa to urge the Territorial claims, and it is reported that there is a fair probability of the Federal Government giving a substantial increase. Should this be so, the Territories will probably pursue their way under present auspices for some time longer. Failing any increase in the Federal grant, it is expected (rightly or wrongly, we know not) that to avoid a period of stagnation or of

actual going back Ministers will appeal to the country on a provincial autonomy scheme. The present idea, which, of course, may be falsified by events, is that when provincial status is attained the whole of the public works of the country will continue to be directed from Regina, with such local assistance as we have indicated.

The present writer has not attempted to criticise so much as to fairly state the position; but it may be added that the experiment is not without its dangers. Centralization, beyond a given point not easy to define, is a danger in any free and self-governing community. To rely on the primitive leverage of a labor tax (for after all, that, and that only, is what it amounts to) as the sole means of avoiding municipal organization in the future is, as it appears to the writer, to lean upon a somewhat frail support. It may be sufficient for to-day. Nothing but the future can reveal the future, and we expect to see this primitive staff eventually bend and break beneath the weight of population and the all-round pressure that will come with progress. At the same time the experiment is praiseworthy and instructive, and even if it fails to hold its ground in the long run, it will be useful in its day and generation.

The attempt of a young community to work out an old problem on a new line—not working up to municipalities, but working away from them—will at any rate be a valuable contribution to the data of self-government. One thing is certain, just now the Northwest Government is not in a position to help itself, for the simple reason that in their present frame of mind nothing could induce the people of the Territories to touch municipalities except in the most gingerly way. A compulsory labor tax was the only available way in which the mass of the people of the Territories could be reached in the way desired. Only time can show whether this plan is an expedient or a solution.

Homemaking.

I have been thinking for some time that I would like to say a few words to my brother farmers on this all-important subject, "Homemaking," and I do not know a better way of reaching the people than through the columns of the FARMER'S ADVOCATE. It has been my privilege to visit a great many of the rural homes in Manitoba. Some are well-ordered, comfortable homes. Others, again, and I am sorry to say, a great many, are run in a very slipshod sort of a way.

Let it be understood that I am not finding fault with the houses or surroundings. Nothing of the kind, for one can find a real home, in the true sense of the term, in very small, uncomfortable-looking quarters. There is a great difference between a home and a residence. In too many homes I have seen the father and grown-up boys lie around on the Sabbath day in their working clothes without tidying up a bit. They would be far better fitted to engage in the labors of the coming week if they would dress up and attend the church of their choice and take their children to the Sabbath School.

Moral and spiritual matters are as necessary considerations in Homemaking as those of a social nature. These qualities cannot be purchased, nor are they inherited, but are the gift of a kind Heavenly Father meted out freely to all, upon conditions which in this Christian land are known, or should be known, by all. Of course these graces do not flourish if they are neglected. Our Father has given us a guide-book, a careful study of which will help greatly in this important work of Homemaking. When these steps have been made, comes the important work of character building. But you say, what has that to do with the subject? A great deal. Character is essential to the true home. It is the best thing we can possess on this world and the only thing we can take with us to the next.

A Few Hints on the Home Surroundings.—If you have not already begun to beautify your home, begin now. There is no time like the present. First calculate on and lay out the piece of land that you think you can handle and keep neat and clean. A good plan is to make a diagram of your farm and buildings, mark the places in which you want to plant trees for ornament and for shelter belts, also reserve a place for a lawn and several small flower plots. Just now, before spring opens, is a good time to draw your plans and maps. Do not wait until you have fine residences and barns. If you have them, all the better; if not, mark the places on your diagram where you would like to have your buildings located. First, fence, then plant the trees. The buildings will likely come in due time. Make home the pleasantest place possible for your family; provide them with all the legitimate games, such as football, hand ball, croquet and the like; let the parents take part in the amusements with the children occasionally, and see how the young people will enjoy the sports. Far better furnish them with amusement at home than let them go to questionable places to get it. Do not make classes of your family or servants. Expect fair, honest work, pay fair wages, and all will be well.

J. J. RING.
Municipality of Louise, Man.

Farm-yard manure or feeding highly concentrated foods on a pasture, supply appropriate fertilizing elements for permanent pasture.

The Handling of Wheat at Fort William.

To a wheat-grower of the western plains a trip through the large terminal elevators at Fort William is full of interest. The human mind is so constructed that it can readily picture the accomplishment of great things, but rarely does it take into account the contributing elaboration of details which has led up to the final climax or height of accomplishment in a given direction. For example, the settlers of Manitoba who came in the early '80's, if they had been told they would live to see the country exporting 30,000,000 bushels of wheat annually would have probably acquiesced, believing as all did that they had found a veritable "Land of Promise"; but if told that in order to the accomplishment of such an agricultural feat it was necessary to have 30,000 farmers bring 2,000,000 acres of virgin soil under cultivation, not to speak of the 3,500 miles of railway and the elevator system required to handle that amount of produce, and the flourishing towns and cities and the population of a quarter of a million supported by the industry, it is probable the most sanguine would have demurred. So, when the western wheat-grower is told that the Fort William elevators have appliance for unloading 400 cars of wheat daily and can load into boats a million and a half bushels of grain in a day, he is doubtless struck with the idea that it is pretty big business, but he doesn't recognize the stages by which this business has grown nor the aggregation of ideas, plans and experiments gathered from the four corners of the earth required to bring forth such results.

A representative of the FARMER'S ADVOCATE was recently given an opportunity of carefully looking into the method of handling grain in the four large C. P. R. elevators at Fort William and of the cleaning, drying and scouring in King's elevator at Port Arthur.

CAPACITY.

The storage capacity of the elevators is as follows: Elevator A—1,100,000 bushels; size 308x90 feet. Elevator B—1,100,000 bushels; size 308x90 feet. Elevator C—1,500,000 bushels; size 308x90 feet. Elevator D—1,500,000 bushels; steel, with tank bins. Or a total storage capacity of over 5,000,000 bushels.

INSPECTING.

All wheat is re-inspected here upon arrival, after which it is run to the A, B or D elevators, C not being a receiving elevator, but only for storage as an annex to A. At A and B 9 cars can be unloaded at each elevator at one time, and at D 4 cars. At the three elevators 400 cars can be unloaded in the day. A, B and C elevators are immense wooden structures, with over 200 bins each, mostly holding 5,000 bushels, though each elevator has a few 10,000-bushel bins. For each car being unloaded, there is an elevator, cleaner and scales. If a car of wheat requires cleaning, it is done on the spot and never mixed until cleaned. The shipping out is done on the opposite side of the elevator, and has a full complement of shipping scales and bins and special weighman. Each of the three wooden elevators can load a vessel carrying a quarter of a million bushels in five hours.

But it is in looking over elevator D that one is impressed with the idea that here are appliances and system hard to improve upon. This is a steel structure throughout, frame of steel, walls of steel, floor of steel, and cribbing of steel. Indeed, you wouldn't find enough wood in the building to make a decent kitchen fire. The working portion is 68x90 feet and 150 feet high, which has four receiving and two shipping compartments. The storage portion consists of circular steel tanks 65 feet deep, with cone tops and sitting flat on the ground. Eight of these tanks are 65 feet in diameter and 16 are 35 feet. The larger ones hold 125,000 bushels each and the smaller 35,000. These tanks are arranged in two double rows, between which, above and below, runs the large conveyor belts to carry the grain from the working portion to any tank in which it is to be stored and dropping into the top, or for emptying the tanks at the bottom, conveying it back to the working portion and shipping scales, from which it may be carried nearly 1,000 feet by conveyor belt and delivered into the vessel at the rate of 15,000 bushels per hour.

The screenings aggregate in the neighborhood of 700 tons per year, and are this year sold to a farmer near by at \$4.50 per ton, who is feeding them to sheep with good results.

Artistic and Educational.

To the Editor FARMER'S ADVOCATE:

Allow me to congratulate you upon your artistic effort styled "Canada's Ideal." It is the best group of cattle I've yet seen, and your artist is entitled to great praise for the manner in which he has done his work. "Canada's Ideal" sounds well, inspiring, and may our young farmers carry the outline of the animals illustrated in their mind's eye as something they should aspire to own, a something that will bring them wealth besides gratification—the pleasure of owning good stock. It is not everyone that can buy thoroughbred cows sufficient to start a herd, but no man need go without a good bull. I am sure your effort cannot but be appreciated, and, for one, allow me to tender my thanks for the engraving, and I would like to suggest to the Educational Department that every school in the Province should be provided with one as an educational chart.

Truly,
RICHARD GIBSON.

Lice on Cattle.

To the Editor FARMER'S ADVOCATE:

I have noticed from time to time questions asked concerning the best remedy for killing lice on cattle. Different remedies are often advertised—sheep dips, coal-oil emulsion, etc. I might say that I have tried remedies known and unknown, from insect powder to the emulsion, and yet none of them have given entire satisfaction. I had a man working for me who declared that there was a blue insect that dropped on the cows from the trees when they were turned out in the spring, and to



IMPORTED SHORTHORN BULL, ROYAL MEMBER =17107=
OWNED BY H. CARGILL & SON, CARGILL, ONTARIO.

prove that he was right mentioned one of my neighbor's cows that were covered, matted with lice. What the suffering of those poor cattle must have been is beyond comprehension. If I do not watch very carefully my cattle will get the vermin, and in spite of my carefulness they get more or less every year. One year I noticed my cattle were very uneasy, and on examining them I found a large grey-back working very industriously. They did not seem to be particular what part of the body they got their dinner from. Next year I examined the cattle and found a small white and red insect, a very industrious fellow, which caused a good deal of annoyance. They worked chiefly around the flank, but a few were found scattered over the body. Another year I found, on close inspection, a very small white insect which seemed to be very active. This year I find a blue kind which hang on like grim death. As I said before, I tried nearly all known and unknown remedies, and they did not give satisfaction, and in every case had to go back to my old remedy, which is very simple, but must be used with care, as I find if too strong it has a weakening effect on cattle. It is nothing more than a plug or two of chewing tobacco. One plug will do about 12 full-grown cattle. I take a 10-cent plug and put it with a pail of water in a kettle. Let it steep for a few hours, when it is ready for use. If it is too strong, I weaken it with more warm water, but generally I find a plug to a pail of water about right. In putting it on the cattle I use a brush and rub the liquid well in from the nose to the end of the tail. After the brush I use the comb, and curry the animal thoroughly; then I blanket until dry, when every insect is dead; not only the insects, but the nits. Two applications a year is all that is necessary, and very seldom more than one is needed. As soon as the cattle come into the stable in the fall they should be well washed, and with constant cleaning with brush and comb, they will come out in the spring in good shape. But they should be well watched, and if there is the appearance of any insect, another dose of tobacco liquid will settle them (the insects). I put a few drops of coal oil on the brush once in awhile, which, I believe, has a beneficial result. J. B. POWELL.
East Assiniboia.

Something for Nothing.

The *Exporter*, of Montreal, devotes a vigorous article to the absurd application of an English firm, Campbell, Shearer & Co., to the Quebec Legislature for a bonus or gift of \$20,000 per year for twenty years to enable them to start a packing-house for cattle, sheep and hogs, and also for the purchase of cheese, butter, and other farm produce, for which English prices are to be paid, less the cost of handling. As the country is *already* well supplied with packing establishments, developed by private enterprise, and the existing competition for dairy products exceedingly keen and prices high, strong opposition has developed against this scheme to bonus outsiders with public funds to come in and compete with Canadians. It is very pertinently asked, if these people have faith in the success of their project, why are they not prepared to carry it on with their own money, and build up a trade for themselves in honest competition? Strong protests are going in to the Quebec Government against the proposal.

Combination Sales.

To the Editor FARMER'S ADVOCATE:

SIR,—In reference to holding combination public auction sales of pure-bred stock at different points in the Province, under public control, and under rules and regulations approved by the various breeders' associations, this is not altogether a new question, and we all know from past experience that combination public auction sales have been a failure so far as they have been tried in this country. I think perhaps if they could be rightly established and placed on a sure and substantial footing they would be of advantage to both the breeders and farmers. But I am very much inclined to think that in a country like this, where the transportation would be expensive owing to the long distances that some stock would have to be shipped, and some people would have to travel, it would be very difficult to get breeders to risk the expense that would be necessary, and risk entering first-class stock in a sale of that kind without having some assurance that they would not be sacrificed. Then, on the other hand, it would be necessary, to insure a good attendance of buyers at a sale of that kind, that they should have some guarantee that they could secure what they want to buy at a fair market price. It has been said that no animal after being entered for the public sale should be sold privately, but that would be a hardship on the breeder; for instance, he might enter a number of cattle in the sale, say this week, and in a few days a buyer comes along and offers him all he would expect to get for one or more of the animals entered, and what he considers a good price, but owing to having entered them in the sale he could not sell. Perhaps the buyer could not be present at the sale. I would like to see your valuable columns used freely to discuss this very important question. JOHN GARDHOUSE.
York Co., Ont.

Experience in Applying Manure.

For years I tried drawing my manure into large heaps, but it did not heat and rot as I would like. Heaps were about 20 feet wide and from 50 to 100 feet long. Used to draw the manure right over the pile, going on at one end and off at the other, and would have a heap 12 to 15 feet high in the spring. Tried putting snow in the heaps. One heap I put nearly as much snow as manure in; it heated in places, but not all over. When I went to spread the manure on the land some of it was not worth carting, so I threw it out and burnt it when I had got all that was any good away, so I came to the conclusion that there was too much labor for the benefit obtained; so the last three years I have drawn it from the stable on to the land, and in the spring when dry, harrow it and then horse rake with the teeth set a few inches from the ground to take off some of the long straw. The first year I burnt the windrows, the wind being with the rows. Last year I drew them off with waggon and burnt on land that was not manured. This latter is the better way, as a lot of manure near the windrows is burnt off by the first plan, while by the second any manure is left on the land that may have been raked up when putting the light stuff on the waggon.

I believe that the reason the manure does not heat in the heaps is partly that it is not rich enough. As an example of this, the farmers in the eastern counties of England (particularly Lincolnshire), where the farms are chiefly arable lands and grow lots of straw and mangolds, which the farmers want made into manure, and for this purpose they take in beasts (3-year-old steers principally) to keep for the winter in large fold yards. The farmer feeds them straw and mangolds, and the owner of the steers, instead of paying cash for their keep, has to provide linseed cake, from five to seven pounds per beast per day. The farmer is paid for his labor of feeding the animals by the extra value of the manure from feeding the cake. On this point a tenant leaving a farm is allowed, I believe, one half of the

price of the cake he has used during the last two years on his farm. This used to be done by agreement, but I believe it is now the custom of the country, and is always done. JOHN BUCK.
Municipality of Pipestone.

Handling Manure.

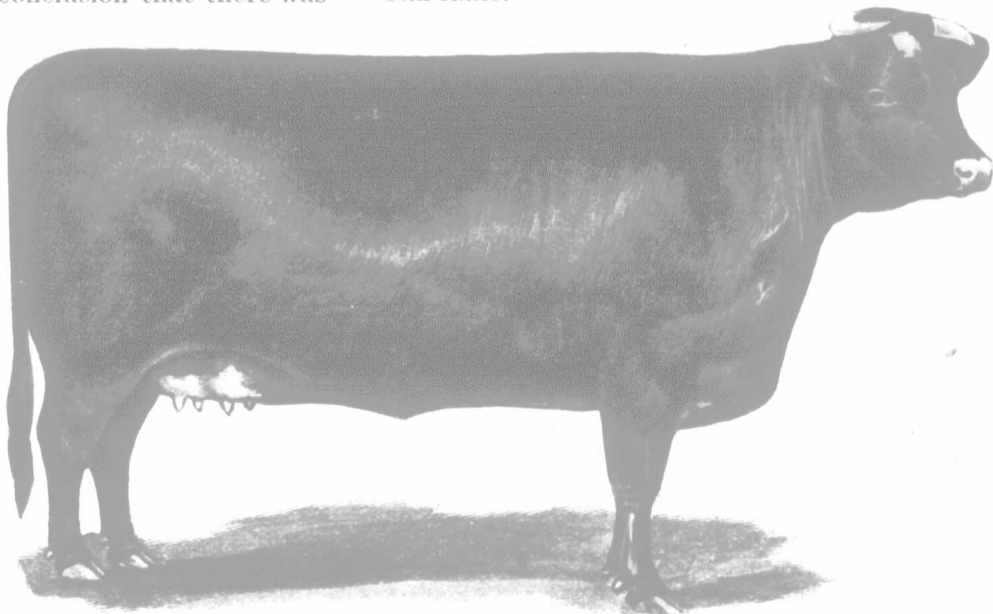
To the Editor FARMER'S ADVOCATE:

On the farm our greatest enemies are weeds, and as they are spread largely by the manure not being properly treated in many places, I will give my way of handling it before applying it to the field. In the fall when the cattle are first stabled, start a manure pile where it is to remain for the winter; then the next thing is to get it started to heat. If the weather is not too cold it will start itself, but in case it doesn't it will have to be started. To do this get a large quantity of fresh manure; the manure may be left in the stable for two or three days. Then we dig a hole in the manure pile that is already made, take out all the horse manure first and tramp it well down, then the cattle manure and do the same. This is a sure way of starting the pile to heat; at least it has worked satisfactorily with us. Then we clean our stables every morning, piling the manure on top, mixing the manure from the cattle and horses. The next thing to be done is to keep it from burning or fire-fanging. To do this we draw snow onto the pile—that is, when there is lots of snow. This year we have had to draw water and throw on it.

About once a month or more I let out the cattle, and take some oat sheaves and scatter them all over the pile; this entices the stock onto the pile, tramping it down, which does it a great deal of good. In the spring time, about the last of March or first of April, draw it onto land to be spring plowed for oats or barley. The manure is quite rotten, but none of it burnt; you can dig it with a shovel. It generally lies in water from six to ten inches deep before the snow starts to go away in the spring.

There are several advantages in having the manure this way: As it is about the time of the year when the men are partly idle, horses that have been idle all winter can be hardened for their spring work; and last, but not least, the weeds that are in the manure are all rotted and will not germinate.

No doubt some readers of your valuable paper will object to putting out manure before the frost is out of the ground. But we have been handling our manure in this way for a number of years, and as I stated above, the manure being well rotted, and if spread properly and not thrown in big forkfuls, it will not make any difference, as at the time of spreading it is warm and will make its way through the snow to the ground at that time of the year when the snow is soft. After the snow is gone I have gone over the field and could hardly notice the manure, as it had dissolved with the snow water. I am speaking of level land; for rolling land I would put it on a field I was intending to summer-fallow the following summer, spreading it thickly upon the high places only, as the water will wash a certain amount into the low places. S. L. J.
Oak Lake.



MATCHLESS 18TH =29130=
Champion female Shorthorn at Toronto Industrial Exhibition, 1899.
BRED AND OWNED BY W. B. WATT, SALEM, ONTARIO.

A Good Butter Record.

I have just been making up accounts of the working of our cows for last year, and find we made of butter 3,913 lbs. from 13 Jersey cows, and six of them were 2-year-old heifers with their first calves, an average of 300 lbs. or a trifle over, and we averaged a trifle over 20 cents per lb. for it, making a little over \$60 dollars per cow in butter alone. I bought no feed outside of what we raised on the farm, so there was no extra expense, nor have I said anything about what cream and milk was used in our family of nine persons, besides some outside help sometimes. If you think this is worth publishing you may do so. WM. WILLIS, York Co., Ont.

Agricultural Education.

(Continued from page 118.)

Let me disabuse your minds on one subject which clings everywhere with that tenacity which so often characterizes misinformation and error. Agricultural instruction is the most expensive of all lines of educational effort. Because farmers live economically and often endure privations, our people have come to think that agricultural colleges can be run far more cheaply than other branches of educational effort. The very reverse is the case. No other line of instruction will compare in cost with *bona-fide* agricultural instruction. Let us compare instruction in animal husbandry with teaching Greek or mathematics. In the latter subjects, if the professor is given a comfortable room, with a few books, maps, blackboards, etc., he is equipped for thorough work. In addition to his salary, there is the little expense for the janitor, fuel, etc., but it is exceedingly slight. What about live-stock instruction? First of all, there must be the living animals with which to teach the students. If these are illustrative and typical, and in sufficient variety for the purpose, there is a heavy outlay—perhaps thousands of dollars—before the first lecture and demonstration. These animals must be housed in expensive buildings; they must be fed and cared for day by day and kept ready for classwork, and after two or three years their places must be taken by others.

In an agricultural college where live stock is used both for instruction and for experimentation, I do not believe that a minimum equipment can be secured for less than \$25,000; indeed, your own agricultural college at Guelph received at one time an appropriation of \$25,000 for the purchase of stock, and the money was all expended, as some of you will recall, for the purchase of cattle and sheep. That expenditure was not too large, nor was it too much concentrated in the number of animals purchased. At the Iowa Agricultural College their cattle alone to-day represent a market value of probably \$20,000. As with cattle, so with plants in the greenhouses, with the objects on the farm, including machinery and other illustrative apparatus. More than all this, in many cases the students can receive but a small part of their instruction in lectures, but must be taught individually by expert instructors in many parts of their work. In teaching how to handle sheep, for example, each student's hands must be taken in the hands of the instructor and placed upon the sheep so as to detect its strong and weak points. The lecture system will not apply at all in work like this, but instruction must be imparted to each member of the class individually. Instruction in the sciences is far more expensive than instruction in mathematics or the classics, because of the large cost of the scientific apparatus required, the heavy expenses attendant on laboratory efforts, etc. Teaching students in the mechanic arts is likewise very expensive, because there must be lathes, tools, etc., for each student. Teaching agriculture is still more expensive than any of these, because many of the objects, such as animals and plants, are expensive, short-lived, and need constant care and attention.

After twenty years of study, reflection and observation on this matter in my present position in Wisconsin, and after having seen the little income which my college possessed a score of years ago multiply many fold, I will say to you that, in my judgment, a successful agricultural college and experiment station cannot be maintained in any western State short of an annual income of \$100,000, exclusive of all buildings and extraordinary expenses.

For a Province like your own, where there are probably less problems to be met, and where greater economies may be practiced, you could doubtless have a school of much merit with an annual appropriation of \$25,000. A great deal would depend upon how much was attempted, and how thoroughly the work was done. In my judgment, these schools should be technical schools for instruction in agriculture, and not institutions where one can get general training in academic branches. Our young men can be taught arithmetic, physical geography, history, algebra, etc., far more cheaply, and as successfully, in the schools already established. Why should we duplicate these lines of instruction in a central school where the pupils must be housed at a considerable expense to themselves or the Government which is educating them? Surely, they would better be at home so long as home schools can possibly afford general training. I am strongly in favor of making an agricultural college as technical and professional in its way as is a dental college, a medical school, or a law school.

From all of this you will see that agricultural education is very costly. Studying the problem as I have year after year, and coming face to face with the difficulties which have confronted me one after another, I have made up my mind that there is no cheap road for us to follow in the States, and I doubt if there is a cheap one for your people on this side. I am sure if you cannot establish a school in some measure worthy of the great cost it represents, even though it be expensive, you will prefer not to undertake it at all. But sooner or later you will undertake it, and when you do, let it be headed in the right direction and started right, even though the beginning be humble.

And will it pay? Let us consider what has been accomplished through the intelligent direction of

agricultural effort. Forty years ago Danish butter was about the poorest in all Europe. A generation ago the Danish Government undertook the improvement of Danish dairying in a systematic manner. A dairy school was opened, an experiment station founded, and in other ways this industry was encouraged. As the pupils began to pass out from the school into the creameries, agents were kept in England reporting each week to the Danish Government the conditions of the English butter market. From Birmingham, Liverpool, London, and other cities, messages went back telling of how Danish butter stood in these great markets in comparison with butter from other countries, of its faults, with suggestions for improvement. This information was transmitted at once to the creameries, and efforts made to meet complaints and to raise the standard. All of these efforts cost money—a lot of it. What is the result of this consistent move toward improvement? Denmark is now selling England over twenty million dollars' worth of butter annually, and her total export output is worth about two million dollars per month.

When Denmark had captured the British butter market, was she satisfied? Not at all. She next turned her attention to the pork trade. This country is sending abroad enormous quantities of pork products, but they are the lowest-priced goods sold anywhere. Denmark realized at once that she could not compete with the United States on low-priced goods. But there were high-priced goods in the English market. Irish bacon brought a much higher price than that from America. Could not Denmark make as good bacon as Ireland? Persons were sent to inspect market conditions and requirements, to ascertain how the Irish put up their bacon, etc. The Danish experiment station was set to work on the problem of how to feed the pigs to make the best meat, and others took up the problem of the proper preparation of this flesh for the market. Tens of thousands of dollars were spent by the Government on this problem—enough money to have scared the farmers of some countries almost into rebellion. And what of the result? Denmark has captured the fine bacon trade of Great Britain, and is selling high-priced pork products there; while the United States is still furnishing the cheaper grades. Happily, I can bring illustrations of how the Canadian Government, through its fixed and travelling schools of dairying, through its Central Department of Agriculture, through its subsidies to creameries, cold-storage houses, steamship companies, etc., is pushing the manufacture and sale of choice dairy products; how it is distancing the States in these matters; how, too, it is putting up fancy pork products which enable the farmers to get higher prices for your hogs than do our farmers in the States by from 10 to 25 per cent. But time forbids.

My friends, a new era is dawning upon us. Canada and the United States are progressing rapidly, located as they are, side by side, though acknowledging different flags. Your progress, bright and shining as it is, has reflected light to our people and has stimulated and helped us more than you can realize. In turn, a study of the agricultural system founded by our National Government is of help to you, we are only too glad that you may learn of the lessons it teaches. You are in advance of our people at some points of the line of progress, and we are watching most intensely what you are accomplishing. Our schools are, in some points of agricultural instruction, ahead of what you have reached, and you are at liberty to gain what you may from these efforts. With a great region of prairie soil, rich in the fertility which the Almighty has been storing there through countless ages, with the wide world for your markets, with the tremendous impulse of national life behind you impelling you forward with an irresistible force, destiny has marked a happy future for you all. It is your opportunity and your inheritance to found here in this Northwest country an agricultural institution which shall be the pride of your people and the central source of light for your agricultural development. To it your sons and daughters will flock for the highest of instruction in relation to the soil which you turn with the plow, to the animals which your hands shall feed, and to the fruits of the fields and the trees which are yours for the gathering. In such a country as ours, whether on your side or the farther side of the line, there is nothing impossible to a people who are single-minded as to the desired end. Your progress in educational matters has been marvellous, and great as it is, it is but the prophecy of what is to come.

Maxims for Sheep Feeders.

Give the fattening sheep regular and quiet attention, an abundance of pure water, and plenty of salt where they can take it at will. Corn and clover hay makes an excellent ration for lambs and sheep. If roots of some kind are plentiful, they will be found a valuable help. Should clover hay be scarce or high, by using a little coarse other coarse fodders may be substituted, such as cornstalks, millet hay, oat straw, and bean straw. A lamb should gain on an average at least two pounds per week while on full feed. He will consume from one and one-fourth to two pounds of grain per day when on full feed, and when a lamb receives this ration he generally consumes about one pound of clover hay or other feed per day. The length of the fattening period may vary from twelve to sixteen weeks.

ROBT. CO., Ont.

FRED REED.

Roads in Springfield.

To the Editor FARMER'S ADVOCATE:

The last two wet summers have emphasized the necessity of better roads to our markets, if the farmers are to get all the possible profit from the year's operations. The added cost of marketing our produce over roads such as we have in the Red River Valley, with its adhesive mud roads even where extensive grading has been done, is a very heavy tax on the producer. Can we not improve our methods of road construction? In Ontario for some time past a Better Roads Campaign has been on, led by the Provincial Road Commissioner, Mr. Campbell, with, if the press can be relied on, good results. In the absence here of an official to take the initiative, I think the columns of the *ADVOCATE* would be a good medium for the discussion of this all-important subject.

In entering upon this discussion, I am fully alive to the difficulties which the nature of our soil places in the way of the roadmaker, as I have had considerable experience as a member of the municipal council.

Here in Springfield we are, and justifiably so, I think, proud of our efforts in roadmaking. Since 1880 the municipality in making and repairing roads has expended about \$100,000, or an average of \$5,000 a year, to say nothing of the statute labor, amounting annually to nearly 3,000 days. This statute-labor business has not been satisfactory as to results, and the council abolished it last year, imposing a road tax instead, which, I think, was a step forward, although as yet we have not had the practical experience which gives assurance, and no doubt the result largely depends on how the money is expended. We have found from our experience here that the essentials to roadmaking are:

1. *Drainage.*—Our aim has been to get the water away from the road-bed, and we have quite a drainage system in connection with our roads, which not only carries the water away from the road-bed, but also incidentally drains a great deal of the land of the municipality. Generally, these drains run continuously along the side of the road, the material taken from the drain being used to make the road, additional excavating being made to raise the low places to grade. In these low, flat places—the original watercourses—culverts are put in for the purpose of relieving the ditch during the spring freshet, and as it subsides to allow the water from the other side of the road to get through into the ditch.

2. *Form of Road or Grade.*—The grade must be high enough to be well above the water at any time, and well rounded on top. If the center is kept high, the water will run off it instead of saturating the soil so that it cuts easily into ruts. In this particular, we (in Springfield) have not lived up to our privileges. Much of the benefits which we should have from our heavy expenditure in constructing roads has been lost because of the continual attention which these clay roads require in order to keep them in passable condition. Necessary attention has not been given, and our main roads have been for the last two years at least nearly impassable; in wet weather from mud and in dry weather from roughness. To remedy this, and in order that the first expenditure may not be useless, the grades when cut up during wet weather should be immediately rounded up and made smooth, so that people can and will drive on them; for anyone driving over our roads must have observed that in wet weather that part is best and cuts least which has been by continuous travel made smooth and firm.

Lately, the question of gravelling our leading roads is being agitated. The expense and the advantages are points upon which arguments are based. The cost, seeing that we have plenty of gravel within our bounds, should not be such a grave matter, provided the advantages were assured. People often refer to the gravel roads of Ontario and their advantages and low cost of maintenance. But we are not in Ontario, and from our experience of the effects of wet weather on some of the macadam streets of Winnipeg last season, some of us at least have grave doubts about the ultimate benefit of applying a covering of gravel. Some time ago a gentleman, a civil engineer, whose name I do not remember, advocated through the Winnipeg press the sanding of the clay streets of the city. His plan was to place a few inches of sand yearly on the roads, claiming it would mix with the clay and in a few years would make a road the surface of which would not lift on the wheels in wet weather. Now, I am inclined to think there is something in this plan, for we have a short piece of road the soil of which is a mixture of clay and sand, and it is always passable, does not cut up, and is not carried off on our wagon wheels. Would it not be a good plan for some of our municipalities, where gravel and sand are convenient, to experiment a little in roadmaking? A mile of road might be gravelled heavily and another sanded lightly for a few years, and thus we would have a test which would be of great value not only to the municipality, but to a large part of our Province, and might be the means of preventing unnecessary or useless expenditure.

In conclusion, I may say that experience has shown us that for a district where the soil washes so easily as our clay does, the system of piling rather than framing on mud sills is preferable for bridges and culverts, also that for approaches to bridges earth embankment is more permanent and cheaper than timber work, so long as sufficient space for the flow of water is left. ROBT. FISHER,

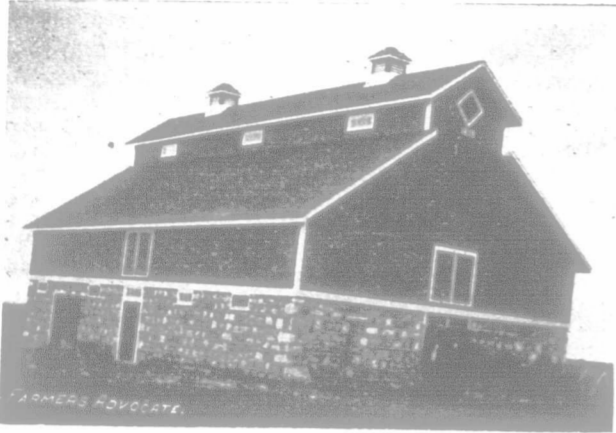
Municipality of Springfield.

English Notes.

FROM OUR OWN CORRESPONDENT.

The lambing season up to the date of writing has been a favorable one in nearly every district. Here and there one hears of some loss, but as a rule the general result has been remarkable for its freedom from losses, both in respect to ewes and lambs. The fall of lambs will not be a heavy one, but taking into consideration the fewer losses by death than usual, it may, we think, be generally estimated that the aggregate result will be an average one.

The individual report of flockmasters, or even different breeds, is hardly needful, for they would be of little interest to your readers, but we may say



STOCK BARN, OWNED BY GEO. LANG, INDIAN HEAD, N.-W. T.

that the different breeds whose advertisements appear in your columns, and those of the individual and progressive breeders who likewise give you their patronage, are having good luck, with lambs of good quality, typical character and good merit. Selectors or importers who desire to import English sheep should consult your columns, for we can assure them that those breeders who place advertisements in your columns are first-class men, owning flocks of the highest merit and quality.

The demand for sheep for export has certainly not been so large during the past few months as has been the case in the preceding two years, but there has been shown greater discrimination and care in the selection of the smaller number selected, with the consequent rise in the prices paid. Mr. Henry Dudding's well-known flock continues to be the center of attraction to which many of the principal buyers of Lincoln sheep resort, upwards of 300 ram lambs having been sold already from that noted flock this year. This does not in any sense exhaust the supply; there are many more left, and many of the best have been reserved for the spring and summer trade.

Mr. J. E. Casswell's flock has done well in the Argentine sales, where its representatives are well sought after at first-rate value and prices.

The Hampshire Down sheep, too, are having a full share of the export demand. The wise policy of their council in spending a portion of the income of the society to advertise their breed is having the inevitable result (advertisements properly placed always do), namely, increased demand, with increased sales at good paying values.

One important attraction in the show list for the coming season will be of interest to your readers; i.e., for the Shropshire and West Midland, whose date of meeting has been moved forward from July to May, or, in other words, been put nearly first instead of nearly last in the more important summer shows.

An Indian Head Barn.

To the Editor FARMER'S ADVOCATE:

Enclosed you will find a plan of our barn. The walls of basement are 22 inches thick and nine feet high—size, 40x60 feet—and are pointed with black mortar and blocked out with white lead. The horse stable and cow stable are separated by partition. The stable is all floored with 2-inch fir plank, and I think that B. C. fir makes as durable a plank floor as can be used. There are fanlights over each door, and these, with the 13 windows, give lots of light. The ventilation is obtained by an opening 3 inches wide, which runs the whole length of the building and is boxed over in loft, and the ventilator pipes are connected with this box; this appears to give good ventilation. The upper floor is just an open loft for storing feed, with an oat bin holding 400 bushels connected with oat box in feed alley. There is a large door, 8x10, in the west end for hay fork, with four smaller ones, 5x6, for putting in feed. The barn is painted with red oxide, trimmed with white lead. The stonework was done by Millar & McGuire, and cost \$175 for the work. The carpenter work was done by A. E. Sibbald, assisted by myself. The stone and sand were hauled during the winter, and cost nothing except time. The lumber cost \$1,108, and the labor \$120; painting, \$45. The barn cost \$1,500 complete.

District of Indian Head. GEO. LANG, JR.

Farming in Winter.

To the Editor FARMER'S ADVOCATE:

I have been reading with interest some of the articles published in the FARMER'S ADVOCATE with regard to the selling versus keeping young stock and feeding them to a finish. In the first place, it depends altogether upon the circumstances or position a man is in. If on a grazing farm, he is, I consider, practically finishing his cattle by keeping them until about the first of September before selling; but if on a "general purpose" farm, growing a great amount of wheat and coarse grains, as in the Pembina Mountain district, the farmer is foolish, I think, in selling young stock off the grass in preference to stall-feeding. One would imagine by so doing it was to lighten his work in winter. If the stock is sold, what is going to be done with the coarse grain? Sell that too? What about the land? You will find in first-class wheat districts that unless first-class farming is practiced, and the land is properly fed, the wheat crop is diminishing both in quality and quantity. From personal experience, I find that the manure from a large stable full of fat steers through the winter months more than repays the extra trouble. With regard to the farmer selling his stock with the idea of buying better females for breeding purposes, I believe that a Shorthorn grade cow is the best general purpose cow the farmer can own, far ahead of a pure-bred; but always keep a choice bull, either Shorthorn or Ayrshire, at the head of the herd. I know nothing that looks more satisfactory in the beginning of winter than to go into a stable and see 16 or 20 choice steers, a number of choice breeding cows, and the balance of the stable filled with young stock. This is farming in winter. If a man cannot raise 20 steers, or cannot buy enough suitable for feeding, then I would take some to feed on shares. Some farmers think feeding on shares does not pay, but there is money in it at from 7½c. to 8c. per pound for all the gain made. You have no money invested in the steer, and no risk to run, only your feed and labor. I prefer, if possible, to buy choice steers, but when I cannot get enough then it pays to take good steers to feed at the above mentioned figures in preference to selling coarse grain and robbing your farm of manure. I consider there is more money in feeding a steer at 2½ years old than at 3½, as at the former age one gains both in growth of frame and in flesh, while at the latter in flesh only. In handling stock in the stable, tie cattle up every time, as they can be kept cleaner and much quieter. As to dehorning, I believe in leaving the poor brutes as nature made them.

The food I use is cut oat sheaves, putting it in a large box, moistened with water; the chop is barley, oats, and small wheat, ground; mix this with the cut feed six hours before feeding, so that everything is well moistened; give a little oat straw between meals. This method I adopt until the first of March, after which I feed hay and chop to finish, all they will eat, being careful in all cases not to stall them. Give a little salt twice a week to each animal. I have water troughs in front of the cattle, and water twice a day, about two hours after feeding, and I never let the steers out from the time I tie them in to feed until they go to market. I believe in keeping them as quiet as possible. In Manitoba I find it impossible to finish more than one lot of cattle in the winter, as the fall season is too short, there being too much work to be done before winter sets in; therefore, I think one lot is sufficient, and that lot "done well."

As to handling manure, I take it out of the stable with a horse and boat, making a large pile in the barnyard, there to heat until spring, so that whatever seeds may be in the manure will be destroyed before going on the land. I was much surprised in reading some of the articles in the ADVOCATE, written by intelligent farmers, some that I am acquainted with, stating that they haul manure direct to the fields, spreading it at once. No wonder there are dirty farms. When we know there are weed seeds in the manure, we should kill them in the manure pile, instead of hauling them out on the land. I would like to hear this question more thoroughly discussed, and intend bringing it up at our next Institute meeting.

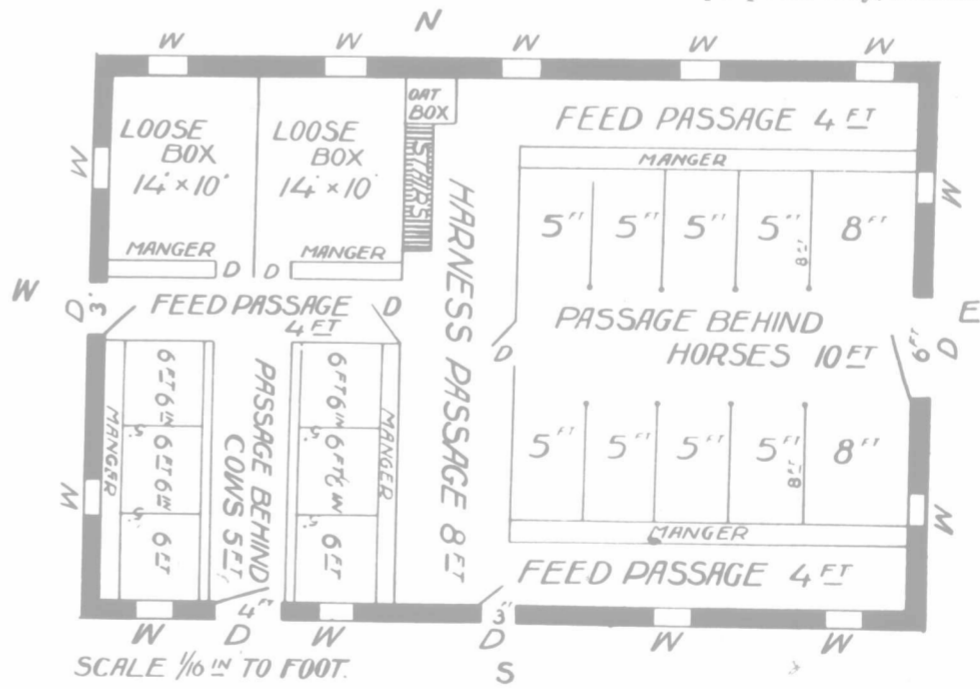
Pembina Municipality, Man. W. E. BALDWIN.

A. B. SMITH, Moosomin, Assa.—"Received the Christmas number, and think it beats them all. It has very magnificent cuts of stock, but think it would be more complete if it had a cut of Cotswold sheep in it, and should be in the hands of every farmer, as the ADVOCATE is full of practical reading matter, and a help to all. Wishing you a prosperous year." February 28th, 1900.

The Importance of Grass.

To the Editor FARMER'S ADVOCATE:

I am quite of your opinion as to the grass question in this country, so far as my limited experience goes, but as I have only been in the country some three and a half years, it is too soon for me to give any decided opinion on the subject. But as far as the natural grasses in this neighborhood are concerned, it seems to me that they are of very inferior quality, and of a much smaller quantity than the land ought to produce. Having lived in Lorraine, near Metz (now Germany), for some 30 years before coming here, where a good deal of attention is paid (of necessity) to artificial fodders, I have seen a good deal of the cultivation of Lucerne (or Alfalfa), Sanfoin, Alsike, Crimson and Mammoth clovers, among others, and have a high opinion of them, not only as fodder, but also as renovators of land exhausted from over-cropping, and so far as I can judge at present, believe that the least expensive and most expeditious way of bringing the many exhausted lands in this Province will be found in the judicious use of the above grasses or clovers. But, although my experiments have so far entirely succeeded especially with Sanfoin, Lucerne, Crimson, Alsike and Mammoth clovers, so far as the crops themselves are concerned, and although these have wintered well during last winter, I am awaiting, with some curiosity and not a little anxiety, the advent of the coming spring to see what the result of the present winter will be on them. Last winter on several occasions my glass went down to 60° below zero, but we always had a good covering of snow of two feet or more. This winter we have had but little snow worth talking about, and though 35° is the lowest that my glass has marked so far, I very much fear that all the clovers will suffer much more this winter than they did last. The same might be said of strawberry plants and small fruits. But, "qui vivra verra." If, however, they escape this winter and make as good a show this spring as they did last, I hope this year to carry on my experiments with them, with a view of renovating exhausted land. But, I need not tell you that these experiments require a certain lapse of time to gather the necessary experience, the first thing being to ascertain whether the crops themselves will withstand the climate effectually. If that be satisfactorily established, then, will they have the same beneficial results on exhausted lands as in Europe? I have been told by some that the ensuing crop of grain would probably be too "proud," and run more to straw than grain, and probably get "laid." It might be so, and, if so, it would be a serious defect; but, as I have not yet arrived at that point, I cannot give any opinion thereon. Nothing but experience can decide the question. Brome grass I have tried on a small scale with decided success, and I have no reason to doubt that, at all events, as fodder or pasture, it will prove most valuable here if cultivated and handled properly, and as soon as I can find a suitable seeder attachment to an ordinary drill for this grass, I hope to extend the acreage of land under it. I hear that Sylvester, of Brandon, has brought one out, and I hope soon to hear from Mr. Bedford, of the Experimental Farm at Brandon, whether or not it is a success? As so far this grass has been laid down here for fodder purposes only, I cannot



FLOOR PLAN OF GEO. LANG'S STOCK BARN.

say from personal experience what result it will have on the land as a preparation for grain, but, from analogy, I should conclude it would considerably improve the land when the sod comes to be broken. I think, also, that both vetches and peas can be most usefully employed here for the purpose of cleaning and renovating land preparatory to seeding with grain. At present the great drawback to the successful handling of these crops is the want of an efficient mower, which will raise and bunch the crops without a too great expenditure of hand labor. So far as I have seen, as a general rule the people here cut the natural grasses too late, constantly leaving them uncut until the flowering has long passed and the seed is formed. I have

always been taught that to secure the greatest amount of succulence and nourishment in the fodder (be it what it may), the period for cutting is just as the bloom begins to fall, and that every day's delay in cutting after that period is a dead loss in quality, even though the bulk may be increased. Whereas, here it would appear that the cutting takes place not according to the state of the grass, but the exigencies of the farm in other work. But it is easy to talk "ex-cathedra"; but where hand labor is so difficult to attain, one can't do always what one knows should be done, though I believe if the farmers once appreciated the fact that it is not bulk, as much as quality, that they should regard first, they would find means to arrive at the desired result. No doubt another great drawback to the native forage crops here is the system of letting the cattle pasture them indiscriminately in the spring, when the water is on the land, whereby it becomes terribly "poached," a most injurious thing for all grasses, to say nothing of the most promising grasses being cut back, which throws the natural time of maturity in arrears. Of course, the difficulty here is the necessity and expense of fencing to keep the land apart, and, probably, unless for artificial foddere, the expense would, in many cases, be too great. Pastures should never be fed when the land is in a sodden state, nor should cattle be turned continuously onto the same ground. A few days' rest should be given every week or ten days, or oftener if possible, to one piece of land while they are turned on to another. All clovers, Lucerne, Sanfoin, and Brome grass, once established, should every spring (as soon as the frost is sufficiently out of the ground to admit of the operation, and it is dry enough to be "poached" by the horses) be well harrowed over to admit the light and air to the roots, and if two crops are to be cut, a similar operation should be performed as soon as possible after removing the first crop. The proper instrument for this work is the "chain harrow," but so far as I can learn it is not known here. I wish I could find one. As soon as the plants begin to make their growth, say of 2 to 3 inches, a roller passed over them will be a great benefit. From the above you will gather that I have not had sufficient local experience yet to enable me to give much reliable information on the subject, always remembering that "one man's meat is another's poison."

W. SWAN CREALOCK.

Portage Municipality, Man.

Good Institute Work.

When passing a wheat field last August I noticed what seemed to be a swarm of mosquitoes on the stalks, but, whilst I had never noticed such a thing before, saw no reason for attaching any importance to it. Later on, when passing the same field I observed some of the heads and stalks blighted, but attributed it to the joint worm, or possible damage by hail. I have seen wheat similarly affected before, and in speaking to one of our largest wheat-raisers found that he had observed it, but, like myself, blamed it to the joint worm.

On reading Mr. M. Bartlett's paper, as published in the annual report of Farmers' Institutes, I was convinced that the Hessian fly was the insect I had seen in the wheat, and brought the matter to the notice of our members, reading the above paper as the best means of acquainting them with its nature and habits, and the best means of destroying them. Although others had noticed grain similarly affected, no serious damage appears to have been done.

Our members speak very highly of the practical matter contained in the annual report referred to above, especially the paper by Mr. Larcome on "The Farmer's Garden," which was discussed at our last meeting, as also the articles now appearing in the FARMER'S ADVOCATE by Mr. A. P. Stevenson.

The interest in our meetings has been well sustained during the present season, and we are looking forward to some good meetings yet this season.

Our members favor a change of the annual meeting to the beginning of winter, as it is difficult to secure a full turnout in the busy months of summer, whilst the choice of officers and apportionment of grant are based on the paid-up membership at that date.

JOHN FREEMAN, President Dennis, No. 2, Farmers' Institute.

The Show at Mafeking.

The development of the show system is remarkable among the English-speaking people all over the world, but we have rarely noticed a more striking evidence than the note in a recent message from our beleaguered South African town of Mafeking, which has been invested by the Boers for four months. A recent telegram from the little town in which Colonel Baden-Powell and his brave comrades have made such a gallant stand against the enemies of the country, remarked, among other items of interest: "We have just held our Agricultural Show and it proved very successful." The holding of an agricultural show amidst the constant fall of shells from an investing army must be a unique experience.—London Live Stock Journal.

JAMES ROBERTSON, Graduate. "It is now some time since we received the Changing Time of the Farmers' Advocate, and I must confess have not been able to read all. The contents are so elegant, and there are so many items that a good deal of time is taken up looking at them. Then, it contains a good deal of useful reading matter for the farmer, and is well worth the price of the paper for the whole year. Wishing you a successful season and every success in your enterprise."

January 28th, 1899.

British Pedigree Stock Sales, 1899.

The following tables, giving the highest prices realized in 1898 and 1899, extracted from a sale record which I have published in the Farmer and Stock Breeder's Annual, will doubtless be of interest to your many readers who don't see the English publication, which in addition to these summarized tables, has a complete record of every sale of importance chronicled therein which has taken place during the past year, and from whence can be obtained the names of those breeders whose produce realized the prices which are given in the following summaries, in the compiling of which no sales transacted privately have been included. The sales of the breeds in which Canadians are interested only are given in full.

The Horse Section is given first, and I have tabulated the highest prices realized at the sales included in my record by each separate age, and given for comparison the prices made for the same in the preceding year. The results disclosed are as follows for the breeds in the following order:

SHIRES.	Highest price 1898.	Highest price 1899.
Stallions	\$4,987 50	\$2,100 00
Three-year-old stallions	3,737 50	1,050 00
Two-year-old stallions	3,150 00	1,627 50
Yearling stallions	525 00	3,675 00
Colt foals	1,312 50	1,365 00
Brood mares	4,462 50	4,987 00
Four-year-old fillies	1,680 00	1,627 00
Three-year-old fillies	6,037 00	2,887 00
Two-year-old fillies	2,625 00	2,257 50
Yearling fillies	3,150 00	3,307 50
Filly foals	1,575 00	1,680 00
HACKNEYS.		
Stallions	5,250 00	3,150 00
Three-year-old stallions	288 00	5,775 00
Two-year-old stallions	1,391 00	2,835 00
Yearling stallions	1,076 00	1,785 00
Colt foals	210 00	210 00
Brood mares	3,281 00	2,787 50
Four-year-old mares	446 00	336 00
Three-year-old fillies	2,100 00	4,987 50
Two-year-old fillies	3,045 00	2,231 00
Yearling fillies	1,152 50	630 00
Filly foals		183 75
HARNESSES HORSES, ETC.		
Geldings	1,205 00	4,856 00
Show mares		2,152 50
CLYDESDALES.		
Stallions		4,460 00
Three-year-old stallions		
Yearling stallions	446 00	436 00
Colt foals	472 50	367 50
Brood mares	625 00	1,732 50
Three-year-old fillies	582 75	2,100 00
Two-year-old fillies	340 00	525 00
Yearling fillies	525 00	735 00
Filly foals	498 75	577 50
SUFFOLKS.		
Stallions	493 00	393 75
Two-year-old stallion	131 00	682 50
PONIES (ALL BREEDS).		
Stallions		367 00
Yearling stallions		220 48
Brood mares	1,365 00	1,102 50
Three-year-old fillies		625 00
Two-year-old fillies	131 00	315 00
POLO PONIES.		
Polo ponies	3,937 50	3,937 50

With respect to this breed, the top prices each year are the same, but the average for this sale, for in both years Messrs. Miller made the top price, which in 1898 was \$1,405.00 for thirty-one head, and in 1899, \$1,321.00 for thirty-four head.

The general results of these sales have been satisfactory, but the Shire horses have both made higher values and received the largest demand; in fact, for this class of horse the demand has been considerably in excess of former years, particularly for geldings, which have sold readily at higher prices.

The Cattle Section is given in exactly the same manner as the preceding section, starting with the

SHORTHORNS.	Highest price 1898.	Highest price 1899.
Bulls	\$1,076 00	\$1,890 00
Bull calves	1,732 50	1,601 00
Cows	2,152 50	813 75
Two-year-old heifers	735 00	682 00
Yearling heifers	577 50	1,102 50
Heifer calves	401 25	546 00
ABERDEEN-ANGUS.		
Bulls	378 00	997 50
Bull calves	147 00	225 72
Cows	603 75	561 75
Two-year-old heifers	325 00	425 24
Yearling heifers	325 48	456 72
Yearling calves	278 00	287 75
HEREFORDS.		
Two-year-old bulls	231 00	320 24
Yearling bulls	231 00	478 75
Cows	194 25	131 25
Two-year-old heifers	200 00	115 48
Yearling heifers	162 75	110 24
GALLOWAYS.		
Bulls	260 00	183 75
Yearling bulls	305 00	425 00
Cows	131 00	136 24
Three-year-old heifers	131 00	131 00
Two-year-old heifers	305 00	405 00
Yearling heifers	105 00	200 00
SUSSEX.		
Bulls	367 50	315 00
Yearling bulls	131 24	
Cows	273 00	446 00
DEVONS.		
Bulls	470 00	210 00
Yearling bulls	246 48	
Bull calves	194 24	47 00
Cows	194 24	236 24
Two-year-old heifers	265 00	157 50
SOUTH DEVONS.		
Bulls	194 48	212 50
Yearling bulls		199 50
Cows	147 00	

HIGHLAND.	Highest price 1898.	Highest price 1899.
Bulls	\$ 285 00	\$ 380 00
Yearling bulls	400 00	405 00
Cows		105 00
Two-year-old heifers		200 00
JERSEYS.		
Bulls	267 75	210 00
Cows or heifers	630 00	945 00
AYRSHIRES.		
Two-year-old bulls	261 50	170 00
Yearling bulls	78 75	135 00
Bull calves		136 24
Cows		170 00
Three-year-old heifers		131 24
Two-year-old heifers		107 50
Yearling heifers		112 75
Heifer calves		98 00
KERRY AND DEXTER-KERRY.		
Bulls	204 75	236 30
Cows	336 00	367 50

There has been throughout all breeds a first-class demand, and at private sales some very high prices have been made, but these are excluded from my record for this reason, that one only hears of some and not all; hence, no satisfactory conclusions could be drawn therefrom. The Shorthorns have been strongly supported, as have also the Herefords, whilst in the Red Polls more record prices have been realized.

The Sheep Section is dealt with more fully than either of the two preceding sections, from the fact that more detailed information is obtainable in the public press, and there are given first the highest prices realized in the different breeds during the present and past years for rams, yearlings, ram lambs, yearling ewes and ewe lambs of each breed, and then a set of tables giving the highest averages made for the same subdivisions during the same period:

RAMS.	Highest price 1898.	Highest price 1899.
Leicesters	\$ 199 50	\$ 205 00
Cotswolds	162 75	115 48
Lincolns	5,250 00	1,155 00
Oxford Downs	425 24	346 24
Shropshires	1,627 50	787 50
Southdowns	262 50	577 50
Hampshire Downs	315 00	84 00
Suffolks	630 00	299 24
Wensleydale	90 00	105 00
Border Leicesters	1,375 00	550 00
Dorset Horns	115 48	150 00
Kent or Romney Marsh	157 50	282 50
Cheviots	345 00	500 00
Devon Long-wool	230 00	76 00
Blackface Mountain	1,000 00	750 00
Kerry Hill	210 24	220 72
Ryeland		105 00
South Devons	325 48	220 72
South Hams		41 24

RAM LAMBS.	Highest price 1898.	Highest price 1899.
Cotswolds	94 72	63 00
Oxford Downs	157 50	210 24
Shropshires	231 24	31 24
Hampshire Downs (letting only)	656 24	472 50
Hampshire Downs (selling)	357 00	210 00
Suffolks	525 00	761 24
Wensleydale	80 00	62 50

YEARLING EWES.	Highest price 1898.	Highest price 1899.
Lincolns	52 50	131 24
Oxford Downs	16 24	20 72
Shropshires	47 00	42 00
Southdowns	80 00	78 75
Hampshire Downs	37 50	25 00
Suffolks	77 50	70 00
Border Leicesters	50 00	50 00
Dorset Horn	17 00	15 00
Kent or Romney Marsh	20 24	15 24

EWELAMBS.	Highest price 1898.	Highest price 1899.
Shropshires	31 24	16 00
Southdowns	52 50	21 24
Hampshire Downs	26 24	18 75
Suffolks	52 50	37 50
Dorset Horns	12 75	9 00
Kent or Romney Marsh	9 00	13 00

AVERAGE TABLES.

YEARLING RAMS.	Highest price 1898.	Highest price 1899.
Leicesters	73 72	45 60
Cotswolds	57 00	46 75
Lincolns	434 75	372 75
Oxford Downs	88 24	77 50
Shropshires	104 00	138 82
Southdowns	110 24	115 00
Hampshire Downs	117 00	73 24
Suffolks	75 68	145 00
Wensleydale	49 00	189 00
Border Leicesters	228 00	52 50
Kent or Romney Marsh	60 00	97 00
Cheviots	107 00	50 80
Devon long-wool	56 24	50 80
Blackface Mountain	154 48	156 00
Kerry Hill	31 24	63 00
RAM LAMBS.		
Cotswolds	54 48	42 50
Oxford Downs	61 00	47 24
Shropshires	35 24	17 00
Southdowns	50 24	62 00
Hampshire Downs (letting)	245 48	229 75
Hampshire Downs (selling)	58 00	58 75
Suffolks	105 60	115 25
Kerry Hill		44 60
YEARLING EWES.		
Lincolns	40 66	41 20
Oxford Downs	15 72	18 00
Shropshires	26 30	25 24
Southdowns	25 24	30 48
Hampshire Downs	20 88	15 00
Suffolks	38 00	36 00
Border Leicesters		18 85
Dorset Horns		11 32
Kent or Romney Marsh	13 80	13 00
EWELAMBS.		
Southdowns	10 32	10 60
Hampshire Downs	13 00	10 00
Suffolks	21 24	19 00

Swine.—The auction sale record of these during the past year has been a very small one, and the best prices made were: Boars, Berkshires, \$630.00, and sows, \$168.00. W. N. C.

My Experience with Native Grasses.

(CONTRIBUTED BY KENNETH M'IVOR, VIRDEN, TO THE PURE-BRED CATTLE BREEDERS' CONVENTION.)

I find that the subject of seeding to grass has been a very live one for the last few years, and as the useful varieties suited to our climate are at present unfortunately few, also as the majority of those intending to sow are at a loss which variety to use, as the varieties which are admittedly the best are comparatively new, therefore a few remarks on the variety I advocate, viz., Western or Native Rye grass, may, I trust, be of some interest to at least a few of my brother farmers. Western or Native Rye grass, as its name implies, is a native of this Western country, also of the Northwestern States, as I have been led to understand by F. Lamson Scribner, Agrostologist, Washington, D. C. I noticed it first in 1885, while putting up hay in the Assiniboin Valley. I gathered enough seed to sow about one-twelfth of an acre. This I sowed in the spring of 1886, which, as will be remembered, was our first dry summer. It grew about 1 foot high and matured seed. This plot I left for 8 years, cutting it every year. The soil was light sand; I spread manure on it twice, I think, during that period. The grass kept clean till plowed. It was plowed in July along with the summer-fallow, getting the same furrow. The crop of wheat the next season was, judging from appearance, about double that of the rest of the field, and has kept ahead since. My system of handling it now is to leave it two years under grass and then plow, which, I think, is more satisfactory.

My reason for advocating this grass is, because I think it is the best all-round grass adapted to our climate yet introduced; its only rival is Austrian Brome grass (*B. inermis*). As to the relative merits of those grasses, I will refer to experiments conducted on the Dominion Experimental Farms, which I believe to be as nearly correct as practical. The Western Rye Grass has the advantage over its rival: 1st. Because it can be sown at two-fifths the cost of Brome. 2nd. It can be easily sown with an ordinary grain-seeder, while Brome cannot. 3rd. It yields a heavier crop (see Experimental Farm reports, 1891 to 1896: Brandon Farm average yield of Rye grass, 2 tons, 1,310 lbs.; Brome, 1 ton, 1,283 lbs.). 4th. It is richer in albumenoids (for analysis see Bulletin No. 19, Central Experimental Farm: Rye grass seed, fully formed, green, 5.27; Brome seed, fully formed, green, 4.14. Calculated to water-free substance—Rye grass, 14.06; Brome, 11.88). Allow me now to draw your attention to the explanation given in above bulletin as to albumenoids or protein: "Under these terms are collected the substances that constitute the nitrogenous portion of the fodder. They are by far the most important and valuable of all the nutrients, since they largely assist in the formation of blood, muscle and bone. They are consequently necessary to the production of milk and flesh, hence they are known as flesh-formers. The wastes of the tissues which daily issue from bodily activity are repaired from and replaced by the albumenoids of the food. They are, under certain circumstances, converted into fats of the body, and at times also serve for the production of heat and muscular strength in the animal. Since they are absolutely necessary not only for the milk and beef production, but also for the maintenance of life, the albumenoids cannot be replaced in a ration by any other nutrients." Assuming the average yields and analysis to be practically correct, one acre of Rye grass yields as much milk and flesh formers as two of Brome. 5th. It is easier saved than Brome. 6th. It withstands drought better than Brome. See Experimental Farm reports for 1892, page 206, Brandon Farm: "The following were quite hardy, but owing to the very dry weather in the early part of the summer, the yield from them was light: Timothy, *Bromus inermis*, etc." Yield from Rye grass same season and place, 2 tons, 1,200 lbs. Again, Indian Head Farm report, 1897, page 374: Brome—This year a fair start was made about 20th April, but dry weather set in shortly after, and very little progress was made till 20th June. Result: Brome, 1 ton 1,616 lbs.; Rye grass, 2 tons, 1,764 lbs. 7th. When wanted for seed, it is easier handled than Brome, as it can be threshed at same cost per bushel as wheat. 8th. For preventing drifting, it excels the Brome, because its slender, fibrous roots bind the soil closer together than the coarse sucking roots of Brome. 9th. It adapts itself better to all sorts of soils than does the Brome. 10th. Being a bunch grass, and having no running roots, one plowing at any time of season effectually kills it—a very important consideration to the ordinary farmer, as compared with Brome.

I have now given you several strong reasons why I consider Western or Native Rye grass the best agricultural grass, and considering the disadvantage under which it has to push its way, as compared with its rival (being introduced by an obscure farmer), I am fully satisfied with the progress it has made in the estimation of men who do part of their own thinking. Seven or eight years ago individual orders ran for 1 to 5 lbs.; now they run up to 800 or 900 lbs. For the last two seasons I shipped to Brandon station alone 3,450 lbs. of seeds.

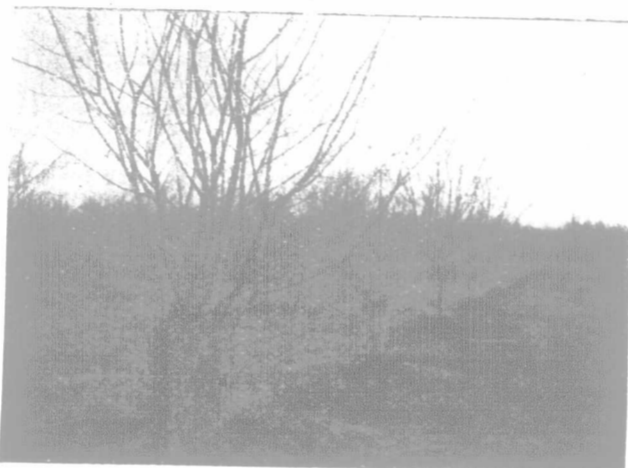
Fruit Growing in Manitoba.

BY A. P. STEVENSON, NELSON, MAN.
NO. 5—APPLES.

In this brief review of apple-growing it may be well at the first to state that so far as known at the present time there is no standard apple tree of sufficient hardiness to be recommended for general planting in Manitoba. Without doubt, more money has been spent by our farmers for this class of nursery stock than all others combined, with failure the end in every occasion. We know it is dear to the heart of the Manitoba farmer to be able to grow apples. This, in fact, appears to be the one thing lacking to a perfect existence here. Nevertheless, we will yet grow an abundance of apples at least for culinary purposes. One of the very first steps taken to bring to pass this desirable state of things will be the planting of windbreaks. Even if we had the trees of the desired hardiness at the present time it would be the height of folly to plant without first affording some protection from high winds. The fruit would certainly be blown off the trees before it was half grown.

Soil and Location.—All Minnesota authorities claim that a rich clay loam is best adapted for apple-growing, and land that has been cleared of heavy scrub or bush, and known as bur-oak land, is preferred. The poorest success will be obtained on light sandy land with gravelly subsoil. The best location for an orchard is said to be on land that slopes steeply to the north and east, on account of its being least affected by changes of temperature; and the worst location, that with a southern exposure. Be this as it may, our own location is a strictly southern exposure; but I am pleased to say that the results so far have been fairly satisfactory and encouraging.

Distance apart to plant.—In cold countries it is the rule to plant apple trees closer together than in milder climates. Our trees are planted 12 feet apart each way, and from their habit of growth I think that to be about the correct distance. Trees should be planted at least 6 inches deeper than they stood in the nursery. This deep planting encourages the growth of young roots above the graft. The tree



APPLE TREES IN THE ORCHARD OF A. P. STEVENSON, NELSON, MAN., PROTECTED FOR WINTER.

will then be on its own roots, and, in consequence, will be less liable to injury by root-killing. Spring is the only and proper time to plant in this country. In planting, lean the trees in a south-westerly direction. Plant rows of red raspberries between the rows of trees; when the latter are 8 years old, dig out the raspberries, giving all the space to the trees, but still continue to give the trees shallow cultivation.

Protection.—Probably the best method is to box up the trunks with four boards reaching from the ground to the lower limbs, then filling the box with earth. This is done late in the fall. The box is removed in the spring and set aside. The same lot can be used for a number of years. If trees are grown in bush form—that is, three or four large limbs starting from near the ground, this form of protection cannot well be used. Wrapping each stem with burlap will, however, answer very well; but whatever method is used, it is necessary that some form of protection be given; otherwise, the trunk will get sun-scalded and black-hearted, which will shorten its life a good many years.

Varieties of the large apple. During the last fourteen years 530 apple trees of 87 varieties have been planted at this place, and I am planting yet. Eighty per cent. of the total were of what is known as hardy Russian trees; the balance were American seedlings. A great many of the Russian trees went out the second year after planting, all lacking in hardiness, notwithstanding their Russian origin, and a good percentage of the American seedlings followed suit. The following are the varieties of the Russian apple trees that have carried fruit:

Blushed Calville—a summer apple, fair for dessert; tree moderately vigorous; fruit does not hang well to the tree. *Ostreloff*—a fall apple; tree a vigorous, spreading grower; fruit good for cooking purposes; hangs well to the tree. *Anisette*—a fall apple of the largest size and of good dessert quality; resembles the Duchess, but of better appearance. *Ropka Kishuja*—a good grower, with very dark foliage; a sweet apple; season late fall. *Hibernal*—a true ironclad; fruit large, even-sized, handsomely colored, and good quality for

culinary use; season late fall. *Romna*—resembles the Hibernal in habit of growth; fruit conical, smooth, good for cooking; season late fall. *Silken Leaf*—of the Hibernal family; our most prolific bearer; fruit medium to large, for culinary use. *White Naliv*—fruit medium to large, light yellow, some blush, tender, juicy, fair for dessert; season September. *Russian Gravenstein*—a fine tree; fruit medium in size, ribbed and colored; flesh white, tender, juicy; our best and most handsome for dessert; season September. *Blue Anis*—a moderate upright grower; a rather shy bearer; fruit medium, of good quality; season October. *Little Hat*—fruit round, without basin, highly colored; season October. This closes the list of varieties of Russian apple trees that have fruited at this place, although there are still a number of strong growing, hardy trees that give promise of bearing at an early date. Of the American seedlings, *Wealthy* is the only variety that has come into bearing. A description of this fine, well-known apple is unnecessary here further than it appears to lose none of its quality and beauty in this high latitude. I don't think it will succeed here except in an extra favorable location.

Among the hybrid apples I will only mention *August* and *Whitney*, being the only varieties that have as yet fruited with me. The trees of the latter were well loaded with highly-colored small apples of good quality. *August* (one of Gedion's seedlings) appears to be a rather shy bearer when young, but with age its fruitfulness will increase.

CRAB APPLES.

At the head of the list we have no hesitation in placing the *Transcendent* for productiveness, appearance, and hardiness. Our oldest trees are twenty years old, and to all appearance are good for twenty years more. *Hyslop* is another hardy productive variety, quite distinct from the *Transcendent* in fruit and habit of tree. The fruit is a dull red color, firm, but perishable. *Virginia* resembles the *Hyslop* so much that it is difficult to distinguish between them. *Sweet Russet* is the largest and first in quality of all varieties grown here. The fruit is a rich russet color, but does not hang well to the tree. *Philips 1000*—tree hardy; slow grower; fruit sweet, medium in size; shy bearer. *Greenwood*—hardy; slow grower; fruit small, inferior. *Gen. Grant*—moderately hardy; fruit large and desirable.

Insect Pests.—Up till the present time the flat-headed apple-tree borer is the only pest we have noticed affecting the apple trees. By watching for their sawdust-like castings around the base of the trunks they are easily located and dug out with a crooked wire and destroyed.

Combination Sales of Pure-bred Stock.

It has been proposed, and somewhat publicly made known through the press, to hold combination public sales of pure-bred stock yearly at different points in the Provinces, those who are advocating the establishment of these sales claiming that they would be in the interests of not only the large breeder, but more particularly the small breeder. They claim it would bring the breeder and generally the buyers or farmers in contact with each other, and be the means of bringing the stock of each breeder under the notice of the buyer, at the least possible expense to the purchaser. It is not justifiable to denounce, or say it cannot be made a success, any scheme or undertaking until it has a chance of a fair trial. Neither is it wise to say that, because a project has been tried once and proved a failure, under different circumstances and conditions it cannot be made a success. I am aware that such sales are held yearly (more particularly in Scotland, I believe), and with success, I suppose, as I find they continue to hold them. But there are some reasons that seem to present themselves to my mind why they would not be a success here. If these can be overcome and the holding of these sales will not only help the large but also the small breeder, and as well do good to the average farmer, I can say by all means let us have them. Some of these sales have been held in the past and did not prove a success, but a failure, but perhaps there were reasons why this was so. When it is only a draft from any breeder's herd or flock that is offered, the public will likely come to the conclusion, rightly or wrongly, that it is only the culls that are offered, and of course be chary about buying. Another objection seems to me to arise—there will be some expense to the breeder in getting his animals to the place of sale, and if he has some misgivings that he will not realize as much for them at such a sale as he can in his own stables, he will be loth to put them in. As a general thing in my own neighborhood, breeding stock does not realize as much at auction sales as they do in the breeders' stables. At present the supply of breeding stock hardly is equal to the demand, and while this is the case I think the breeder will prefer to sell at his own stable, where he can set the price himself. In a draft sale there is not the same confidence between the buyer and the seller; the public seem to be suspicious, thinking only the poorest animals are being offered and if good ones are procured they will not be sold unless extra prices themselves, but perhaps enough has been said. What little I have said is with the view, if such sales are proceeded with, that these obstacles may be guarded against.

Bruce Co. JAS. TOLTON.

Entomology in the Northwest.

[An address given by Percy B. Gregson, President of the Northwest Entomological Society, Waghorn, Alberta, to the pupils and parents at Waghorn Schoolhouse, Alta., on the "Oviposition of Insects."]

The last time I gave a sketch, you will recollect I said something about the uses of leaves to plants. I said that plants themselves were really composed chiefly of carbon. You can make charcoal of a plant, and then burn up the charcoal till nothing but a few ashes remains. It goes away into the air as a gas, and is called carbonic acid gas. The plants and trees have to get this carbonic acid gas, and there is no other way except from the air. We found, then, that the leaves are the lungs, so to speak, of the trees and plants. They breathe the gas in through small openings in their upper surface, and so the plants live and grow. We could kill a tree or plant by plucking off every leaf as it came, or by keeping it from breathing the air by means of its leaves. That is the reason why they die when they are plowed under: they cannot breathe.

This evening, however, I want to say a little more about insects. The more we know about them the more wonderful everything connected with them appears, and let us this evening look into some of their habits with regard to "eggs." The eggs of birds, as we know, are all nearly of the same shape, but the eggs of insects are infinitely varied in their forms, and besides dissimilarity in shape they are for the most part externally ornamented with a variety of beautiful figures and devices. They are not really the plain, ordinary-looking globules we are accustomed to think. If we examine them through a microscope we shall find that some are figured on one side and plain on the other; some are crossed with wrinkles; some are figured all over with hexagonal devices; some are ribbed, and some seem as if carved by the most skilled of sculptors. Some eggs are depressed, with a central cavity above and below; some are orbicular (round), and some are of a cylindrical shape, with prominent ribs. Others are of a flask shape and quite smooth. Others, again, resemble a miniature sea urchin, and others are crowned by imbricated scales like the tiles of a roof, and so on.

But the instinct possessed by the female in depositing her eggs is no less wonderful. By an unerring foresight she deposits them in the precise place where food suitable to the existence of her progeny (after extrusion from the egg) is found. In the case of butterflies and moths, with very few exceptions, the eggs are enveloped in an adhesive cement, which fixes them to the spot on which they are deposited. With some butterflies this cement is so strong that the eggs hang down, eight or nine in a string, from the twig, one below the other. This cement is evidently intended by nature to prevent the eggs from being carried away to a place where the young caterpillar would starve. It also preserves the eggs against adverse weather. Several species of moths, which lay their eggs in the fall, cover them with a thick coating of soft, hairlike down which they strip from their own bodies. They first attach to the trunk of the tree enough down to make a bed for the eggs, and into the bed the moth then places successive layers of eggs, surrounding them all with a similar coating of soft down, and over the whole number she spreads a cement and lays a neat roof of down over the whole, like the roof of a thatched cottage, as a protection against the winter storms. Her task completed, and having denuded herself of down for her offspring's sake, she expires.

There is a great diversity in the arrangement of eggs after extrusion. Sometimes they are deposited in confused masses, but in general they are arranged in an orderly and even systematic manner. Many butterflies place their eggs upon one end, ranked close together in perfect order, so that the caterpillars on hatching escape from the upper end, without disturbing the adjoining eggs. Some moths deposit their eggs round twigs of trees like a bracelet, arrayed with extraordinary neatness and regularity, as if set by the hand of a skilful jeweller.

But I must hurry on. I have mentioned the wonderful foresight of insects in selecting a suitable place for their progeny. This instinct is common to nearly every insect (flies, beetles, etc., nearly all are guided by it). The horse bot-fly lays its eggs on the hairs of animals, which being licked by the tongue are drawn down into the stomach of the animal, and there the grub finds its food. The Hessian fly lays its eggs in the creases of the young green blade of the wheat, and on the hatching of the larva it works its way naturally down the leaf, within the leaf sheaf, to the culm or stem, where it remains, sucking the juice of the plant. The mosquito lays its eggs in a mass on the surface of still water, where it floats like a boat or raft, and the young larva, hatching from the underneath, at once finds the water, which is its natural environment, and where it remains to pass through the stages preparatory for the perfect insect. The flea is among the exceptions to those insects having this instinct, for that creature seems to prefer to lay its eggs loosely among hairs of animals or clothing, unattached by cement, and consequently on any shaking the eggs fall to the ground, where the larva finds congenial food.

The Colorado beetle (potato bug) lays its eggs on the under surface of the potato leaf; and an interesting example of foresight is shown by the ladybird. These pretty little beetles, as well as their larvae, prey upon the larvae of the Colorado beetle, and upon plant-lice. The female ladybird therefore lays its eggs in a group of plant-lice, or in close

contiguity to the eggs of the Colorado beetle, so that there shall be a ready repast for her young progeny when they hatch.

This foresight of the female in selecting a suitable food for its young, shows us, in the case of pernicious insects, how important it is to keep our gardens clean from weeds which will attract the fly or moth at the time it is laying its eggs.

(To be continued.)

Government Stock Sales.

The question has been raised whether in our remarks on this subject in our last issue we were justified in designating as Government sales the proposed series of combination stock sales which Breeders' Associations have been asked to endorse. Our reply is, that so far as we are aware the idea was not entertained nor proposed by the breeders until it was first intimated to them that the Government was prepared to grant money towards the expenses of holding such sales, and to our mind the resolution passed by the Shorthorn Breeders' Association, which we herewith reproduce fully justifies the term applied to the scheme. Here is the resolution:

Moved by Arthur Johnston, seconded by W. J. Biggins, "That this meeting is of opinion that a well-conducted sale, under the supervision of the Dominion Government and with the best type of animal contributed, would be beneficial to the breeders of this country." Carried.

The FARMER'S ADVOCATE has always favored generous Government grants to agricultural societies for the encouragement of open competitive exhibitions of live stock and other products of the farm, with a view to improvement in the character and quality. We have also favored liberal aid to the breeders' associations, for the purpose of supplementing their prizes at the Spring Horse Show and at the Winter Fat Stock, Dairy and Poultry Shows, believing that these are legitimate methods of promoting the improvement of stock, which are open on equal terms to all farmers, and we are fully in sympathy with those enterprises. Moreover, we have always given credit to the directors of these associations as being able and honorable men, broad-minded and liberal in their views, and in intelligence and business ability not only comparing well, but standing head and shoulders above their peers in the same class in any other country we know of. We have also cheerfully thrown our influence in support of the excellent work accomplished by the breeders' associations, with the assistance and co-operation of the Ministers of Agriculture, in securing reduced freight rates from the railway companies for the carriage of pure-bred stock, believing this to be legitimate work and in the best interest of the whole country. In fact, the whole question of the transportation of live stock generally, horses included, presents a wide field of opportunity for vigorous and unremitting attention by the Government. Trade will develop fast enough if given a chance. Witness the immense impetus given the Canadian cattle industry by removing the vexatious international quarantine. But when it comes to a question of State subsidies to any business, whether solicited or offered unasked under a mistaken idea of its need, and especially to the introduction of a system of business in which we know a large proportion of the leading breeders have no confidence, and upon which many of the smaller breeders and the farmers generally are sure to look with suspicion and distrust, it has appeared to us that the question is one which calls for more careful consideration than it has received. We have too high an opinion of the rank and file of Canadian breeders to believe that on sober second thought they will approve of this pap-feeding process, which has a tendency to make mendicants, rather than men.

We are of the opinion that if the proposition had been made at the Shorthorn breeders' meeting to use a portion of their own surplus of \$8,500 in paying the costly expenses of such sales, it would have met with a very different reception, and yet if the members have confidence that such sales would be in their interest, why should they not devote a part of their fat surplus to this object? Was it the sugar-coated promise of Government funds to pay the expenses of the venture that enabled them to swallow the proposal with so little protest? The system of Government paternalism, and of meddling with the rational and natural current of business, has little, if anything, to commend it to favor. Spoon-fed people, as a rule, fail to prove progressive, and there is no business so healthy and sound as that promoted by energetic private enterprise. This has been proven in innumerable instances by the unhappy experience of many municipal corporations in bonusing manufactories and other business schemes. In Britain, where the success of the pure-bred live-stock industry has not been paralleled elsewhere in the world, the Government have never attempted to meddle with the business, and we can find no better precedent. The industry is flourishing here, as witness the large numbers of animals imported in order to meet the increasing demand, showing the scheme to be unnecessary.

R. B. BENNETT & SON, Wolsely, Assa.: "We always find the ADVOCATE a welcome visitor."
February 20th, 1900.

FRANK CRAMER, Carberry, Man.: "Like the ADVOCATE, and do not want to do without it."
February 21st, 1900.

Canadian Products on the British Market.

FROM OUR ENGLISH CORRESPONDENT.

Amongst matters likely to interest your readers, I know of none more so than the question of imported Canadian produce; I mean those commodities which you produce in larger quantities than you consume, shipping the balance to our markets. It is needless going through a long list of articles, for the principle at stake in one is pretty much the same in respect to others; for instance, there is bacon, known to be sent us in large quantities from your country, and, according to reports of its purchasers, as judged by the value it realizes here, of excellent quality; yet, strange though it may appear to your readers, though I am constantly in London and at many of the leading towns of England, I do not know that I have ever seen any shop, or store, as you call them, where Canadian bacon is sold. Then, again, in respect to cheese, American is the general tune; then in respect to butter, the tune is Colonial, which includes a lot of different Colonies, but no individual one; and thus one after another of your exports might be enumerated, and few, if any, would be found to be sold as Canadian. This surely is not as it should be. I prefer, as an Englishman, to spend my money for English produce, and hence, would naturally prefer to buy that produced within the limits of the Empire rather than that from other sources. Then, again, every tub should stand upon its own bottom, or, in other words, the country producing any commodity should either have the credit or discredit, as the case may be. This matter is one that needs the attention of your authorities, it being, of course, impossible for purchasers to discriminate between the produce of one country and another; hence, it appears to me that it would be a grand thing and a great benefit to your country to have a central depot in London or Liverpool, or both, and small branches in other centers, whereat Canadian products only should be sold, and depend upon it, if those products were of that high merit and quality those were that I had the privilege of sampling when on my trip in Canada, the demand would soon be found to repay the cost incurred. What I want to bring home to your readers, who are practically the producers of most, if not all, the commodities which would be affected, is the bare, startling fact that a far larger proportion of the Canadian produce sent us is sold under some other name than Canadian, possibly a good deal goes for English produce; but whatever may be the description under which it is sold matters not, for it does not alter that fact, namely, that Canadian farmers and producers are not receiving nearly all the benefits the high merit and quality of their products merit.

A sale of considerable importance and interest is announced for June 20th, 1900, namely, the usual draft sale of Shorthorn cattle and Southdown sheep from the herd and flock of H. R. H. the Prince of Wales, at Sandringham. The high merit and quality of both the herd and flock is too well known to need recapitulation, and therefore we feel confident that this simple announcement will be equally effective as any longer or more elaborate one. With respect to the numbers included in the sale, we are informed that they will consist of about 60 Shorthorns, male and female; the whole of the yearling Southdown ewes and twenty yearling rams. Canadians who are in England at the time should not fail to attend this important sale, whereat full opportunity will be afforded them to see the grand herd and flock.

Beef Rings as They Are Conducted.

In our March 5th issue a subscriber asks us to publish a chart as a guide in cutting up beef into roasts and boiling pieces. This we give herewith, according to the system adopted by some of the beef rings, of which there are so many running in various parts of the country. These beef rings are simply unions of farmers united for the purpose of supplying themselves with fresh beef during the summer months. Some rings have 20 members, and others 16, or whatever it may be made. The chart we herewith show is for a ring of 16 members. The members each agree to put in a beast that will dress say 400 pounds, which will allow 25 pounds to each member. A beast is killed each week and distributed to the members in such a system as to give each a different cut or cuts each week, so that by the end of the 16 weeks or 20 weeks, as the case might be, each member will have received a whole carcass in weekly sections.

A butcher is appointed, as well as a Secretary. The butcher provides a suitable place for killing, and furnishes a hook for every member, on which each man's share is hung. He kills the animal in the evening and cuts it up in the morning, weighs each share, hangs it upon its respective hook. He keeps an accurate account of the weight of each animal — of the quantity that each one receives per week. He changes each week the order in which the cuts are distributed; that is, the cut No. 1 receives this week, No. 2 receives next week, and No. 1 takes the place of No. 16. He renders to the Secretary the account at the end of each season of weight of each animal and of weight of meat received by each member, as shown by the following table:

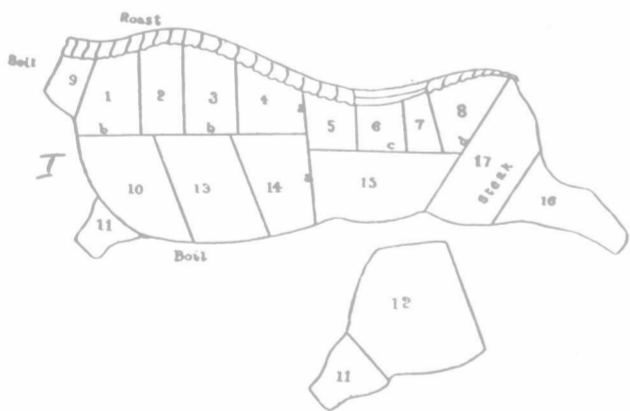
2. Front shank and rump, No. 2	A's beef.																			
3. Neck and rump, No. 1	B's beef.																			
4. Flank and roast, No. 2	C's beef.																			
5. Shoulder and roast, No. 4	D's beef.																			
6. Hind shank and roast, No. 3	E's beef.																			
7. Second rib and roast, No. 1	F's beef.																			
8. First rib cut and sirloin	G's beef.																			
1. Brisket and roast, No. 5	H's beef.																			
2. Front shank and rump, No. 2	I's beef.																			
3. Neck and rump, No. 1	J's beef.																			
4. Flank and roast, No. 2	K's beef.																			
5. Shoulder and roast, No. 4	L's beef.																			
6. Hind shank and roast, No. 3	M's beef.																			
7. Second rib and roast, No. 1	N's beef.																			
8. First rib cut and sirloin	O's beef.																			
9. Brisket and roast, No. 5	P's beef.																			
10. Front shank and rump, No. 2																				
11. Neck and rump, No. 1																				
12. Flank and roast, No. 2																				
13. Shoulder and roast, No. 4																				
14. Hind shank and roast, No. 3																				
15. Second rib cut and roast, No. 1																				
16. First rib cut and sirloin																				
		441																		

This table represents the way in which the beef is to be divided and weighed out to each person. The diagram represents A's beef being slaughtered and weighed out to the men composing the ring. No. 1 cut goes to No. 1 man the first week, to No. 2 man the second week, and to No. 3 man the third week; etc. This is done by moving the long list of cuts (at the left edge of time-table) down one space for every beef that is slaughtered, which changes the cut for each man. This slip is let down week after week until No. 2 comes opposite No. 1 man, then No. 1 cut is placed opposite No. 1 man again, as all the cuts in one half of the beef is contained in the first eight numbers, and the other half of the beef has the same cuts in it.

There are a number of details which each ring can work out to suit themselves according to their own circumstances. The secretary may furnish tickets with numbers on, which the members draw from a box, to decide the order in which they are to supply the animals. He also sends at the close of the season—the butcher's account to each member of the weight of his beast, the quantity he has received, and what he owes or is due him, as the case may be.

CUTTING UP BEEF.

- Fig. 1. Represents one-half of beef lying on the table ready for the saw. Before letting this half down divide it in the middle by running a saw across at "a" between roasts 4 and 5, leaving two ribs on hind quarter. After laying both quarters on the table divide fore quarter at line "b."
- No. 9. Represents neck. Saw neck off, leaving three joints on it.
- No. 1. Represents roast No. 1. Saw roast No. 1 off, leaving three joints on it.
- No. 2. Represents roast No. 2. Saw roast No. 2 off, leaving three joints on it.
- No. 3. Represents roast No. 3. Saw roast No. 3 off, leaving three joints on it.
- No. 4. Represents roast No. 4. Saw roast No. 4 off, leaving four joints on it.
- No. 11. Represents front shank. Saw front shank off above upper joint.
- No. 14. Represents second rib cut. Saw it off, leaving five ribs on it.
- No. 13. Represents first rib cut. Saw it off, leaving four ribs on it.



- No. 10. Represents brisket.
- No. 12. Represents shoulder, which lies directly under brisket as represented in Fig. 1.
- Then take the hind quarter and divide it at line "d."
- No. 15. Represents flank. Cut flank off at line "c."
- No. 5. Represents roast No. 5. Saw roast No. 5 off, with three joints on it.
- Nos. 6, 7 and 8. Represents sirloin, rump No. 2 and rump No. 1, respectively. Divide these three as near to the same weight as possible.
- No. 17. Represents steak. Cut steak into slices, giving a slice to each person.
- No. 16. Represents hind shank after steak is taken off.
- No. 18. After this half of the beef has been cut up it is divided between the first eight persons, as shown by time-table, giving each person a roast, a boil piece, and a slice of steak. Then the other half of beef is taken down and cut up in the same manner.

Sugar Beet Growing Trials in Britain.

At a recent meeting of the Sugar Beet Committee of the Central Chamber of Agriculture it was decided to make arrangements for a series of not less than 20 experiments in the growth of sugar beet in different parts of Great Britain and Ireland during the forthcoming season. As in certain cases previous experiments have demonstrated the value of sugar beet for the feeding of stock independently of the value of the root for the manufacture of sugar, this point will be especially kept in view in connection with the proposed experiments of the present year.

Demands of the Live Stock Export Markets.

[Extracts from an address by J. R. Mullins before the Virden Farmers' Institute.]

As beef is practically the chief export from this country, I will call your attention to what I consider the best breeds of that class of stock. First and foremost in the estimation of all cattlemen is the Durham, commonly called the Shorthorn, as the best all-round beast, but a cross between either the Polled Angus, Galloway or Hereford with the Shorthorn produces a desirable animal for the market. I am a strong advocate of dehorning, especially if done when calves, as I find in shipping they are less liable to be ripped and bruised while in transit than are cattle having horns, and I am convinced they always feed better while on the farm. The present market demands, for the best prices, steers and heifers weighing from 1,200 to 1,500 live weight. For this purpose we would expect best results from cattle, when stall-fed, rising 3 years old, and when grass-fed, rising 4 years old. Such cattle should be finished before being marketed to obtain best prices. When I say "finished," I mean fat enough to stand a three-weeks' journey, and under favorable conditions land in good shape. As the journey of 1,000 miles in railway cars and 3,000 miles by boat does not improve them, one can readily understand that they require to be fat.

I find that the export of live hogs from this country has scarcely been attempted yet, as the bulk of the supply finds ready market at home. The hog most in demand is the long, lean hog, weighing alive from 150 to 250 lbs. This class of hog is best produced from a cross between Berkshire and either Poland-China, Tamworth, Yorkshire or Suffolk.

I consider that a large percentage of the quality of both cattle and hogs lies in the correct system of feeding, as a thoroughbred beast of any description can be made a scrub by neglect and poor feeding, but you cannot make any kind of quality by putting feed into a scrub beast.

Regarding sheep, the supply at present is in no way equal to the demand. As several cars of mutton were brought into the Province this winter from Eastern points, it has been proven that sheep do not do well when ranched exclusively in this Province, but where they have the run of the stubble fields in the fall they appear to do very satisfactorily. Shropshires and Leicesters seem to be in favor with most breeders. It is easily seen that the men who have made the best success are those who have kept and handled properly the right class of stock. Some farmers have told me that there is no use in raising the class of animal the market most demands, as they cannot realize any more from them than they would from an inferior grade. Well, to a certain extent they were right, up to a short time ago, when the bulk of the live stock raised was required for local use, and quality did not cut so much figure as it does to-day. But

The Weanling Colt.

As feeding goes hand in hand with breeding, it is very essential that the colt should still be kept in a healthy, thriving, growing condition after it is weaned, and the aim should be to give

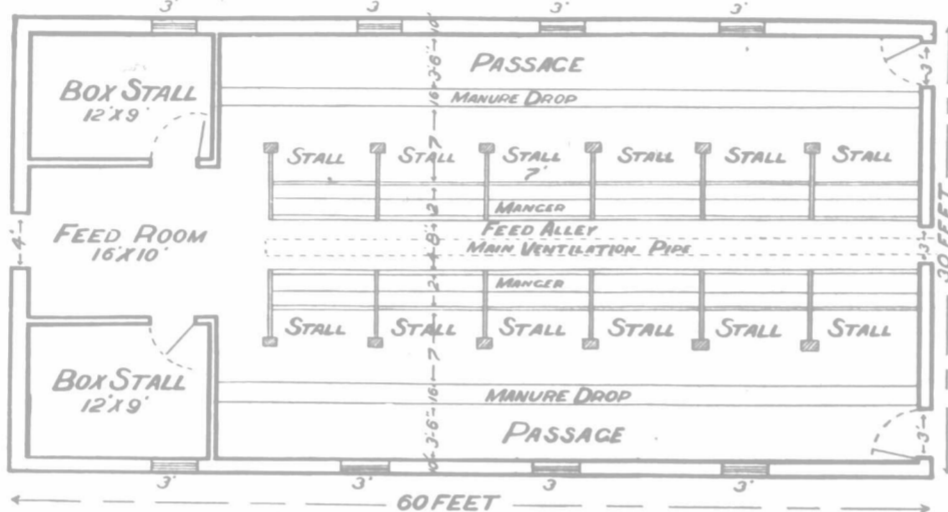


FIG. 1.—BASEMENT PLAN COW STABLE, DESIGNED BY MR. ISAAC USHER FOR JOHN SKINNER, THOROLD, ONTARIO.

them abundance of food for producing bone and muscle, which is lacking in a good many horses in this country, as a little bone and muscle added to a colt is far more important than producing a lot of fat, which can be put on later very cheaply. One of the best agents for contributing bone and muscle in colt life is good sound oats, with the addition of bran. Bran, being rich in mineral salts, which is necessary in making bone, is therefore a valuable food for young growing animals, furnishing them with plenty of bone-making material, and it also acts as a laxative. A grain ration composed of three parts oats, one part bran, and a little salt added, and of this mixture to be fed three quarts divided into two feeds per head daily; a few carrots would also be beneficial. Water twice daily—that is, for heavy draft or agricultural colts—along with a variety of coarse and cheap fodders such as hay, good oat straw, or a little sheaf oats. Of course the feeder must use judgment as to the age, breed, etc., of the individual colt, as to when this grain ration may have to be increased as the animal develops. Colts should have a liberal amount of exercise daily, and be stabled in a roomy, well-bedded, comfortable box stall. WALLACE MUNICIPALITY.

Barn Plan and Ventilation System Designed by Isaac Usher, Queenston, Ont.

The accompanying plan of barn basement for stock is to accommodate the cattle stock on a 100-acre farm. It is laid out for convenience in feeding as well as economy in space. The disposition of space could be changed to suit others to more advantage; for instance, the platform on which the cows stand could well be less than seven feet, allowing the space gained to go into the passage behind the cows. Otherwise the plan has good points, and no doubt will be copied, especially by those who have old barns from 30 to 34 feet wide they wish to raise up and put basements beneath.

Fig. II. represents the end section of the stable, showing the ventilation system of the stable. The fresh air enters the tile channel at the end of the building. The channel runs through the entire length of the building, beneath the raised feed passage. It is tapped at every cow stall on either side by a gas pipe which opens at the parting boards between the cows. These pipes are covered at the opening with perforated caps, which admits the air by a spray. As the temperature rises in the stable the heated air escapes by the ventilator, thus making room for more fresh air. With this system the doors and windows are kept closed, and the temperature will regulate itself, keeping the air pure at all times. A prominent feature of this system is that the closer the cattle are housed the more actively will the system work; while a uniformity of temperature is maintained.

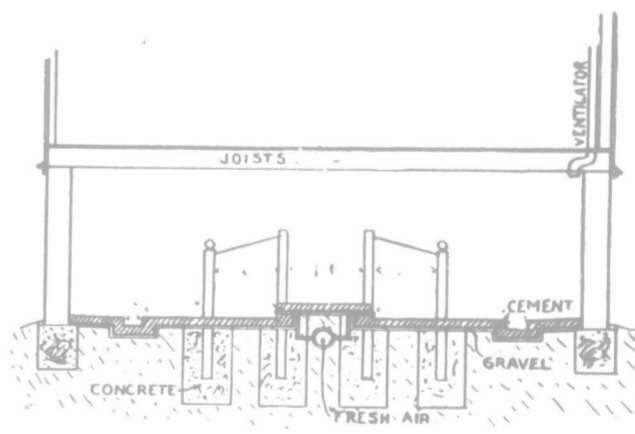


FIG. II.—CROSS SECTION OF BASEMENT, SHOWING USHER'S VENTILATION SYSTEM.

the time has arrived when live stock must be graded as other products are and paid for accordingly, as with stock so graded it would raise the quality of our export animals and put them on an equality with the stock produced by our neighbors to the South. At the present time United States cattle command from 2 to 3 cents per pound more in England than Canadian cattle do, and it is the careful breeding, feeding and grading of their stock which has raised them to that standard. I, with other shippers, have found that we had such a small percentage of finished animals in our shipments that it was impossible to realize the same prices as Americans. I may say the Argentine Republic is fast coming to the front as a cattle-producing country, and Canada will have to look to her laurels if she wants to keep pace with that great Republic, as they are importing the best sires that money can purchase, and their stock is fast improving and practically ruling the English market at present. The only remedy that I see is to raise the standard of our stock by careful breeding and feeding, and John Bull will pay us just as much for our meats as he does our cousins over the border.

Thickness of Cream?

To the Editor FARMER'S ADVOCATE:

SIR,—In your issue of 5th February, Mr. Stonehouse, in an article on buttermaking, says: "Experience, coupled with good dairy literature, taught us to thicken our cream until one gallon would churn 5 to 5½ lbs. butter." I can't help thinking there is some mistake in this statement, and would be much obliged if you can inform a green hand at the dairying business if it is possible to thicken the cream to that extent, and, if so, can it be done without losing a considerable quantity in the skim milk? We have been using a separator for 2 months with satisfaction, and in compliance with instructions have not altered the regulator, as the cream is of the consistency called for by experts in writing on the subject. Furthermore, no milk is visible at the bottom of our cream cans, which have a glass, permitting one to notice such if present; and no cream rises to the top of our skim milk if left over night in pail. We have no trouble in churning or ripening, and the butter is not affected in quality by the presence of either "white specks or curdlike lumps." However, it takes 4 gallons of our cream to make 7 lbs. butter; and the butter, as far as I can judge, is in quality quite according to the book. If you, or the separator men, can tell me how to fix that amount of cream so as to make 20 lbs. butter from it, you will greatly oblige,
South Cypress, Man. A GREENHORN.

MR. STONEHOUSE'S REPLY.

To the Editor FARMER'S ADVOCATE:

SIR,—Your communication of the 19th, regarding "Greenhorn's" trouble with cream, received. From this gentleman's statement I infer, of course, that he is using a separator, and, I think further, that it must be what is called the Hydro-Lactic separator, as I cannot conceive of any regular machine separator making such thin cream. If such is the case, then I can only say I am sorry any intelligent farmer should be caught by such cheap, clap-net, Yankee delusions, as these things have been fully exposed by all leading farm and dairy journals, and all the experimental stations both here and in the U. S. But if, on the other hand, your correspondent has a regular separator, then he either does not understand his machine and how to operate it, or else he has not an up-to-date utensil, and at the present time you will find "back numbers" even in separators. This regulating the thickness of cream, or the percentage of butter-fat in it, is a very simple matter in a good machine; it just simply means that by turning a screw—the cream screw—a little one way or the opposite, you change the cream outlet so near the skim-milk line that some milk will be delivered along with the cream; or you can change the outlet to such a position that only the pure cream will be delivered. This should not affect the clean skimming of the machine unless the cream gets above 40°, which is not advisable anyway, as such cream is troublesome in churning unless the buttermaker has had experience in handling such cream. We just gradually worked up to it, and have churned by actual weight 30 lbs. from 5 gals. cream, but five pounds to a gallon usually gives better results in skimming as well as churning. The advantage of thick cream is that it saves so much churning, as it is no more trouble—as far as washing utensils go—to churn 50 lbs. than 10 lbs., and cream without milk in it will churn at a lower temperature, which in warm weather gives a firmer butter; besides, we always found it ripened better too, doing away with those white specks or curdlike substance which so often troubled us when cream was allowed to ripen thoroughly; i. e., if thin with milk to start on.

I can assure "Greenhorn" that what he refers to can be done, and to his advantage, too; and if his machine will not do it, just tell the agent you do not want it any longer, as there are some that will, and in the simplest way imaginable, while others are, I know, just as difficult and complex to adjust. But, by all means get your cream thick enough to churn out at least 3½ lbs. to 4 lbs. per gallon.

York Co., Ont.

M. STONEHOUSE.

Selling Stockers.

To the Editor FARMER'S ADVOCATE:

The question whether it pays to sell off the young cattle from the farm or to keep them till finished, as, say, three years old, seems now a very simple one to me. Some time ago I thought (foolishly) that there was only one side to the argument, and that the man who sold the young ones off made a mistake. To-day I know better, and look at it in this way: With the cheap feed we have there will be a profit of say \$9.00 for first, \$3.00 for second, and \$1.00 for third year in raising and keeping steers or heifers, for the latter will make up in calves before they are three years old what the steers would exceed them as heaves. After the farmer's herd has increased to the point that he must either sell or increase his stable room, then he has a sum in simple proportion to work out, and each ought to be able to decide for himself whether it will pay best to build larger stables or sell off enough to keep the herd within present quarters without overcrowding. While aiming to keep as many calves as possible, I have found I must sell young ones sometimes for above reasons, and in doing so have culled out the least desirable and improved the herd. Of course, I use a pure-bred bull only, and the best obtainable; the one now in use is a son of the champion Tomman. F. C. COPELAND.
Southern Saskatchewan.

"Canada's Ideal."

We give herewith a brief sketch of the breeding and show record of the twelve notable Shorthorns whose portraits appear in the fine premium picture just issued from the office of the FARMER'S ADVOCATE, entitled "Canada's Ideal," which is being eagerly enquired for and ordered by a large number of our readers in all the provinces and many of the States, and which is greatly admired by all who have seen it.

Judge = 23419 =, the first of Manitoba's big four, is a roan bull, and was calved Sept. 26th, 1895. He was bred by J. & W. B. Watt, Salem, Ont., and is owned by Hon. Thomas Greenway, Crystal City, Man. Sire imp. Royal Sailor = 18959 =, dam Mildred 4th = 22941 =, tracing to imp. Minnie, alias Mildred = 5175 =, of Mr. S. Campbell's (Kinellar) Mina tribe. Judge won 2nd prize as under a year at Toronto Exhibition (1896), 1st at Toronto as yearling in 1897, 1st and sweepstakes at Winnipeg (1898) Industrial, and was at the head of the 1st-prize herd at that show. His sire, Royal Sailor, was bred by W. S. Marr, Upper Mill, Aberdeenshire, and got by Sea King (61769), dam Red Lady 18th, by William of Orange. The dam of Judge was got by imp. Hospodar = 2703 =, and her grandam by Challenge = 2933 =, a son of Barmpton Hero = 324 =.

Topsman = 17847 =. Red. Calved December, 1891. Bred by J. & W. Russell, Richmond Hill, Ont. Owned by and used for four years in the herd of J. G. Barron, Carberry, Man. Sire Stanley = 7949 =, dam Nonpareil Victoria = 17138 =, by imp. Vice Consul (60112), g. d. imp. Nonpareil of Kinellar = 8314 =, bred by S. Campbell, Kinellar. Topsman won 1st prize in 1896, 1st and sweepstakes in 1897, 1st and sweepstakes in 1899, at Winnipeg Industrial Exhibition, in the hands of Mr. Barron; also 1st prize and sweepstakes at Toronto, London and Ottawa in 1899 as the property of Capt. T. E. Robson, M. P. P., Ilderton, his present owner. Stanley, the sire of Topsman, was got by Challenge = 2933 =, and out of imp. Wimple 15th, bred by S. Campbell, Kinellar. Topsman is the sire of Moneyfuffel Lad = 20521 =, sweepstakes bull at Toronto in 1895 and 1896. He is also sire of 1st-prize Manitoba-bred herd at Winnipeg Exhibition, 1899.

Matchless 18th = 20130 =. Red. Calved Oct 19th, 1895. Bred by J. & W. B. Watt, Salem, Ont. Sire imp. Royal Sailor = 18959 =, bred by W. S. Marr, Upper Mill, Aberdeen; dam Matchless of Elmhurst 9th = 17293 =, by Perfection = 9100 =, by Barmpton Hero = 324 =, and out of imp. Lovely 19th = 306 =, bred by Amos Cruickshank, Sittyton. Matchless 18th won 2nd prize as a 2-year-old at Toronto Exhibition in 1898, and 1st as a 3-year-old and sweepstakes as best female any age at Toronto, 1899.

Royal Member = 17107 = (64741). Roan. Calved April 16th, 1892. Bred by the representatives of the late S. Campbell, Kinellar; imported in 1892 by Arthur Johnston, Greenwood, Ont. Owned by H. Cargill & Son, Cargill, Ont. Sire Royal James (54972), dam Nonpareil 32nd, by Borough Member (33186). Royal James was sired by Cumberland (46144), used exclusively in the Sittyton herd of Mr. Cruickshank. Borough Member was a pure Booth bull, probably one of the highest-priced bulls in his day. He was by Lord Blythesome, and out of Lady Faithful, by Baron Killerby. Royal Member has not been exhibited.

Knuckle Duster = 28868 = (72733). Roan. Calved March 13th, 1897. Bred by J. Bruce, Inverquhomery, Aberdeenshire. Imported in 1898 by H. Cargill & Son. Owned by H. Smith, Hay, and A. W. Smith, Maple Lodge, Ont. Sire Waverly (68072) (sire of Smithfield winning steer in 1898), dam Augusta 42nd, of the Inverquhomery family of that name, by Capapie (58591). Knuckle Duster won 1st prize at the Western Fair, at London, 1899, over the 1st-prize bull in the same section at the Toronto Industrial Exhibition in the same year.

Rosabella = 19753 =. Red. Calved Jan 17th, 1891. Bred by Arthur Johnston, Greenwood, Ont. Born in Manitoba, the property of and now owned by W. S. Lister, Middlechurch, Man. Sire imp. Vice Consul = 4132 =, a sweepstakes winner at Toronto Exhibition; bred by Amos Cruickshank, Sittyton. Dam imp. Rosabel = 5202 =, bred by Mr. Geo. Bruce, Heatherwick, Aberdeen. Rosabella was the 1st-prize cow over 4 years old at the Winnipeg Industrial Exhibition, 1899, and 1st as cow and two of her progeny, also 1st in 1891 as a heifer calf and in 1892 as a yearling. She is carrying her 5th calf, and two of her daughters are suckling calves.

Robert the Bruce = 22835 =. Roan. Calved April 3rd, 1895. Bred by H. J. Elliot, Danville, Quebec. Owned by C. A. Archibald, Truro, N. S. Sire imp. King James = 20837 =, bred by Mr. S. Campbell, Kinellar; dam imp. Mimosa = 24832 = (bred by Mr. Geo. Bruce, Heatherwick, Scotland), by Stockwell (59615). Robert the Bruce won 2nd prize and headed Mr. Archibald's 1st-prize herd at the Nova Scotia Provincial Exhibition, 1899. He also won 2nd at Halifax in 1898 and at St. John, N. B., in 1899.

Queen of the Louans, Vol. 16. Red. Calved Jan. 3rd, 1899. Bred by H. F. Brown, Minneapolis, Minn. Calved the property of Capt. T. E. Robson, M. P. P., Ilderton, Ont. Sire Golden Victor 30626, A. H. B.; dam Louan of Bowndale 2nd 33406, winner of 1st prize and sweepstakes at Minnesota State Fair, and 1st prize at Toronto Industrial Exhibition, 1898.

Queen of the Louans won 1st prize as best heifer calf over 6 and under 12 months at the Toronto, London and Ottawa Exhibitions, 1899, in the herd of Capt. Robson, and has since been sold at a long price to W. D. Flatt, Hamilton, Ont.

Matabele Chief (73029), imp. Red. Calved June 24th, 1897. Bred by Mr. J. Wilson, Lower Perriemill, Huntley, Aberdeenshire. Imported in 1899. Owned by W. G. Pettit & Son, Freeman, Ont. Sire Sennacherib (67893), dam Meadow Queen 4th, by Boulevard (56966), bred by Mr. Duthie, Collynie, Sennacherib was by the Cruickshank-bred bull, Sovereign (61811), dam by Roan Gauntlet. Matabele Chief has not been exhibited.

Village Hero = 14342 =. Red. Calved Dec. 13th, 1889. Bred by H. & W. Smith, Hay, Ont. Owned by Walter Lynch, Westbourne, Man. Sire Prince Albert = 3069 =, dam imp. Village Blossom = 2277 =, bred by Mr. Amos Cruickshank. Village Hero is the sire of Vanity, 1st-prize cow at Toronto Industrial Exhibition, 1897, and of the bull, What-For-No, 2nd-prize 2-year-old bull at Winnipeg Industrial Exhibition, 1897. Village Hero also won the 1st prize at Winnipeg, 1897, for the best bull and two of his get, and his owner, Mr. Lynch, won at the same show 1st prize for cow and two of her progeny, with Ruby and her twin bull calves, sired by Village Hero.

Golden Fame = 20056 = (72610). Red. Calved Feb. 17th, 1897. Bred by the executors of the late Mr. S. Campbell, Kinellar. Imported in 1898 by John Isaac, Markham, and purchased at his sale, March, 1898, by W. D. Flatt, Hamilton, Ont. (his present owner), for \$720. Sire Emancipator (65447), a prize bull at the Perth Show and sale, and the highest-priced bull in the sale that year. He was got by Dauntless, bred by Mr. Cruickshank. The dam of Golden Fame was Golden Drop 10th, by Sittyton Sort (61831), by Gondomar (55821), dam by Gondolier, gr. dam by Roan Gauntlet (35239).

Marquis of Zenda = 20064 =, imp. Roan. Calved Feb. 23rd, 1897. Bred by Mr. W. S. Marr, Upper Mill, Aberdeenshire. Imported and owned by W. C. Edwards & Co., Rockland, Ont. Sire Wanderer (60138), bred by Mr. Amos Cruickshank, Sittyton, from his Brawith Bud family. Dam Missie 123rd, by William of Orange (50694). As a 2-year-old at Toronto Exhibition, 1899, Marquis of Zenda was placed above the bull which at the Western Fair, London, the following week was given 1st place over the bull awarded 1st prize at Toronto Exhibition in the same section.

Breaking Land in Dauphin.

I came to Dauphin in March, 1890. The early settlers here had to go very slow, as we had no market we could depend on. My advice to intending settlers is to come here about the 1st of June, when there will be plenty of pasture for the teams, and they will be in good time to do breaking. Land that is broken in June must be backset. If it is loamy soil, break it four inches deep, and in back-setting I would not plow it any deeper than it was broken. Backset it as soon as it is properly rotted; if left late in the fall, the crop next year will be sure to be weedy. If the land is inclined to be soddy, break light and backset it about one and one-half to two inches deeper than it was broken. If loamy soil and free of sod, break deep in July, not before or after July, leave it until the spring, and the frost will cause it to be easily worked. I have had 40 bushels of wheat to the acre and a very clean crop in this way. I would not approve of taking a crop off breaking, as you cannot count on getting more than a third of a crop, and you have the same expense in seeding it, and next year you will not get more than a half crop; in fact, when cropped on the breaking it does not seem to give a proper return until it is summer-fallowed. Once I broke early in the spring, backset about the end of May, and sowed oats. It appeared to do as well as old land worked in that way, and I had a fine crop. The amount of seed I sow per acre with drill is one and one-half to one and three-fourths bushels; if broadcast, I sow two bushels. Be sure and use clean seed always, more particularly on new land. Weeds will come soon enough without sowing them. I would advise beginners to break with three horses, moderate-sized ones, of about 1,200 lbs. or 1,300 lbs. each.
ROBERT D. GIBSON.

Brome with Native Rye for Hay.

To the Editor FARMER'S ADVOCATE:

It is gratifying to see one's opinions backed by men of good judgment and wide experience, and that is what has been taking place for some time back, but in a very rapidly-increasing degree lately, with regard to Brome grass. I have sold seed of this excellent grass all over Manitoba and the Territories, but have never had one man yet that was disappointed in it, and it is gratifying, as I said, to see some of these, in your columns and elsewhere, endorsing what I and others said three or four years ago. I would like to emphasize, however, a statement I have been making for the last year or more, namely, that for fodder I believe it is better to have a small proportion, say a quarter, of Western Rye grass mixed with it, for fear of a wet hay season, as the leafy Brome grass is rather easily spoiled by unfavorable weather, and it cures more safely with a little of the more wiry Rye grass mixed in. If the weather could be depended on, the Brome grass is best alone.
THOS. COPELAND.
South Saskatchewan.

A High Standard.

W. A. HENRY, Dean and Director, Agricultural Experiment Station, Madison, Wis.—"There has just come to hand a copy of the engraving entitled "Canada's Ideal." Surely the leading stockmen of Canada have set their ideals high, and may we not hope that the rank-and-file of breeders and all lovers of good live stock will not be slow in making the most of the opportunities which so favorably surround them for reaching this same high standard. Your country, excellent as is its reputation, in no instance excites more interest or favorable comment than in relation to the high standard you have set for your herds and flocks."

"Canada's Ideal" an Object Lesson.

Editor, the Farmer's Advocate:

GENTLEMEN,—I beg to acknowledge receipt of a copy of your picture of noted Shorthorns, entitled "Canada's Ideal." I have been greatly interested in examining the pictures and brief descriptions of these noted animals. The picture certainly affords a most instructive object lesson that will tend toward higher ideals in animal production.

Thanking you for this favor, and wishing you continued success, I am, Very truly yours,

C. F. CURRISS, Director, Iowa Agricultural College Experiment Station, March 12th, 1900.

An Inspiration.

The Wm. Weld Co., Limited:

GENTLEMEN,—I wish to express my thanks for the beautiful engraving which you have forwarded to my address, that you designate as "Canada's Ideal." It is a fine piece of engraving, and should adorn the walls of thousands of your Canadian readers, and serve as an inspiration for high-class live stock.

Very respectfully yours, C. S. PLUMB, Director, Purdue University, March 12th, 1900.

Help Lectures on Judging.

The William Weld Co., Limited:

GENTLEMEN,—I have before me a copy of your "Canada's Ideal," a superb picture. I am also advised that you have three companions to this "Canada's Ideal." If they are as well executed, they certainly commend themselves to all lovers of fine animal portraiture.

I beg to say that if you can send any, or all, of these pictures to me, I will see that they are appropriately hung up in the classroom. Our dean is a Canadian, a graduate of one of your veterinary colleges, and several of our students are also graduates of similar institutions within your borders. The pictures will illustrate points in lectures on judging live stock. Very respectfully,

JAS. R. COVERT, United States College of Veterinary Surgeons, Washington, D.C., March 12, 1900.

Creditable Piece of Work.

Editor, the Farmer's Advocate:

DEAR SIR,—The Secretary desires me to acknowledge, with thanks, the receipt from you of a copy of a fine picture of twelve notable Shorthorns. He is much pleased with it, and congratulates you on your enterprise in publishing so creditable a piece of work. Very respectfully,

JAMES W. WILSON, Private Secretary, Department of Agriculture, Washington, D. C., March 12, 1900.

Worthy of a Conspicuous Place.

PERU, Ind., March 12, 1900.

Editor, the Farmer's Advocate:

DEAR SIR,—Your beautiful engraving of Shorthorns, "Canada's Ideal," has been received. Please accept my thanks for the same. I am glad to have it. Shall have it framed, and it shall occupy a conspicuous place in my office. Yours truly,

J. H. MILLER, Secretary Polled Durham Association.

Most Important Points in Churning.

- 1. Complete control of temperature and its judicious regulation according to conditions. (Butter to "come" in firm granules in from 30 to 60 minutes.)
2. The stopping of the churn when the butter is in granular form.
3. Not to wash the butter too much, especially not to let it soak too long, and have perfectly pure water.
4. Clean and sweet churns. (Remember a rinsing with clear lime water after the regular washing is one of the best means of keeping a churn sweet.)
5. Not to attempt to churn more cream than will churn easily.
6. Always use the (for your churn) best speed and run it evenly.
7. Strain the cream into the churn. Don't forget to put in the color or to ventilate.
These are the points (and their order of importance) which I consider will affect the churning.

—J. H. Moulard in Produce Review. GEORGE P. LOHSE, Roland, Man.: "Thank you very much for your Christmas number. We think a great deal of the Advocate, and are always pleased to see it come. February 11th, 1900."

Beef in the West.

SPECIAL CORRESPONDENCE TO THE FARMER'S ADVOCATE, BY J. M'CAIG, ONTARIO.

Men who have never lived in any other than temperate latitudes do not sufficiently value their heritage and condition. They are free from the constant cold that brings mental torpor and want of ambition, besides dwarfing their stature, and free from the enervating influence of constant heat and from the tendency to indolent habits induced by living in a moist tropical climate where production is spontaneous and perennial. The temperate zone is productive; but only so under the diligence of man. Moreover, this diligence is a necessity from another cause, namely, that the sealing up of the productivity of nature during a half of the year implies diligence and foresight during the remaining half to meet the necessities of existence. So industry is an essential quality of the men of this clime. That the people of the temperate clime are progressive is borne out by history and experience, for the foremost people of the world in art, industry, commerce, and war, are the people of the middle zones, not those of the tropical or polar regions. This is a matter of climate and soil and of the now inherent mental and physical attributes of the races sprung from such areas.



ALBERTA RANGE CATTLE IN WINTER CONDITION.

As an adjunct to the productivity of the land in the way of cereal foods, the temperate zone has an illimitable wealth of fish, flesh and fowl of the useful classes. The food fishes are largely confined to our zone. Our game is the best in the world, and our capacity for the production of meat animals from the domestic classes unsurpassed on the globe. Canada is not behind, but rather ahead of most other temperate countries in these peculiar advantages. Her beef is no worse than her wheat, and her wheat is the best in the world. Canada has stores of strong food for strong men and to spare for the tables of industrial England. Besides, we live under institutions that do not clog, but rather make possible and encourage the highest freedom, the greatest energy and the most complete self realization for the individuals composing the banner British colony. Under these circumstances, it is not strange that the great western country should show a very rapid and energetic development peculiar to itself under the hands of versatile and busy people.

Beef is King in the West.—In the East we cannot pin our faith to a single product. Lands are high, competition more or less intense, and the pro-



ON THE RANGE, ALBERTA, CANADA.

duction of as many and as varied products as possible is recognized to be the wisest course for the average farmer. Similarly, it is due to special conditions that beef is the important product of the Northwest Territories. It must not be supposed that there are not vast areas in the Northwest Territories suitable for agriculture; there are plenty of such lands. The larger areas, however, are ranching lands, and ranching is the characteristic industry. The principal ranch lands are on the eastern side of the Rockies and along the southern part, while the agricultural lands are those parts of Saskatchewan and Assiniboia nearest to Manitoba, and generally resembling it, besides northern Alberta and northerly stretches right up to the Rockies.

The southern parts of the Territories are prairie country. What determines whether a country is ranching or agricultural is its moisture. Plentiful moisture is necessary for vegetation of the heavier sorts, such as timber, cereals and roots. Moisture from the Pacific is shut off by the Rockies. The moist return trade winds from the south-west precipitate all their moisture on being forced into the higher latitudes of the plateau west of the Rockies,

and though these south-west winds are the prevailing winds for Alberta, they reach us as dry winds. Little moisture comes from the east or south-east, as the long continental stretches covered before they reach us absorb all their moisture. Our rain and snow are from Hudson's Bay, and most of this goes to our northern areas, thus leaving the southern and south-western parts semi-arid. The condition of the ranching country with respect to moisture can best be understood by a comparison with Ontario. In Ontario the annual rainfall is about twenty-eight or thirty inches; in southern Alberta it is about ten or eleven inches.

The prairie country is a most valuable part of the Northwest Territories, though for ultimate national wealth the same area of agricultural land would doubtless be more valuable. It is not so dry as to be of little value, as some of the barren lands of the Missouri farther south are. It yields large quantities of valuable and nutritious grasses of different kinds without effort. On the prairie country the land becomes green at about the first of May with a new growth of grass, the old grass still standing, and by June it is bright in most places with delicate prairie flowers. This month is, perhaps, the height of the season of vegetation. By August the grass is burnt a tawny yellow on the benches and prairie, and greenness remains later only along the river bottoms or beside the occasional shallow lakes. The appearance of the prairie after the period of spring growth is wholly deceiving to the newcomer. It looks like a sere and barren waste. The grasses, however, are preserved rather than spoiled by the dry weather. Their essence and nutriment are naturally sealed up and remain good until eaten in winter or summer. Hay may be made and saved during any month of the summer or fall.

In southern Alberta housing of cattle is unnecessary, but in the northern parts both sheltering and hay feeding are practiced. Cattle are enabled to "rustle" their living, as the phrase goes here, both summer and winter, because the snowfall is light and is seldom protracted even if heavy. The Chinook winds, which are warm winds coming through the passes of the Rockies, suddenly unseal any condition of frost or hard weather. The snow does not thaw on the ground, but is licked up by these winds. The changes of temperature are very sudden and very violent, sometimes amounting to a variation of 70 degrees in one hour. This will sound improbable to an Easterner. It might be thought, besides, that such rapid changes would be disastrous to man and beast alike, but such is not the case. The extreme dryness of the air prevents any experience of discomfort. An occasional year of hard luck will come, in which, after an exceptionally heavy fall of snow, a partial thaw is followed by hard frost, and a hard crust will seal up even the longest grass. The gathering in of the cattle from long distances to the hay camps is impossible, as they soon become disabled by skinning their legs in the crust. Cases of severe or total losses, however, are rare, but each year means a small but more or less uniform percentage of loss of weak cows or an occasional early calf. As the number of ranchers increases, the tendency to keep up the weak ones and pull them through on hay becomes more common. The increase of Western population makes more help available, and on this account additional attention pays. The encroaching of the smaller ranchers on the ranges of the big outfits is changing the ranching somewhat. More winter feeding is becoming the rule. The cattle are being better looked after, and the percentage of losses is steadily decreasing.

The ranching business offers wide contrast to the cattle business in Ontario, and it might be expected that the beef products of the West would be quite inferior to those of the East. It is one of the great surprises for an Easterner to find that the contrary is the case. The haphazard system when practiced in Ontario results in stunted, poor beasts; in south Alberta, where cattle often complete their third or fourth year without shelter of any kind, they grow right along and are in good condition all the time. It might be thought that the well-fed Eastern steer would at least surpass the Western one. Even this is not the case. Steers sheltered in bank barns in Ontario, well fed for two years and finished on turnips, clover hay and grain for the last five or six months, are not on the average as good as Western steers at the same age and fed on a diet of grass and water from birth to block. The steers here seem to keep well fleshed up on top. They never lose their rib flesh; they grow very lengthy and keep both a straight upper and under line. The steers brought in at one and two years old from Ontario and Manitoba, called "dobies" or by some "dogies," are smaller in size than Western cattle at the same age. They are shorter, more podgy in the belly, not as well filled on the crops, hips and upper ribs, and are less symmetrical generally. The Western steer has the full points and ripeness of a pure-bred, with the flesh evenly laid on, not appearing in lumps and patches. He has the grace of a wild animal (he is rather wild), and at the same time seems to have sacrificed none of the fast-growing qualities that are the result of quite an opposed system of culture and feeding to that under which he is reared here. I saw a bunch of 500 steers that went at one shipment from a ranch out here, mostly three-year-olds, but with an occasional four. A finer lot it would be hard to find. They were not uniform in breeding, but Shorthorn predominated. There were a few fine heavy-fronted, curly-coated Herefords, which make good range cattle; some Galloways, and plump, barrel-shaped Angus; an occasional Highlander, judging by his horns and coat; and one or two raw

Texan relics. With the exception of the Texans, all were in fine shape. There was not a poor thrasher in the bunch. There was not even a sign of scouring after a journey of fifty miles. They all had fine loose coats, low flanks and thick cuds, showing a uniform finish in condition.

Though sheep do well out here, it seems to me cattle do better. They do not lose, but rather gain, by the change to ranging habits, and it must be understood that they have to range more for food than in Ontario. There can be no definite estimate as to the average area required for range for each animal. Ten acres is said to be as little as will suffice. The grass is not heavy or thick. The stalks are short, and it grows in sparse bunches, rather than a thick turf, though in many places it completely hides the soil. It is called "bunch-grass." An advantage that cattle have over sheep is that they go in small, scattered bunches, while sheep have to graze in bands of two or three thousand. They have to be kept by a shepherd. The cattle are only brought together at the two round-ups each year; one in the spring, to brand the young calves, the other in the fall to cut out the beef.

Range cattle stand transportation much better than stall-fed cattle do. On account of their good muscular condition, due to plenty of exercise, and their hardiness, they do not play out, and arrive at their destination with slight loss of flesh. The beef from them is sweet, juicy, close-grained, tender, and well-mixed. Truly, beef is king in this country.

In beginning, a man usually homesteads a quarter-section, brings in his stock, and lets them go with his brand on. This brand is registered in the Territories and is his exclusive property. Where range is being taken up rapidly, a man usually rents from the Government for a term of years such additional land as he deems necessary to control in the interests of his bunch of cattle. In other cases the cattle are simply turned out and no land is bought or rented. His whole capital is in his stock. A good many young fellows begin by working as cow-boys and taking their pay in cattle or earning money while their herd grows. By becoming a member of the Stock Association his cattle are rounded up and branded for him each year. It is not hard to understand how Western men can buy Ontario yearlings, pay high freight on them and make money, when range is so easy. The price for good threees during the past season has run from about forty to forty-six dollars. Cattle are generally sold by the head, not by weight.

Testimonials.

WALTER JAMES, Rosser, Man.:—"I find your paper improving every number, up-to-date all through; away ahead of anything published in Canada. The articles are excellent."
February 10th, 1900.

ALEXANDER WOOD, Souris, Man.:—"Please find enclosed express order for \$1.00 for my subscription for 1900, and oblige. As to the Christmas number, I think it is the best paper that has ever been published in Canada."
February 7th, 1900.

RICHARD S. GILMOUR, Innisfail, Alta.:—"I like the FARMER'S ADVOCATE, and think it is superior, both externally and internally, to any of its contemporary agricultural papers in the British Isles or Canada."
January 30th, 1900.

W. McFADEN, 48 Park Ave., Kansas City, Mo.:—"We were very much pleased with your Christmas number. The engravings are most beautiful."
February, 1900.

W. B. UNDERHILL, Melita, Man.:—"Your Christmas number was very fine; not only was your matter excellent, but every part of it, from start to finish, was beautifully artistic."
February 12th, 1900.

C. S. CLENDENNING, Bradwardine, Man.:—"I am enjoying your paper very much. Find many useful hints and practical advice in its columns. It is a true farmer's paper, and I wish you every success."
February 17th, 1900.

MESSRS. A. & G. MUTCH, Craigie Mains, Lumsden, Assa.:—"We are well pleased with results from our advertisement in your paper, selling as high as six first-class horses to James Flukes, of Indian Head, four of them being Clydesdales and two nice Hackneys. Several other sales have been made, and our horses are going fast."
February 15th, 1900.

Feeding Test with Two Steers.

In a feeding experiment at the farm of the Royal Agricultural College of Cirencester, Eng., two Aberdeen-Angus steers fed during the winter a daily ration of 4 lbs. decorticated cotton-seed cake, 6 lbs. maize meal, 18 lbs. hay and chaff, and 15 lbs. roots, gained 14 lbs. per head per week. The cost of a pound of gain was 10.5 cts. Two similar steers fed a daily ration of 7 lbs. linseed cake and 3 lbs. of oatmeal, with the same amount of hay, chaff, and roots as the others, gained 12 lbs. per head per week, the cost of a pound of gain being 15 cts. The dressed carcass in the first lot constituted 60.6 per cent. of the live weight, and in the second 59.3 per cent. The flesh of the first lot was regarded as superior, showing more lean in proportion to fat.

"Canada's Ideal" Issued.

Late last week the final touches were given our great premium picture, "Canada's Ideal," which we have begun mailing, securely encased in tubes, to the purchasers at \$1 each and to those who have earned it by sending in two new subscribers to the FARMER'S ADVOCATE. Representing the cosmopolitan Shorthorn breed, and executed by the best artists and engravers of the continent, we feel sure it will meet with an appreciative reception and do much to further the interests of rearing cattle of a superior type.

The Peace River Valley.

To the Editor FARMER'S ADVOCATE:

The great District of Athabasca lies north of Alberta and Saskatchewan, between latitudes 55° and 60° north and longitude 100° to 120° west. The area is about 280,000 square miles. It is not my purpose to enter into details concerning this great area, of a good deal of which there is not much known, except about its numerous lakes and watercourses, but to examine a little into its western portion, which comprises the Valley of the Peace River.

This great river, which takes its rise among the mountains of British Columbia, flowing eastward through the main chain of the Rockies, emerges in a broad and beautiful plateau, partly prairie, partly timber, and drained by unnumbered tributaries which flow through valleys of great beauty and fertility, from 100 to 400 feet below the general level of the country. The deepest valleys are near the mountains, and as they approach the main river they become much deeper, and the streams are therefore swift. This plateau is about 2,500 feet above sea level, both north and south of the river, at a distance, but about 2,000 feet near the river. As the valley of the river stretches away to the north-east, its elevation gradually becomes less until it reaches the vicinity of the Great Lakes of Athabasca and Great Slave Lake, where it is only from six to seven hundred feet above the sea. Very much might be said of this vast area, comprising about 100,000 square miles. The general reader, however, does not care too much for particulars, but this country has been heard of by the outside world; reports have gone abroad that the sunshines, the water runs, vegetation is abundant, animals roam over its surface, and that even mankind is found there. Eastern people, who are accustomed to heavy rains, deep snows, stormy weather, cold blustering days, with disagreeable east winds at all seasons, do not say very much, but when this northern country is mentioned, they just step up nearer the stove, shiver a little, and button another button or two. Westerners, whose minds are supposed to be somewhat enlarged, and whose thoughts travel on a larger plain, do not, of course, ascend to the shivering pinnacle; but when they see their own beautiful domain, it is hard for them to think that the Creator of all things did not exhaust His power when He made their land, and that even a possibility may exist wherein they have not received it all, but that a region large enough for an empire has been most beautifully and wondrously planned and laid quietly away out of reach until such time as its development might best serve the interests of mankind. That time is perhaps approaching, and people are beginning to enquire how it is that this region, so far away up among the parallels, can become the happy and prosperous home of millions of our race?

There are many things to be considered in this respect, and first is that of climate, for on this hang all the possibilities.

It is well understood that elevation has the most wonderful influence on the temperature of the atmosphere. At school we were taught that at the equator the altitude of perpetual snow and ice was about 16,000 feet above sea level, and that as the distance either north or south of the equator increased, the snow line descended to a lower altitude, until somewhere within the arctic it was down even to the sea level. By a close study of the map of North America we will learn that the table-lands east of the Rockies become gradually less as one approaches the north. The elevation in Mexico is nearly 10,000 feet, while in the north-western States it comes down to nearly half that; and at 49° north, where it comes under the smiling influences of our Dominion, it is in the neighborhood of 4,000 feet. It loses another thousand before it leaves Alberta, and by the time the 56° of north latitude is reached it is only about 2,000 feet. Now leaving the foothills and proceeding down our valley towards the north-east, it descends, as has been mentioned before, to less than 1,000 feet. So much for elevation. Now, 300 feet in altitude is reckoned to be equal to 1° of latitude, so the difference of 9,000 feet in altitude would be equal to 30° of latitude, other things being equal; but they are not, and I will endeavor to show how we have the advantage. The ranges of mountains south are over a wide area from the coast, with their heads covered over for thousands of feet with eternal snows; while between our valley and the mild influences of the Pacific the distance is not great, and the highest mountain peak scarcely exceeds 6,000 feet. The ranges are largely beneath the snow line and covered with timber and vegetation, instead of ice and snow. Again, what the Gulf Stream is to the Atlantic Ocean, so is the Japan Current to the Pacific; that great stream, hundreds of miles in width, flowing up from the warm waters of the south, laden with warmth and moisture, passes close on our shore and breathes constantly out upon us as it passes without having its temperature much lowered or its moisture all precipitated before it reaches the eastern plain, as is the case farther south, where the high mountains take up all the moisture from the Pacific breezes and leave the country at no great distance from the coast a desert waste. The Union Pacific Railway passes for about 1,500 miles across what is known as the American Desert, and its roadbed is for that distance at a higher elevation than our highest mountain peaks.

When we were little children we liked to get into the sunshine, because it was warmer. Sunshine and warmth are not far apart. We have in June about 18 hours of sunshine, and at that time the sun never gets far below the horizon, so that light, which must accompany vegetation, is ours for 24 hours in the day. Such, in a general way, is our position. It may be seen from this that being even 1,000 miles nearer the north pole than the good people of southern Ontario does not necessarily imply that we are so very much more boreal in our surroundings, our feelings, or our lives.

It shows plainly also how one thing may be set over against another, and as a great American philosopher has put it, that there is nothing in this world without its compensation.

Peace River Valley. E. J. LAWRENCE.

Milking the Government Cow.

To the Editor FARMER'S ADVOCATE:

SIR,—I have read Mr. Isaac's letter in your issue of the 5th inst. in reference to combination sales of pure-bred stock by public auction. I am strongly of the opinion that such sales, properly conducted, will be of the greatest benefit to all breeders of all pure-bred live stock. We often see a small breeder, perhaps a new beginner, who has a bull or two for sale, refrain from spending \$10.00 or \$20.00 in advertising, and we often find that the animals remain on his hands until they have eaten their heads off. If this breeder could take them to a well-advertised sale with assurance that he could sell them at a fair price and have his money to bring home with him, he would feel encouraged, and perhaps go to Mr. Isaac's for another bull to propagate more of like kind; and his neighbors, seeing how well he had done, would wish to do likewise. Thus the good work would go on and on, and in a few years there would be an immense increase in the number of breeders of pure-bred stock of one kind or another.

I look upon the Hon. Mr. Fisher's proposition as the most progressive that has ever been offered to the farmers of this country. How farmers can grumble at the small sum of two thousand dollars being set aside for their special benefit I cannot understand. If a few promoters and politicians wait on a government to get a grant to improve a harbor, build a dock or post office, no one speaks a word in opposition, except politicians; but if any part or section of the farming community want even a very few dollars, comparatively, the farmers themselves throughout the country are the first ones to hold up their hands in holy horror against it. The Government of the Northwest Territories are doing a noble work for the people of their part of the country. If such sales as are proposed were established, the people of the Northwest Territories, and also the Americans, could and would attend, as they could get the animals they want without travelling over the country for weeks, at great expense of time and money, often to be completely disappointed in the animals they see and have offered to them. By all means have these sales established, get all the money we can from the Government to help us, and ask for more, and then we shall not have too much. Under the management of Mr. F. W. Hodson, success from the very commencement is assured.

WM. LINTON.
York Co., Ont., March 5th.

[EDITORIAL NOTE.—We notice that in the arrangements for the Central Shorthorn Breeders' Association sale at Kansas City the expense has been fixed at \$20.00 per head, and the sale is managed and expenses provided by the breeders themselves and not by the government. Added to that sum, we presume, will be the cost of shipping animals to the place of sale. The author of the above document appears to have a rather fanciful way of putting his ideas of the cost of selling animals in ordinary procedure. With the business in politics, what the outlay for government combination sales might be it would hardly be safe to forecast, but as the government is to foot the bill, in the words of "The Mikado," "it really doesn't matter."]

Elevated Beds for Hogs.

Having seen in your paper last summer the plan of a hog pen with a raised bed or upper deck for the hogs to sleep on, and later having seen the fine new pen of D. C. Flatt, Esq., I have put up raised beds for about twenty pigs, and find that we can keep them drier and get them to take more exercise in the cold weather than with the plan of a single floor. A bed of straw will also last longer on the raised beds, which is a great benefit this year of scarcity of straw.

FARMER.

The stock-breeders of Minnesota are uniting in an effort to secure from the railroads reduced freight and express rates on pure-bred stock. The Breeders' Associations of Manitoba and the Canadian Northwest are also making a combined application to the C. P. R. Company for better rates of freight and express rates on pure-bred stock between local points, with good ground for the hope of securing important concessions. There is reason and common sense in this movement in the interest of the breeders and farmers, and of the railway companies as well, and we are distinctly in favor of this kind of work in preference to Government or railway paternalism.

How to Breed Saddle and Harness Horses at a Profit.

Simple as it may seem to the uninitiated to raise horses at a profit, it is only comparatively few who manage to make horse-breeding a paying business.

price. No horse is as easily kept, and this is quite an item to most farmers. Then, he is easily broken, and can earn his own rations after he is three years old, and when old enough to sell can always find a ready purchaser.

Wyoming Co., N. Y.

JOHN WYLLIE.

A Good Barn for Beef Raising.

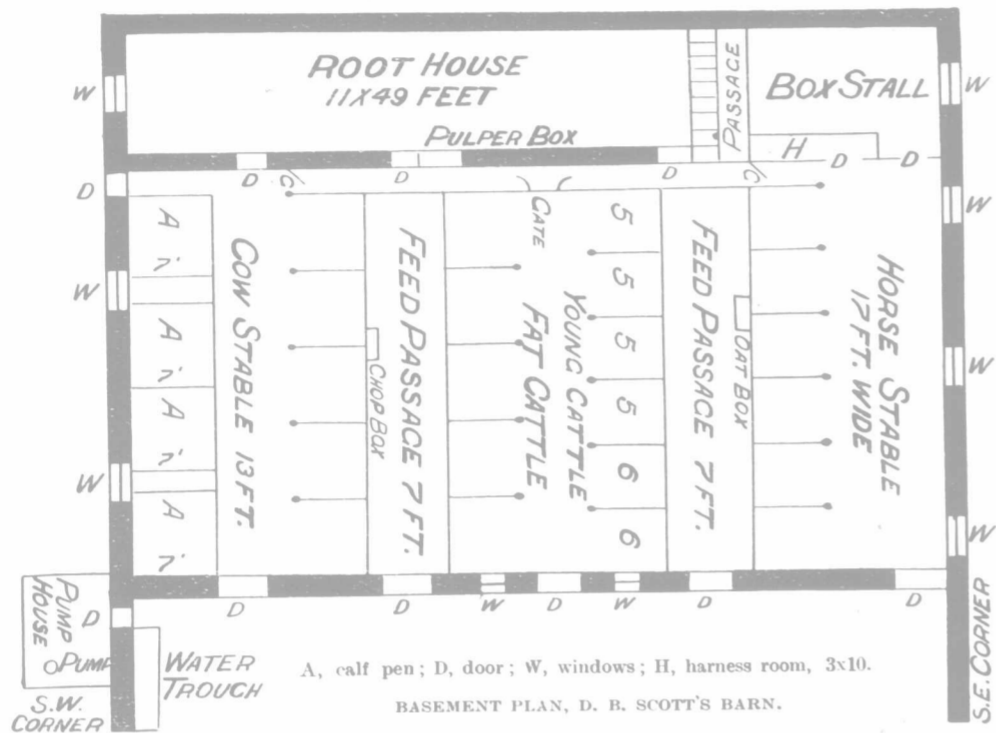
According to request, I send you the plan and description of my barn, which was erected last summer. It is intended for a 100-acre farm, all working land, and we consider it quite sufficient for even a larger farm.

It is 76 by 64 feet, and is none too long for the stabling below. If it was two feet longer it would be better, as it would give more room behind the cows; that is the only fault we see about it below. The barn is built of good material, and stands on a stone wall 10 feet high.

the chutes partly, but this plan has two objections, filling your barn with steam and also allowing the cold air to blow down, causing a draft below. We would prefer some system of ventilating by wooden pipes as a help to the tile, at least one at each end of the stabling, going up say 20 feet, and going out at the end of the barn, and protected in such a way that the rain would not descend in it, and it would also help it if it were larger at the bottom than the upper end.

Wellington Co., Ont.

D. B. SCOTT.



BASEMENT PLAN, D. B. SCOTT'S BARN.

object will be attained. Nothing but long years of experience would have induced me to come forward and offer my advice, were it not for the hope that I might benefit some of those less experienced than myself, and thereby help them avoid some of the common errors so many fall into for lack of something to go on and a little horse sense.

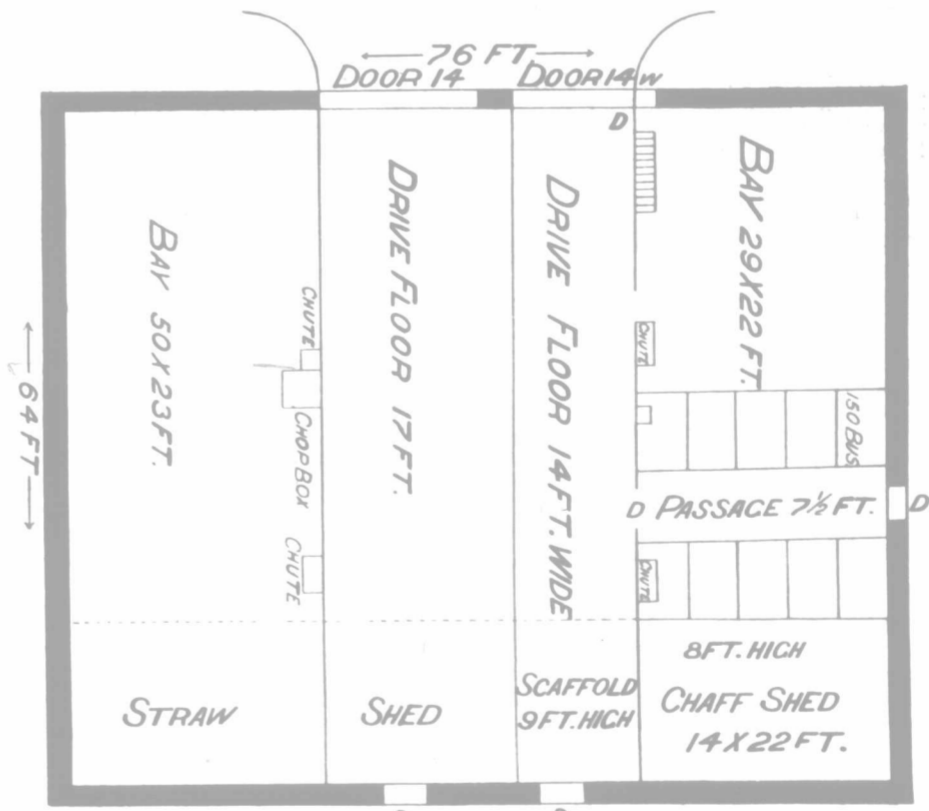
To be profitable, the average brood mare must work for her living and incidentally raise a colt as well. On the proper selection of sire and dam depends much of your success, and too great stress cannot be laid upon this, for not only do hereditary unsoundnesses, like spavin, curb, ringbone, defective eyesight, sidebone, string-halt, etc., crop out, but other and less objectionable defects, such as calf-knees, low backs, stilty pasterns, sickle hocks, etc., are reproduced with almost absolute certainty.

To breed a good saddle horse, it is essential to have an animal with a good head and neck, and shoulders well laid back, so that (as the old adage has it) when in the saddle you have a good half of the horse in front of you.

What is wanted most in a harness horse is high action, and therefore we should keep that in mind above everything else. Again, I would advise utilizing mares of good breeding—that is, not mixed with draft blood—good, sound individuals, largely of Thoroughbred or trotting blood, the latter to be smooth and shapely, and not of the rough-hipped, ewe-necked order, but with substance and quality, and such can be found without great difficulty.

and cedar shingles on the roof. All the bays are double-boarded above the stabling, drive floors the same with plank and inch boards, which prevents steam from ascending and spoiling the hay or grain. The granary is 21 by 22 feet, finished with dressed lumber, and maple flooring in the passage, which is 7 1/2 feet wide, which gives ample room for cleaning the grain beside the bins. The face boards of the bins are rounded on the ends, which makes them much easier to put in and take out.

The wall below is built so that there is the greatest amount of space possible for stabling. The front wall is all in the shed, with the exception of five inches, and the root-house wall is all in the root-house but five inches, leaving a space of 35 feet 2 inches inside for stabling. So the main posts of the barn stand partly on the wall and partly on the sleepers or joists. The height from floor to joists is 9 feet. The floors, as well as the bottoms of all the mangers, are cement, finished with one inch of Portland cement on top.



UPPER FLOOR, D. B. SCOTT'S BARN.

In addressing the Agricultural Committee of the Canadian House of Commons, the other day, Dr. Fletcher, of the Central Experimental Farm, stated that there was no weed which could not be got rid of if only the farmers took the trouble to understand the nature of the weeds and devoted their attention to clearing them out of their lands.

Half hardy plants, such as cabbage, cauliflower, and celery, should be hardened off in a moderately low temperature. The tomato, being a semi-tropical plant, cannot be kept in a low temperature without sustaining injury. It catches cold, becomes sickly and stunted.

QUESTIONS AND ANSWERS.

Veterinary.

NASAL GLEET.

F. M., Frontenac Co., Ont.:—"I got a mare three years old about two months ago. When examining her noticed a slight discharge from one nostril, with hacking cough. As many horses here were then affected with a sort of distemper, supposed it to be that. Soon cured the cough, but still after a quick drive will discharge a little of a thicker nature and rather yellow color. In every other respect seems to be in fine spirits and condition, eyes bright and clear, breathing natural and quiet. She is getting second pair of front teeth. Have never had a horse discharge so long after distemper or cold. Is it a common complaint? Is it likely to continue, and what can I do for it?"

[Your filly is affected with nasal gleet, which occasionally appears as a sequel to catarrhal diseases such as she has had. The disease consists in a chronic inflammation of the lining membrane of the sinuses (cavities) of the face, which are connected by means of small openings with the nasal chambers. The general health of animals affected is not usually interfered with except in advanced stages of the disease. There will be an irregular discharge from one or both nostrils, frequently only one, pointing to the fact that the sinuses of but one side are affected. This discharge is often accompanied with or preceded by a sneezing or coughing, and is usually noticed after exercise or while drinking; then for a shorter or longer period nothing is noticed, when under favorable circumstances there will be another discharge. In some cases a cure is very hard to effect, and in chronic cases an operation has usually to be performed, but if proper treatment be adopted early it usually results in a cure. You should take very good care of the filly; don't allow her to get wet, stand in a draft or in a cold stable, or subject her to any usage that would be likely to cause catarrhal disease or aggravate that already existing. When the weather is fine it will be better to give her regular light exercise, not sufficiently severe to cause profuse perspiration. If you have a good box stall for her it would be well to feed her off the floor. The position of the head under these conditions is such as to favor the escape of any pus or mucus that is present in the sinuses. It is also good practice to steam the nostrils once daily by holding the nose over a pail of boiling water, and stirring the water with a wisp of hay; this softens any accumulation of pus that may be there, and allows its escape. Give the following powders: Pulverized sulphate of copper, 3 oz.; pulverized sulphate of iron, 3 oz.; arsenious acid, 4 drs. Mix and make into 24 powders, and give one night and morning in damp food. If she won't eat the powders in her food, each one can be mixed with about half pint of cold water and given as a drench. After the powders are done don't give any medicine for a week, when, if you still notice a discharge, give another course of powders.]

Vet. Dept., O. A. C., Guelph. J. H. REED, V. S.]

CHRONIC INDIGESTION.

Thos. McK., Lambton Co., Ont.:—"I have a horse six years old which I cannot get into condition; he has not done a day's work in three months. I have given him all kinds of feed, hay, cornstalks, and straw in changes, boiled oats, oats and bran mixed with a tablespoonful of raw linseed oil. I have fed him coppers, condition powders, and given him a couple of physics. He is healthy enough, with an awful appetite, but keeps as poor as can be. Can you please prescribe something to help him?"

[I am of opinion, from the description, that your horse is suffering from indigestion, but from what cause it is hard to determine. Will you try a course of treatment as follows: Get your druggist to make up the following prescription: Powdered aloes, 2 ounces; powdered gentian, 2 ounces; powdered nitrate of potash, 2 ounces; powdered ginger, 1 ounce; powdered quinine, 1 ounce; powdered capsica, 1 dram; treacle, a sufficiency to make a mass. Divide into 12 doses, give one every day until bowels are freely relieved. Wm. MOLE, M. R. C. V. S., Toronto.]

VAGINITIS.

J. B., Wellington Co., Ont.:—"I have a cow that had twin calves last spring, and for a time after calving there was a discharge from the vagina of a bloody color. I asked a veterinary if anything could be done, and he thought she would come all right, but after a time the bloody discharge stopped, and afterwards a discharge resembling the white of a light-boiled egg came from her quite frequently, and she has never come in heat since. Would your veterinary department give me some light on the case? She is in good health and thriving condition. I have another cow that calved last spring. She came in heat regularly after, but when she was served in December she seemed in pain that night, straining as though trying to calve, and after a time the same white discharge started to come from her, and continues."

[In calving, the cow lacerated some portion of the vaginal passage, or the os uteri, which healed by suppuration. The second case described was injured much in the same manner through service setting up an irritation to the parts, producing the results mentioned. Give each cow daily an antiseptic injection into the vagina of the following: Little's Soluble Phenyle and warm water in the proportion of 1 to 200. Use a fountain syringe and wash the parts out thoroughly daily with not less than 2 quarts to each cow for two weeks.]

INFLAMMATION OF KIDNEYS.

SUBSCRIBER, Elgin Co., Ont.:—"Have valuable Clyde mare, suddenly taken as if in colic (after day's work), which continued for most of a day. Would lie down and roll; did not bloat. When down would stretch out as if preparing to rise. Next day took a coughing spell quite bad, which lasted three days, then she took chills. Her kidneys appeared much out of order; urine very scanty and high-colored, and apparently caused pain to urinate. She does not eat well and is failing in condition. Can you tell me where the trouble is, and the remedy?"

[From the description, we are suspicious of inflammation of the kidneys. The coughing may be the result of having forced fluid on her lungs when drenching, and the chills the result of a little inflammation of the lungs. Continue to feed her a laxative diet, including a liberal amount of boiled linseed, and give her one of the following powders three times a day: bicarbonate of soda, two ounces; powdered gentian, one ounce; powdered nux vomica, half ounce; mix well and divide into twelve doses. Also give her a teaspoonful of fluid extract of belladonna every six hours for four days, mixed in a cup of water and drench. Get a fresh sheepskin from your butcher and put over the region of her kidneys for six to ten hours, which will cause much perspiration, after which rub dry and put on warm woolen blankets. Keep her warm, dry and quiet, take the chill off her drinking water, and avoid all drugs that will irritate the kidneys. If bowels are much constipated give a quart pure raw linseed oil, but nothing else in the shape of a physic.]

PRESSURE ON THE BRAIN.

T. H., Oxford Co., Ont.:—"I have a bull eight months old that has fits. Until he was four months old I gave him his mother's milk; after that I gave him oil cake, a few pulped roots, a little bran, a little corn chop and a little hay. He seemed to be doing splendidly, until about a month ago he began to have fits. He would lie and struggle and froth at the mouth for a few minutes, and then get up and begin to eat. He is getting stiff in his limbs now and is getting very thin. I am giving him soft feed all the time. My veterinary has been doctoring him, but does no good. He will have three or four fits in one day. Can you tell me the cause and what to do for him?"

[Your calf certainly is suffering from some brain affection, probably a growth of some kind, the pressure of which causes the fits. It may be tubercular. If a tumor of some kind is the trouble, nothing can be done, and the animal will continue (in all probability) to grow worse and eventually die. It is possible the brain trouble may be caused from digestive derangement, and it is worth while attempting treatment on that supposition. Give him a purgative of about six ounces of Epsom salts dissolved in warm water. After the purgative has ceased to act, give him the following: Pulverized nux vomica, four drams; pulverized gentian, two ounces; pulverized sulphate of iron, two ounces; bicarbonate of soda, four ounces. Mix well and make into twenty-four powders, and give a powder twice daily. It would be better to shake up in about four ounces of water and drench with the powders than to mix with the food. Little fault can be found with the food you have been giving, but it would be well to give no more corn.]

J. H. REED, V. S.

Veterinary Dept., O. A. C., Guelph.]

PINK EYE IN HORSES.

A. H. P., Richmond Co., Que.:—"Will you kindly describe the disease, pink eye in horses?"

[The disease commonly termed pink eye, or, more properly, epizootic cellulitis, is an inflammation of the cellular tissues of the body, appearing as an epizootic. Infection is transmissible through the air, and usually attacks many horses in the district in which it appears. The term, pink eye, arises from the highly-colored condition of the visible mucous membranes, especially that of the eye. The first noticeable symptom is an abundant watery discharge from the eyes, the lids becoming swollen and the mucous membranes highly colored (red or pink). There is great dullness, with quick pulse and an elevation in temperature (103° to 105° F.); mouth hot; the animal becomes stiff and sore, with some swelling under the belly; cough may be present; the secretions (kidneys and bowels) impaired; and great depression is present. The treatment consists in placing the horse in a warm, clean and dry box stall. Clothe the body, and avoid drafts. Give a laxative dose of raw linseed oil, about one pint; feed only light bran mashes, in which may be mixed small quantities of oatmeal; a few moderate doses of tr. aconite, say 10 drops of the B. P. tincture, every 6 hours in the drinking water, which should be pure and liberally supplied. Potassium nitrate and bicarbonate of soda in dram doses every 6 hours will also modify the fever. The patient should not be worked until completely recovered, as complications kill more horses with pink eye than anything else. During convalescence give tonics, such as gentian, iron, and nux vomica.]

MAKE GIVING MILK BEFORE PARTURITION.

A. M., Peel Co., Ont.:—"Have a mare eight years old, carrying first foal, due in about two months, and for the last month milk has been running from her very freely. Am feeding as lightly as possible. Can or should anything be done to prevent it, and is it likely to have a bad influence on the foal?"

[The cause or causes of mares giving milk before the termination of gestation are obscure. I have noticed that in cases where the foetus dies in the uterus, the dam usually gives milk for a variable length of time. In cases of this kind the foal may

or may not be carried until full time. If it should be, the general appearance would indicate that death had occurred some time previously. In cases of twins, one may be mature and the other immature, indicating that the latter had died in utero. In many cases the foetus is still alive, and will be carried alive until full term and be born alive, and in rare cases is a good strong foal, but, as a rule, is weakly and delicate, and in most cases dies. The condition must always be looked upon with suspicion. The flow of milk is hard to check. Keep the mare quiet and feed lightly on dry food; give diuretics, as dram doses of nitrate of potash, night and morning, in damp food (a little damp bran) for one week. Rub the gland well twice daily with the following lotion: Solid extract belladonna, 3 drs.; warm water, 1 pt. J. H. REED, V. S. Agr. College, Guelph.]

Miscellaneous.

DEVONSHIRE CLOTTED CREAM.

INQUIRER, Olds, Alta.:—"Has any creamery attempted the manufacture of Devonshire clotted cream? One would think that it might command a ready sale for use with the stewed dried fruits of this country?"

[We do not know of any attempt being made along this line. It would not be practical.]

INQUIRIES.

H. B., Manitoba:—"What would be the probable cost of cement sufficient to floor stable 35x15 feet?"
[A barrel of Thorold or Queenston cement will lay about 45 feet of stable floor, at which rate the space, 35 by 45 feet, would require 35 barrels of cement. The cement at the mines costs about \$1 per barrel, to which would require to be added the cost of transportation.]

CHOICE OF DRILL.

SUBSCRIBER, Holmfield, Man.:—"Would like your advice on buying a new drill. Is there any difference in the makes? What satisfaction do the new disk drills give?"

[To advise on the selection of a drill when there are so many almost equally good drills manufactured, would be almost like advising on the selection of a wife. Any of the manufacturers are quite willing to guarantee their machine to give entire satisfaction, and in this way one can hardly go astray, after satisfying oneself as to the strength and simplicity of the working parts of the machine. We have heard many practical farmers express themselves favorably regarding the disk attachments which have been introduced during the past few years, and doubtless, with improvements that are being made this year, still better satisfaction will be given.]

BROME GRASS ON LOW LAND.

I. L. C., Cypress River:—"I have about twenty-five acres of low land. If the spring is dry we get a good crop off it, especially oats; straw very heavy when first broken. Wheat was a good crop, but does not do so well now. If the spring is wet the land is so sticky it is almost impossible to work it, and the crop is bad. Last spring we put in oats with a broadcast seeder and made a fine job. A very heavy rain came the first of June and drowned it out, and we had no crop.

"How would it do to seed it down to Brome grass? How much should I sow to the acre, and what would be the best way to sow it? The land has been broken about eight years. Please answer in *ADVOCATE*."

[From the evidence given by those who have tried Brome grass on low land such as you describe, we think it should do well. About fifteen pounds to the acre should be sufficient seed, which may be sown by hand, or can be sown, mixed with a small quantity of wheat, by some of the seed drills. It is better to sow it without any crop, and to run the mower over the land two or three times during the season in order to cut down the weeds or any volunteer crop that may come up, leaving what is cut down on the ground to serve as a mulch for the young grass plants. Be sure and get home-grown seed, as its germinating powers are better than imported seed. Shall be glad to hear the result of your experiments.]

SUN-SCALD IN APPLE TREES.

W. A. W., York Co., Ont.:—"I have lost a great number of young apple trees from what I suppose to be sun-scall. The bark dies on the south or west sides of the trunk of healthy trees, beginning on a small piece, and enlarging each year till it kills the tree. It attacks a tree generally at the bearing age. What is the cause, and what will prevent it? My land is a heavy clay loam. Your reply through the *ADVOCATE* will much oblige."

[Sun-scall is caused by alternate freezing and thawing of the stem on the south-west side in late winter, causing the bark to die and decay. Oftentimes the dead, blackened bark separates entirely from the stem. Orchardists now generally recognize the cause of the trouble, and prevent it by shading the stem in some way. A good plan is to set a board, or two boards, trough-fashion, on the south-west side, held in place by a piece of twine. Some fruit-growers use cornstalks, wire netting, or lath. Trees are apt to suffer from sun-scall after a heavy pruning, especially if they have been allowed to grow too thick in the first place. Cutting out heavily from the center of the tree exposes the oblique and horizontal limbs to the intense heat of the sun, and the bark is likely to blister and be killed, after which borers are likely to finish the work of destruction.]

SICK FOWLS—LEG WEAKNESS.

E. S., Ontario Co., Ont.:—"I. One of my hens lately became swollen in the head round the eyes. The swelling seems baggy, as if watery. Her eyes, too, are watery, though they are as bright as in a healthy bird. There is no discharge of any kind from mouth or nostrils. She eats well and talks when I feed her. I have her isolated. What do you think is the cause of the swelling? Is it infectious? How can it be cured? She began laying to-day, and she is not too old—1½ years.

"2. Lately, one or two of my hens have partially lost the use of their limbs for a time. They are lame for a day and then all right next day. They are laying, and are last year's pullets. The house is new; board floor, deeply littered with cut hay and straw. Would their feed so affect them? Soft, warm mash in the morning, and grain buried in the litter; at noon, wheat to scratch for; and in the evening, grain or oats or sunflower seeds; cabbage or a mangold almost every day is hung up for them."

[The swelling in the head is due to a cold. If there is a discharge from the nose it would be wise to kill and burn the bird and thus avoid disease. If only a cold, place the bird in a warm coop, free of drafts, and feed on warm feed, using plenty of pepper. Bathe the swollen parts with warm water. A few drops of coal oil injected in the nostrils might be an advantage.

The leg weakness in the pullets is due to excessive egg-production. Your pullets have been fed on a stimulating food, which must be reduced somewhat on the approach of spring. Remove the male bird from the pullets until the use of their legs is restored. At this season of the year, sunflower seeds are too fattening, as is also corn. Feed more vegetables and grain, such as barley, wheat and oats.

W. R. GRAHAM, Manager.

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

GLUTEN MEAL AND OTHER FOODS—CONVENIENT PASTEURIZER.

SUBSCRIBER, Ontario Co., Ont.:—"1st. Is gluten meal a good feed for milk and butter production, to be fed with ensilage, hay, roots, etc.?"

"2nd. Will it take the place of bran? If so, what quantity should be fed?"

"3rd. What is its value for feed, say at \$20 per ton, compared with bran at \$15 per ton."

"4th. Is there any simple or convenient way to pasteurize the milk or cream in an ordinary farm dairy?"

[1. When of good quality, gluten meal is an excellent food for milk and butter production. It is a product which varies a good deal in composition, and therefore it is well to be careful in forming an estimate of its value.

2. It will take the place of bran when mixed with other foods, but owing to its concentrated nature it is hardly so safe a food as bran, and should not be fed alone. It combines well with oats. Probably not more than half of the concentrated part of the ration should be composed of gluten meal. Three or four pounds per cow per day may be fed with safety.

3. As a supplier of protein (muscle and milk formers), gluten meal at \$20 per ton would be cheaper than bran at \$15 per ton. It is impossible to state with certainty the exact money values of these two foods, especially since gluten meal is so variable in composition; but I would not hesitate to say that the gluten meal is the cheaper of the two at prices quoted.

G. E. DAY.

4. Apart from using a modern pasteurizer, which can be secured at any dairy supply house, probably the cheapest method of pasteurizing a small bulk of cream or milk is to place it in a shotgun milk can which is 8 inches across and about 18 inches deep; set the can in a barrel or other vessel of hot water, heating the milk or cream to 160 degrees, keeping it well stirred for 20 minutes at the temperature referred to.]

PAINT RECIPES.

A SUBSCRIBER, Shellmouth:—"Would you please give recipes in the columns of your valuable paper for making a good white and brownish-drab paint suitable for outside of house; also a light yellow for floors that will dry quickly and wear well."

[Ready mixed paints prepared by Canada Paint Co., also Sherwin-Williams Co., both of Montreal, are mixed in all colors and for all purposes. They are cheap, durable, and easily applied. If it is desired to mix the paints, the following rules may be followed: For the house paints, first get Robertson's chemically-pure white lead, mix with raw linseed oil to a consistency almost ready to apply, and thin to work well with turpentine. Now mix in a separate pot a small amount of ultramarine blue with raw linseed oil; pour carefully into the white, stirring thoroughly, just enough to remove the yellow cast. To dry quickly, add a little Japan or patent drier—Japan preferred. To get the brownish-drab shade, mix burnt umber and raw oil to the same consistency as the white paint. In another pot mix lamp black with oil to same consistency. Use sufficient of these with the white paint to produce the desired shade of brown or drab.

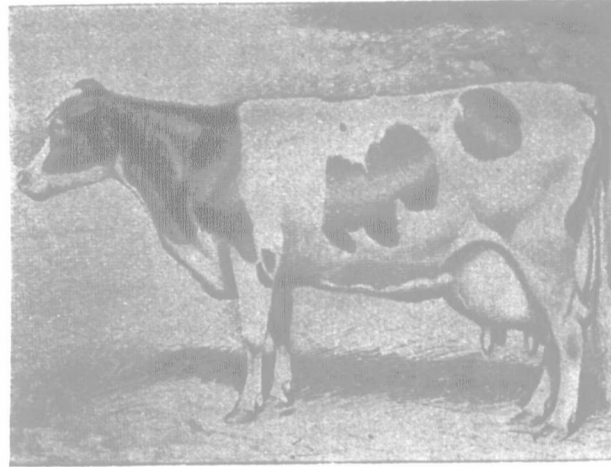
For Yellow floor paint get spruce ochre ground in oil (put up in tins), thin with boiled oil and turpentine, in equal parts, to working consistency. Give two coats of this, then one coat of waggon varnish or best furniture varnish.]

DESTROYING COUCH GRASS AND OX-EYE DAISY.

QUEBEC FARMER:—"I intend, the coming season, to cultivate a field containing twitch or couch grass, which in some parts has almost taken full possession of the soil. Since plowing out of lea there has been one crop taken off it, and it was again plowed last fall; clay soil. Please tell me how to proceed in order to make a thorough job of it. Do you approve of sowing buckwheat on such land? Whether would a 20-tooth iron grubber or one of the modern spring-tooth cultivators be the best to tear up the strong roots of this weed? How can ox-eye daisy be killed out?"

[In a dry season probably the most satisfactory method of exterminating couch grass is to plow rather shallowly and work the roots of the grass to the top with a spring-toothed cultivator. If this is done repeatedly and the roots raked up and drawn off and burned, good work will be accomplished. Regarding the growing of buckwheat, our experience leads us to favor it as a means of destroying couch grass by smothering, and better results seem to be accomplished by allowing the buckwheat to ripen for seed before plowing the ground. In the case in question, we would recommend working the surface, as already mentioned, till about the middle of June; then sow buckwheat, about five pecks per acre, and allow the crop to ripen; then, after the crop is removed, give the field another thorough cultivation as in spring. Rib the land late in the fall by turning two furrows together or by cutting and covering. This will expose a large amount of surface over winter, which will lift and kill the exposed roots. The following spring it would be well to cultivate thoroughly till time to sow roots or plant corn and grow a hoed crop. This treatment should accomplish good results, which it will, especially if the seasons are at all dry, but in a wet season it is almost useless to work at couch grass, as each turning of the plant gives it a fresh start, at which time smothering seems the only remedy.

Ox-eye daisy is a bad weed to deal with, particularly in meadows and pastures where cultivation cannot be given. It grows in all soils and infests



HOLSTEIN-FRIESIAN COW, BELLE KORNDYKE 13913.

First prize in official test, under rules of American Holstein-Friesian Association, in 1889. Test 509 8-10 lbs. milk, averaging 1 per cent. butter-fat; 25.77 lbs. butter, 80 per cent. butter-fat, in 7 days.

OWNED BY H. STEVENS & SONS, LACONA, N. Y.

all kinds of crops. It is least troublesome in hoed crops, and these, too, are effective in destroying it. The object should be to grow two hoed crops in succession, or a hoed crop following a summer-fallow. An infested meadow could be pastured until June, then plowed rather deeply, cultivated down and sowed to rape in drills. This crop can be cultivated well throughout the season and pastured off in the fall. The following spring grow a well-cultivated hoed crop. Another good plan is to sow an infested field with rye and pasture it off until June. The ground may then be worked as summer-fallow or sown to millet to pasture later in the season, or it could be plowed down. Whatever plan is adopted, the aim should be to induce germination of the seeds and then destroy the young plants. It would be well to avoid seeding down until the field has been cleared of the weeds.]

WHAT STALLION SHOULD BE USED?

YOUNG FARMER, Muskoka, Ont.:—"I would like your opinion on a matter of horse-breeding. I have a large young mare from imported Percheron stallion, dam from Clydesdale. Would it do to breed her back to her own sire, there being no other horse of the class within reach? Would you recommend breeding her to a good-sized trotting horse for a good lively general-purpose horse?"

[Of the two evils, which is the lesser? That is the question. Were the mare ours we would travel considerable distance and make some sacrifice to have her bred to a draft stallion, preferably of Clydesdale or Shire breeding. If such a horse cannot be reached, however, our next choice would be her own sire, provided he is a well-formed, sound horse, with no striking defects. No doubt a useful produce might follow the service of a well-bred, superior class of Standard-bred horse, but this sort of crossing does too often produce what is known as the dunghill nondescript, that is little better than no horse at all.]

POLLED DURHAMS.

S. H. B., Simcoe Co., Ont.:—"I am well pleased with the ADVOCATE. I think every Canadian farmer should have it. I am starting on a new farm that I purchased a year ago. I have cleared the timber off 50 acres already. I am putting up good buildings, and want to get a proper start in stock, as that is important. I am told there is a strain of Durham cattle without horns, and that they are good milkers. Now, if you or any of your readers can tell me where to get this breed of cattle, I will deem it a favor."

[Messrs. J. F. and A. E. Burleigh, of Mayon, Grundy Co., Ill., are leading breeders of the Polled Durham family. These gentlemen began breeding the horns off their Shorthorn cattle a good many years ago, and when we last heard from them had reared a considerable number of hornless cattle. The FARMER'S ADVOCATE of July 5th, 1894, contained an illustrated history of this breed, which had its origin about 1881 in a "sport" or "freak" of the recorded Shorthorn cattle of the Gwynne and Duke lines in the form of twin polled heifer calves. In 1883 the same cow dropped a polled bull calf. All are recorded in the American Shorthorn herd book, as well as in the Polled Durham herd book, of which Mr. J. H. Miller, Peru, Indiana, is the secretary. Mr. Miller is also a breeder. An enquiry written to either of these gentlemen, mentioning the FARMER'S ADVOCATE, will doubtless bring you any additional information desired. In breeding these cattle the aim has been to combine milk and beef, as well as to obviate the necessity for dehorning. A class of Polled Durhams were shown at the Chicago World's Fair, in 1893. There are, we believe, two classes of Polled Durhams admitted to the herd book for that breed, viz., (1) those eligible to registry in the American Shorthorn herd book, which are called "double standard," and (2) those graded up from native mulley cows by the use of registered Shorthorn bulls.]

Chatty Stock Letter from Chicago.

FROM OUR OWN CORRESPONDENT.

Following table shows current and comparative live stock prices:

	Extreme prices now.	Top Prices		
		ago.	1899	1898
Beef cattle.				
1500 lbs. up.....	\$4 85 to 6 05	\$5 75	\$5 85	\$5 60
1350 to 1500 lbs.....	4 50 to 6 00	5 75	5 90	5 65
1200 to 1350 lbs.....	4 25 to 5 65	5 75	5 90	5 40
1050 to 1200 lbs.....	4 05 to 5 65	5 30	5 35	5 20
900 to 1050 lbs.....	3 90 to 5 10	4 90	5 20	4 30
Hogs.				
Mixed.....	4 65 to 4 95	5 00	3 92	4 15
Heavy.....	4 65 to 5 00	5 00	3 95	4 17
Light.....	4 60 to 4 90	4 85	3 85	4 10
Pigs.....	4 00 to 4 75	4 70	3 75	4 05
Sheep.				
Natives.....	4 00 to 6 00	5 80	4 65	4 70
Lambs.....	5 00 to 7 50	7 25	5 10	5 60
Colorado lambs.....	7 25 to 7 50	6 90	5 00

The cattle prices are just now a little disappointing; not to the few who had faith and made their cattle good, but to the many who paid high prices for growing cattle, and then fed them a short time and lacked courage or corn or capital, or all three, to finish them out. If the cattle that are unfit for market were held back, the prices for all kinds would be a good deal better than they are now. The light and heavy cattle are getting a little closer together, as they usually do at this season, but the ordinary light-weights are not making money, while the ripe cattle are leaving a fair margin of profit for feeders. A cattleman says: "With a decrease of 30 per cent. in the number of beef cattle in ten years; with an increase of 30 per cent. in the population of our meat-eating country; with prosperity installed in every industry; with foreign demand increasing and foreign nations dependent upon us; with a balance of trade annually in our favor amounting to \$12 per capita increase in the currency of the country; without a cloud in the sky to obscure the sunshine from a happy, industrious, and prosperous people, only the sluggard and the ignorant have cause for complaint, and the cattleman who is not successful has only his own neglect to lay hold of, the abounding essential of success to blame for his failure."

Hogs are selling so well that feeders are losing no time in getting them to market. For some time past supplies have not been as large as looked for, but as a matter of fact the current supplies, not only here, but elsewhere, are close to the average for this time of year. The recent heavy storms were given as a reason for disappointment, and now the trade is seeking further without getting very satisfactory answers. It seems that the good, profitable prices for hogs have kept the supplies pretty well marketed, and there is at present no supplies of ripe hogs on hand.

Sheep never sold so high at this season of the year as at present. The sheep and lambs are being better prepared than ever before, and the lamb and mutton that one is now able to get, even in an average restaurant, is so good that it tends to increase the general demand for that class of meat. There is yet plenty of lamb stew from tough old ewes and rams, and it is not hard to find mutton chops of boot-strap tenderness, but in the main the mutton that is offered is from younger, better bred and better fed sheep than formerly.

Canadian Live Stock Exports.

The total number of cattle shipped from Montreal during the season of 1899 was 81,804, a decrease of 17,385 from 1898. The total number of sheep shipped during the same time was 58,277, an increase of 23,336 over the shipment of the season of 1898. The number of horses shipped from Montreal during 1899 was 4,739, being 1,988 less than last year. The total number of United States cattle in bond shipped from Canada numbered 11,745. From Quebec were shipped 4,263 cattle and 779 sheep; from St. John, N. B., 8,579 cattle, 1,624 sheep, and 363 horses; and from Halifax, 6 horses, were shipped. From Charlottetown, 1,363 sheep and 91 cattle were shipped. Total from all these ports, 91,767 cattle, 62,273 sheep, and 5,048 horses.

Dear Butter.

Buttermakers are having their innings in the market now. The price on the farmer's market in Toronto runs from 26c. to 30c. per lb., and the stores are retailing it at 30c. to 35c. The scarcity of the article accounts for the price, and the scarcity is accounted for partly by the great increase in the export of Canadian butter to Great Britain, which for the last six months of 1899 amounted to no less than 25,491,790 lbs., valued at \$4,947,438, as compared with an export for the same period in 1898 of 15,739,898 lbs., valued at \$2,894,798, and in 1897 of 11,526,592 lbs., valued at \$2,039,197. The price of cheese is ruling so high, and promising to continue to be high, that many factories have continued making cheese during the winter, which has also tended to make butter scarce and consequently high. The outlook for dairymen is indeed encouraging.



The Mercy of the Boer.

A SOUTH AFRICAN PASTORAL.

Night had just fallen upon the veldt. The short dusk suddenly deepened into a heavy, thick obscurity, impenetrable for a space until there rose the rim of a full moon over the edge of the plain which showed hard and clear-cut against the great disk. The ant-hills, that alone broke the monotonous flatness, flung interminable inky shadows as the cold white glare, electric in its fierce intensity, shone out level across the plains. The sense of loneliness, of utter isolation, was overwhelming; the heavens, sown with fire, seemed so remote, and the bare earth, stretching away into the dim, starry distance, so empty and limitless. It might have been the roof of some dead world.

By the edge of the marsh a transport wagon had outspanned for the night, and within the circle of firelight, where moon and flame struggled for the mastery, loomed the wavering outlines of the trek oxen tethered to the dissel-boom, and now and again the figure of a man.

The only sounds were the crackling chirps of the bullfrogs in the vlel, and the voices of two men who sat leaning back against the kaross of meer-kat skins flung over one of the wagon wheels.

"No!" repeated the elder man, the transport rider and owner of the wagon, raising his voice. "With us they shall not come—either she or the brat."

"But look, Jakob," persisted the other; "it is now three weeks, four weeks, that we are on the trek, and she has followed all the time, and carried the child, too. How the poor girl lives I do not know. Take only the child, Jakob."

"How are we to eat? How is the Vrouw to eat?" demanded the Boer, querulously. "Are there not enough mouths to fill already? And God knows how much further the span can go without water in this accursed country; they have enough to pull as it is. And why should I feed the wife and child of every black scoundrel that is fool enough to want them? Verdomme swartzkop!"

"But the child," persisted Piet; "that is small, and eats but little, not a quarter as much as a dog. Besides, Klaus may run away if the girl falls sick, and he alone knows the road and the drifts across the river."

There was a moment's pause. "Well, the brat, then, in God's name," snapped the other. "The girl can walk, as she has walked these three weeks," he added, and rolled himself in his rug to avoid further surrender.

Piet rose stiffly to his feet; the night breeze was growing chill. He knocked the ashes out of his pipe, kicked some fuel into the embers of the fire, and went around to the other side of the wagon, where the three Basuto boys were lying.

"Klaus!" he called. "Here a moment!"

A grunt from one of the blankets answered him.

"Baas Jakob says the baby may ride with the Vrouw in the wagon, but the girl must still walk."

There was a sudden movement at his feet, and a dark figure rolled out of the blanket.

"No, boy, no! Not that!" His hand was being covered with kisses. Piet drew it sharply away, and, taking a strip of biltong from his pocket, thrust it into the Basuto's grasp. "Here, this may help for the girl; it was all I could get," he said, roughly, and turning on his heel he went back to where his brother lay sleeping. Baas Piet was as averse to being generous as the transport rider, though for other reasons.

For a while Klaus lay still. Presently, carrying the piece of hard sun-dried meat and his own supper of boiled mealies, he crept shivering from his blanket and went slowly out on to the silent veldt, in the direction from which the wagon had come, as he had gone every night to listen for the signal that told him Beta was there among the ant-hills. Then he would cheer her up, and sit beside her while she ate some of his poor rations, though they were not enough for her and the child. Beta was a good girl. He knew that when he gave her father two oxen and some weathers, and took her away with him from the old kraal by the wagon drift across the Krei three years ago. She had been with him ever since, and now, when the trek began, Baas Jakob would not let her ride in the wagon or even come near it.

Klaus grasped the kerrie dangling from his belt at the recollection of the cut across the mouth that the drunken transport rider had given him with his sjambok when he had asked his permission. Besides, there was the baby, and he could not have left both of them behind, so far from the kraal and her own people. But Baas Jakob was a hard man; he did not understand such things.

Ever since they had left Burghersdorp—many weeks ago—she had walked after them, the baby slung at her back; and there were yet three weeks more and the desert strip to cross before they reached the Great Belt and the river. But the baby was to ride in the wagon now with the Vrouw, and the girl would not be so tired.

Ah! Baas Piet was a good man—better than Baas Jakob. He would help; and later on he might even be rich enough to buy a few head of cattle and some ponies, and they would all go back to the old place on the Krei, and . . . He started to his feet as the pipe of a honeybird came faintly out of the distance. Beta was there at last.

The wagon was creaking along under the burning noontday sun; the oxen stumbled lazily with lolling tongues, crawling at snail's pace without fear of the flick of the lash, for every one was asleep except the little voerloper trudging in front of the two leaders, crooning an endless native song to himself. The wind, more burning than the sun, came in ceaseless gusts across the arid veldt, destitute of grass or tree, and, catching up great clouds of red dust, whirled them in eddying, choking masses about the wagon, and then swept them away until they vanished in the shimmering heat haze. Now and then a tortoise dragged his black and yellow shell out of the way of the span, and lumbered heavily off the track to a safe distance, there to retire within himself until the unwonted apparition had disappeared beyond his limited horizon; or a snake would shoot out a shining head from the shelter of some deserted ant heap as the rumble of wheels roused him from his nap; and far up in the clear blue air floated a great vulture, without a tremor of his wide pinions, just as he had floated for many days past, watching and waiting.

Suddenly there was a stir under the tilt. The curtain was flung aside, and Baas Piet stepped out on to the fore part of the wagon, yawning sleepily.

"Boy!" he shouted, "onsaddle the mare. I shall ride on to the waterhole beyond the drift. It cannot be far off now."

Klaus appeared from underneath the wagon, where his blanket was slung hammock-fashion in the daytime.

"No, Baas Piet; the spruit should not be more than one hour's ride now, and the hole is only two, three mile further."

Presently he brought the mare around from the back of the wagon, where she had been tied up, tightened the girths, and rolled up the riem of the neck halter. Baas Piet swung himself off the edge of the wagon into the saddle.

"Tell the Baas when he wakes up," he said; and with a shake of the reins cantered off through the dust.

"It cannot be far off now," repeated Klaus to himself, as he watched him until he became invisible in the midst of the vast brown expanse of sun-scorched hillside.

It was now five days since they had left the last vlel, and he had given nearly all his share of the hot muddy water that the Vrouw served out to the girl for the last few days, but that was very, very little; and she was sick, too.

For a moment he stopped and looked backward. There, just topping the last rise, miles and miles away, his keen sight could pick out against the skyline the little black speck that had been behind them for so many weeks now, faltering on with parched lips through the heat and loneliness of the plains, always dropping further and further behind as evening drew in.

He heard the snores of the transport rider and his Vrouw as they slept comfortably under the tilt. If they could only feel what Beta felt—yet it was easier for her now that she had not the baby to carry; and the water was close in front; and after that only two or three days' trek before the desert ended. And, comforted by the thought, Klaus walked on after the wagon and returned to his blanket.

The baby was certainly the most contented of all, lying in an empty sugar box under the shade of the tilt, engaged in coiling the soft end of the eighteen-foot lash round and round its chubby arms. It grew fatter and merrier every day. The Vrouw rather liked it, black as it was, for she had no children of her own.

All at once came a warning shout from the voerloper. They were right on the edge of the drift, and the leaders began to pick their way slowly down the steep bank over the loose rocks and sand. Klaus was busy putting the heavy iron shoedrag under one of the hind wheels, while Baas Jakob, in a bad temper at having his sleep disturbed, sat upon the front of the wagon, swearing at him and the other boys for being lazy.

Now sliding sideways over a smooth shelving rock, now plunging down over a ledge with a jar that wrenched every bolt and wheelspoke, the heavy wagon crashed down the bank, only to come to a dead stop at the bottom, imbedded in sand up to the axles. The span were knotted in a tangled mob of clashing horns and twisted yoke reins, smiling and pawing up the sand with impatient hoofs; instinct told them that water was there—but it was far, far below, for the last rains had fallen many months back.

"Verdomme rooiebacks!" raged the angry Baas, beside himself. "Twist their tails; get that iron spike here, Hendrik—that will make the devils move."

But it was of no use; the span only became more hopelessly entangled. In vain Klaus dashed in among them, sjambok in hand, kicking here and slashing there, while Hendrik and the voerloper called upon the beasts by name and urged them forward. Water they knew was there, and water they would have.

"The whip! why don't you take the whip, you schelms! Where is it?" roared the infuriated Boer, rising and glaring about the wagon.

As he went forward he stumbled over the baby and its box, upsetting it and sending the child rolling across the floor of the wagon, where it lay in a ball on a heap of skins, crowing with delight. People so seldom played games with it.

The Boer thrust the empty box back against the side with his foot, and snatched up the bamboo whip handle. Poising it carefully above his head in both hands, he gave a little preliminary flourish, but the end was caught in something—"The brat again, curse it!"

It opened wide eyes of pleasure at him, holding up its dimpled wrists, wound round with the end of the lash.

With a snatched oath he kicked it off the end of the wagon into the midst of the struggling cattle and brought the great whip down upon them with all his force. Again and again it uncoiled and whizzed down with a crack like a rifle shot, cutting into the steaming flanks of the plunging mob until they belowed again. Scarred and bleeding, deafened by the report of the whip and the hoarse yells of the men, the maddened beasts straightened out, and with Klaus and the voerloper tugging at the leaders' heads, strained, panting up the further bank of the drift, the wagon creaking through the rocky river-bed behind them, and then trailed wearily forward into the dusk.

And when all was still the lizards came out of the crevices, only to scuttle back with a whisk of their tails. There was water in the drift now—red water, dripping softly down between the stones and sinking into the thirsty sand. Overhead sailed a vulture in ever-narrowing circles. And then the night fell.

It was late that evening before Klaus crawled stealthily away from the wagon, taking a full beaker of fresh water from the pool and his supper; the Baas was very angry with him because the wagon had stuck in the drift—though how could he help it if the oxen would not be driven?—and had forbidden him to leave the wagon to see Beta. But no Baas could keep him from doing that, no matter how many hidings he got for it.

He walked back as far as the edge of the drift, and sat there waiting. He could not see far to-night, for there was no moon, only the half light of the stars, and the bottom of the drift yawned black at his feet. A prowling jackal snarled close by, and at his approach a great vulture, gorged with the remains of some worn-out trek ox that had fallen there to die, though he did not remember noticing it, had flapped heavily off into the night.

Klaus waited for many hours, but the girl did not come. Of course, having the baby to carry again would make her take longer; for Baas Jakob had told him how he had seen it roll off the wagon that morning trying to reach a big tortoise on the road, and crawl after it unhurt, and how he had watched it there until Beta had picked it up when she came along. Still, she would catch them up next evening, and he left the water beaker and the food tied up in a piece of rag under a heap of stones in the middle of the road, so that the aasvogels could not get at them, and Beta might find them there in the morning.

But Beta did not catch the wagon up next evening, or the next.

Four days afterward they had passed the edge of the desert and outspanned among the shady tamarisks and the willows by the banks of the Great River.

"Never mind, Klaus," said Baas Piet, kindly, patting him on the shoulder; "hunger is a bad death, but it is God's will. Besides," he added, with a smile, "there are yet many good girls in Basutoland. But you will stay with Baas Jakob and me yet a bit?"

"I stay with you—and Baas Jakob," answered Klaus, simply. "He treats me as well as any other Baas."—*Pall Mall Gazette.*

Had Him Fast.

It was only recently, according to a letter in an exchange, that in St. Paul's Cathedral a London guide held forth thus to an American gentleman:

"That, sir, is the tomb of the greatest naval hero Europe or the 'ole world hever knew."

"Yes?"

"It is, sir, the tomb of Lord Nelson. This marble sarcophagus weighs forty-two tons. Hinside that is a steel receptacle weighing twelve tons, and hinside that is a leaden casket, hermetically sealed, weighing two tons. Hinside that is a mahogany coffin 'olding the ashes of the great 'ero."

"Well," said the Yankee, after reflecting a moment, "I guess you've got him. If he ever gets out of that, telegraph me at my expense."

THE QUIET HOUR.

"Give Us Men."

Give us men!
Strong and stalwart ones:
Men whom highest hope inspires,
Men whom purest honor fires,
Men who trample self beneath them,
Men who make their country wreathe them,
As her noble sons
Worthy of their sires!
Men who never shame their mothers,
Men who never fail their brothers,
True, however false are others,
Give us men—I say again,
Give us men!
Give us men!
Men who, when the tempest gathers,
Grasp the standard of their fathers
In the thickest fight:
Men who strike for home and altar
(Let the crowd cringe and falter).
God defend the right!
True as truth, though lorn and lonely,
Tender—as the brave are only:
Men who tread where saints have trod,
Men for country—Queen—and God:
Give us men—I say again—again—
Give us men!

There is a cry going up from many homes in city, town and village—an intensely earnest cry, from many and many a heart. Sometimes the pleading voice is almost hopeless, and yet the prayers go up day after day, night after night, with hope or without it. Mothers praying for sons, wives praying for husbands, sisters praying for brothers. Do not mistake my meaning. I do not now speak of the many prayers, both public and private, offered for the safety of our soldiers in a distant land.

I speak to-day to young men particularly, and wish to remind you, to begin with, that you cannot take the downhill road—recklessly, defiantly, carelessly—without involving others in the shame and misery which you may think you have a perfect right to heap up for yourselves. When you spend night after night with bad companions, losing by degrees the shame and self-contempt which at first made you miserable, dare you assert that it is no one's business but your own? Have you lost your manliness altogether? Don't you feel ashamed to drag down the women who love you, instead of using your manly strength to protect and shield them from harm? Are you not ashamed to show such mean ingratitude in return for the kindness you have received? Your mother will forgive! Yes, until seventy times seven! A mother's love is almost infinite. Is that any reason for making her miserable?

These are severe words, and you may indignantly exclaim: "I am not a brute! I don't intend to break any woman's heart!" Probably you don't. Surely no one ever did set out with that intention. But, think a moment, are you carelessly drifting in that direction?

Did you ever watch the Niagara River some distance above the Falls? How quiet and peaceful it looks, yet the current is terribly strong. Drop your oars and drift a little. Then try to row back to safety—if you can! If you let yourself carelessly drift into evil habits, it is folly to think that you can pull yourself up at any time. If you have such a delusion, think of other men who have made shipwreck of their lives; who have lost their own self-respect, and are pitied or scorned by their fellow-men. Did they intend to fling away, with both hands, their hopes for this life and the next? God has provided a natural protector for the weakness of childhood, and another for the weakness of old age. He did not need to write on tables of stone the command that parents should love and protect their children. That law was already written in their hearts. But He did command children to honor their parents, and even singled out that commandment by adding a promise to it. You disobey that command at your peril. If there is a promise attached there is also a penalty implied in the promise. The Apostle says: "Honor thy father and mother, which is the first commandment with promise, that it may be well with thee, and thou mayest live long on the earth"; and certainly it is not likely to be well with those who are undutiful and disobedient.

There is some truth in the Spanish proverb, "One father can support ten sons, but ten sons cannot support one father." Think how your parents denied themselves that they might provide you with everything you needed. Think how proud and pleased they were when you were successful in school or the world. Think how untiringly they cared for you in sickness and in health. Have you paid back any of the debt of love you owe to them? "A wise son maketh a glad father," and you may, if you choose, fill the last days of your parents with gladness; you don't want to earn the opposite title of "the foolish son," who is truly said to be "the heaviness of his mother," do you?

God made man in His own image. Think what an honor He has bestowed on you, and do not drag down His image below the level of the brute creation.

But over and above the negative virtue of refraining from evil and keeping your manhood from trailing in the dust,—

"Be noble; and the nobleness that lies
In other men, sleeping but never dead,—
Will rise in majesty to meet thine own!
Then wilt thou see it gleam in many eyes,
Then wilt pure light about thy path be shed,
And thou wilt never more be sad and lone."

HOPE.

MINNIE MAY'S DEPARTMENT.

MY DEAR NIECES,—

No one can drive through the country without being struck with the difference in farmhouses and their surroundings. Some look well cared for and comfortable, while others have a neglected and miserable appearance. Here is a farm with a cosy, snug little dwelling house on it—only a simple frame cottage, but well-kept and clean. Graceful creepers cover the walls and add beauty to the building, and close by is a neat garden filled with a great variety of flowers and vegetables. Not far off are the stables and barn, all in good order, with the cattle quietly standing about, chewing the cud and looking the picture of contentment. The fences, too, are trim and tidy; no gaps in them or fallen pieces. If we step inside the home the same order and cheerfulness prevail. Everything is in place and cosy-looking, inviting us to enter and rest; flowers blooming in the windows, brightening the room. Everything about the place, inside and outside, suggests order and comfort; aye, even prosperity. "Surely," we exclaim, "this farmer and his family are on the road to success." And they deserve it, too!

But we come to another scene by no means so enchanting. What a tumble-down place! What an air of general neglect! Shingles off the roof; in the windows a few broken panes of glass, patched, perhaps, with paper or rags; garden nowhere; kitchen refuse thrown anywhere; vegetable scraps adorning the paths; dirt and cobwebs over all, with possibly a pig or a calf lending grace and beauty to the scene at the back door.

Look at the outbuildings; doors off their hinges, or will not fasten. Nice wide spaces in the fences, through which the cattle and pigs may pass "at their own sweet will," and cause the loss of many a half-hour to their owner while he chases them out. The animals are all standing about, but they have not the peaceful, contented look of their neighbor's across the way. They seem to say: "Here we are, poor, neglected creatures! We have the misfortune to belong to a man who cares neither for us nor our comfort. How would he like to exchange places with us? Would that we had a home as pleasant as our friends next door; but we are only dumb animals and must suffer patiently." No one seeing a farm of this description would think of associating with it the word "prosperity."

So it is all over the country. We need not go far to see both kinds of farmers' homes; they are everywhere. But every farmer and his family ought to aim at improvement in their home. It is not necessary to have expensive outer buildings or fine houses, but we can all have homes—cosy, cheery, inviting and bright. We can make our house have a "homey" look, both outside and inside. We can remember the climbing vines and the plots of brilliant flowers; the orchard, with its tempting produce; the garden, with its many varieties of vegetables for our tables; and the trees, with their refreshing shade on a hot day. Inside we can follow the same lines and make everything just as inviting as possible. A pot or two of paint and a few rolls of wall paper will work wonders under a judicious hand.

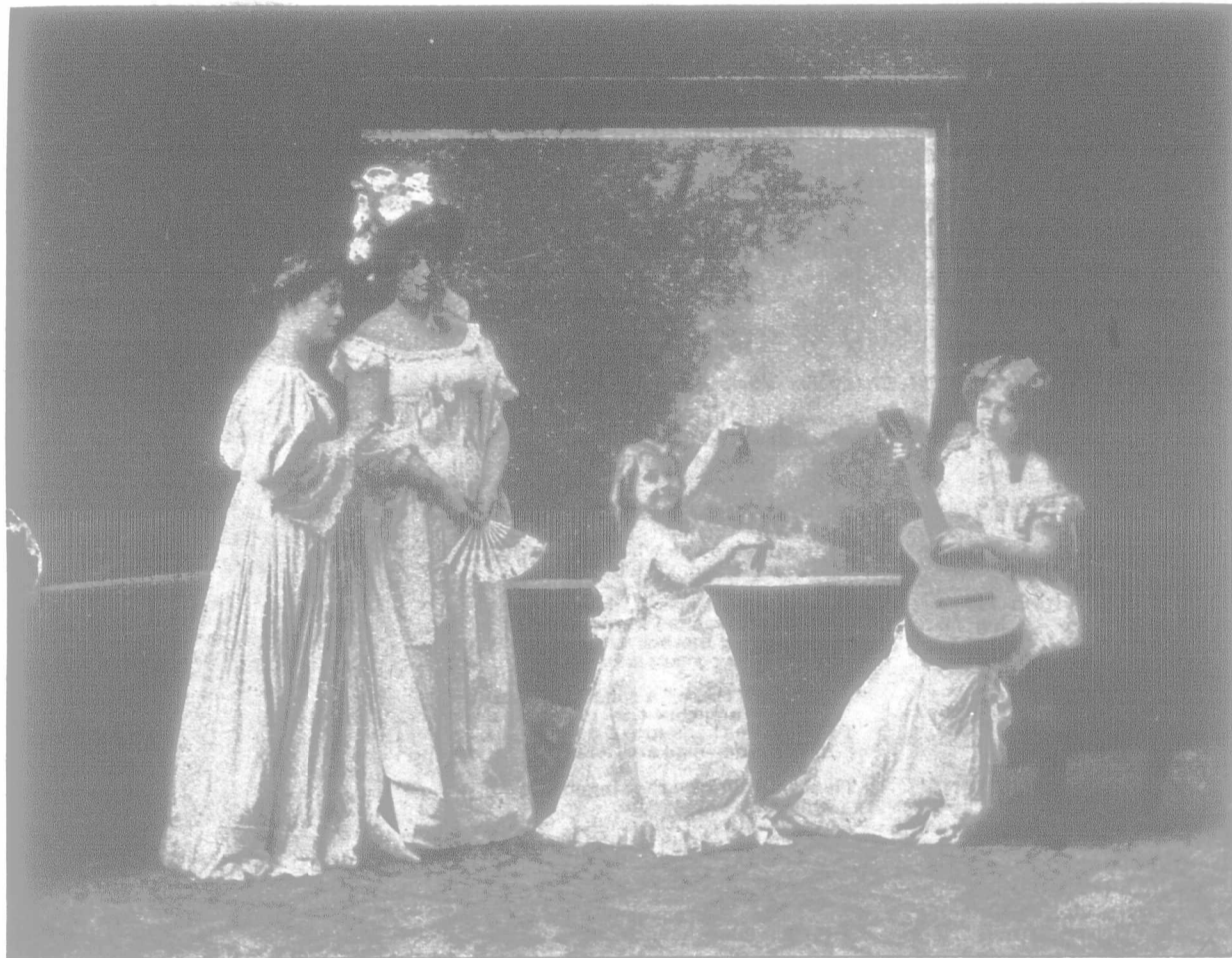
A good way to work is to have a particular object in view and try to attain it. We might lay our plans as to what is most needed. First, it might be a new reaper or a rake for the goodman, or a washing machine or a better churn for his wife, or something equally necessary; but let us work for that, trying to save a few cents here and there, and we shall gain our object by and bye. Do you not think, my dear girls, that things acquired in this way have far more interest and value to us than if we got them easily? It is human nature to prize what is difficult to obtain. It is hard work—hard, steady work—to make our homes just what we wish them to be, but how great is the pleasure of living with the object of getting on. This month is just the very best time to begin. Winter will soon be forgotten, and Nature will revive again. Dear nieces, do not forget the tiny seeds now, if you would have a beautiful home in summer. Many seeds should be sown now in boxes, and with a little care will be ready for transplanting later on. A few packets cost only a few cents, and then the wealth of color and fragrance which we may have! Nasturtiums, poppies, morning glories, geraniums and others, for color; and for their delightful odor, what is better than mignonette, violets, heliotrope

or roses? Did someone say, "Oh! such common flowers; anyone can grow these." Yes, they are common, and that is a glorious thing, for beauty and fragrance may thus be everywhere. It is people's own fault if they have surroundings devoid of beauty and taste. A girl once said to me: "I am sick of geraniums—vulgar, scarlet things, in everybody's windows. I hate them!" What do you think of this? I am pretty sure you do not agree with such a foolish remark. All flowers are lovely, however plentiful they may be. Shall we all try to have lovely flowers this summer, girls? We can if we only begin in time. Let us each endeavor to make our dear ones, and to think of a farmer's home as an ideal one.

Your loving old Auntie,
MINNIE MAY.

"A Difficult Step."

Our last picture was sad, but here is a decided contrast. How proud and pleased the wee dancer looks as she practices her difficult step, and surely it must be rather difficult with such a long dress! Some months ago we had Little Pepita dancing to her old grandfather's accordian music in the quaint Dutch kitchen. Here, however, is something quite different, and there seems to be a certain atmosphere of wealth. The attitude is very graceful, particularly in the holding of the castanets; also the young guitarist is most attractive. The instrument is a trifle larger than is generally seen, but perhaps in those times they were larger. Dance on, little girl, with the sweet face and old-fashioned frock—we think that difficult step is nearly perfect.



"A DIFFICULT STEP."

Our Library Table.

THE LOST HEIR. G. A. Henty.—This author is so widely known as one who usually tells of thrilling adventure that a departure from this style comes as a surprise. This is a clever detective story, but on entirely new lines, the unravelling of the mystery being due to reading the motions of the lips—a system largely taught to the deaf and dumb—and, in this story, successfully pursued by two charming young ladies.

RICHARD CARVEL. Winston Churchill.—Few books have been as much talked about this season. It is certainly cleverly conceived, and deals with the olden time when George was king, and England and America were at daggers drawn. The hero is a fine, brave fellow enough in warfare, but in his love affair somewhat timid, for Mistress Dorothy Manners flouts him terribly—but we will not reveal whether this treatment continues, for it would be a pity to spoil the end. Many leading characters of those stirring times are introduced, amongst them William Pitt and Charles Fox. This book will be specially welcome to those who like historical novels. Copp, Clark & Co., Toronto.

IN THE GOLDEN DAYS. Edna Lyle.—As mentioned above of Henty's book, this author departs from her usual style, and instead of (sometimes overmuch) religious argument, gives us a powerful and beautiful story of brave self-sacrifice, which makes the heart glow to read. All Miss Lyle's books are well written and have a noble purpose, and often introduce the same characters, but this is of a different and earlier time.

KIT KENNEDY. S. R. Crockett.—In style much resembling the same author's delightful "Cleg

Kelly." You have Kit from childhood to manhood, and there is that masterly blending of humor and pathos which always distinguishes Crockett's work. Of boys' description he is simply pastmaster, and one cannot help but love them. William Briggs, Toronto. FELIX.

Recipes.

FOR THE BATH OR WASH BASIN.

One pound of oatmeal, ¼ pound orris root, ¼ pound Castile soap shaved fine. Mix these ingredients well, and fill little bags of cheese cloth, about the size of a very small egg or large walnut. Leave in the water a few minutes before bathing. This causes a delightfully softening effect on the bath, and is specially suitable for winter.

POLISH FOR OAK.

Two ounces of beeswax (cut fine), ½ ounce of white wax. Cover with turpentine and let stand for 24 hours. Cut fine ½ ounce of Castile soap, and dissolve in ½ gill of boiling water. Add this to the mixture and shake until it is a creamy liquid.

SLICED EGGS WITH GRAVY.

Six eggs, boiled hard, and, when cold, sliced. One half cup of fine bread or cracker crumbs, to which a little pepper and salt are added. One raw egg, beaten light. One cup of gravy, well-seasoned and heated. Dip each slice of the hard-boiled egg into the beaten egg; roll them in the crumbs. Lay the eggs in a frying-pan in which you have melted some good dripping, and fry until light brown on both sides. As soon as they are done put them into a hot dish and pour over them the boiling gravy.

EGG TOAST.

Beat four eggs all together thoroughly. Put two tablespoonfuls of butter into a saucepan and melt slowly, then pour in the eggs and heat, without boiling, over a slow fire, stirring constantly. Add a little salt, and when cooked, spread on slices of nicely browned toast, and serve at once.

GOOD RECIPE FOR A JELLY CAKE.

One cup of sugar; butter the size of an egg; 1 egg; ¾ cup of sweet milk; 2 teaspoons baking powder; 2½ cups of flour. Bake in layers.

DOLLY VARDEN CAKE.

One-half cup of butter, beaten to a cream; 1 cup of sugar added; and the beaten whites of 3 eggs; 2 cups of flour and 2 teaspoons of baking powder; ¼ cup of milk, and flavoring. Use the yolks for icing, and bake the cake in layers.

Dissolution.

Mr. Raggles—"You've been an' made a mistake with my washin', Mrs. Mangles, and sent 'ome three old hankychers as don't belong to me, an' nothink else."

Mrs. Mangles—"Lor! Mr. Raggles, that ain't hankychers; that is your shirt as 'as come to pieces in the washin' at last."

Begun it First.

An old minister in the Cheviots used, when excited in the pulpit, to raise his voice to a loud half whimper, half whine. One day a shepherd had brought with him a young collie, who became so thrilled by the high note of the preacher that he also broke out into a quaver so like the other that the minister stopped short. "Put out that collie!" he said, angrily. The shepherd, equally angry, seized the animal by the neck, and, as he dragged him down the aisle, sent back the growling retort at the pulpit, "It was yersel' begoud it!"

The Birthday Flower.

For a child's birthday party let the table be decorated with the flower of the month in which the child was born, as: January, snowdrop; February, the primrose; March, violet; April, daisy; May, hawthorn; June, wild rose; July, lily; August, poppy; September, convolvulus; October, hops; November, chrysanthemum; December, holly. Each has an appropriate sentiment attached to it; The snowdrop means consolation; the primrose, youthful sunshine; the violet, modesty; the daisy, innocence; the hawthorn, hope; the wild rose, simplicity; the lily, purity; the poppy, the comfort of sleep; the convolvulus, contentment; hops, aspiration; the chrysanthemum, cheerfulness; holly, foresight and protection.

Smith—One of Jones' sons was an idiot. What became of him? Brown—He got a position as a truck driver, and is getting along well.

Travelling Notes.

AUSTRALIA.

From Sydney to Melbourne we felt particularly at home, for were we not in one of our own Pullman cars? We felt almost like kissing the cushions, but refrained, and slept the sleep of the just—as tired as ever we could be. One thing which strikes very forcibly after the slight rains we get in B. C., is the amount of sand and dust which in this great colony is tremendous, and anything but pleasant. In our railway journey there was much desert-land view, and therefore it lacked the ever-living interest which attended our trip to Vancouver and California. The intense heat, too, is trying. On arriving at Melbourne, the usual run of sight-seeing took place; but, before proceeding to any details, we might say a few words about the origin of so very important a place. Melbourne was founded many years after Sydney. First was discovered Port Phillip Bay, and it was in 1803 that the River Yarra was first seen by a white man. Then the vessel *Cumberland* sailed from Sydney, under the direction of Charles Grimes, Surveyor-General of New South Wales. After viewing the Yarra in all directions, he decided that the banks would make an excellent and prosperous settlement, and so informed his Government. How would he stare could he see it now as the great City of Melbourne, with half a million population! The ideas of distances seem to be much the same everywhere, for in about 1838 the English authorities seriously contemplated building a bridge from Port Phillip Heads to Van Diemen's Land, only a distance of 160 miles! With such a phenomenal bridge there would certainly have been no holding this colony until it had been placed as the eighth wonder! Melbourne was not finally named until 1837, when the name of the (then) Premier of England—Lord Melbourne—was bestowed. To digress: Our loyal Canadians will remember that it was Lord Melbourne who had to cause our beloved Queen to be roused, at one or two a. m., from her youthful slumbers, to inform her that she was Queen, and to bend the knee of allegiance—an allegiance Victoria the Good has earned and kept, and will keep for ever. God bless the Queen!

What was the chief cause, perhaps, of Melbourne's wonderful advancement was the great gold discovery, when half the world seemed to go mad in its golden greed. Then, in the early seventies, great extension of the railway systems took place all over the country. In 1888 there was a tremendous boom, which, like every other boom, flattened out in a few years and caused much depression, stopping of bank payments, etc. But now all is sunshine again, for things are working on a sure basis, and booms are looked at askance.

Unlike the beautiful Sydney harbor, which so delightfully greets you as the big liner slows up, you are landed at Port Melbourne pier, which is not picturesque by any means; but a very short train trip brings you to the foot of Prince's Bridge, and then you forget the pier. The hotels are particularly fine, and the Grand Hotel may rank with the enormous ones of New York, London, and Paris. The general Post Office is a fine structure—solid, like everything else out here—but, as is the usual thing with almost all general post offices in big cities, it is too small. The only churches we had time to visit were St. Paul's Cathedral (Anglican), which is built in an unfortunate situation, somewhat depressed, where the surrounding buildings, of commanding height, which have gradually grown up near it, greatly dwarf its proportions. Its promoters did not seem to have looked forward sufficiently to the possible growth of the city, and looking backward doesn't do for building purposes, does it? It is to be hoped that eventually a cathedral more worthy of the wealthy class who attend it may be built. In contrast is the magnificent R. C. St. Patrick's Cathedral, and it is almost incredible to believe that the foundation stone of this grand structure was only laid less than half a century ago by Archbishop Goold, and then contemplate how many centuries ago were built the great European cathedrals, so fit is it to be compared to these. No mistake in location here; all seems to have been planned to perfection. A particularly fine building is the Town Hall, and amongst its many advantages may be specially mentioned the great hall, which seats 4,000 people, and its grand organ. The services of a first-class organist are engaged, and an organ recital given every Thursday. We have made special mention only of one hotel—the Grand—but one cannot pass over the Federal Coffee Palace Hotel, which is perfect in every way, both inside and outside. It was built in 1888, and no expense seems to have been spared to make it one of the handsomest hotels in the world. On one side of the vestibule is a public dining-room, or restaurant, which seats 350 people. We have described so many botanical gardens, and all being, of necessity, somewhat similar, a detailed description of Melbourne's botanical garden would be superfluous. It may be of interest, however, to mention its size, as it is as large as the botanic gardens of Sydney, Brisbane and Adelaide combined. There are many beautiful parks surrounding Melbourne, and the Zoo and Aquarium are well worth visiting. There are over a dozen hospitals and homes of various kinds, and all excellently conducted. Melbourne claims the finest race course in the world, which is, of course, claiming a great deal; but the Flemington race course certainly *can* claim a great deal. The great race for the Mel-

bourne Cup is run on the first Tuesday in November, and is sometimes attended by 200,000 people. Would that we poor travellers had been there just a little earlier than December! The beautiful suburbs of Melbourne are altogether too numerous to particularize; but one must be mentioned, for there we had a picnic to Fern Tree Gully, about 20 miles out. To see those lovely ferns is indeed a sight. The trunks are about from 10 to 30 feet high, the most delicate branches forming an umbrella above them. Fern Tree Gully is a ravine of such picturesque beauty that it seems like an enchanted fairy valley. You can drive or go by rail from Prince's Bridge, and can either start for the Gully at once, or take the wiser plan of a little refreshment first at one of the hotels or restaurants. To reach (nearly 2,000 feet) the summit of the Dandenong Ranges is pretty tiring unless you are vigorous; but the views reward you, and the winding paths and delicious variety of coloring form an undying picture of loveliness. And then you can get a rest, etc., at a little cottage on One Tree Hill (so named because in making the trigonometrical survey the officers left one large tree in the center of an open space as a landmark.) The exquisite fern trees, the licopods, the polypods, and the wonderful eucalyptus amygdalina (200 to 300 feet high), the myriad mosses, climbing parasites, hazel and musk trees, many varieties of acacia;—well, one's brains are apt to become confused, literally *intoxicated*, with such splendor, so we will take our courage in our hands and leave Fern Tree Gully—but Fern Tree Gully can never, never leave us. We will go back to Melbourne, for it would hardly be fair not to mention its streets. Collins street is unrivalled, with its long row of palatial buildings and ceaseless traffic. Almost the same may be said of Bourke street, and, intersecting them, Elizabeth street and Swanston street, and ever so many others. The picture galleries are also very fine, and some rare works of art are to be seen in them, which are ever and again added to. The concert halls and theatres are fine and many, for Melbourne has always shown much dramatic and musical taste, and there are few of the leading artists of any nationality who have not appeared on the stage of the fine Princess Theatre. Truly, a city to be proud of is Melbourne—and now we proceed to Adelaide.

His Mother's Songs.

This little poem is re-published at request of a subscriber.—Ed.

Beneath the hot midsummer sun
The men had marched all day;
And now beside a rippling stream,
Upon the grass they lay.

Tiring of games and idle jests,
As swept the hours along,
They called to one who mused apart,
"Come, friend, give us a song."

"I fear I cannot please," he said;
"The only songs I know
Are those my mother used to sing
For me long years ago."

"Sing one of those," a rough voice cried,
"There's none but true men here;
To every mother's son of us
A mother's songs are dear."

Then sweetly rose the singer's voice
Amid unwonted calm,
"Am I a soldier of the cross,
A follower of the Lamb?"

"And shall I fear to own his cause?"—
The very stream was stilled,
And hearts that never throbbled with fear
With tender thoughts were filled.

Ended the song, the singer said,
As to his feet he rose,
"Thanks to you all, my friends; good night,
God grant us sweet repose."

"Sing us one more," the captain begged;
The soldier bent his head,
Then glancing round, with smiling lips,
"You'll join with me," he said.

"We'll sing this old familiar air,
Sweet as the bugle call,
'All hail the power of Jesus' name,
Let angels prostrate fall.'"

Ah! wondrous was the old tune's spell,
As on the singer sang,
Man after man fell into line,
And loud the voices rang!

The songs are done, the camp is still,
Naught but the stream is heard;
But ah! the depths of every soul
By those old hymns are stirred.

And up from many a bearded lip,
In whispers soft and low,
Rises the prayer the mother taught
The boy long years ago.

A Southern Delicacy.

Anyone who has lived south is acquainted with the deliciousness of the "Virginia egg bread"; but everyone may not know how economically that favorite breakfast or tea dish is made. It is nothing more than a mixture of hot boiled rice, say two cupfuls (that left from yesterday's dinner may be reheated); half the quantity of corn meal, an egg or two, a pinch of salt, a lump of butter (melted), a generous sprinkling of baking powder, and enough sweet milk to render all about the consistency of pound-cake dough. This mixture, poured into a well-battered dish and baked slowly and thoroughly for one hour, will recall to you the old-fashioned rice hock, and well reward your small efforts.

Puzzles.

[The following prizes are offered every quarter, beginning with months of April, July and October: For answers to puzzles during each quarter—1st prize, \$1.50; 2nd, \$1.00; 3rd, 75c. For original puzzles—1st, \$1.00; 2nd, 75c.; 3rd, 50c.]

This column is open to all who comply with the following rules: Puzzles must be original—that is, must not be copied from other papers; they must be written on one side only of paper, and sender's name signed to each puzzle; answers must accompany all original puzzles (preferably on separate paper). It is not necessary to write out puzzles to which you send answers—the number of puzzle and date of issue is sufficient. Partial answers will receive credit. Work intended for first issue of any month should reach Pakenham not later than the 15th of the month previous; that for second issue not later than the 5th of that month. Leave envelope open, mark "Printer's Copy" in one corner, and letter will come for one cent. Address all work to Miss Ada Armand, Pakenham, Ont.]

1—CHARADE.

My *total* tells a story
That made its writer known
To all who love a romance
Of the good old-fashioned tone.
His death we now deplore,
But his fame we hold in store.
First means lone, forsaken;
Second's an article's name;
Third is a verb of two letters;
Fourth and second mean the same. M. N.

2—TRANSFORMATION.

A stately manner I express
By little letters four;
But by changing their place,
A deep hole you explore.
Put the last to the first,
A Turk's name you see;
Change again, a pronoun (German)
Says, "belonging to me." M. N.

3—LINKED DIAGONAL (centrals overlap).

..... 1—To make better, and an ancient
..... country.
..... 2—To guide, and a proportion.
..... 3—A mount in Judea, an entry into
..... life.

4—A woman's name, and the highest room.
5—A miraculous food, and a geography.
Down left diagonal and up right outer, courts of a Roman house. M. N.

4—CHARADE.

There's nothing that will *One* a home,
Whether it be poor or fair,
Like *Two*, which drives the family
To the *Total* of despair. ROLLY.

5—CHARADE.

When I quarrel with a man,
And come home in great ire,
And look at my favorite
Seat by the fire,
I out *One* my boots,
Leave them down by the *Two*,
Then order some toast,
And perhaps a nice stew.
When I'm hungry no longer,
I sit in my seat,
Puff away at my pipe,
And forget the *Complete*. ROLLY.

6—SQUARE.

1—A kind of turban.
2—A garb worn by Mahomedan pilgrims.
3—An Egyptian intoxicating drink made of dates.
4—Inclines from a perpendicular direction.
5—Improperly. ROLLY.

7—CHARADE.

On a floor that seemed as dirty as if it never saw a *FIRST*,
In a home that seemed of poverty the bane,
I saw a little maiden, smiling through a dirty face,
Why, the sight of it would make a miser groan.
In her arms she held a *TOTAL*, and to it thus she sang:
"Ting a ling, a ling, a ling, a lang,
Sleep, my baby, sleep, my *LAST*, why cry?
Why the big tear drop in your eye?
You will be a daddy by-and-by,
So rock-a-bye, baby, rock-a-bye." IKE ICICLE.

8—CHARADE.

When I *FIRST* Miss Biddie Marjory Street,
I thought sure a poor day I never would meet,
She looked so angelic, so simple and sweet,
And I thought sure her heart was as big as her feet;
But after the *LAST* was put on complete,
And I tied a knot with my tongue
I couldn't loose with my teeth,
Sure, of happiness I never more saw a peep.
So *TOTAL*, my cousins, is no happy song
When you're tied to a woman whose tongue is too long.
IKE ICICLE.

Answers to Feb. 20th Puzzles.

1—Quoit.
2—Mutton-chop.
3—Hall-low-wed, hallowed.
4—Soprano, tenor, alto, bass.
5—Pearl-eyed.
6—Axiom, aim, mood, loom, Ovid, lax, mix, mild.
7—Prelate, relate, elate, late, ate.
8— e e l a t 9—Madam.
c h a i r 10—Dad, Anna, Bob, Aga, Abba.
l a p s e pop, peep, eye, tot, pup.
a i s l e Nan, Hannah, pap, ewe,
t r e e s num, gag.

SOLVERS TO FEB. 20TH PUZZLES.

"Diana," M. N., J. McLean, "Rolly," Sila Jackson.

ADDITIONAL SOLVERS TO FEB. 5TH PUZZLES.

M. R. G., J. McLean, Florrie Wherret, Sila Jackson, E. O.

COUSINLY CHAT.

MY DEAR COUSINS,—

I must beg you to be more punctual in sending your work, as your poor innocent cousin at Pakenham is having vials of wrath poured upon her because matter does not reach the editor's office sooner.

Laura F.—Your answer was not quite right, and, in any case, we do not give a prize for one puzzle; the prizes are for the most correct answers during the quarter.

E. O.—It is seldom all the answers are sent in; but whoever has the most correct ones wins the prize. Practice makes perfect. Your puzzle is scarcely up to the standard.

F. A. W.—Your puzzles are rather easy, little girl; but never mind, try again.

Sila.—That No. 8 was a mistake, but as it was the same for everyone, no harm was done.

M. N.—That's a fine budget you sent this time—just got it to-night—nearly snowed up.

Ike Icicle.—I cannot understand your charade beginning, "I met a *FIRST*," etc." A. A.

How a Siege was Stopped.

I need not remind you what is meant by a siege, you hear people talking about a siege—the siege of Ladysmith, for example—every day; you see it on posters and in newspapers, so that you cannot help knowing something of what it means. You will understand that in a siege there are soldiers outside and all around the besieged town, no one can go out nor anyone come in. Sometimes the army outside the town will try to take it by storm—that is, by a sudden, strong attack, forcing those within to open the gates; or sometimes they will prevent any supplies of food coming to the people, and so force them to yield. It is a fearful time to all concerned. It is very sad to think of our soldiers and others shut up in Ladysmith, constantly in danger of the heavy shot and shell which the Boers send at them from the hills all around the town. Now, I urged you a fortnight ago to remember that prayer had a great power, and that we at home might help our brave soldiers out in Africa. I gave you a story then as to how a young soldier was saved, let me tell you another story now as to how a town was once saved. It has been often told, but we should do well at this time to remember it. The story is concerning a small town in one of the valleys of the Tyrol, and the time was about the beginning of this century, or, more exactly, in the year 1799. There was then going on a great war be-

tween France and Austria. On Easter Day of that year the people woke up out of their sleep just as usual, but soon there was dismay and terror in the hearts of all the inhabitants, for on all the heights around the town the rising sun was seen to fall upon the glittering weapons of the French, and the people knew by the vast number of the besieging host that there was no hope of defending themselves. The town council was hastily called together, and all the chief people came as well. They each gave their opinion as to what was best to be done: some thought the only thing to do was to give up the town to the enemy, and so save their lives; none gave counsel that they should fight.

At length, however, the old dean of the church rose up and said: "My brethren, it is Easter Day! We have been reckoning a good deal too much on our own strength, and now we can do nothing. I propose, therefore, that we turn to seek help from God; that we ring the bells and attend service as usual, leaving the whole matter in the hands of God."

The old man's counsel prevailed, and from the church towers of Feldkirch there rang out the wonted joyous peals in honor of the risen Lord, and soon the inhabitants were seen flocking to the churches in their holiday clothes.

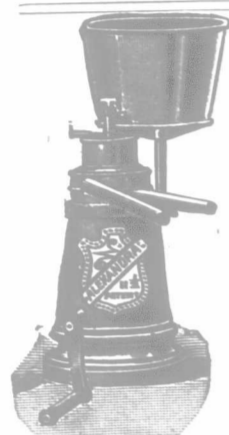
The French heard the strange sound of the church bells, and, through their telescopes, they

saw the streets crowded with worshippers, going quietly on their way to the House of God. It was their turn now to be dismayed. They thought that the Austrian army must have come in such force during the night that the people were no longer afraid, and so the French general gave orders to his army to retire. Thus the simple fact of leaving the matter in the hands of God won the day without a blow.

What a blessing if in this way we could turn to God and save our brave soldiers! There are still at hand, as in days of old, the armies of God, the angelic hosts, always ready to do his bidding. Then let us ask Him to send His legions of angels to fight for our troops, and win for them complete victory. We cannot ask in vain.

Picked Up in the Kitchen.

The following is a good parrot story: A parrot in a certain house was usually kept in the dining-room with the family, but during the winter was removed to the kitchen for greater warmth. When the winter was past it again made its appearance among the family, whom it amused with the new remarks it had picked up in the kitchen. On one occasion, when the bell had been rung for something, the parrot was heard remarking from his cage: "Let 'em ring again!"



LISTER'S Alexandra and Melotte CREAM SEPARATORS

STAND UNRIVALLED FOR LARGE OR SMALL DAIRIES.

"The proof o' the puddin' is the preenin o't."

Do not be misled by interested agents, men of ready speech, who are all selling the "best" machine, no matter how cheap and worthless they are, and which certainly are the best for separating the unwary farmer from his hard-earned money. Listen to men in your own rank who have tested them:

WHITESAND, ASSA., 15TH JANUARY, 1900.

Dear Sirs, Please send me a copy of your Dairy Handbook. I expect to milk 17 to 20 cows this summer; am milking 14 at present date. I use one of your 7½ Alexandra separators to skim the milk. Have used this machine four years with greatest satisfaction, and it shows no sign of wear yet. Repairs have cost me 10 cents in the four years. Yours truly, ALFRED HUTCHINSON.

For full description, prices, and copies of reliable testimonials, address:

R. A. LISTER & CO., LIMITED.

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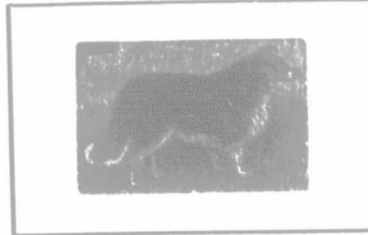
Advertisement for Scott Furniture Co. featuring a row of chairs and the text: 'Do you need Furniture of any kind? Our new, big, illustrated catalogue will besent you free. School Desks always on hand. SEND FOR COPY. Scott Furniture Co., WINNIPEG. Largest Dealers in W. Canada.'

GOSSIP. J. Herriot, Souris, writes us that he recently sold a one-year-old Holstein bull to Mr. W. Paterson, of Waxness, which he will use to head his herd, which consists of a nice lot of cows and heifers, all registered and good milkers. J. A. McGill, of Neepawa, writes under recent date: "The 'Gold Standard Herd' are coming through the winter in fine shape. My brood sows are in fine, thrifty breeding condition, with plenty of vitality and carrying a fair amount of flesh. I am importing another fine boar from S. L. Stone, Trumansburg, N.Y. He is sired by the great boar, Lord Oxford (imported), bred by Col. J. B. Jenkins, England. Lord Oxford won first prize at the great Royal Show in England in '96; he then came to America, won first and champion at the New York State Show, the Wisconsin State and the St. Louis Fair, Mo., in '97 and '98. Vincleere, the dam of my young boar, is from the great, Lord Windsor, winner of first at the World's Fair. This is a combination of the best blood known to the Berkshire breed. This young boar, along with the one imported last fall from the well-known herd of A. J. Lovejoy & Son, of Roscoe, Illinois, General Booth, a winner over the great Toronto 1st-prize boar, Fitz Lee, make a good trio of boars, and such sows as Charmar 2nd, weighing 750 pounds, and also a Toronto prizewinner, Nora, Rosamond, Daisy, Nacomas, Nimona and a number of other good ones, should produce pigs to suit the most fastidious purchaser. Mr. William Sharman, Souris, has been appointed by the Land Department of the C.P.R. to select the bulls and boars that they are purchasing in Manitoba and the N.-W. T. for free distribution. We understand from Mr. Sharman that, as far as possible, he will visit every known breeder who has stock for sale likely to suit the requirements of the Company. We also understand that the Railway Company have had an immense number of applications from farmers all over the country for these free sires. They have completed the allotment, however, and every applicant will be notified at once whether or not he is to receive one of these animals. Once this is done, it will be possible for the market to settle down, and those who are not supplied with bulls can then make up their minds to provide themselves with animals in the ordinary way. It is not the 80 bulls that the C. P. R. are giving away that has demoralized the breeders' market so much as the uncertainty as to who shall receive them. Hundreds of farmers in need of bulls have for the past few months been calculating on getting one of these free bulls, and the effect upon the market can readily be imagined. The railway authorities, however, announce that this will be the last lot distributed free.

NOTICES. In writing to advertisers, mention the "Farmer's Advocate." The name "Ideal Flax" is not applied to a grain, but is a fancy, strong note paper, put up in one-pound packages by the Ford Stationery Co., of Winnipeg. This up-to-date firm offer, postpaid, for 60c., 120 sheets of this paper with 100 good envelopes. Cream Separator Pamphlet. The Manitoba Cream Separator Co., Winnipeg, Man., Western Canada agents for the Mikado Cream Separators, state in their advertisement elsewhere in this issue that they introduced the "Mikado" into Manitoba two years ago, and now they have in operation in the Province 600 seven hundred machines. This Company issue a pamphlet giving full information regarding how to operate the "Mikado" and the experiences of many who use it. This pamphlet will be sent to anyone furnishing their name and address by dropping a post card.

DO YOU OWN A FIRST-CLASS COLLIE?

Get One Free.



Prizewinning Stock.

Send us the names of 10 new subscribers to the "ADVOCATE" and we will ship you, F. O. B., Winnipeg, a Collie Pup, from the kennels of Mr. W. J. Lumsden, of Hanlan, Man. These pups are all from prizewinning stock, and are eligible for registration, or, if you send us 11 New Subscriptions, we will have your pup registered and will furnish Certificate. If you want one Speak Quickly, for the number that can be supplied is limited. Remember, you get a high-class Collie, free of all cost, excepting express charges, which will be not more than \$1.00.

Feeds and Feeding.

The latest and most complete work on this all-important subject. Consists of upwards of 650 large pages. Every stock-raiser should have a copy. GIVEN FREE for securing three new subscribers to the FARMER'S ADVOCATE. Regular price \$2.00 per copy.

FARMER'S ADVOCATE, WINNIPEG, MANITOBA.

J. J. Caswell, of Saskatoon, Sask., writes us, under recent date, that he has now a herd of 18 Shorthorn females; that they have wintered well, and the demand for young bulls is good. Indian Warrior's Hero, by Indian Warrior, out of Vacuna 10th, is at the head of the herd. Mr. Richard Gibson, Delaware, Ont., informs us that in a letter recently received from his brother, Mr. A. S. Gibson, manager of the estate and herds of Mr. Philo L. Mills, Rudington, England, he states that he has sold to Mr. W. D. Flatt, of Hamilton, Ontario, 35 head of high-class Shorthorns, which will be included in his next importation. At last account Mr. Flatt had purchased 51 head in England and Scotland, so that his importation is likely to be on a pretty large scale. Mr. Martin, of Hope Farm, St. Jean Baptiste, Man., reports sale of the young Galloway bull, General Gatacre 15714, to Wm. McCarthy, of Maple Creek. He has also just brought up from the old-established herd of Mr. McCrea, of Guelph, Ont., a fine yearling bull, Drumlane of London last year, and promises to develop into an animal of great substance, and will be kept as a stock bull in the Hope Farm herd. Inquiries for Galloways keep coming in, and it is evident that the breed is growing in favor. The robe-making qualities of Galloways are being more appreciated, and this is sure to become more and more a point worthy of consideration.

MORE HIGH-CLASS SHORTHORNS FOR MANITOBA. Mr. James Yule, farm manager for Hon. Thos. Greenway, at Crystal City, Man., has recently returned from a business trip to Ontario with two carloads of high-class pure-bred stock. This shipment includes the first-prize herd of 5 female Shorthorns, bred and owned by the exhibitor, at the Toronto Industrial Exhibition, 1899, shown by W. E. Watt, Salem, Ont. In this lot is the red Matchless 18th, winner of 1st prize as a 3-year-old cow, and the sweepstakes as best female of the breed, any age, at the same show. Also, Mildred 6th, the 2nd-prize 3-year-old cow, a daughter of Royal Sailor; Matchless 11th, the 3rd-prize cow, by Barmpton Hero; Dora Stamford and Matchless 11th, the 2nd- and 3rd-prize 2-year-old heifers, both daughters of Imp. Royal Sailor; and Matchless 24th, 2nd-prize yearling heifer, sired by Mr. Greenway's champion bull, Judge. The shipment also includes the imported 2-year-old heifer, Marina, bought at W. D. Flatt's sale in December, and several other selections of Shorthorns, particulars of which have not reached us. Some fine Clyde-dale mares and about a score of choice Yorkshire and Berkshire sows and boars completed the consignment, which Mr. Yule considers the most valuable and of the highest degree of individual merit that has ever graced the stables at Prairie Home Farm; and that is saying a good deal.

NOTICES.

Keith & Co., Seed Store.—Mr. Alex. Keith, manager for Keith & Co., seedsmen, Winnipeg, has returned from an Eastern trip, and will be opening up his seed store shortly for this season's trade. Their handsome catalogue for 1900 will be ready to mail in a few days, and will be sent to anyone furnishing their name and address on a post card.

The Western Canadian Hall Insurance Co., of Wawanesa, Man., advertise for reliable and energetic agents. They also wish all farmers to investigate their plan before placing their hail insurance. Full information will be gladly furnished to anyone making application to the secretary, Mr. Joseph Cornell, Wawanesa, or any of their agents.

Auction Sale of Swine in Alberta.—The Department of Agriculture at Regina has received information from the Ontario Government to the effect that the purchase of the boars and sows to be offered for sale by public auction at various points along the Calgary and Edmonton Railway in Northern and Southern Alberta, under the auspices of the Territorial Government, is progressing rapidly. A very superior grade of animals are being procured, and it is anticipated that the shipment will reach Alberta towards the end of the present month, so that the sales may be held between the 1st and the 15th of April. The final dates and places of sale will be advertised as soon as it is possible to fix them definitely.

Insure Where You Will be Insured.
RAT PORTAGE, ONT.,
February 26th, 1900.
A. D. IRISH,
Agent Union Mutual Life Insurance Co.,
Grain Exchange Bldg., Winnipeg, Man.

Dear Sir,—I desire thankfully to acknowledge receipt of draft for \$913.47, in settlement of policy No. 105-140 on the life of my late brother, Ross McRitchie, who died Dec. 30th, 1899. My late brother took out this policy for \$1,000 in Sept., 1893, and only made three payments thereon, making no payments since 1895, and I assure you we were very much surprised when we learned that, through the benefit of the Maine non-forfeiture law, this policy was still kept in force. Allow me also to thank you and your Company for your promptness in settling this claim.

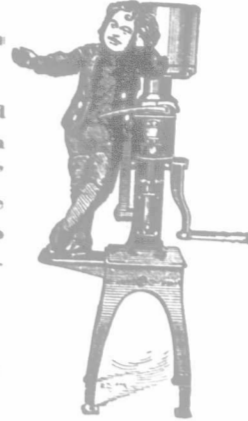
Wm. McRitchie, Administrator.
The Dominion Organ and Piano Co.—The close of 1899 marked one of the most satisfactory years in the history of the Dominion Organ and Piano Co.'s business at Bowmanville, Ontario, is the report which comes from the manager, Mr. Alexander, when one of the FARMER'S ADVOCATE staff called at their factory. The firm is well and favorably known throughout the Dominion of Canada, as well as abroad in Europe, where an immense trade is done in special lines. Since the business has been under the guidance of the present manager, Mr. Alexander, it has assumed solid, substantial proportions. The firm is fully alive to the requirements of the music world, and bend every energy in the perfect production of the various instruments made by them. While appearance in the outside finish is among their strong features, they by no means neglect those parts which go to make up the highest quality of tone production. Among their special features is action that is considered perfect, and a style of frame that is extremely durable and strain-resisting. This firm, too, make a specialty of bicycle rims, for which there is a demand that taxes capacity to produce. The Dominion rim is an acknowledged leader in appearance and durability.

J. M. Perkins' Seed Catalogue.—We are in receipt of Mr. J. M. Perkins' (Seedsman, 221 Market St., Winnipeg, Man.) Seed Catalogue for 1900. Mr. Perkins has been growing and importing seeds since 1885, and his handsome illustrated announcement gives a complete list of garden and field seeds and grains best suited to Western Canada. Flowers, bird seeds and notions of all kinds are kept in stock. Valuable hints for cultivation and a valuable table on quality of seed requisite to produce a given number of plants and sow an acre of ground are also given. We were informed by Mr. Perkins that the price of garden utensils and seeds will be higher this year. Owing to a general shrinkage in bean crop, there is a shortage of seed, and retail price for seed beans has advanced. Peas also have advanced in price. Mr. Perkins managed to secure a splendid large stock of Dutch sets, potato onions, and is prepared to cater to the increased requirements in this line, and supply as good as can be got anywhere. Already orders have been filled for timothy and Bromo grass seed and fodder corn. As a surplus of Bromo grass seed is now produced in the Province, this seed can be had cheaper than last year. A catalogue and information in reference to seeds or implements required by the gardener or farmer will be gladly furnished to anyone for the asking.

A Prosperous Concern.—During a recent visit to Brantford, a member of the FARMER'S ADVOCATE staff visited the Gould, Shapley & Muir Works, and reports having found their business in keeping with the activity of the times. Although a large portion of their output consists of their improved windmills, yet much attention is given to the manufacture of pumps, grinders, fanning mills, water tanks and watering basins for stock. The firm informed us that since roller bearings have given such entire satisfaction in their windmills they have gone extensively into the manufacture of roller bearings for factory and foundry equipments, which, by their use, lessens friction and consequently increases the power; also adds to the steadiness and running qualities of machinery so equipped. Another very important feature taken up by the firm since their removal to their new quarters is their galvanizing plant, which has sufficient capacity to treat a whole section of a large windmill at one operation. Their entire piping and connections being thus treated renders them impervious to the alkaline action of hard water so frequently met in many sections. The firm are making a neat and handy inside stock water basin in two sizes (single and double). This they also treat in their galvanizing bath, which insures proof from rust, a feature which will be readily appreciated by practical stock owners. The firm also manufacture all sorts of modern beekeeper's supplies.

"ALPHA BABY" SEPARATOR

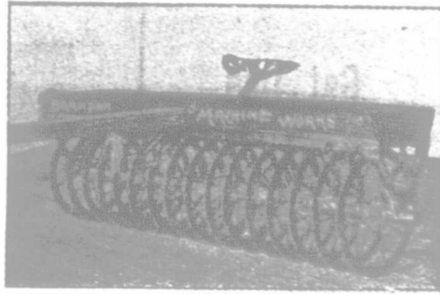
The De Laval Cream Separators continue to take the lead everywhere. No one who tries them and compares them with the cheap imitations (and they are all imitating the "Alpha" as much as they dare) can remain in doubt as to which is the best, the closest skimmer, and the strongest constructed. No use taking anyone's word for it. Try the machines and convince yourselves.



Send for circulars and particulars re prices to

The Canadian Dairy Supply Company,
236 KING ST., WINNIPEG, MAN.

**Sub-Surface Packer
and Davidson's Grain Pickler.**



Manufactured by
THE BRANDON MACHINE WORKS CO.
BRANDON, MAN.

"DOMINION" Pianos and Organs



HAVE been before the public for thirty years, and are in use to-day in 60,000 Canadian homes. If you want a piano or organ that is above criticism, get a "DOMINION." For catalogues address—



THE "DOMINION" ORGAN AND PIANO CO., Limited,
BOWMANVILLE, ONT.

David Maxwell & Sons,
ST. MARY'S, ONT.

**STEEL ROLLER BEARINGS
IMPROVED STEEL FRAME**

And combined Foot and Lever Drive, improvements you will not find on other churns. Do you want the best? Then don't purchase until you see it. Sold by the leading wholesale houses in the Dominion.

CAPACITY.	
No.	Churns from
0	6 gal. to 3 gal. cream.
1	10 " " " " " "
2	15 " " " " " "
3	20 " " " " " "
4	26 " " " " " "
5	30 " " " " " "
6	40 " " " " " "



CANADIAN DAIRY SUPPLY COMPANY,
236 KING ST., WINNIPEG, MAN.
Agents Manitoba and the Territories.

PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP.

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

Mr. H. F. Brown, Minneapolis, Minn., will hold his 21st annual Shorthorn sale on March 26th, 1900.

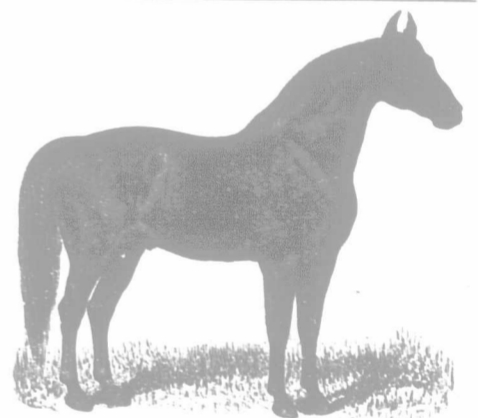
We present to our readers in this issue an illustration of the Holstein-Friesian cow, Belle Korndyke 13913, foundation cow of the Korndyke family owned by Henry Stevens & Sons, Lacona, Oswego Co., N. Y. This cow was officially tested by a representative of Cornell University, under the rules and regulations of the Holstein-Friesian Association of America, and won first prize for the cow making the most butter of any cow officially tested in 1898-9. The results of this test show that her milk during the seven days of her official test averaged over 4 per cent. butter-fat. Her production of 25.77 lbs. butter in 7 days has been equaled by only two cows, viz., Netherland Hengerveld and De Kol 2nd, which are also members of the Brookside herd of Messrs. Stevens.

THE SCOTTISH BULL SALES.

At the annual show and sale of Shorthorn bulls at Inverness, in the last week in February, 72 bulls made an average price of £20 5s. 2d. The highest average by a single breeder was made by the selection from the herd of Lord Lovat, whose 3 bulls entered averaged £126. This result was largely due to the high price of 230 guineas received for his roan bull calf, Dewar, calved February 18th, 1899. He was got by Royal Star (71502), and out of Rose of Underley. He won 1st prize in his class, and was bought by Mr. McLennan for Buenos Ayres. The bidding on the second-prize calf did not come up to expectations, and he was withdrawn. The fifth-prize calf was not sold, and the sixth-prize winner, Fitzallan, brought 100 guineas. He was shown by Mr. Macrae, of Clunes, was sired by Scotland's Fame (bred by Mr. Duthie), and out of Flower Girl, by Gold Dust. The buyer was Mr. D. C. Bruce, of Byres.

At the Perth Show and sale, 199 Shorthorn bulls averaged £28 9s. 9d., Lord Lovat again making the highest average for his contribution of 3 bulls, and the highest price of the sale with his first-prize roan bull calf, Mikado, born after March 1st, 1899, sired by Royal Star, and out of Adeline Princess. He brought 240 guineas, and fell to the bid of Mr. Miller, Buenos Ayres. The second-prize bull in the same class sold for 78 guineas, the third-prize one for 94 guineas, and the fifth winner for 100 guineas.

At the Aberdeen Show and sale 164 bulls averaged £21 16s. 5d. The highest prices were 125 guineas for Mr. Crombie's fourth-prize bull in the 2-year-old class, Kitchener, bought by Mr. Reid, Crombybank, and Mrs. Law's first-prize bull in the same class, Lancelot, by the Duthie-bred Proud Star, which went at 108 guineas to Sir Arthur Grant, of Money-musk. Mr. Durno's contribution of 5 bulls made the highest average, £57. Mrs. Law's New Keig, came second, her 5 making £40 each; Money-musk and Heatherwick contingents coming next, at £33 12s. and £32, respectively.



KNIGHT OF THE VALE.

Coach Horse Stallion for Sale

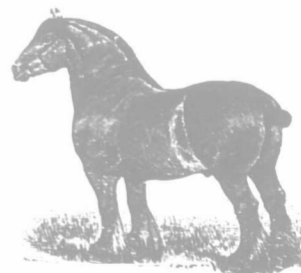
The celebrated Yorkshire Coach stallion, Knight of the Vale, Nos. 1799 and 988.

KNITTEL BROTHERS

Desire to sell this horse, with a view to replacing him, as he has stood for service in the vicinity of Boissevain for six seasons. For particulars apply,

P. O. Box 148, Boissevain, Manitoba.

J. E. SMITH,



IMPORTER AND BREEDER.

HAS FOR SALE—

CLYDESDALES—Bargains in Stallions and Mares, all ages.
SHORTHORNS—Choice Bulls, Cows and Heifers.

HEREFORDS—17 Heifers.

All animals registered in their respective herd books. Everything for sale except the stock bulls, Lord Stanley 2nd and Golden Measure. If notified, visitors will be met at the station. Come and see the stock. Satisfaction guaranteed. Write or wire

J. E. SMITH,
Smithfield Ave., BRANDON.

P. O. Box 274. Telephone 4.

PLEASE MENTION FARMER'S ADVOCATE.

NOTICES.

Canadian Engines in Russia.—Geo. White & Sons, London, Ont., are making a shipment of two caploads of portable and stationary engines and boilers to St. Petersburg, Russia. They are to be used for threshing and brick-making. All the bricks in that country previous to last year have been made by hand. This order has been received without any solicitation by agents or otherwise.

Ripley Hardware Co., Grafton, Ill.: Gentlemen.—The more I use your cooker, the more I am pleased with it. We have no trouble heating our hog-pen, 18 by 80 feet, and at the same time heating water for over 100 pigs. I purchased my cooker at the Springfield Fair, of your agent, in the fall of 1898. I can heartily recommend your cooker to any person in need of an article of this kind, as it will do all and more than you claim for it.—J. E. BRETHOUR, Breeder (Oak Lodge) Yorkshire hogs. Burford, Ont., Feb. 3, 1900.

Persic Sheep Dip and Animal Wash, manufactured by the Pickhardt-Renfrew Co., Stouffville, Ont., is a non-poisonous insecticide that does effectual work in improving the skins and coats of animals treated by it. It is a great healer of wounds and a sure cure for scab if properly applied, besides being a most effective louse and tick destroyer. Among the very favorable testimonials for the dip received by the company are those of Messrs. Jas. I. Davidson, Balsam; G. A. Brodie, Bethesda; P. G. Button, V. S., Stouffville; and Robt. Miller, Stouffville, Ont.

USED WITH SUCCESS.

CHADBOURN, N. C., Nov. 15, 1899.
Please send me a bottle of GOMBAULT'S CAUSTIC BALSAM. Enclosed is \$1.50. I used one bottle of it when I lived in Wayne Co., Ohio, and saved a valuable horse that had got strained, causing the sheath to swell up as large as a quart measure. I happened to see the account of a similar case in a farm journal, in which they used your remedy with success, so I got a bottle and made one application according to directions, and as soon as it broke and run I used it to cleanse the sore by mixing it with oil, making it $\frac{1}{2}$ oil, and used a feather to put it in the sore, and it cured the horse so that no one could tell that anything was ever wrong with him. I have used it for other sores and wounds with like success.

J. S. SHAVER.

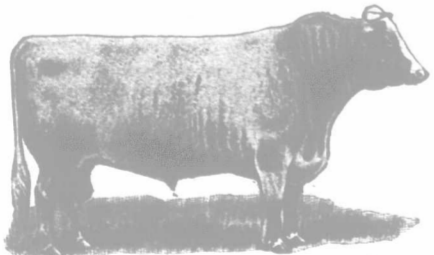
Farm Seeds.—Of the many follies to which men are addicted, there are few greater than that of buying cheap seeds for the sake of economy. The fact is, seeds that are good enough to produce maximum clean crops cannot be produced at a low price. Cheap seeds, according to the customary usage of that term, are in most cases expensive to the buyer, as it is the crop return that settles the value of the seed planted. Nor is it enough to obtain plump, clean seed, but it is also important to plant the varieties that give maximum returns in quantity and quality of crop. This is especially true in roots and vegetables, and in no other crop more pronounced than in sugar beets, in the varieties of which there is such a vast difference in feeding quality and ease of harvesting. Look up Steel, Briggs Seed Company's advertisement in this issue and send to their offices in Toronto for their 1900 112-page illustrated catalogue.

Prairie State Incubators.—The Prairie State Incubator Company's Works, at Homer City, Pa., are very busy at present, indicating an unprecedented activity in chicken-breeding and chicken-raising. Their sales of machines in November and December were 3,126, in January 2,227, and it was expected February sales would reach 3,000 incubators. Among the sales is a consignment of 55 machines to H. S. Karsendick, New Orleans, who already has one of the best poultry farms in the world. The 55 new incubators will add to the big flock 16,000 chickens every third week during the hatching season. In Georgia, State Senator White and G. M. Clark & Co., at Kensington, have each bought ten large-capacity machines. Readers interested should write the Prairie State Incubator Co., Homer City, Pa., for their 128-page catalogue, containing 30 colored plates, many photo-engravings and a full description of new appliances.

"PRAIRIE HOME STOCK FARM."

Bulls at head of herd:

Judge = 23419 = and Imp. Jubilee = 28858 =.



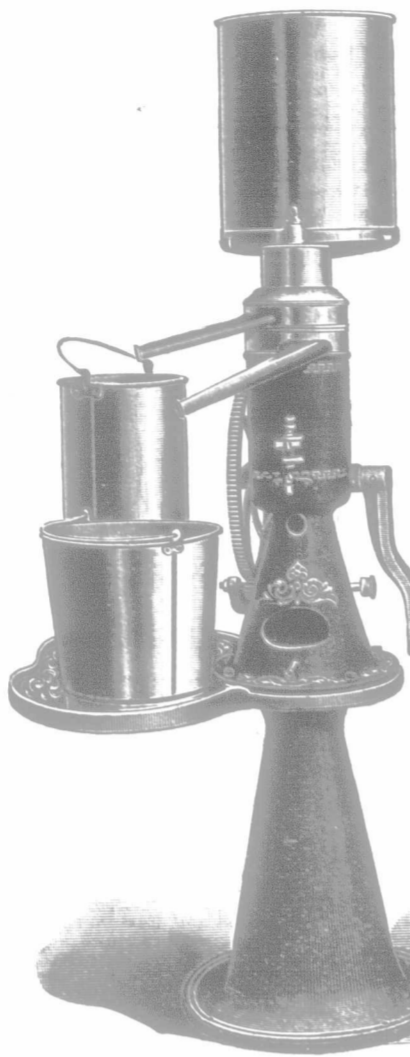
Yorkshire and Berkshire Swine,
Glydesdale Stallions and
Shropshire Sheep,
Shorthorn and Ayrshire Cattle.

T. JAMES GREENWAY, Proprietor.
JAMES YULE, Manager, Crystal City.

Shorthorn Cows and Heifers for Sale
Of good breeding. Prices right.

GEORGE RANKIN, HAMIOTA, MAN.
"Melrose Stock Farm."

Shorthorns 4 Heifers and 2 Young Bulls.
Choice ones of Royal Sailor breeding, also Admiral, their stock bull. Also imported **CLYDESDALE STALLION.**
A. & J. CHADBOURN, Ralphton, Man.



**MIKADO
Cream Separators
700**

TWO years ago we introduced this Wonderful Cream and Money Saver to the farmers and dairymen of Manitoba, with such success that there are now 700 of them in operation in this Province alone, to say nothing of Assiniboia, Alberta, Saskatchewan, and British Columbia. The proof of the pudding is in the eating, and farmers now know that with a herd of 10 cows it will pay to sell at least two and buy a Mikado, as he will have more butter and better calves than with the extra cows and either deep or shallow setting. A farmer from the Birtle district, who used a Mikado last year, told us that his calves were so good that he got the same price for them as did the farmers who let their calves run with the cows, besides which he got nearly 20c. per pound for his season's make of butter. This man has about cleared the cost of his machine in one year.

For the reason that there are numerous inferior separators offered, some of them at very low prices, we would advise purchasers to test any separator they may think of buying: first for clean skimming, second for ease of running, and third for the time it takes to clean up and get ready for "next time." In all these points the Mikado has never been equalled. Write us for pamphlet.

**THE MANITOBA
Cream Separator Co.
WINNIPEG, MAN.**

MENTION THIS PAPER.

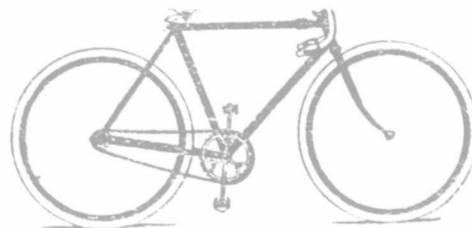
"Pasteur" Black-Leg Vaccine

THE original and genuine preventive vaccine remedy for Blackleg. Officially endorsed in all the cattle-raising States. Successfully used upon 1,500,000 head in the U. S. A. during the last 4 years. Write for official endorsements and testimonials from the largest and most prominent stock-raisers of the country. "Single" treatment vaccine for ordinary stock; "Double" treatment vaccine for choice herds. Registered "BLACKLEGINE" Trade-Mark. "Pasteur" single treatment Blackleg Vaccine ready for use (no set of instruments required). No. 1 (10 head), \$1.50; No. 2 (20 head), \$2.50; No. 3 (50 head), \$6. Easily applied. No experience necessary.

**Pasteur Vaccine Co.,
65 Fifth Avenue, CHICAGO.**

**W. J. Mitchell & Co.,
WINNIPEG, MAN.**

**Sporting
Goods.**



"Rambler" Bicycles.

FISHING TACKLE, FOLDING BATHS, TRAP SHOOTERS' SUPPLIES,
HAMMOCKS, CAMP BEDS AND CHAIRS, FOOTBALLS, TENTS, FISH NETS, BICYCLE SUNDRIES.

THE HINGSTON SMITH ARMS CO., WINNIPEG, MAN.

Maw's Poultry Farm, Winnipeg.

BREEDS BEST STRAINS OF UTILITY BREEDS.

Thoroughly acclimatized and best adapted to our climate. Have for sale stock and eggs of Mammoth Bronze Turkeys, Toulouse Geese, Imperial Deep-keeled Pekin Ducks, English Rouen Ducks, White Wyandottes, White Leghorns, Silver-Laced Wyandottes, Light Brahmans, Hero Strain Plymouth Rocks. Homing Pigeons from best imported Belgian stock, same as used by the army for carrying messages from beleaguered cities. Large illustrated catalogue, giving list of prizes and medals won at all leading exhibitions, with prices, description and pedigree of stock mailed free on receipt of address. I am North-west agent for the celebrated **CYPHERS INCUBATOR AND BROODER**. Mr. Cyphers is the discoverer and patentee of the diffusive principle in artificial incubation, thus saving the lives of thousands of chicks that die in the shell in ordinary incubators. It is asbestos-coated and perfectly fireproof. Supplies and regulates its own moisture, and so simple a child can operate it with success. Write for particulars.

YOUR ATTENTION

Our No. 1 Collection contains 33 full sized packets of the best Vegetable Seeds, sufficient to furnish vegetables throughout the year, and one packet of Wild-Garden Flower Seeds, which we will send prepaid to any address in the Dominion of Canada or United States for the extremely low price of \$1.

Our No. 2 Collection contains 16 packets of Vegetable Seeds and one packet Wild Garden Flower Seed Mixture. Prepaid for 50 cents.

Our No. 3 Collection contains 8 packets of Vegetable Seeds for 25c.

Our No. 4 Collection contains 40 packets of Flower Seeds for \$1.

Our No. 5 Collection contains 20 packets of Flower Seeds for 50c.

Our No. 6 Collection contains 10 packets of Flower Seeds for 25c.

All postpaid on receipt of price. For varieties in above collections see our Handsome Illustrated Catalogue containing other great offers. Mailed free to any address.

R. ALSTON, Royal Greenhouse & Seed Establishment, WINNIPEG, MAN

PLEASE MENTION FARMER'S ADVOCATE.

**Marchmont Stock Farm,
MIDDLECHURCH, MAN.**

Scotch-bred Shorthorn Cattle



7 YEARLING BULLS. 10 BULL CALVES.

W. S. LISTER, Middlechurch, Man.

For Sale:

1 3-year-old Shorthorn bull, Strathallan Hero = 26357 =.
1 yearling bull, Pioneer of Gloster = 31959 =.
3 bull calves: Strathallan Pioneer = 31960 =, Boharm Chief = 31958 =, and another got by Duke of Gloster = 24263 = suitable for the range.
FRED W. GREEN, MOOSE JAW, ASSA.
3-f-m

**4 Young (Golden Royal - 24402 -)
SHORTHORN BULLS.**

Good size, grand feeders, in good growing order, and from choicely-bred dams.

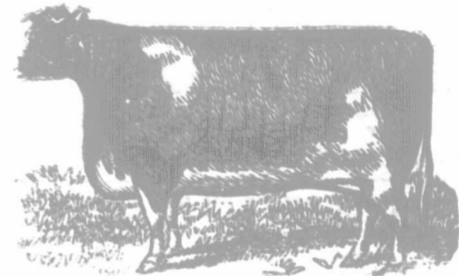
J. H. KINNEAR, SOURIS, MAN.

**THORNDALE STOCK FARM,
MANITOU.**

JOHN S. ROBSON, PROP.

**30 Shorthorn Bulls and 30 Heifers
FOR SALE.**

Write for particulars.



PIONEER HERD OF SHORTHORNS
Won the gold medal at the last Winnipeg Industrial Exhibition; also first for bull and two of his get, first for cow and two of her progeny, and numerous prizes for individuals. They were bred right here, and I can usually show a few generations of their ancestors, and am always pleased to show them.

WALTER LYNCH, Westbourne, Man.
P. O., Railway and Telegraph.

**D. FRASER & SONS,
EMERSON, MAN.**

Breeders and importers of Durham Cattle, Shropshire and Southdown Sheep, and Pure-bred Poland-China Pigs a specialty. Young stock for sale.

THREE SHORTHORN BULLS FOR SALE

AT MODERATE PRICES,
from 10 to 13 months old, with good Scotch pedigrees and individual merit. Write, or, better, call.

**J. G. Washington,
Elysee Stock Farm,
3-f-m NINGA, MAN.**

ELMWOOD STOCK FARM.

Scotch Shorthorns for Sale:

Three grand young bulls, all got by imported Scotch sires, and out of extra good cows, by imported bulls.

**H. O. AYEARST,
MIDDLECHURCH, MAN.**

**SHORTHORNS, YORKSHIRES AND
TAMWORTHS.**

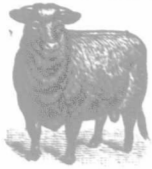
Stock of all ages and both sexes, at prices according to quality. Auction sales of farm stock undertaken. Improved farm and wild lands for sale in the Winnipeg district. Correspondence solicited.

**W. G. STYLES,
Sec. 12-13-1. West, Rosser P. O., C. P. R.**

Landazer Stock Farm.

Shorthorns Choice young bulls and females, Cotswolds of top-notch excellence. Prices moderate.
**D. Hysop & Sons,
492, Killarney, Man.**

SHORTHORNS



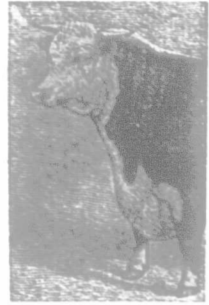
Masterpiece -23750- by imp. Grand Sweep, out of an Indian Chief dam, at head of herd. Imp. Large Yorkshires for sale.

JAMES BRAY, LONGBURN, MAN.

HEREFORDS

I keep only the best. For stock of all ages. Write or call. WM. SHARMAN, -m

"Ridgewood Stock Farm," SOURIS, MAN.



POPLAR GROVE HEREFORDS THE LARGEST HERD IN CANADA.

STOCK OF ALL AGES FOR SALE.

J. E. MARPLES, DELEAU, MAN.

Galloways for Sale

Six bull calves for sale at right prices. Also heifers and cows at reasonable figures. Stock all well pedigreed and first-class quality.

Apply to T. M. CAMPBELL, Manager.

Hope Farm, St. Jean Baptiste, Manitoba.



6 young bulls, by Mani and Robbie O'Day, out of some of our best cows.

9 Berkshire sows of choice quality and breeding, from 5 months to 3 years. The standard of our Yorkshire herd is steadily improving. Our stock boars, the sweepstakes at last Industrial.

the other recently imported from England, are grand specimens of the breed. A choice lot of sows ready for breeding. About 50 B. P. Rock Cockerels, strong, healthy birds, of great size and good markings. All at reasonable prices.

ANDREW GRAHAM, Forest Home Farm, Pomeroy, Man. Roland, N. P. R.; Carman, C. P. R.

STEEL BROS., Glenboro, Manitoba,

Choice young stock for sale. 21-23-m

TWO JERSEY BULLS FOR SALE

Of high-class breeding. Prices right. Write to William Murray, Dugald, Man.

JERSEY BULLS

2 high-class Jersey Bulls for sale. Also farm lands. H. R. KEYES, 43-m Midway, Man.

Bulls. Bulls. Bulls.

I WILL undertake commissions to purchase pure-bred bulls of any breed for ranchmen, and will attend to their careful shipment, on the best terms obtainable. Correspondence solicited.

WM. SHARMAN, RIDGEWOOD FARM, SOURIS, MAN. References -Merchants' Bank, Farmer's Advocate, Nor-West Farmer, Pure-bred Cattle Breeders' Association. -m

J. A. S. MAGMILLAN

IMPORTER OF Clydesdales, Shires, Hackneys.

STALLIONS: Has a few choice ones for sale. Also Clydesdale mares and fillies.



SHROPSHIRE SHEEP,

Rams and Ewes, from the most fashionable, imported blood. Inquiries invited. For full particulars, apply to Box 483, Brandon, Manitoba.

LEICESTERS!

Young rams and ewes for sale. Write to A. D. GAMLEY, Box 192, BRANDON, MANITOBA.

GOSSIP.

The list of British exhibitions—200 in number—for 1900 has been issued. It is expected that they will to some extent be prejudicially affected by the war. The International show of cattle, sheep, and pigs, at Paris, is from June 7 to 21, and the English Royal, at York, June 18 to 22.

Mr. S. J. Pearson & Son, Meadowvale, Ont., in writing us regarding a change of advertisement, say that they have three very fine young Shorthorn bulls and some nice yearling and two-year-old heifers they can spare, also a lot of the best Berkshires they have ever raised. Among winter sales were a show sow for Manitoba and a boar to go to Calgary, N.-W. T. Watch Messrs. Pearson's offerings.

The Donaldson liner, Amarynthia, which recently sailed from the Clyde, had on board a valuable shipment of Ayrshire cattle for Canada. The animals belong to Mr. Robert Reford, Tredonnoch Farm, St. Annes de Bellevue, Quebec, and have been selected with considerable care and skill in the south-west of Scotland by his manager, Mr. Boden. In all, sixteen head were purchased, but nineteen head were shipped, as three of the cows calved before they left Glasgow. At the head of the consignment was the bull, Lord Dudley of Drumside 3945, which was purchased from Mr. James Walker, Kirkmuir, Stewarton.

The prize list for the Great International Live Stock Exposition in Chicago next December is being arranged on an exceedingly liberal scale. Over \$30,000 will be offered in prizes by the various stock-breeders' associations, in addition to the regular list, which, it may be presumed, will be on broad lines. The classification in cattle has a section for 3-year cow or bull, these will have to show with aged animals. There will be senior and junior championship prizes in both the male and female divisions. The senior herd prizes are graded as to ages, and the herd must consist of a bull, 2 years or over; cow, 3 years or over; heifer, 2 years and under 3; heifer, 1 year and under 2; and heifer under 1 year. Breeders' young herd consists of bull under 2 years; two heifers, 1 and under 2 years; and two heifers under 1 year. All, except the bull, to be bred by the exhibitor. There are prizes for the get of a sire, 4 animals, either sex, any age, and for produce of a cow, 2 animals, either sex, any age. The classification for sheep provides for showing ewes singly, instead of in pairs, championships for ram and for ewe, any age, in each breed. The flock prize is for ram, any age; ewe, 2 years or over; ewe, 1 and under 2 years, and ewe under a year. There are prizes for four lambs, either-sex, by one sire.

Mr. J. W. Barnett, manager for W. C. Edwards & Co., Rockland, Ont., writes:—"Our late sales of Shorthorns have been: Mina King to Gorman & Lynch, Douglas, Ont.; bull Scottish Duke, to Mr. Albert Hagar, Plantagenet, Ont.; bull, Duke of Bellevue, to Mr. Arch. Deman, Ashton, Ont.; also bull out of Bessie of Rockland, and got by Scottish Knight, to Mr. John Gamble, Cumberland, Ont.; to Mr. N. F. Wilson, Cumberland, as foundation for a herd; the imp. cow, Orinda 3rd, with her ten-months heifer calf, Orinda 5th, also the two home-bred heifers, Village Beauty and Mayflower 20th. Mr. Wilson is making a good start and will make his mark as a Shorthorn breeder. To another new beginner, M'Neil Robertson, Arnprior, the two-year-old heifer Bellebird, with her nice heifer calf at foot got by Marquis of Zenda (imp.). Marquis of Zenda is doing well, and his calves are coming all that we could wish for. We have a few very good young bulls yet on hand, also a few yearling and two-year-old heifers. The latter all safe with calf to Marquis of Zenda. Our new importation are nicely settled in their new quarters and are doing well; a number of them are close to the calving. Since getting the young bulls home we can spare our old stock bull, Scottish Duke (imp.), has left us some good calves and we don't like to part with him, but we cannot keep them all."

ANOTHER CHAMPION SHORTHORN SOLD. We learn that Capt. T. E. Robson, M. P. P., has sold to Mr. C. E. Ladd, of Oregon, U. S., the famous bull, Topsmen -1787- winner of the championship in 1890 at the four great Canadian exhibitions held at Winnipeg, Toronto, London, and Ottawa. Topsmen has made a great record as a prizewinner without protest, and holds a very prominent place in "Canada's Ideal."

LIVE STOCK SHOW AT PARIS EXPOSITION. The International Show of cattle, sheep and swine in connection with the Paris Exhibition was to have been held, according to dates fixed some time ago, on June 21st to July 2nd, but owing to these dates clashing with the English Royal, to be held at York, June 18th to 22nd, the Paris authorities have seen fit to fix their dates for showing live stock from June 7th to 21st. The judging will commence on June 9th and close with auction sales on June 18th, the days before and after the dates named being for the reception and removal of the animals.

EGGS FOR HATCHING.

From high-class G. Wyandottes, Langshans and Indian Games. Price, \$2.00 per 15 eggs.

FOR SALE:

A few choice P. Rocks, L. Brahmas, Pekin ducks, Pearl guineas, fancy pigeons, and Belgian hares. S. LING & CO., FORT RIDGE POULTRY YARDS, Winnipeg, Man.

PLYMOUTH ROCKS

HIGH-CLASS STOCK. -m

WILLIAM LAUGHLAND, - Hartney, Man.

J. C. & A. W. FLEMING,

Rosbank Stock Farm, Pilot Mound, Man.

Breeders of Island Chickens and Cotswold sheep of choice quality. Also select seed potatoes of eighty varieties. Write for catalogue. -m

BLACK MINORCAS.

For sale by Mr. J. C. & A. W. Fleming, Rosbank Stock Farm, Pilot Mound, Man.

A. M. ROBERTSON, KEEWATIN, ONT.

Norwood Bridge Poultry Yards,

Winnipeg, Man. Breeder of high-class S. C. B. Minorcas, Houdans, and White Wyandottes; also Bronze turkeys, Pekin Bantams, Pekin ducks. Young stock for sale of all varieties. Write or call.

Poultry Supplies.

White Plymouth Rocks for sale, and eggs. First prize on breeding pen, first on hen, second on cock, at Winnipeg Show. Ask for catalogue. -m

R. DOLBEAR, 1238 Main St., Winnipeg, Man.

IT'S A WINNER.

So is our Ideal Flax note-paper and envelopes

120 sheets of paper with 100 envelopes, mailed for 60 cts.

This is only one of the many snaps we offer. We carry a full stock of office, school, municipal supplies. Write us for catalogue. Our store is "value."

The FORD STATIONERY CO.,

One door north of P. O.

P. O. Box 1273. 407 Main St., Winnipeg.

The Union Mutual Life In. Co.,

of Portland, Maine,

CLOSED its fiftieth anniversary on Dec. 31st, 1899, with 29,790 policies and \$46,054,820 in insurance in force, being an increase in round numbers for the year of 3,000 and \$4,000,000.00 in insurance. The income for the year was \$1,833,919.16; surplus at a 4% basis is \$1,013,000.00.

This Company issues all up-to-date policies, and all are protected by the benefits of the Maine Non-Forfeiture Law. The Company's office for Manitoba and Territories is in the Grain Exchange Building, Winnipeg. Room for a few more good active agents.

ADDRESS—A. D. IRISH, Manager.

AGENTS WANTED for the Gem Sickle

and Tool Grinder, attachment. A necessity to every farmer. D. M. McMILLAN, Brandon, Man., sole agent for Manitoba and Eastern Assiniboia. -4-x-m

Brome Grass Seed.

I have a quantity of good Brome Grass Seed for sale. Farmers requiring any should write me for price early, as it will soon go.

ELMER SHAW, Kentis, Assa.

NATIVE RYE GRASS.

I have a quantity of choice Native Rye Grass (Agropyrum tenerum) seed for sale. F. E. WENMAN, Spruce Lawn Farm, Souris, Man.

STAY AT

HOTEL LELAND

The Leading Hotel of the West.

ALL MODERN CONVENIENCES. RATES, \$2 TO \$4 PER DAY. -m

W. D. DOUGLAS, Prop., Winnipeg, Man.

DR. BARNARDO'S HOME.

The managers of these institutions invite applications from farmers and others for boys and youths, who are being sent out periodically, after careful training in English homes. The older boys remain for a period of one year at the Farm Home at Russel, during which time they receive practical instruction in general farm work before being placed in situations. Boys from eleven to thirteen are placed from the distributing home in Winnipeg. Applications for younger boys should be addressed to the Resident Superintendent, 115 Pacific Avenue, Winnipeg, or P. O. Box 370, and for older boys, possessing experience in farm work, to Manager, Dr. Barnardo's Farm Home, Barnardo, Man.

Very Best

PLACE FOR THE FARMER'S SON TO SPEND THE WINTER MONTHS IS AT THE

Winnipeg Business College.

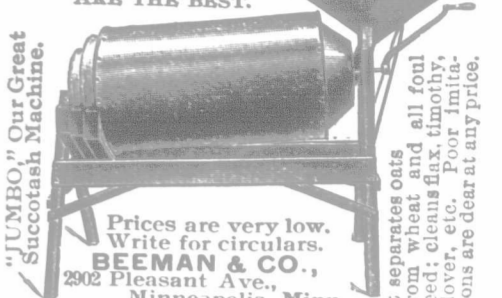
WRITE FOR HANDSOME CATALOGUE (FREE).

G. W. DONALD, SECRETARY.

Agents

We have the authentic life of the great evangelist Moody. Large book, liberally illustrated. Great seller. Prospectus free. BRADLEY-GARRETSON CO., Limited, Brantford.

BEEMAN GRAIN CLEANERS ARE THE BEST.



Prices are very low. Write for circulars. BEEMAN & CO., 2302 Pleasant Ave., Minneapolis, Minn.

MOLINE PLOW CO.



The Good Enough Sulky Plow

CAN NOT BE BEAT.

The Price will please you and its work will surprise you!

Write for illustrated circular. It will pay you.

MINNESOTA MOLINE PLOW CO.

H. F. Anderson, Agent, Winnipeg, Man.

Buttermakers,

A Word!

Impure salt spoils good butter; Windsor salt makes good butter better; makes it, keeps it sweet; puts a higher price on it. Try it.

The Windsor Salt Company

(LIMITED), WINDSOR, ONTARIO.

FLEMING'S LUMP JAW CURE



LUMP JAW QUICKLY CURED.

A case of lump jaw in your herd means immediate loss; it may mean the infection of the rest of your herd; it may result in the distribution of the germs all over your pastures. All loss and danger can be positively averted by prompt use of

Fleming's Lump Jaw Cure

The only radical cure known. Is endorsed by the most prominent ranchers and shippers of the continent. Easy to use. Is applied externally. One to three applications cure. Leaves jaw sound and smooth. Cannot harm in any way. One bottle usually cures two or three ordinary or one severe case. Price \$2.00. Sold by druggists. Can be sent anywhere by mail.

Money cheerfully refunded if the remedy ever fails.

FREE:—Some important reports and an illustrated treatise on Lump Jaw. Write for them.

FLEMING BROS., Chemists, St. George, Ont.

THERE is evidence already of the immense activity that will prevail in the Lardian this coming summer.

I have some absolutely safe stocks in properties that I can recommend. If you would like to invest, send for my illustrated booklet. Only first-class stocks handled, on

A. E. WELCH, Mines & Mining, London, Ont.

PLEASE MENTION FARMER'S ADVOCATE.

NOTICES.

Ear Tags.—We were surprised to learn from Mr. R. W. James, at Bowmanville, Ont., of the extent to which his business of making ear tags has increased during the past twelve months. The gentleman has been brought in close touch during that time with many of the largest flock and herd owners in the country, who have applied to him for this class of supplies, and the fact that their second and further orders came in proof of Mr. James' ability to execute an order on short notice in a satisfactory manner. He informed us that he is in a position to furnish ear punches to correspond with his labels at a moderate cost.

National Cream Separators.—Upon visiting the Raymond Separator Co.'s office, at Guelph, Ont., a short time ago, that firm gave us the assurance of the benefit they have derived through the FARMER'S ADVOCATE advertising by ordering a continuance of their ad. throughout the entire year. They claim that they are doing business to-day from ocean to ocean. The popularity their machine is meeting has more than taxed the capacity of their plant, and they are negotiating with the City of Guelph for a site to build a large factory for the extensive manufacture of National Cream Separators. We are delighted to learn that their labors are bringing them reward, and we know no reason why Canadian energy and capital, properly conducted, should not cope with that of any other nation under the sun. The firm have in their employ only expert machinists, who have been educated along this line of work, and are able to turn out to-day a machine perfect in detail from the ground up, with the greatest capacity possible for the labor to run it. See their advertisement and send for a catalogue.

Thorold Cement Works.—During a call at the Thorold Cement Works at Thorold, Ont., Mr. Battle informed the writer that the grinding of their cement had been for fifty years under the constant personal supervision of one man, and that the grinding was carried out as perfectly as machinery and human skill could accomplish. The firm report an exceedingly active trade in cement within the past two years, and find it necessary to increase their output to keep pace with the growing demand. They are able to report a very large demand having sprung up in different sections of this and other Provinces, accountable, no doubt, from the high quality of their cement, combined with their prompt and gentlemanly manner of conducting their business, aided by the assistance of their experts, who are educating and lending their aid to intending builders. The firm report that their Mr. Hager is in much demand, and from the highly complimentary testimonials in their possession from their many influential patrons, it is gratifying to see a business so widespread as theirs meeting with such universal success.

Where Bell Pianos and Organs are Made.—Approaching Guelph, Ont., on the Grand Trunk Railway, from either east or west, the first important establishment that presents itself to the view of the casual observer is the large manufacturing establishment and business offices of the Bell Organ and Piano Co. It was in 1864 this present business was established in a very small way, but the foundation was right, and the structure of the concern was just as substantial, as is proved by the fact that weekly shipments are now made to Europe, South Africa, South America, New Zealand, and Australia, and constant consignments to every part of our own Dominion. The demand for Bell instruments has grown out of their genuine merits. Their construction is based on accepted scientific lines, which, with the selection of the choicest materials, produces a perfectly balanced harmony in every part of the instrument. The Company is always pleased to have its friends visit the factories and inspect every portion of the work. There are no mysteries about piano building, and every detail will be cheerfully explained. Hundreds of different things are embodied in a piano, and the Bell Co. makes it an absolute law that every item, no matter how small or trifling, shall be of the very best. Their piano and organ catalogues are always ready for distribution to those who write for them. See their advertisement in this issue.

Queenston Cement Works.—While in the vicinity of Niagara Falls, we took a run out to the Queenston Cement Works, and there found Messrs. Usher & Son concentrating their energies along the line of cement production and building plans. The former, through its extensive introduction, has led up to an endless enquiry for assistance in the latter. Mr. Usher may be to-day looked upon as an expert along the line of architecture, having placed his services at the command of his numerous patrons, who fully appreciate and avail themselves of them. Sanitation has always occurred to Mr. Usher as of the greater importance, and from his practical turn of mind has given much attention to the matter of ventilation, and based his theory upon demonstrated mechanical facts, the details of which have been previously explained in the FARMER'S ADVOCATE. Mr. Usher built a new house last year with cement from the ground to the eaves, including partitions, and it would be hard to find a more compact and comfortable structure in the country, the cost of which was low, indeed, as compared with other materials. The appointments, from a point of convenience, are complete in detail, while the interior finish is in keeping with their surroundings. The firm have enlarged the farming interests in the purchase of some 300 or 400 acres of good stock land adjoining their cement plant, and intend erecting a barn with stabling accommodation for 120 pure-bred Shorthorn cattle; in fact, the firm have made a commencement along this line in the purchase of 20 or more Shorthorn females of various ages. In looking over their pedigrees we noticed that they had collected representatives of the Missies, Bright Eye, Indian Chief, and Nonpareils, tracing through different branches of the strongly-bred strains. Mr. Usher instructed us to state that he is open to exchange cement for good Shorthorns at any time, and parties having such for disposal who contemplate building within the near future will be able to make a mutual exchange. We may therefore reasonably look forward to Queenston Heights being the home of a choice and important herd of Shorthorns, if we can estimate by Mr. Usher's perseverance, hustle and business capacity.

DALGETY BROS.,

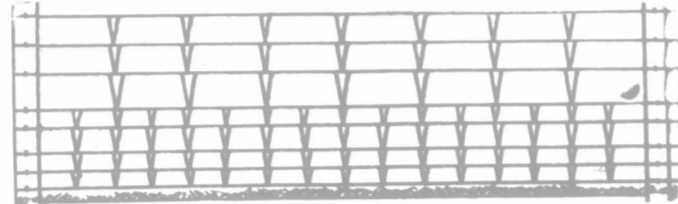
463 King St., London, Ont.



Largest importers in Canada. Fourth consignment has just arrived in splendid condition, and includes some heavy ones. Will be on sale at Black Horse Hotel, Toronto, on and after Monday, March 19th, for ten days, and afterwards at London, Ont. Fifth consignment will arrive second week in March. Have sold more Clydes than all importers combined. A specially good lot of stallions and mares soon to arrive. No exorbitant prices asked.

SMALL PROFITS AND QUICK RETURNS.

Strathy's "HINGE" Stay Field Fence and SINGLE POLE Gates "THE 20TH CENTURY FENCE."



A fence competitor says: "It has no equal." A trial will convince you also.

The product of years of practical experience, careful study and experiment under the hardest climatic conditions of heavy snow and severe frost in winter and high temperature in summer, with a variation of 150 degrees. Our Spring Post meets perfectly the requirements and overcomes all the difficulties of contraction and expansion, under a variation of 180 degrees of temperature, and has besides a reserve capacity of as much more to provide for great strain and to automatically take up the stretch in the wires. Our "Hinge" Stays so act, when under pressure of snow or other weight, that when the weight is removed the fence springs back to place, with Stays unbent and fence uninjured. A system all our own and unlike any other. We use heavy wires—high-carbon spring-steel wire of highest quality—but our system is cheaper and the completed cost less than any other fence. Write for full particulars, and state fully your requirements.

STRATHY & CO., WELLAND, ONT. Agents of ability wanted in every part of Canada.

Wanted at once

Single or married man. Must understand farm work and machinery. Also first-class herdsman. Address, with references, W. D. FLATT, Trout Creek Stock Farm, MILLGROVE, ONT.

AUCTION SALE: Registered Shorthorns.

3 bulls—2 years, 1 year, 8 months. 2 cows—9 years and 5 years. 2 heifers—2 years and 4 months. SALE, April 6th. Full particulars from F. J. BARBER, Prop., or J. A. BELL, Auctr. Georgetown, Ont.

WANTED—By April 20th, 1900, a married man, good worker, who understands farming in all its branches, also the feeding and care of dairy cattle, and is a good milker. Must be reliable, honest and trustworthy. Salary, \$200 per year; free house, garden, firewood, and a good percentage on pure-bred Ayrshire stock sold. Permanent situation to suitable person. Must have first-class references. Address: JOHN A. McDONALD, Jr., Williamstown, Ont. Scotchman preferred.

Imported Shire Stallion

FOR SALE. A winner at two Toronto Spring Horse Shows; big ringer, good looker; good action, clean, flat bone; active, sure foal-getter, and all right; just the sort to leave big, useful, sound stock. Address: JOHN SEMPLE, BOX 73, TOTTENHAM, ONT.

GOSSIP.

HEREFORDS BRING BIG PRICES—SOTHAM'S BULL, THICKSET, SELLS FOR \$5,100.

At the four days' series of sales of Hereford cattle, held at Kansas City, February 27th to March 2nd, very satisfactory prices were made in spite of the great snow storm which prevailed on the first two days, delaying trains and preventing many intending buyers from attending.

Mr. F. B. Sotham, Chillicothe, Mo., made the highest averages, his 21 bulls averaging \$626.45, this result being largely due to the exceptional price of \$5,100, made by the 1-year-old bull, Thickset 6385, purchased by Wm. Humphrey, Ashland, Neb. Grandee, another 4-year-old bull, sold for \$1,500, and Sir Comwell for \$1,000. These were all sired by Corrector. The 26 females sold at this sale averaged \$286.15, the highest price being \$600 for a daughter of Corrector, and the whole 50 head of Mr. Sotham's cattle averaged \$44.70.

The offering from the Sunny Slope herd of Mr. C. A. Stannard, Emporia, Kan., 49 head, averaged \$273; the highest for a bull was for a son of Salisbury, \$110, and for a female, \$650, for Robertha, a daughter of Wild Tom. The 30 head offered by W. S. VanNatta & Son, Fowler, Ind., made an average of \$365.30; the highest price for a bull being \$690, for Grove Cherry Boy 2nd, by Cherry Boy; and for a female, \$925, for Miss Betsy 2nd, by the same sire. In this sale we note that 2 bulls and 2 heifers are credited to W. H. & H. A. Hunter, Orangeville, Canada.

The 14th sale was that of Scott & Marsh, Belton, Mo., of which 49 head averaged \$222. The highest price for a bull was \$120, and for a female, \$157. None of the animals in this sale were over 24 months old. The Whitefaces are evidently holding their own in the West.

FOR SALE AT REDUCED PRICES.

1 No. 7 Alexandra Cream Separator. 1 No. 1 Alexandra Cream Separator. 1 Springer Cream Separator. 2 Springer Cream Separator Bowls. 1 Iron Cheese Press. 1 Wooden Cheese Press. Address: BOX 524, LONDON.

OAKLAWN FARM

as ever, greatly excels all other establishments in the quality and numbers of its

PERCHERONS and FRENCH COACHERS

ON HAND: 229 STALLIONS—234 MARES Home bred and imported, including a few CHOICE SHIRES

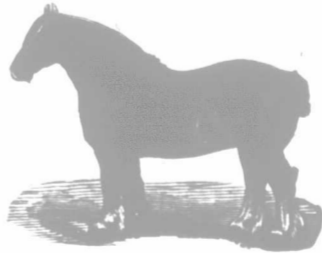
At the Illinois, Iowa and Michigan State Fairs of 1899, Oaklawn's exhibits in 22 stallion classes won 18 first prizes. Prices and terms reasonable.

DUNHAM, FLETCHER & COLEMAN WAYNE, DU PAGE CO., ILLINOIS.

THORNCLIFFE Stock Farm

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

"LYON MACGREGOR."



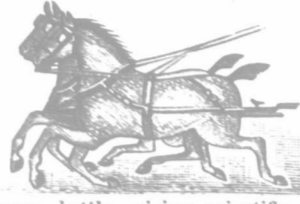
Stallions and Colts

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. Terms reasonable. A visit to Thorncliffe will well repay you.

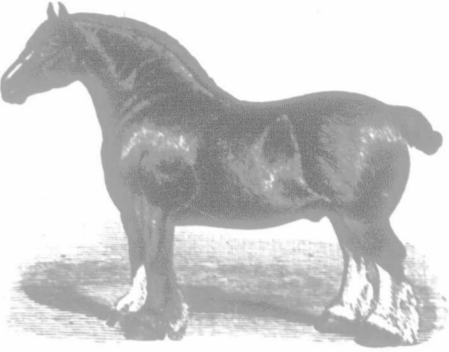
ROBT. DAVIES, Thorncliffe Stock Farm, TORONTO.

IMPORTED CLYDE STALLION FOR SALE. Large and stylish, heavy-boned and a first-class breeder. JOHN JOLL, Hampton P. O., West Durham Co., Ont.

Important to Breeders and Horsemen. Eureka Veterinary CAUSTIC BALSAM.



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



Clydesdales FOR SALE.

The largest stud of superior imported Clydesdales in Canada; 15 stallions of different ages, warranted sure, sound, and money-makers; inspection invited. Those horses are not got up for show purposes, they are fed and exercised with a view to usefulness.

Also 1 aged Hackney Stallion.

JOHN BELL,

Clydesdale Farm, Amber P. O., E. R. York, Ont. Agincourt Station, C. P. R. or G. T. R. Trains met by appointment.

W. D. FLATT,

Hamilton, Ontario, Can., Importer and breeder of Shorthorn Cattle.



GOLDEN FAME (IMP.)—26056—(72610). My herd is one of the largest in America, both imported and Canadian-bred. A very choice selection of both sexes always on hand for sale. Personal inspection invited. Address all communications: JAMES SMITH, Mgr., Millgrove, Ont. R. R. Station and Telegraph, Hamilton, on main line Grand Trunk RR.

FOR SALE: A choice Shorthorn bull, 18 months old. Also a few choice Cotswold sheep. J. C. ROSS, Jr., Jarvis, Ont.

FOR SALE: Two Shorthorn bulls, 21 months old, and one 11 months. W. F. R. JONES, Balsam, Ont.

FOR SALE: Imported Clydesdale Stallion No. 9053. Bay, with both hind feet white, and strip in face. Foaled 1889. Will weigh about 2,000 lbs. Sired by Prince of Wales 673. Dam by Darnley 222; 2nd dam by Old Times 379; 3rd dam by Sir Colin 1299, etc. For further particulars apply to O. A. COATES, Bothwell, Ont.

SPRINGBANK FARM. Shorthorn Cattle, Oxford Sheep, and Bronze Turkeys. Young bulls for sale. JAS. TOLTON, WALKERTON, ONT.

SHORTHORN BULLS AND HEIFERS FOR SALE. Cruickshank and other Scotch sort, headed by (imp.) Knuckle Duster. Herd has furnished the Fat Stock Show champion three out of the last five years. Correspondence invited. Exeter Station, G. T. R., H. SMITH, half mile from farm. HAY, ONT.

GOSSIP.

FOR WORLD'S FAIR VISITORS.

The Secretary of the Canadian Commission to the Paris International Exhibition, 1900, has written to say that the Canadian Commission have an office at No. 10 Rue de Rome, Paris, France, where Canadian visitors can have their letters addressed and receive assistance of every kind through the Commission.

CANADIAN FAIRS AND EXHIBITIONS.

The Canadian Association of Fairs and Exhibitions elected officers for the ensuing year as follows: President, T. J. Murphy, Simcoe; 1st Vice-President, John Burns, Whitby; 2nd Vice-President, James Mitchell, Goderich; Secretary-Treasurer, Alex. McFarlane, Otterville. Executive Committee—T. F. Wallace, Woodbridge; E. Jackson, Newmarket; William Laidlaw, Guelph; G. R. Vanzant, Markham; S. McClure, Elmer's Mills; J. W. Sheppard, Cayuga; James Brethour, Suderland; Auditors—J. M. Guardhouse, Highfield; J. Y. Murdock, Jarvis.

NATIONAL SHEEP BREEDERS' ASSOCIATION.

The last meeting of the council of the National Sheep Breeders' Association, held in London, England, on February 27th last, was one of world-wide interest from the fact that the programme of the National conference of Sheep Breeders, to be held at York in June next, during the week of the Royal Show, was adopted. Invitations to attend this conference have been sent to all known Sheep Societies throughout the world, and at the time of writing there have been intimations received from Tasmania, New South Wales, New Zealand, Uruguay, Natal, Argentine, etc., that delegates will be sent, some 6 or 8 having already been nominated. What steps the Canadian Societies may take, we have not yet heard, but it is inconceivable at so important a gathering of breeders of registered sheep that Canada will be unrepresented. The programme provides for the adoption of regulations to facilitate the transfer of registered sheep from the record books of one country to those of another, and means to prevent the substitution of unregistered for registered sheep; the issue of export certificates, veterinary inspection, and a certificate of health and the advisability of holding periodical conferences of representatives of Sheep Breeders' Societies.

ROBERT NESS & SONS' CLYDESDALES AND AYRSHIRES, AND POULTRY.

The stock at the Woodside and Burnside farms of R. Ness & Sons, at Howick, Quebec, are coming through the winter in fine condition. The imported Clydesdale stallions are superb in form, size and quality, and are receiving the best kind of treatment to ensure usefulness and satisfaction to purchasers and patrons. The Ayrshires are up-to-date in breeding, type, and capacity for work, about forty cows being due to calve during the present year. Among these are upwards of a dozen daughters of Golden Guinea, who left the Guinness stamp on all his produce in color of skin, quality of handling, and size and form of milk vessels, his progeny and family winning more honors than any other at the World's Fair. Among the younger are many meritorious daughters of Matchless, the great son of such great parents as Imp. Glencairn 3rd, and Imp. Nellie Osborne, female champion of the Columbian Exhibition. A number of excellent young bulls are held for sale, including a handsome bull calf, imported in his dam, a prizewinner in Scotland. The herd won at the Ottawa Exhibition last year, in stong competition, a round dozen prizes, including the sweepstakes for best bull of any age, and first prize for young herd. The stock bull is imported Duke of Clarence of Barcheskie, a model of the modern stamp of Ayrshire, and one of the very best in the Dominion. A high-class stock of utility poultry is kept, and includes Barred and White Plymouth Rocks, Light Brahmas, Dorkings and Wyandottes, also Pekin, Rouen and Cayuga ducks, China geese, Bronze turkeys, and fancy pigeons.

BROOKBANK HOLSTEIN SALE.

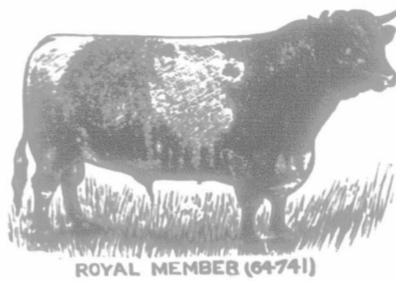
Mr. A. Rice's sale of Holsteins, which occurred on the 28th of February, at Currie's Crossing, Ont., was very successful. The day was very disagreeable, snow falling all day, which, no doubt, kept several from a distance, and certainly many local men, at home. However, there was a very fair attendance, several coming 200 to 400 miles, and those who were there were on hand for business. The sale was started by leading out the well-known public test winner, Daisy Texal 2nd. It soon became apparent that most every one there had a hankering for this fine young cow, and it was no trouble to get bids until the \$200 mark was reached; then there was a lull until Mr. Walter S. Schell, a local man, made it \$210, and she was knocked down to him. The keen contest for this "plum" of the sale warmed things up several degrees—people forgot all about the cold, and the sale went through with a good "swing"—not, of course, so high, but much better than sales generally go. Prices for females over three years ranged from \$70 to \$100. Some heifer calves reached \$35 each; also some bull calves reached \$55. A gentleman from Peterboro came all the way to buy Winnie's bull calf, sired by Calamity Jane's Paul, and secured him at \$55. Yearling bulls sold as high as \$90. Mr. Wm. Simmonds, New Durham, who has a nice herd of pure-bred Holsteins, secured Winnie R. De Kol to head his herd. He is a very fine animal, from a great dam and sire. Dr. Robt. Craik, Montreal, secured the imported bull, Monk Lyons 3rd two years old, at \$65, and he also secured three cows. The herd was very widely scattered, most purchasers getting but one or two. The sale made a clean sweep of all owned by A. Rice, but Geo. Rice, who has taken such an active part in building up this herd, continues the business, and has a nice herd of choice animals. He has always been prominent in public tests, and will surely be a great help in future. In the past, it has been our advertising columns that have done much for the welfare of the Province, and we are glad to see that it is now offered to the public. As a result of the present, he will be a great help to the public, and we are glad to see that it is now offered to the public. As a result of the present, he will be a great help to the public, and we are glad to see that it is now offered to the public.

HIGH-CLASSED Auction Sale of Thoroughbred Shorthorn Cattle AND COTSWOLD SHEEP.

The following registered Shorthorns will be sold on the farm of FITZGERALD BROS., Mount St. Louis P. O., Simcoe Co., Ont., on TUESDAY, MARCH 20, 1900: 19 Cows and Heifers. Those of breeding age, bred to Imp. British Statesman (63729)—20833—7 Export Steers and 4 Beef Heifers. 15 young Bulls ready for service, and 16 Ewe Lambs. The above cattle are of the highest quality of improved Scotch breeding. Catalogues will be furnished on application. Trains will be met on day of sale at Coldwater and Phelepston on G. T. R. Sale starts at 2 o'clock p. m. TERMS—Nine months' credit will be given on furnishing approved joint notes. 6% per annum discount for cash. Hillsdale Telegraph Office. -om

10 Imported Shorthorn Bulls ALL SCOTCH.

21 IMPORTED HEIFERS. ALL SCOTCH.



ROYAL MEMBER (64741)

21 IMPORTED HEIFERS. ALL SCOTCH.

Heifers all in calf to imported bulls. Also a number of first-class home-bred animals of either sex. The oldest home-bred bull we have was calved in April last. Correspondence or a personal visit solicited. Catalogues on application. -om

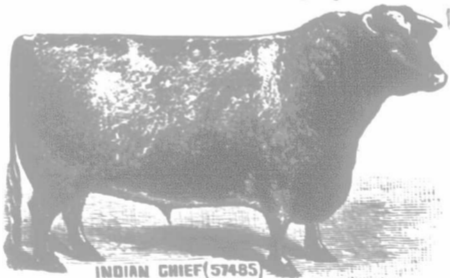
H. CARGILL & SON, CARGILL, ONT. Cargill Station and Post Office on G. T. R., within half a mile of barns.

20 - Imported Scotch Shorthorns - 20 2 BULLS, 1 and 2 YEARS OLD; 14 HEIFERS, 2 YEARS OLD; 4 YEARLING HEIFERS.

THIS importation came out of quarantine on the 12th July, and representatives of many of the leading Scotch families are amongst them, including Minas, Brawith Buds, Secrets, Mysies, Beauties, Lady Mays, Lustres, etc. The home-bred herd contains Indian Statesman =23004=, and 15 young bulls from 6 to 18 months old, and 50 cows and heifers of all ages. Registered Shropshires, yearling rams and ewes, ram lambs from Imp. Flashlight. Any of the above will be sold at reasonable prices. Correspondence or a personal visit solicited. Catalogues on application.

Burlington Junction Station and Telegraph Office, G. T. R., within half a mile of farm. W. G. PETTIT & SON, FREEMAN, ONT. -om

ARTHUR JOHNSTON Greenwood P. O. and Telegraph Office,



INDIAN CHIEF (57485)

OFFERS FOR SALE, AT MODERATE PRICES, 13 IMPORTED AND SHORTHORN BULLS HOME-BRED 17 IMPORTED COWS and HEIFERS 22 HOME-BRED COWS and HEIFERS Many of them from imported cows, and by imported bulls. Catalogues on application. Claremont Station, C. P. R., -om or Pickering Station, G. T. R.

Scotch Shorthorns FOR SALE. 100 head to select from; 15 grand young bulls by Valkyrie =21806=, and cows and heifers of all ages, of the most approved breeding, served by (Imp.) Diamond Jubilee =28861=, now at the head of our herd. T. DOUGLAS & SONS, Strathroy Station and P. O. Farm 1 mile north of the town. -om

John Miller & Sons, BROUGHAM P. O. and TELEGRAPH OFFICE, OFFER FOR SALE... 4 Imported Clydesdale Stallions. 10 Scotch-bred Shorthorn Bulls. PRICES REASONABLE. Claremont Stn., G.T.R., Pickering Stn., G.T.R. Correspondence Invited. PLEASE MENTION FARMER'S ADVOCATE.

SCOTCH SHORTHORN BULLS AND HEIFERS HERD ESTABLISHED IN 1872. Such sires as imported Royal George and imported Warfare have put us where we are. Imported Blue Ribbon now heads herd. A. & D. BROWN, ELGIN COUNTY. -om IONA, ONTARIO.

5 SHORTHORN BULLS Of the most noted Scotch families, and choice individuals. For prices and particulars write SHORE BROS., White Oak. -om

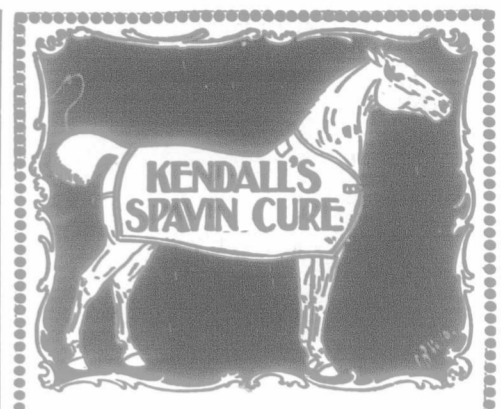
Hillhurst Farm. ESTABLISHED 1864. Scotch Shorthorns. Sires in Service: Scottish Hero and Joy of Morning. Bred by W. DUTHIE, COLLYNIE. Oldest Stud of Hackneys in America. Shropshire, Dorset Horn and Hampshire Down Sheep. -om

M. H. COCHRANE, Hillhurst Station, Compton Co., P. Q.

SHORTHORN CATTLE AND LINCOLN SHEEP. Imp. The Baron at head of herd. Seven young bulls for sale—good ones. Also a few females. Stud rams all imported from H. Dudding, Esq.; the same blood as the 1000-guinea ram. J. T. GIBSON, DENFIELD, ONT. -om

J. & W. B. WATT, Salem, Ont., Offer for sale the four-year-old imported Clydesdale stallion, Heather Bloom (10203), and Six Shorthorn Bulls. Fit for service. Elora Station, C. P. R. and G. T. R. -om

BONNIE BURN STOCK FARM Forty rods north of Stouffville Station, offers for sale (5) five grand young Shorthorn bulls, good breeding and excellent quality, at very moderate prices. Write for what you want. D. H. RUSSELL, Stouffville, Ont. -om



KENDALL'S SPAVIN CURE. WORTH \$50 A BOTTLE To This Man. It may be worth a like sum or even more to you.... Fingal, Barnes Co., N. D., March 19, 1896. Dear Sirs—I have used your Kendall's Spavin Cure and think it a good Liniment. I have cured a Spavin on my best mare, and I would not take \$125 for her, which I offered for \$75 before. I will be pleased to have your book and receipts for this inclosed stamp, as I read on the carton. Truly yours, FRANK SMITH. Hartington, P. O., Ontario, Mar. 6, '96. Dr. R. J. Kendall Co. Dear Sirs—Enclosed please find a two-cent stamp for your valuable Horse Book. I had one but it is lost. I have used your Kendall's Spavin Cure without one failure in years, and consider it the best Liniment for man or beast in the market. Please send me the book as you advertise it on bottle, for horses. GEORGE BROWN. It is an absolutely reliable remedy for Spavin, Splints, Curbs, Ringbones, etc. Removes the bunion and leaves no scar. Price, \$1; six for \$5. As a Liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAVIN CURE, also "A Treatise on the Horse," the book free, or address DR. R. J. KENDALL CO., ENOSBURG FALLS, VT. -om

HAWTHORN HERD OF DEEP-MILKING SHORTHORNS. We are offering 5 young bulls for sale, of first-class quality, and A1 breeding. Wm. Grainger & Son, - Londesboro, Ont. -om

8 SHORTHORN BULLS 8 From 8 to 19 Months. Thick-fleshed reds and roans, out of Bates-bred Scotch-topped dams, and by Lord Stanley 4th, twice a winner at Toronto. Registered Yorkshires later. G. & W. GIER, Grand Valley, Ont. -om

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

JAS. DORRANCE, SEAFORTH, ONTARIO, BREEDER OF Shorthorn Cattle and Berkshire Pigs Young stock always for sale. -om

SHORTHORNS. Stock bull, Kinellar of York =2504=, by Imp. Kinellar Sort; 1 bull 16 mos. old, and one 8 mos. old, dam Nonpareil 53rd. Cows and heifers, some of them the same family as the first and second prize cows at Provincial Dairy Show, London. F. MARTINDALE, York P.O., Ont. -om

R. & S. NICHOLSON SYLVAN P. O., PARKHILL STATION. Scotch Shorthorns, imp. and home-bred. The Imp. Clipper bull, Chief of Stars, heads the herd. Eight extra good 2-year-old heifers for sale, in calf to Chief of Stars (72215). Inspection invited. -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. -om

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

Maple Lodge Stock Farm ESTABLISHED 1854. SHORTHORNS—An excellent lot of young bulls, and a special value in young cows and heifers in calf to our imported Knuckle Duster. LEICESTERS—Imported and home bred—the best. ALEX. W. SMITH, MAPLE LODGE P. O., ONT. -om

Ayrshires, Guernseys, Yorkshires and Shropshires are our leaders.



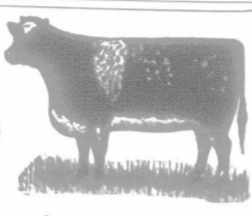
ALL high-class, ped'gred stock. Those desirous of purchasing thoroughbred animals should write for particulars at once.



ISALEIGH GRANGE FARM, Danville, Quebec. J. N. GREENSHIELDS, PROP. T. D. MCCALLUM, MGR.



W. C. Edwards and Company, Importers and Breeders



Ayrshires, Jerseys, Shropshires, Berkshires.

Our excellent aged herd of Ayrshires is headed by our noted imported bull Cyclone.

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.

JOS. W. BARNETT, Manager.

SCOTCH SHORTHORNS and BERKSHIRES.

Choice young bulls and heifers for sale. Also Berkshire pigs of the most approved breeding.

5--Shorthorn Bulls--5

From 9 to 15 months. Also a few choice yearling and 2-yr.-old heifers, among which are grand, thick-fleshed and choicely-bred animals.

G. A. BRODIE, BETHESDA, ONT.

FOR SALE: TWO CHOICE SHORTHORN BULLS. GAVIN BARBOUR, Crosshill, Ont.

2 Thoroughbred Hereford Bulls for sale--1 and 2 years old. W. R. COLEMAN, "Oakdale Farm," Cookstown P. O., Ont.

Ingleside Herefords CHAMPION HERD OF CANADA.

75 head of Herefords of show-yard character, headed by the champion bull, MARK HANNA (74230).

This herd is rich in the blood of "Corrector," "Ancient Briton" and "Rupert," on an "Anxiety" foundation.

TAMWORTH SWINE. Bacon type, high quality, low prices. H. D. SMITH, COMPTON, QUE.

40 HEREFORDS Bulls, Cows, and Heifers, for immediate sale.

Alfred Stone, 5 Douglas St., GUELPH, ONT.

F. W. STONE ESTATE, GUELPH, ONTARIO.

The first Hereford herd established in Canada by importations in 1859 of the best prizewinners of England, followed by repeated further importations.

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

BRAMPTON JERSEY HERD.

Brampton's Monarch (imported), Canada's champion bull, 1898, heads the herd, which numbers 75 head.

B. H. BULL & SON, BRAMPTON, ONT.

GOSSIP.

At the Perth Aberdeen Angus show and sale, Feb. 21st, Sir Geo. McPherson's 1st-prize yearling bull sold for 360 guineas, or about \$1,890, said to be the highest price ever given for a bull of the breed at public auction in Britain.

At Aberdeen, Feb. 22nd, 188 Angus bulls sold at an average of £22 10s. 6d., and 24 cows and heifers at £18 19s. 3d. each.

Mr. John Campbell, of Fairview Farm, Woodville, Ont., writes: "Have sold the Clydesdale stallion advertised in your columns recently (and could have sold him over and over again)."

Mr. W. B. Whigham, a Buenos Ayres buyer, has recently purchased of Mr. Alex. Robertson, Ballechin Ballenning, the 2-year-old bull, Newton Stone, bred by Mr. A. M. Gordon, and sired by the Highland Society champion, Corner Stone, dam by Star of Morning.

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CLYDESDALES FOR CANADA. Messrs. Dalgety Brothers, of Dundee and London, Ont., shipped two useful horses from Glasgow by the Amarnythia on Feb. 13th.

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BOOKS ON AGRICULTURE. Mr. C. A. Zavitz, Experimentalist of the O. A. C., writes us as follows: "A valuable bulletin has recently been prepared by Prof. J. B. Reynolds, of the Ontario Agricultural College, and has been published by the Department of Agriculture, Toronto, giving a list of books suitable for farmers, stockmen, dairy-men, and fruit-growers."

SOILS AND CROPS. - Morrow & Hunt; 363 pages. \$1. (Howard & Wilson Publishing Co., Chicago, U. S. A.) This book was published in 1885, and gives special attention to the cultivation of wheat, oats, barley, rye, corn, grasses, clovers, potatoes, and root crops.

FORAGE CROPS. - Thomas Shaw; 281 pages. \$1. (Orange Judd Co., New York, U. S. A.) This book was published about January 1st, 1900, and deals with the growing of corn, sorghum, clover, rape, millet, root crops, and the common cereals.

MAPLE HILL HOLSTEIN-FRIESIANS. Three Yearling Heifers, sired by Colanthus Abbecker 2nd, and in calf to Daisy Teake's King (brother to Daisy Meake's Queen, the great test and show cow).

MAPLE HILL HOLSTEIN-FRIESIANS. Three Bull Calves, sired by De Kol 2nd's Paul De Kol Duke, the great butter-bred bull; dams, the fine show cows, Lady Akkrum 2nd, Cornelia Artis, and Madge Merton.

Choice Ayrshire and Holstein-Friesian Spring Calves, At \$12.00 each, from deep milking strains. Breeding stock all registered. H. GEORGE & SONS, Crampton, Ont.

Horse Owners! Use GOMBAULT'S Caustic Balsam. The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.

Ayrshire Bull Calves of 1899. 3 YET on hand, and more to come within the next month, from some of our best imported cows. Will sell at reasonable prices. Address: ROBT. HUNTER, Manager to W. W. Ogilvie, LACHINE RAPIDS, QUE.

Maple Cliff Dairy and Stock Farm. Ayrshires and Tamworths for Sale: 1 yearling and 5 fall calves, and a number of heifers. Five Tamworth boars, fit for service, and 40 fall pigs.

R. Reid & Co., - Hintonburg, Ontario. AYRSHIRES FOR SALE. The kind that can speak for themselves. Size, constitution, dairy and show combined. Six young bulls for sale, by Glencairn 3rd (imp.), dam Primrose (imp.).

JAMES BODEN, TREDINNOCK FARM, -om STE. ANNE DE BELLEVUE, QUE. 4 AYRSHIRE BULLS 4 Sired by Beauty Style of Auchebraun (imp.), whose dam gave 72 lbs. milk in one day, and out of high-producing dams.

311.-Registered Ayrshires-311. Calves coming now in the herd of 30 high-producing registered Ayrshires (either sex); 3 days to 1 week old, \$11.00; over that age, \$1.00 per week extra.

J. A. James, Nilestown, Ontario. KEEP THE BOYS ON THE FARM BY sending them to Meadowside Farm, Carleton Place, to see J. Yuill & Sons' stock. Eighty-four Ayrshires, second to none in the world for milk production.

HICKORY HILL AYRSHIRES. A few choice dairy bulls for sale, or will exchange for first-class fresh milk cows, if taken at once. N. DYMENT, Clappison's Corners, Ont. Hamilton Station. -om

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.

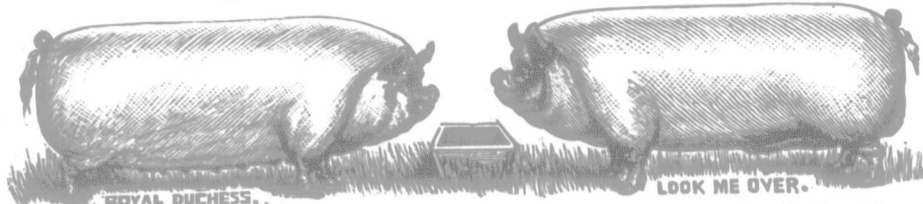
Cattle, horses, pigs, etc. Cleanses the skin from all insects, and makes the coat beautifully soft and glossy. Prevents the attack of Warble Fly.

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, Ont. Sole agent for the Dominion. -om

Summer Hill Herd

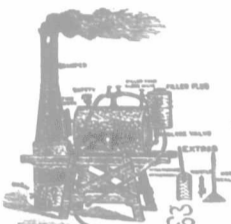
HEADQUARTERS FOR THE IDEAL BACON HOG.



The largest herd of pedigreed Yorkshires of the large English type in Canada. Purity of breed, size, and general excellence is my motto. One hundred awards with one hundred and five exhibits at 7 shows in 1899. A choice selection of young boars and sows of all ages for sale; also boars fit for service, and pregnant sows. Fifty breeding sows, of which 25 (twenty-five) are imported; also three imported stock boars bred by such noted breeders as Sanders Spencer and Philo I. Mills. Am also using two Canadian-bred stock boars, first prize at Toronto in 1898-99. Express charges prepaid. All stock carefully shipped and guaranteed as described. Telephone, Millgrove, Ont. Telegraph 254 Bay St. S., Hamilton, Ont. om

D. C. FLATT, MILLGROVE, ONT.

It will only take two minutes to read our **SPECIAL OFFER** for February and March Orders.



On any and all orders we receive from Breeders and Farmers during February and March we will allow 5 per cent. discount from our regular price, or in place thereof, pay the freight to your nearest railroad station. We will also accept bankable notes to run 2, 4, 6 or 8 months, in payment for Cookers, but we will not allow any discount or pay the freight on any time sales. We guarantee our Cooker to cook more feed and heat more water in less time and with less fuel and attention than any cooker made.

Take advantage of our Improved Reliable Food Cooker, special offer and get the Tank Heater and Steam Generator, one of the greatest feed savers, labor savers and money makers the feeder can possibly have. Cooks a barrel of ground feed in 30 minutes; 25 bushels of ground corn in 2 hours; heats a barrel of water hot enough to scald hogs in 20 minutes; will heat water in tanks 100 feet from Cooker. Used and recommended by feeders throughout the United States and Canada. Highest awards at Omaha Exposition in 1898, and at Toronto, Canada, and at Dallas, Texas, in 1899, and at State Fairs everywhere. Sold on a positive guarantee. Your money back if it does not come up to the contract. Send for 1900 Century Catalogue and introduction price. The Ripley Company proved its claims to superiority by taking first premiums at the Chicago, St. Louis, and Cedar Rapids Poultry Shows in Jan., 1900. It has no flues to rust out or leak. No scorched feed if you use it. The best machine of any kind proves the cheapest in the end. om

RIPPLEY HARDWARE CO., BOX 100, GRAFTON, ILL.

Kicking Cows.

Stop your cows kicking, increase the flow of milk by the use of

SORE TEAT SALVE.

Positively prevents chapped teats, warts, and caked bag or udder. Price, 25c., 50c., and \$1, per tin.

WM. MOLE, Veterinary Surgeon,
-om 443 Bathurst St., TORONTO.

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. -om

FAIRVIEW SHROPSHIRE RAMS.

From the greatest winning flock in Canada. Excellent rams to head flocks offered. Good individuals by leading winners.

Different combinations of "Newton Lord," "Fair Star," "Montford Dreamer," and the \$1200 "Ruddington Eclipse" blood freely found in the offering. The four most famous Shropshire rams known. Blood will tell! It pays well to have the best. **JOHN CAMPBELL, Woodville, Ont., Can.** om

Shropshire Rams and Ewes

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

ROBERT MILLER,
-om STOUFFVILLE, ONT.

CALVERT & DWYER CO'Y, WOOL

TORONTO, CANADA.

Write us before selling your wool. It will pay you. om

DUROC-JERSEY SWINE.

We have a fine lot

First-Class Stock of all ages and either sex. Address, om **TAPE BROS., Kidgetown, Ont.**

SNELGROVE BERKSHIRES AND COTSWOLDS.

We can supply single pairs or trios, and also in larger numbers, registered Berkshire pigs and Cotswold sheep of the highest class. Young boars fit for service, sows old enough to breed. Young pigs 6 to 8 weeks old. Ram lambs and ewe lambs. Write for prices and particulars. om

SNELL & LYONS,
-om SNELGROVE, ONT.

Persianic Sheep Dip and Animal Wash.

A NON-POISONOUS LIQUID "DIP."

Kills Ticks. Kills Red Lice. Heals Wounds.

Greatly Improves quality of WOOL.

For Horses, Cattle, and Pigs.

Removes all insects. Thoroughly cleanses the skin.

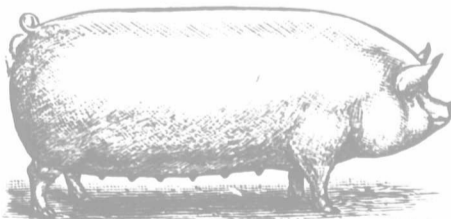
Leading "STOCKMEN" endorse it as the CHEAPEST and most EFFECTIVE "Dip" on the market.

SOLD BY ALL DRUGGISTS, 50 cents PER QT. CAN. Special rates in larger quantities.

MADE ONLY BY

The Pickhardt Renfrew Co. LIMITED,
STOUFFVILLE, ONT. -om

We lead, others follow.



Oak Lodge Yorkshires have a special type of their own, and are acknowledged to be the highest class of bacon hogs. Grand sweepstakes over all other breeds on foot and for dressed carcasses at Provincial Winter Show. Won all herd prizes offered at the largest Canadian exhibitions.

Improve the quality of your pigs by securing some of Oak Lodge blood. Quality! quality! our motto. All stock fully guaranteed. om

Brethour & Saunders, Burford, Ont., Can.

WOODSTOCK Yorkshires, Berkshires, Shorthorns 40 head of improved White Yorkshires. Boars and sows from

2 mos. to 9 mos. Sows in pig to imported boar, 20 head of choice Berkshires, same size. Six Shorthorn bulls from good milking strains. Address: om **H. J. DAVIS, BOX 290, WOODSTOCK, ONT.**

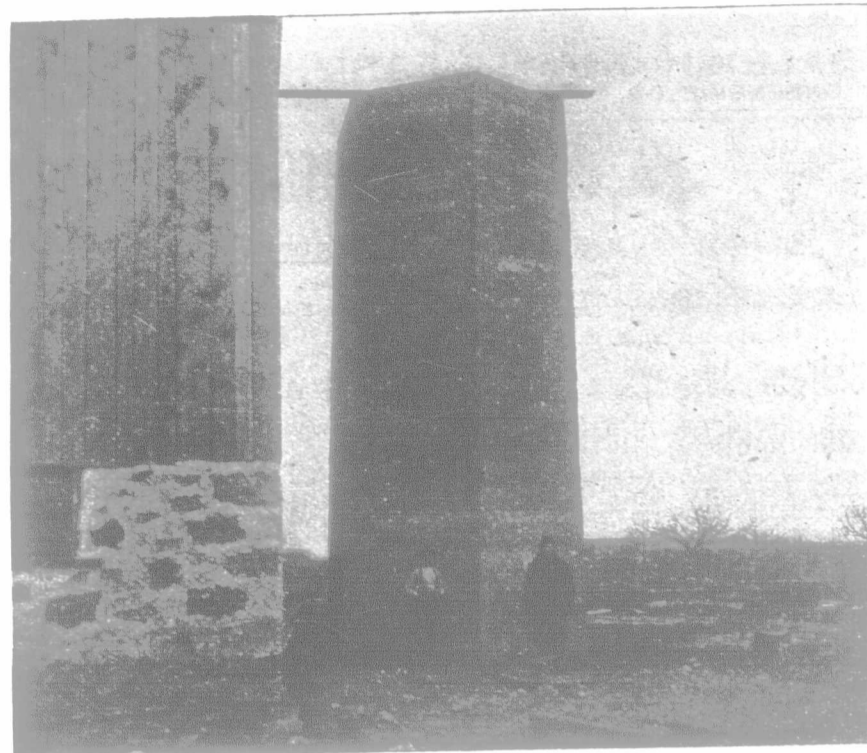
PLEASE MENTION FARMER'S ADVOCATE.

THIS IS A CEMENT SILO BUILT ON

THE FARM OF

John Louve, Harpley, Ont.

It is hexagonal—that is, 6 corners—and is 10 feet across each way, inside measurement, and is 30 feet high



READ WHAT MR. JOHN LOUVE SAYS ABOUT THOROLD CEMENT:

GRANDBEND, ONT., NOV. 14, 1899.

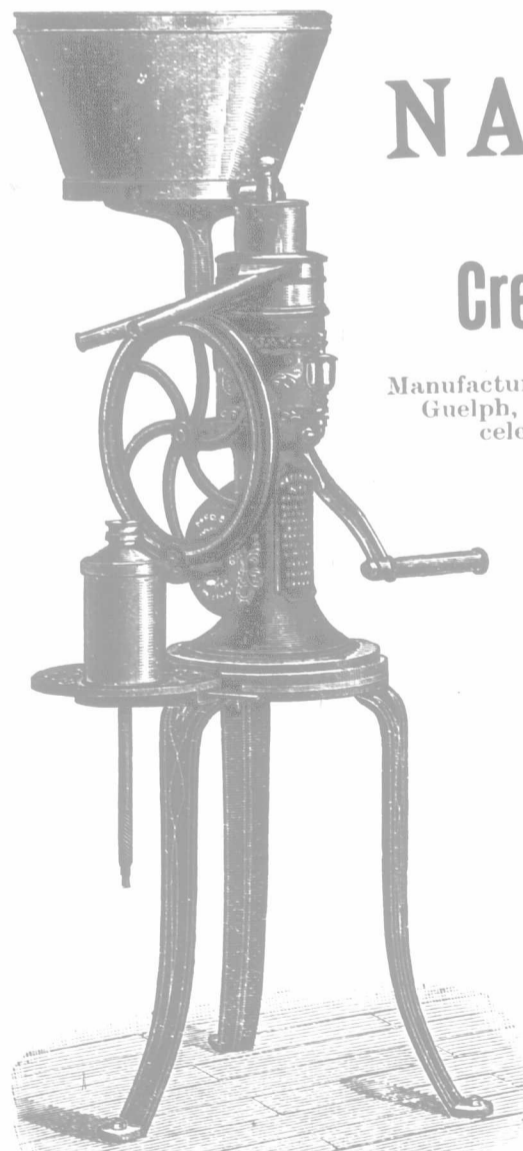
ESTATE OF JOHN BATTLE, THOROLD, ONT.:

DEAR SIR,—I have this summer built a silo 30 feet high by 10 feet across inside—six corners. It was built under the instructions of A. E. Hodgert, your travelling agent and instructor, who understands his business thoroughly. I have filled it with corn, and it is a grand success so far as I can see yet. I also built a large arch root-cellar in the approach to the barn. It was built by your A. E. Hodgert. The arch is 12 x 30 feet. The wall is 12 inches at the side by 14 inches at the top. The root-house and silo are getting as hard as stone, and I would advise those who intend building either one to build them of cement. My silo is here for inspection, and also arch root-house. JOHN LOUVE, Harpley.

Estate of John Battle, Thorold, Ontario.

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, containing 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 guaranteed 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 appreciate 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.

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"NATIONAL" NO. 1 HAND POWER.
Capacity, 330 to 350 lbs. per hour.

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Nitrate of Soda.

It forces the most rapid growth and imparts quality, crispness, tenderness, etc. All about it in our free book, "Food for Plants." Ask for a copy. Address, **John A. Myers, 12-R John St., New York.** Nitrate for sale by fertilizer dealers everywhere.

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Thousands of gardeners depend on Ferry's Seeds every year and never suffer disappointment. Cheap substitutes bring loss, not paying crops. It pays to pay a little more for FERRY'S SEEDS. Five cents per paper everywhere, and always worth it. Always the Best. 1900 Seed Annual free. D. M. FERRY & CO., WINDSOR, ONT.

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For FARM and GARDEN. Our stock includes all that is best in Garden and Field Roots, Flower Seeds and Flowering Plants, Grasses, Clovers, and Seed Grain.

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GEORGE KEITH SEEDS

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Finest Quality. Send for Catalogue.
124 KING STREET E., TORONTO.

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\$50 silver cup and gold medal winners at the "Ontario," Peterboro, 1900. More prizes than any four breeders at Toronto, London and Ottawa Fairs, 1899. Blood will tell.

EGGS \$2.00 and \$3.00 per 15.
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The greatest egg producers. Eggs from a fine pen, headed by a first-prize cockerel mated with prize females, at \$1.00 per setting.

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The BEST and the CHEAPEST.

95 Per Cent. Hatches are often reported by those who use these Incubators.

One reason for this record is absolute uniformity of temperature in egg chamber; correct instructions for operating; has fireproof lamp. A great mistake it would be to purchase an Incubator or Brooder without first getting a copy of our 148-page catalogue. Send 3 cents for illustrated catalogue of Incubator, Brooder, Poultry and Poultry Supplies.

"THE POULTER'S GUIDE" (new edition) 15 cents by mail.

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"Canada's Greatest Seed House"

(1 lb.) **STEELE BRIGGS' ROYAL GIANT SUGAR BEET**

GROWS HEAVY CROPS. EASILY HARVESTED. LARGE CLEAN ROOTS. HIGHEST FEEDING QUALITIES.

SUPPLIED IN SEALED PACKAGES ONLY.

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A NEW **Sugar Beet** FOR STOCK FEEDING

Unlike any other variety. Grows three-fourths its length out of ground. Roots large, clean, of a beautiful rose color, flesh white, firm and of finest feeding quality.

Easily Harvested

EVERY GROWER SHOULD TRY IT.

What an English expert says of this new "Royal Giant" Sugar Beet:

"I should like to express my highest opinion of the special strain of Sugar Beet you showed me at your trial grounds. I have never seen anything so uniformly good before, size, form and weight are perfect, and there is absolutely no waste. For dairy farmers in a country like yours it must be simply invaluable."

Supplied in sealed packages as represented in accompanying cut (printed in colors).

Price (post-paid), 50c. per lb.

STEELE, BRIGGS' "Danish Sugar Beet"

A leading and favorite sort, supplied in sealed packages only.

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ASK YOUR DEALER FOR THEM.

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BY **WM. RENNIE, SR.,** LATE OF THE ONTARIO AGRICULTURAL COLLEGE.

300 PAGES. PROFUSELY ILLUSTRATED. PRICE, \$1.50, POSTPAID.

Never before has such an enormous demand been created for a book upon "Farming for Profit." This is perhaps the first book of the kind ever written by a man while actually engaged in the work which has been such a continued success—hence the advice is practical and doubly valuable. The book is written in a plain, practical and easy-to-be-understood manner, and with up-to-date ideas in everything pertaining to successful farming. Farmers cannot afford to be without it.

The Latest Methods of Profitable Farming. How to Renew Worn-out Land. How to Clean the Land of Weeds. Advantages of Shallow Cultivation. What to Sow, and How to Sow it. Feeding for Profit. What to Feed, and How to Feed, etc., etc.

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Mammoth Bronze Turkeys

S. G. Dorkings, B. P. Rocks, S. C. Br. Leghorns, Black Minorcas. Over 100 grand young birds from winning strains. Pairs and trios mated not akin.

om T. & H. SHORE, WHITE OAK, ONT.

310 First Premiums

Awarded to the PRAIRIE STATE INCUBATOR. Guaranteed to operate in any climate. Send for catalogue.

PRAIRIE STATE INCUBATOR CO. Homer City, Pa.

NOTICE.

Champion Machines.—We are in receipt of an illustrated catalogue of the Warder, Bushnell & Glessner Company, Chicago, Ill., manufacturers of Champion binders, mowers and reapers. The catalogue gives many illustrations of the various parts of their machines, showing their construction and points where strength is added to the machines and lightness of draft unaltered. This firm are to introduce their machines into Manitoba and the Northwest Territories this year, and will be pleased, no doubt, to furnish one of their catalogues to anyone sending their address to their Winnipeg agents, Messrs. Johnson & Stewart.

GOSSIP.

W. F. Bowen, Neponset, Ill., sold a carload of grade Shorthorn cattle at Chicago last week, weighing 1,400 lbs. each, at \$5.95 per 100 lbs. Mr. Bowen says he bought no fancy feeds, and feels sure that good breeding is more than half of it.

Col. William S. King, of Minneapolis, died at his home in that city last month. His name is familiar to many of the older breeders of Shorthorn cattle as one who played an important part back in the seventies as a breeder and a successful exhibitor of Shorthorns in the leading shows in the Western States.

The rules relating to the clipping of sheep competing for prizes at the Paris Exhibition require that the sheep, except in the case of Merinos, must be clipped bare within 15 days of the exhibition, with the exception of a tuft of wool to be left full length behind the left shoulder.

R. S. Nicholson, Sylvan, Ont., have purchased, to head their herd of Shorthorns, the imported Clipper bull, Chief of Stars (72215), imported in 1899 by Arthur Johnston, Greenwood, and illustrated in the Xmas number of the FARMER'S ADVOCATE.

The executive committee of the American Shropshire Association, Richard Gibson, Dr. G. Howard Davidson and Mortimer Levering,

met in Chicago recently, and voted to appropriate \$800 to be offered in special prizes for Shropshires at the International Live Stock Show to be held in Chicago, Dec. 1st to 8th.

The big "Dobie steer" has been shipped from Texas to the Universal Exhibition to be held at Paris, France, this year. He is 9 years old, has horns that measure 9 feet 7 inches from tip to tip, and weighs between 1,600 and 1,700 lbs. He was bought in a bunch on the Mexican border in 1894.

In this issue, Mr. J. A. James, Nilestown, Ont., offers an exceptional bargain in calves from his excellent herd of 30 registered Ayrshire cows. Mr. James has a cheese and butter factory on his farm, where the milk from his herd is made up, so that unless a cow does really good work at the pail she cannot live in Mr. James' herd. The calves offered are all sired by Norman McLeod—1894—from imported parentage in the herd of W. W. Ballantyne, Stratford, Ont. Mr. James has recently made a valuable addition to his herd, in three fine cows and a yearling bull, from Caldwell Bros.' Briery Banks herd, from Caldwell Bros. Briery Banks herd, a grandson of the world-famous Nelly Osborne. We might also add that the price of calves mentioned in the advertisement includes the cost of registration, which Mr. James attends to himself.

CANCER CURED WITHOUT KNIFE OR PLASTER. FULL PARTICULARS FREE. -om
F. STOTT & JURY, Bowmanville, Ont.

ADDRESS  **Belleville Business College.**
 BELLEVILLE, ONTARIO.

Great Work
 IS BEING DONE THIS TERM IN THE
Central Business College,
 of Toronto, where 12 regular teachers are employed, and over 300 students are in attendance. This is a big school, and a popular school, to which business firms look for skilled help. Eleven young people went direct from college to situations during one week, ending Feb. 16th. Enter any time. No vacations. Write for prospectus. -om
W. H. SHAW, Principal.

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CENTRAL Business College
 STRATFORD, ONTARIO.
 A school that enjoys a large patronage, has large staff of expert teachers, gives superior training, and produces best results. Write for our prospectus. -om
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THE "ROB ROY" MINES.
 OUR SUPT. WIRES US TO-DAY:
CONTRACT DONE. SEND \$125.00. MY REPORT ON WAY. ORE HAS IMPROVED.

The Ferguson (B. C.) Eagle of Feb. 21 says: "The ore is improving with every blast, and this property will be another Lardau shipper this season."
 Some stock is yet available for subscription. If interested, send for reports and booklets.
THE SCOTTISH-CANADIAN MINING & DEV. CO. of B. C., Limited. (Non-assessable.)
 Phone 1090. 207 Dundas Street, London.
 A. E. WELCH, Managing Director.

Farmers' Live Stock Ear Labels \$1.50 per 100 and up, according to the amount of matter wanted on them. Also Punches to suit them. Many send for price list, and do not order. Tell us why? Please write for circular and price list. **R. W. James, Farm Implement Forwarding Agency, Bowmanville, Ont.** -om

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 Will do all knitting required in a family, home spun or factory yarn. **SIMPLEST KNITTER ON THE MARKET.**
 We guarantee every machine to do good work. Agents wanted. Write for particulars.
PRICE, \$8.00.
DUNDAS KNITTING MACHINE CO., DUNDAS, ONTARIO.

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

THE GLOBE FURNITURE COMPANY, LIMITED, WALKERVILLE, ONTARIO.
CHURCH DEWS, PRINTS, ALBUMS, BARS, SCHOOL DESKS, ETC.
 WRITE FOR PRICES

GOSSIP.

Mr. Geo. F. Weston, Superintendent of Mr. Vanderbilt's farms at Biltmore, N. C., has recently purchased from Juneman & Berry, of Illinois, the famous Berkshire boar, Columbia's Duke, which sold some two years ago at Reuben Gentry's auction sale for \$1,200.

THE HILLHURST IMPORTED SHORTHORNS.
 Hon. M. H. Cochrane, Hillhurst, Quebec, writes:—I am pleased to say that our recent importation of Scotch Shorthorns are now safe at Hillhurst. "Joy of Morning" is a credit to his breeding, and the bevy of heifers which accompany him are the kind that would delight both artists and practical men who appreciate the modern money-making Shorthorns from Aberdeenshire.

DR. A. SMITH SUCCEEDS MR. J. J. WITHROW.
 At the first meeting for organization of the Toronto Industrial Exhibition Association, held Feb. 23, Dr. Andrew Smith, Principal of Ontario Veterinary College, was elected to the office of president in the place of Mr. John J. Withrow, who tendered his resignation at the end of twenty-one years of faithful service. Second Vice-President Robt. Davies was raised to 1st vice, and Mr. P. C. Close succeeds as 2nd vice president. Mr. Withrow was appointed honorary president of the Association.

OFFICIAL TESTS OF HOLSTEIN-FRIESIAN COWS, FROM JANUARY TO FEBRUARY 1, 1900.
 These tests are uniformly made by representatives of agricultural colleges or experiment stations, at the homes of the cows; the length of each test is seven consecutive days; the age given is at the date of last calf; the butter-fat is determined by the Babcock test, and the butter estimated—first by the 80 per cent. rule, and second by the 85.7 per cent. rule.

Summary.—Eight cows three years old or over, average per cow 444 lbs. milk, containing butter-fat equivalent to 18 lbs. 7.3 ozs. butter at 80 per cent. fat to the pound, or 17 lbs. 3.7 ozs. butter at 85.7 per cent. fat to the pound.
 One cow between four and five years old produces 442 lbs. milk containing butter-fat equivalent to 22 lbs. 5 ozs. butter at 80 per cent. fat to the pound, or 20 lbs. 13.2 ozs. butter at 85.7 per cent. fat to the pound.

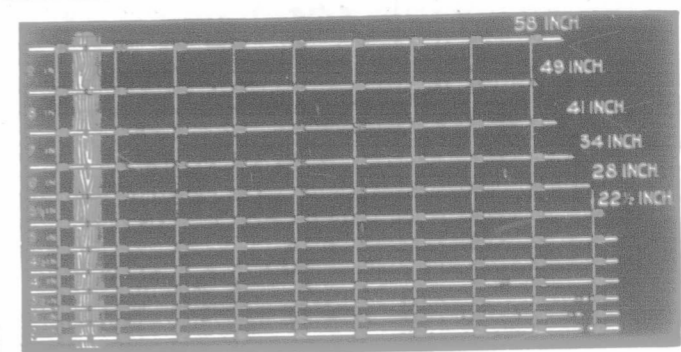
Five cows between three and four years old, average per cow 409.3 lbs. milk containing butter-fat equivalent to 17 lbs. 7.9 ozs. butter at 80 per cent. fat to the pound, or 16 lbs. 3.2 ozs. butter at 85.7 per cent. fat to the pound.

Ten cows under three years old, average per cow 286.5 lbs. milk containing butter-fat equivalent to 12 lbs. 2.6 ozs. butter at 80 per cent. fat to the pound, or 11 lbs. 5.6 ozs. butter at 85.7 per cent. fat to the pound.
 The two most remarkable are those of Beryl Wayne, a cow between seven and eight years old, with a product of 24 lbs. 3.8 ozs. butter at 80 per cent. fat, or 22 lbs. 9.9 ozs. butter at 85.7 per cent. fat, and of Lilith Pauline De Kol, a cow about three and one-fourth years old, with the unprecedented product of 24 lbs. 7.4 ozs. butter at 80 per cent. fat, or 22 lbs. 13.3 ozs. butter at 85.7 per cent. fat to the pound. At my request both these cows were re-tested by Prof. C. B. Lane, of New Jersey station, and the first tests fully confirmed. S. HOKIE, Supt. Advanced Registry, Holstein-Friesian Association.

J. M. GARDHOUSE'S CLYDESDALES, SHORTHORNS, AND LEICESTERS.

Always up to date and improving is the stock found on the farm of Mr. J. M. Gardhouse, of Highfield, Ont. A good judge, enterprising and progressive, he knows a good thing when he sees it, and manages to have a good share of that sort around him. Fond of a good heavy draft horse, if he cannot find a Shire good enough to suit him he secures the best Clydesdale he can find, and he has recently landed at his stables the big and good imp. 3-year-old King of the Clydes, 12591, imported in November last, weighing 1,875 at two and a half years old, with big, clean bone and the best of quality. His sire is Ringleader, considered one of the best stock horses in Scotland, dam by young Darnley, by the famous old Darnley, progenitor of a long list of the best. The sweepstakes mare, Queen of Highfield, never defeated in the showing by Clyde or Shire, is doing good work as a breeder, has a nice black filly foal by Imp. Darnley, and is safe in foal again to the same sire. The imported Duthie-bred bull, Prime Minister (63014), by Chesterfield dam, Princess Lively, by Field Marshal, is at the head of the herd of Shorthorns. He has been a winner at the Toronto Industrial Exhibition, and has proved a very impressive sire. Prominent among the females of the herd is Imp. Jenny Lind, bought at W. D. Platt's sale, sire Matachore (67461), by the Duthie bull, Prince of Fashion (64587), which was by the 300-guinea Cruickshank bull, Scottish Archer (58893), dam Missie of Nairn (63035). Her calf, a red bull, imported in dam, by Prince Charlie (73263), promises to make a good one. Mr. Platt considered her one of his very choicest heifers when in quarantine. Mina Gladstone's Rose, bred by the representative of Mr. S. Campbell, Kinellar, sire Emancipator, dam Mina Gladstone's Gem, by Clan Alpine (60495), is half-sister to W. D. Platt's \$720 Golden Fame, and traces back to the late Mr. Campbell's noted Mina family; Verbena's Blossom, sired by Imp. Eclipse (49526), dam Imp. Verbena, which produced the sweepstakes bull, St. Valentine, and the grand young cow, Verbena's Flower, recently sold by W. D. Platt to Mr. N. P. Clariss, Minn.; Clarissa, by Eclipse (Imp.) (49526), dam Imp. Cleto, bred by S. Campbell, Kinellar; Wimple's Heiress, sire Golden Robe, dam Wimple, Imp. This young cow has a beautiful red heifer, 10 months old, sired by Imp. Prime Minister. Violet of Rosedale, a half-sister to St. Valentine, is a fine young cow, sire Imp. Guardsman (18950), g. sire Imp. Eclipse (49526). Other families in the herd are: Fairies, Duchesses, Diamonds, Charls, Crimson Flowers, etc. The Leicesters number about 70, and were never in better shape. The ewes are all bred to Long Joe, which was a winner as a lamb and a yearling. A lot of good shearlings are in stock, which should place Mr. Gardhouse in a position to supply customers with the right stuff. He bought the shearing ram, "The Star," at Mr. Grant's dispersion sale, which they considered their best ram and used on their flock. The old ram, "Try Me," which won 1st prize last fall at Toronto, London, and Ottawa, is in the form, and will come again. Mr. Gardhouse breeds the best, buys the best, and the best are none too good for him. He is open to purchase a few good young bulls, particularly roans about 10 months old.

The White Man's Burden Killer



—the perfect fence for all purposes—made of LARGE Spring Steel Wires with the heaviest galvanizing. Cannot be broken by animals, or by expansion and contraction. Built right by the makers, if it is put up right by the user it lasts a lifetime—

American Field and Hog Fencing

Sold by our agents in your city. If no agent, write to us and we will solve your fencing burdens.

American Steel and Wire Co.,
 CHICAGO, NEW YORK, SAN FRANCISCO.

"SAFE LOCK" METAL SHINGLES
 THE KIND THAT ARE WEATHERPROOF
 COST LITTLE MORE THAN WOOD SHINGLES
 AND ARE LIGHTNING AND FIRE PROOF
 ASK FOR FREE SAMPLES
 METAL SHINGLE & SIDING CO.
 PEEBLES, ONT.



BUCHANAN'S
 (Malleable Improved)
PITCHING MACHINE
 For unloading hay and all kinds of loose grain.



Unloads on either side of barn floor without changing car. No climbing necessary. Malleable Iron Cars. Steel Forks. Knot Passing Pulleys. Will work on stacks as well as in barns. Satisfaction guaranteed.

The Common-Sense Sheaf-Lifter

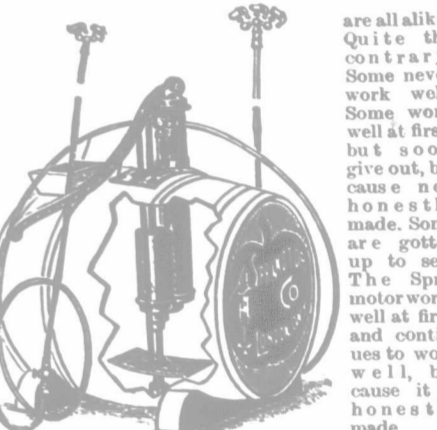


Works in connection with Pitching Machine, and is the most complete apparatus ever offered to the public for pitching sheaves. Sheaves left in the mow just as they come from the load.

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are all alike. Quite the contrary. Some never work well. Some work well at first, but soon give out, because not honestly made. Some are gotten up to sell. The Spramotor works well at first, and continues to work well, because it is honestly made.

We guarantee our machines in every detail against all defects that may arise, and our guarantee is good. We can satisfy you in this point. We could not afford to do this unless we did our work well. All we ask is that the Spramotor be given reasonable care. We will tell you all about these things if you write us. A 76-page copyrighted treatise on the diseases affecting fruit trees and their remedies, for the asking. We pay the postage. Address,
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 Agents wanted. Mention this paper.

A MACHINE
 to weave fence of coiled hard steel spring wire at half price of factory fence. \$25 buys wire for 100 Rod Fence. Catalogue Free. Address,
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FREE! Best Fence Machine Made.
 To first purchaser in each neighborhood of not less than 1,000 lbs. Coiled Spring wire at market price Offer open for 30 days to introduce our goods. -om
McGregor, Banwell & Co., WINDSOR, - ONT.

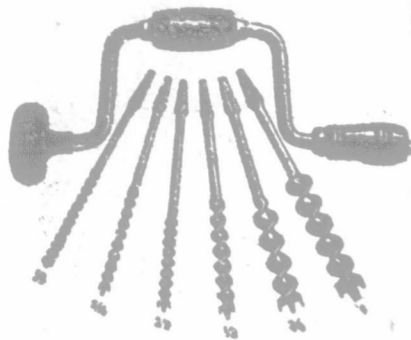
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Church Bells, at prices which would astonish you.



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PURE MANILA, 650 FEET,
SPECIAL MANILA,
TIGER,
STANDARD.

Farmers! Don't be taken in. There is none "just as good." These twines will not bunch at the knoter, and a Binder will run all day without stoppage, thus saving time, annoyance and a "lot o' cussin'."

We pack our twine in bags of the size of ordinary grain bags, and we are not ashamed to put our name upon it. Don't take any other.

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For MAPLE SYRUP and SUGAR. Has a corrugated pan over firebox, doubling boiling capacity and saving fuel; small interchangeable syrup pans (connected by siphons), easily handled for cleansing and storing, and a perfect automatic regulator, which secures rapid and shallow evaporation, and produces the best quality of syrup. The Champion is a perfect evaporator for

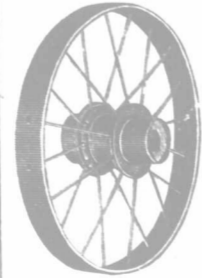
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Low, Wide-Tire Wheels FOR WAGONS.



Made to fit your axles. Every farmer should have a set of these low, wide-tire, wrought-iron wheels for drawing hay, grain, corn, manure, stone, etc. They are lighter, stronger, and much cheaper than wooden wheels. Write for prices.

Dominion Wrought Iron Wheel Co., TORONTO.

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

Permanent Branch Houses: TORONTO, ONT. MONTREAL, QUE. LONDON, ONT. WINNIPEG, MAN.

Handsome Is that Handsome Does.



NO OTHER MOWER LOOKS QUITE SO NICE.

NO OTHER MOWER WORKS QUITE SO WELL.

OUR NO. 8.

It's startling to hear of the work some mowers can do— At least, so the agents say— That with two men drawing them they can cut Right through large cocks of hay.

For a farmer, just think how needful that is: Why, it is wonderful to relate! But for a mower to cut your grass, Just try our Number Eight.

To be sure it is made for horses to draw, But to use it is a pleasure; And the farmer with fields of grass to cut, Will find our Number Eight a treasure.



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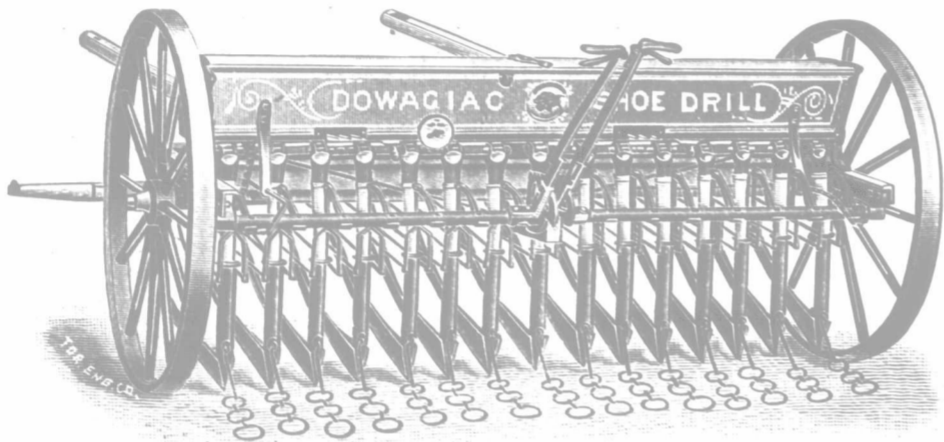
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The STEVENS MFG. CO.'S SHOE DRILL

Undoubtedly the best grain seeder made. Specially adapted for use in Canadian Northwest.



WHAT IT DOES :

Works perfectly in wet as well as dry ground.
Presses down stubble and trash and passes over.
Makes furrows to any desired depth.
Cuts sod or prairie ground better than any other device.
Seed deposited at bottom of furrow—cannot be blown away.
Makes furrows close together, utilizing all ground.

WHAT IT IS MADE OF :

The best material in every respect.
The best plow-share steel for shoes.
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Malleable iron for all light castings.
Main frame of angle iron, trussed and braced, and practically unbreakable.
Poles and all other parts of wood made of thoroughly-seasoned stuff.
Wheels with solid hub, hickory spokes, ash rims and three-inch tires.
In workmanship and material cannot be surpassed.

The STEVENS MANUFACTURING CO.,
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And there is no better to be had.

The orchestral attachment renders possible the effect of sixteen different stringed instruments. It is used only in the "BELL." Send for free booklet, No. 40, it tells all about it.

Built to last a lifetime.

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Government Analysis.

LABORATORY OF INLAND REVENUE,
OFFICE OF OFFICIAL ANALYST,
Montreal, April 8, 1895.

"I hereby certify that I have drawn, by my own hand, ten samples of the

St. Lawrence Sugar Refining Co.'s

EXTRA STANDARD GRANULATED SUGAR, indiscriminately taken from ten lots of about 150 barrels each. I have analyzed same and find them uniformly to contain:

99.99 TO 100 per cent. of pure Cane Sugar, with no impurities whatever.

(Signed) JOHN BAKER EDWARDS, Ph. D., D.C.L.,
Prof. of Chemistry and Public Analyst, Montreal.

Please Mention the Farmer's Advocate.