

**PAGES
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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE AND SUCCEED
FOUNDED 1880

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

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EDITORIAL.

Queen Victoria.

BORN MAY 24TH, 1819; ASCENDED THE THRONE JUNE 20TH, 1837; DIED JANUARY 22ND, 1901.

THE Queen is dead. The Queen is dead. So ran the mournful tidings, with an electric thrill, around the world. Never before in the history of this old earth did such a message awaken so universal a lament in human hearts. Alike in the palaces of wealth and in the humble homes of poverty throughout and beyond the bounds of the greatest empire the world has ever known, the people loved her for her goodness, her kindness, her righteous rule. How Canadians will ever cherish her personal attention to our wounded heroes returning from the South African war, and the people of Ireland her recent self-sacrificing visit to the Emerald Isle! Poets, statesmen, literati, irrespective of nationality, have united their panegyrics to her womanly worth and sagacity and the beneficence of her reign, in which has flourished as never before the intelligence and liberty of the common people. But in all the splendid eulogiums of the press, the agriculturist cannot but reflect that one noteworthy aspect of the Victorian Era has not received attention commensurate with its far-reaching significance, and on behalf of the Canadian husbandman the FARMER'S ADVOCATE ventures a few words, however inadequate, in retrospect.

An adapter of Ben Johnson once wrote: "A farmer Queen the world to farming draws," and so it has been. Agriculture, at the coronation of Victoria, through Great Britain and the world was at a low ebb, but in no department of human effort did the 19th century close with more marked evidences of progress than this great industry, particularly in its main department of live-stock breeding. This we may now say without any suspicion of the todysism with which Anglo-Saxons have been sometimes accused. The love of the Royal Family for the industry was somewhat hereditary. The late Prince Consort (Albert Gotha), though no genius, was a far-seeing, level-headed man, and liked nothing better than his farming operations, in which he was pre-eminently successful, and for which he infused his family with a genuine attachment. We find him an exhibitor at the Smithfield Show as far back as 1843, and probably not a year since passed that the Royal herds were unrepresented in public competitions. The Prince of Wales (born Nov. 9th, 1841)—King Edward VII., we must now call him—is still one of the most extensive and successful farmers and breeders in England, and his son, the Duke of York, is an enthusiastic farmer and breeder, and so with other members of the Royal Family. For over 10 years, the Queen's farms and dairy have been a favorite resort of the family and their visitors. The Princess of Wales has had her dairy at Sandringham, and with her, her daughters have taken great pleasure in dairy work, several of them being adepts as practical buttermakers.

The Royal farms are situated, first of all, at Osborne, on the Isle of Wight, where Clydesdale horses, Jersey and Galloway cattle, Southdown and Dorset Horned sheep have been successfully reared. But it was at the Windsor farms that all the leading breeds and the chief prizewinners have been found. These were: (1) the Home or Dairy and the Shaw farm, (2) the Flemish farm, (3) the Norfolk farm, and (4) the Bag-shot and Rapley farms. The Shaw farm was bought about 25 years ago, from a Frenchman, Mons. de Shaw (hence its name), and here the dairy cattle and all the Shorthorn herds were kept. The Windsor

Shorthorns acquired great fame at the Royal and Smithfield shows, but a few years ago someone raised the cry that the Royal herds were sweeping all before them because William Tait, the manager, had a long purse with which to purchase prize-winners. So this led him to adopt the policy of exhibiting nothing but what was home-bred, but still the Royal cattle were good enough to sweep the boards. As a matter of fact, they simply asked a fair field and no favors, and so it has been all through. In the early days several good Bates cattle were purchased. Then Booth bulls were largely in use, but latterly the Cruickshank type held sway. The Flemish farm has been the home of the celebrated herds of Hereford and Devon cattle, furnishing many distinguished winners. The Queen was always partial to the land "North of the Tweed," and in 1847 the Prince Consort purchased the lease of the Balmoral Estate (some 10,000 acres), and at a later date secured the fee simple, to which was subsequently added the Braemar domains. Aberdeen-Angus cattle have been the chief pure-bred stock at these farms.

We doubt not but that the British Royal House will continue to sustain its active interest in agriculture and stock-rearing. His Majesty, the new king, has a large stud of Shire horses and Hackneys at Wolferton, Sandringham. He is a successful patron of the Thoroughbred horse, and his herd of Shorthorn cattle at the Norfolk farm, as we have seen, has a great reputation; while the Duke of York, with his Red Polled cattle and other stock, has been highly-successful alike at summer and fat-stock shows.

In conclusion, we may fairly say, that just as Her Majesty in court and home life set the pace and the ideal for society and the people, so did the Royal Family, by their devotion to agriculture, give a bent to popular tendencies in that direction. Men of wealth, eminence and great intelligence turned their attention in these directions, thus giving an impetus to advancement which the inherent merit and true dignity of the avocation fully sustain everywhere throughout the English-speaking world. The advantages thus accruing to agriculture have been incalculable, and they have come without any patronizing spirit, on the one hand, or dependence, on the other, but rather through the inspiration of intelligent example in thorough accord with the best traditions of the progressive Anglo-Saxon race.

A School of Agriculture Needed in Manitoba.

Our Federal and Local Governments annually devote very considerable sums for the purpose of inducing immigration to Western Canada, and so long as a reasonably good class of settlers is brought in, there need be no quarrel with such a policy, because the country needs more people. Not only will increased population benefit the commercial and professional interests, but will, by enhancing the value of farm lands, benefit every farmer already located in the country. Besides, the increased trade in both exports and imports created by increased population must assist in the reduction of freight rates, cheapening the cost of living and increasing the profits to be obtained from the products of the farm.

While it may be well enough for the Provincial Government to devote funds toward immigration purposes, still, if a greater effort were made to assist those already located here, the immigration question would very shortly settle itself. The policy of a Government should be framed to benefit the country not only to-day but to-morrow, and in neglecting to provide for the higher elevation of the agricultural portion of the population, the Government is neglecting one of its greatest opportunities. Every intelligent successful farmer is a more valuable asset to the Province than many immigrants, and in addition, doubtless does more

actual immigration work than the salaried immigration agent. For the sons of these men, what is being done? With the rapid advancement of agriculture in other countries, the future promises an ever-increasing keenness in the competition, and to be successful the farmer of the future must be educated, and that education cannot be obtained in the common school through teachers having little or no sympathy with agriculture, nor can it be learned while the boy is taking the place of a man and putting in 12 hours a day, with a couple of hours extra for chores.

Public funds are liberally voted for the higher education of the professional classes, and rightly enough, but why should not equal attention be given to educating the agriculturist, upon whom depends every other interest.

An agricultural school established in connection with a small farm, operated on a practical scale, is what is wanted, where farmers' sons could receive an education that would be of practical everyday service to them in their life work. No elaborate college such as Ontario now possesses would be necessary at first. A winter short course might be made a prominent feature, for which a very expensive equipment would not be necessary.

At the Agricultural College of Wisconsin, where the short course is made a strong feature, there is an increase in the attendance this winter of 20 per cent. over last year, there being 295 students taking this course, 234 of whom are residents of the State and 60 coming from other States, and one from Canada. This large attendance is ample evidence of the popularity of the short course. The dairy school would of course be affiliated with the agricultural school, whereby its efficiency could be greatly increased and its expense proportionately decreased.

Another advantage of such a school to Manitoba, and the whole West, for that matter, would have regard to the labor question, which is, and will be, of the greatest importance. Extra help at harvest time will be a necessity for years to come in all the wheat-growing sections. To supply this extra help during the summer months, we draw largely from the young men of Ontario and the Eastern Provinces. These men stay a few months, and earn good wages, but as there is nothing for them to do during the six months of winter, most of them drift away east again. Now, if there was a practical school of agriculture here, with a winter short course, free tuition, and board at cost, many of these bright young men would be quick to take advantage of it, while the Province would be incidentally assisting them to get over the winter, and at the same time giving them a training that would qualify them to become better settlers and citizens of our own Province. Another class that would be greatly helped, providing the practical working side of the farm were developed as it should be, is the young man from the Old Country, who possesses a good general education, but who has no practical knowledge of farming as applied to this country.

The present Local Government went to the country with an agricultural-college plank in its platform. Was it only for ornament, or will the coming session reveal some practical development along this line? We believe we are voicing the sentiments of many of the most intelligent and successful farmers of this Province in advocating the establishment of a Provincial School of Agriculture.

More Valuable than the Price.

Want of space confines our review to only a small part of the contents of the FARMER'S ADVOCATE Christmas number, the full list of which would occupy a column at least. We can recommend the number to our readers, and if you have friends in this or distant lands, send them a copy: it is many times more valuable than the price.—*Dufferin Leader.*

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

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THE DOMINION.

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Government Aid in Tree Planting.

Elsewhere in this issue appears a report of the organization of a Manitoba branch of the Canadian Forestry Association at a meeting held in Winnipeg. The meeting was an interesting one and attended by a goodly number of representative men. Mr. E. Stewart, Superintendent of the Forestry Department, gave some interesting and instructive information regarding the importance of our forest areas and also the advantages to be gained by the forestation of treeless districts. He outlined a scheme whereby it is proposed to assist the settler to surround his home steadings with shelter belts. The scheme sounds feasible enough if properly carried out, but it is just a question whether the farmer who gets his trees for nothing will appreciate them or care for them as well as the man who pays for them out of his own pocket. It is human nature to put a greater valuation on that which is acquired by personal effort or sacrifice than for that which costs nothing, whether it be a package of trees or a pure-bred bull. Still, so vastly important is this question of shelter belts that the experiment seems worth trying; but, to insure any degree of success, such a scheme as indicated by the Forestry Superintendent must be administered without reference to politics—inspectors and inspectors must receive their appointment on their expert knowledge and experience of tree-planting, not of party politics, for the blight of rust or canker worm would not be more deadly than that of politics to this tree-plantation scheme.

WILFRED T. HARRISON, Myrtle Grange, Myrtle, Man.:—"It gives me great pleasure to acknowledge the receipt of your Christmas number. It is about better than last year's, and will be hard to improve upon. I have been a pretty constant reader since 1887, though not a subscriber, and I find it one of the most interesting and useful papers I have ever read. I also enjoyed the various large fairs." January 16th, 1901.

Preservation of Soil Fertility.

The question of the preservation of soil fertility is one of perennial freshness, a question that will become of ever greater importance as the country grows older, as the vast stores of fertility that have been gathering for centuries in our virgin prairie lands become exhausted by continual cultivation and constant cropping. The past season was an exceptionally trying one, and yet the inconveniences that, as a result, have to be endured by many may not all be in vain if the majority of our settlers are made to think and study out the conditions which surround successful farming, and which must be understood to make farm life all it should be not only a profitable business, but an independent and enjoyable life.

On most of the heavy, strong lands, failing crops are not due to a lack of fertility so much as to a bad mechanical condition of the soil, whereby the fertilizing elements become locked up and unavailable for food of growing plants. Even when land is ordinarily well worked, well plowed, and frequently summer-fallowed, results show that it has lost much of its productive power. This in large measure is owing to the lack of vegetable matter, humus, in the soil, constant cultivation having worn it out. Humus (see extract on this subject elsewhere in this issue, from Prof. Shutt's report) is essential to both light and heavy soils. It assists in retaining and storing moisture, in preventing soil drifting, in opening and warming stiff clays and preventing them baking and drying out, and in making the fertilizing elements in the soil available for plant food. The most available source of supply in this country is grass and manure, and this opens up a wide field for discussion as to the most practical methods of providing this essential ingredient of the soil, the most suitable varieties of grass, preparation of the land, quantity of seed per acre, seeding, whether with or without nurse crop, and then what use should be made of the grass crop. Manure being only a by-product of stock-raising, its production, application, etc., furnish ample subjects for thought and study. This is an opportune time to take up this matter, and we invite discussion.

Improve the Poultry in Manitoba.

The condition of the poultry industry in Manitoba is anything but what it ought to be. Farmers have been awakened to the necessity of improving their horses, cattle, pigs, etc., but the poultry on the farm have mostly been thought to be too insignificant to bestow much attention upon. In the United States this branch of farming has assumed enormous proportions, so much so that its value is greater than that of wheat and corn combined. That the industry has assumed such proportions is not to be wondered at when we read that numbers of poultrymen raise yearly from 5,000 to 30,000 birds of various kinds, and also that the price of breeding stock ranges from \$5 to \$200 and over. The largest if not the most profitable branch is the broiler and green-duck trade. In this there are establishments with investments from \$10,000 to \$30,000, turning out up to 35,000 birds per year, which sell at prices ranging from 15 to 40 cents a pound. Now, to come to the main subject, "Poultry in Manitoba." What a contrast we find! Most farmers think there is no profit in it, which is quite true when carried on the way it is. A look into the village butcher shops tells a disgraceful tale. Birds of every known and unknown breed, dressed any shape and of very inferior quality, are mixed up without any attempt at sorting into uniform lots; consequently, prices realized are so low that there is no profit. The main cause of the poor quality of poultry in this Province is the penny-wise custom of using scrub males for breeding. The utmost that is generally done in that line is to change eggs with the neighbor whose fowls are usually just as bad as his own. Now, a few dollars spent every year for cockerels or eggs from a reliable poultryman, would be found a profitable investment. For a general-purpose fowl, the Plymouth Rock is to be recommended, and the different varieties of that breed, Barred, White, and Buff, are equally good. Wyandottes are somewhat lighter, but also suitable for the farm. One dollar a year per hen is not unreasonable to expect, so with 100 hens, \$100 can be added to the income, which would be a welcome addition. It has been proved in the United States that the poultry industry can not be overdone; the better the quality, the greater the demand, and also a better price per pound. I have noticed in the papers that a company is doing business in Ontario, buying chickens from the farmers, fattening and dressing them for the English market, and paying a higher price for them than is usually paid for dressed poultry. The birds are then properly fattened and dressed the way the customers want them, and they are sorted and packed each size by itself, which should be done in everything of that kind. That the ADVOCATE is paying more attention to this branch of farming is to be very much commended.

WALTER KING.

The Northwest (Canada) Entomological Society.

The second annual meeting of the Northwest (Canada) Entomological Society was held at Lacombe, Alberta, on the 16th January, 1901. It was a meeting essentially in the interests of farmers. At request of the President, the chair was taken by Mr. F. H. Wolley Dod, of Calgary, who was supported by the Vice-President, the Rev. M. White, and several well known farmers in the district. Letters in support of the objects of the Society were read, including letters from Mr. C. W. Peterson, Deputy Com. of Agriculture, Regina; Prof. C. C. James, Dep. Min. of Agriculture, Ontario; Dr. Jas. Fletcher, Dom. Entomologist; and the Right Rev. the Bishop of Calgary and Saskatchewan.

The President of the Society, Percy B. Gregson, on being called upon, explained that the object of the Society was to instruct and interest the farmers of the Northwest regarding the insects that affect their crops—to bring home to them individually the principles which underlie the treatment of insect pests, so that they can deal with them in time, without waiting, as so many do, till their crops are destroyed before applying for advice. Mr. Gregson stated that farmers are beginning to appreciate the value of the study of insects, and this was evidenced by the fact that a number of agricultural societies had during 1900 become active supporting members of the Northwest Entomological Society. Mr. Gregson impressed on the farmers the importance of careful observance of the habits of the insects that came under their notice, such as their time of appearance, method of feeding, the nature of their food, etc., or that they may understand what remedies are applicable. There is always a reason for every remedy recommended, and by observation farmers can readily learn the general principles which govern them. Some insects, for instance, such as beetles and caterpillars, feed by nibbling their food. Poison, therefore, should be placed on their food, so that when consuming their food the insects will also consume the poison with it. Other insects, such as plant lice, pierce through the outside of the leaf and suck juices by means of a trunk-like beak, and poison therefore will not reach them. As, however, insects breathe through little openings in their sides, they can be suffocated by anything which clogs up their breathing valves, such as coal-oil emulsion or tobacco fumes. Other insects hatch out in the spring, and then lay their eggs, so that timing seeding operations till after the date of hatching will avert attacks.

Farmers should not imagine that because this is a new country, there is freedom from insect pests. There have in very many places in the Northwest in 1900 been serious ravages made by insects, and the list of injurious insects now in the Northwest is getting very long. Insects always follow cultivation, and we must, therefore, as the country gets cultivated, expect arrivals of fresh insects. There are very many ways by which insects are always liable to be imported into a new country. They may come in clothes, lumber, domestic animals, packing substances (such as hay, straw or grass). It was probably in packing substances that all the grass-stem maggots common to Europe and America have reached us, including the Hessian fly, the wheat-stem midge and wheat-stem sawfly.

At the close of the meeting the officers for 1900 were re-elected to serve for 1901.

An Experiment in Dehorning.

During last winter an experiment was made on the Experimental Farm at Braddon, to ascertain whether the operation of dehorning when performed on fattening steers was beneficial or not. Fifteen Shorthorn grade steers were selected for this purpose; three of them were three years past and the balance two years old. They were divided as evenly as possible into three groups of five each. One lot was dehorned and tied in stalls with chains. The second group were also dehorned, but were fed together in a loose pen 10x28 feet in size. The horns were left on the third lot, and they were tied up in stalls.

The dehorning was accomplished in the following manner. A strong stanchion was built and the animal firmly fastened in, the head was then pulled down to a ring in the floor, and the horns were then removed close to the base with a saw; they all bled freely, but the wounds soon healed without any offensive odor.

All were fed six months on identically the same food, and each lot of five made the following gains in that period:

Horns left on—gained in six months	2,968 pounds.
Dehorned—fed in loose stall—do	2,964 pounds.
Dehorned and tied up in stall—do	2,330 pounds.

As the greatest difference between the gains of any of the above groups is 18 pounds, the result of this test would lead us to the conclusion that neither dehorning nor feeding in a loose pen has any advantage over the usual plan of feeding steers in stalls, with the horns on. This experiment will be repeated during the present winter, and at its close the result will be published.

S. A. BEDFORD.

TOMAS BRONSON, Goyser, Man.:—"I like the paper so well that I would not be without it." January 16th, 1901.

Winter Management of Brood Mares and Weanling Colts.

Experience teaches, and is, in most cases, the only school in which a man learns—so, whatever I write on the above subjects, your readers may put down as coming from an everyday practical man, who has had years of experience in this line and feels better able to manage a stud of brood mares and colts than to write and tell others how it should be done. But if I can, through my experience, warn others how to avoid disappointment and failure, then my object will have been attained. When the brood mare is taken up from pasture in the fall and put into winter quarters, it is well to see that she is comfortably "housed," or, at any rate, thoroughly protected from the inclemency of the weather. Wherever possible, she should have a roomy box stall in which she can take exercise on those days when the weather is too bad for her to go out, for there is nothing more conducive to abortion than allowing a mare to stay out hour after hour, humping up her back, in bad, stormy weather, and particularly during a rain or sleet storm or in a rapidly-falling temperature. It is quite a good idea not to run too many mares together when out, and only those accustomed to each other, and it is absolutely necessary they should have daily exercise in the warmest part of the day. If in a grass field, so much the better, as a "nip" of green, even if the snow has to be "pawed" away to be got at, is quite beneficial and much relished, otherwise a little good oat straw or well-cured hay strewn on the ground will keep them busy for an hour or two daily and enable them to get all the exercise requisite. It is not unusual for persons raising only one or two colts annually to work their brood mares to some extent. If care and judgment be used there is no reason why light work should not be a benefit to them; but beware of "backing" your pregnant mares, especially in muddy places. This is another frequent cause of abortion. It is not desirable to keep "in-foal" mares too fat, still it should always be borne in mind that the mare must be fed enough not only for her own sustenance, but for the proper nourishment of the "foetus," so that when the proper time comes a good strong, healthy foal is the result. If, in addition to what is given outside when in pasture, brood mares are given a good feed morning and night, or, say, two quarts each of ground oats, bran and cut hay, with the usual allowance of loose hay, they will probably keep in excellent breeding condition. Where this ration is not practicable, a liberal feed of cut corn fodder made damp and mixed with a couple of quarts of ground oats and a little bran will answer in its place. In any case, brood mares need plenty of "roughness," and this must be free from must or mold. They should have access to water at least twice a day. It is by far the best plan to have your colts come at "grass." They are far less trouble and liable to "do" better than if "dropped" in the stable, where there is danger of constipation, joint ill and other troubles. To obviate the former, many people make a point of administering an ounce of castor oil to the newly-born foal as soon as he is able to stand up. This plan is to be thoroughly recommended, and nothing but good can result, and many a future prize-winner's life has been saved by this common-sense practice right on the start.

Weanlings should never be allowed to lose flesh on leaving their dams, and in order to be ahead on this point, it is a good practice to teach the colt to eat a little ground oats and bran before weaning, having it so placed that the mothers can't get at it. In this manner they get accustomed to eat grain and sooner get over the loss of their dams. They should have daily exercise in a yard or paddock free from icy places where they can fall and injure themselves when playing around. They should have warm, roomy box stalls, where practicable, and not more than two or three colts together. On cold or wet days they are better kept inside if left out too long on such days they are apt to get a touch of colic, often accompanied with chills, which if not taken in time may result fatally. A good ration for youngsters is ground oats and bran in the morning, a ration of carrots at noon, scalded feed at night, with a little oil meal in it. Nice sweet hay night and morning.

Particular attention should be given to trimming the colt's feet regularly, say every month, letting the heels well down so the frog can touch the ground, and taking off the toes so the foot remains good and round and neither too long nor too short, thereby avoiding stilty joints, "cocked" ankles, and the like, which are much easier gotten than got rid of. At this period all colts should be halter-broken and become accustomed to be tied in the stall. This will save much trouble afterwards and is never so easily done. Feed regularly and liberally, give daily exercise and keep feet trimmed, and you have laid the best kind of foundation on which to build up good sound horses.

JOHN WYLLIE.
Maplewood Hackney Stud, N. Y.

J. G. Brown, St. Jean Baptiste, Man.:—"Accept thanks for Christmas number of the *Advocate*. It is most certainly a great credit to its proprietors; the illustrations are clear and up to the mark; the articles are well written, based on good judgment, and afford instructive information."
January 14th, 1901.

An Imperilled Industry.

The acute form assumed by the now thoroughly disseminated tuberculin test required by Government regulations to be applied in the case of cattle imported for breeding purposes calls for heroic handling, and being fully persuaded that the stockmen have, in this connection, a genuine grievance, we have had no hesitation in declaring ourselves fully in sympathy with them in their fight for freedom from the galling yoke which has been forced upon them by a despotism which subjects them to unreasonable inconvenience and expense, seriously hampering their trade, and from every point of view doing vastly more harm than good.

If it is necessary as a protection to our cattle from disease to enforce this test, why should it not be required in the case of animals passing from one Province to another, and to be logical, why not apply it to cattle going from one county to another, or from one farm to another. There is no hypodermic campaign against the ordinary milk herds of the country—no city or town in Ontario, so far as we know, enforcing such regulations—and none are compelled to submit to the test but the enterprising importers, who invest large sums in the very best pure-bred animals they can find to improve the stock of the country, and who surely are not going to put their money into unhealthy animals.

The fact is that the people do not believe there is any more of this disease among cattle than there was thirty years ago. There are no evidences that it has increased. There is no healthier country for stock under the sun. It is a very rare thing to see an unhealthy-looking animal on the farm or in any of our herds of pure-bred stock, and, as a matter of fact, very few are lost from disease that has any similarity to tuberculosis. In fact, the attempt to fasten this test upon the stock interests of the country has diverted attention from all the reasonable sanitary precautions which should be pursued in order to the maintenance of sound health. As the *English Live Stock Journal* points out, it has not helped, but rather hindered, the reduction of bovine tuberculosis, because, but for the very high claims made by its advocates, there can be little doubt that long ere now a law would have been passed in that country for the compulsory slaughter of animals visibly diseased, with compensation to their owners, and by that means any really dangerous cases would have been got rid of. Instead of this, nothing has been done, and nothing effectually will be done until the test is given its proper place—that is, to be used at the option of anyone who believes in it and chooses to put in into operation.

Furthermore, we have ample evidence that it has done much harm to healthy animals, causing in some cases blood poisoning, impotence in male animals, and other derangements of the system from which they have not in all cases recovered, and, in many instances, when applied to pregnant cows, both young and old, has caused abortion, which is beyond question the most serious and alarming disease with which the stockmen of this country have to contend. The experiments of Maffucci, as early as 1879, indicated that sterilized cultures of the bacillus in the animal body exerted such a marked influence on the tissues that they induced emaciation, atrophy of the liver cells and of the cells in the different parts of the spleen, and that they set up certain changes in the circulation, the result of which was seen in marked congestion of the lungs, kidneys, spleen, etc. United States breeders want our cattle, and want them badly, but are hampered by the test, for which they have no respect, and have repeatedly declared that they would far rather have them without the test, which is liable to have an injurious influence on them.

That there may be grave doubts as to the fluid "lymph" called tuberculin prepared from cultures of the tubercle bacillus itself, one might gather from an official report of the Quarantine Department, in which breeders are advised to study the test and see that "reliable tuberculin only" is used; and it is further claimed that the product is sterilized, and by a new crushing process the living organisms of tuberculosis are eliminated (?). One need not be surprised, therefore, at the vagaries of the test, and men cannot be too cautious in taking the hazards of injecting this dubious substance into their animals, either in weak or strong doses.

While the contention that the test as an agency for the discovery of the existence of tubercles in cattle, when reliable and properly applied, may have been reasonably well sustained, yet, as applied in Great Britain and Canada, evidence accumulates

showing its unreliability. There is no middle way. It must be either reliable or not reliable. As evidence of its unreliability, we have the statement of one of the most reliable of Canadian importers that of 12 animals tested for him by a British veterinarian, nine were declared to have reacted to such an extent that they could not be passed as free from tuberculosis. They were all sent back to the country, and in five weeks re-tested, when all of the nine formerly rejected were passed as free from any traces of the disease, while one of those passed at the first test was condemned.

Another equally honorable breeder and importer states that in a bunch of cattle tested, several showed the reaction, and yet in six months' time all the condemned ones passed, while one of two that passed the first test reacted under the second trial. According to experiments carried on at Dublin, Ireland, it both condemns the innocent and lets off the guilty, the extent of error amounting to 17 per cent. Even the European expert, Nocard, will not say that reacting animals are always tuberculous. He carefully qualifies it by using the word "almost," and in another place states that "at least 90 per cent of those that show no reaction are free from tuberculosis." Hence, the remaining 10 per cent, afford the opportunity of introducing the disease, despite this unreliable test, which is therefore of no real protection to the breeder. Surely this sort of thing is not to be palmed off upon the public under the guise of a scientific test!

The people are not now, and never have been, asking for the imposition of this alleged protection in the absence of direct proof that tuberculous contagion is carried or conveyed from animals to man, and in the face of the differences noted by bacteriologists existing between the bovine and the human tubercle bacilli. In a recent treatise on this subject, Prof. Marshall says: "The study of the tubercle bacilli in man and animals, comparatively, may lead to far-reaching results, and may also lead to an elucidation of many features of tuberculosis which are little or unsatisfactorily understood at the present time."

The fear that contagion to the human being might develop by being conveyed through milk from a tuberculous udder has excited attention in England and elsewhere. Recently, the Medical Office of Health of Manchester has had all the cows from which milk was sent to Manchester examined critically for tuberculosis. Professor Delepiere, with T. S. Lloyd, M. R. C. V. S., made a most careful examination and have submitted their report. In the city itself, amongst Manchester cow sheds, of 603 animals reacting and examined, 12 were found with diseased udders, and of these 12 only one was found to be tuberculous. Of those outside the city boundaries, 555 were examined, and of 39 affected udders, only two were tuberculous. The final examination included 2,000 cows on 108 farms, the milk from which came by railway. Of the large number tested, only 12 were found tuberculous in the udder. The significance of these figures is great. One may accept all that has been said about reacting dairy cows and see with it all how small a ground there is for any danger to the health of the general public from the milk supply. Three thousand two hundred and eighteen cows, carefully examined by experts, gave 15 cows whose milk, if used alone, would be suspicious. The report has given great satisfaction to the general public in England.

The number of deaths from human tuberculosis, or consumption, as it is called, is deplorably large in Canada, and yet it is lamentable the indifference of the public, and even medical men, to the precautions that should be taken to prevent the spread of the disease from one person to another, or to induce the observance of those reasonable precautions that will fortify the system against it. Only lately has the idea of consumption hospitals or sanitariums received any proper degree of attention. Scientific men brand the disease as contagious, and yet, while other ailments that claim not one quarter as many victims are scheduled and the houses placarded, no ban is placed upon the great "white plague." What physician raises a voice in protest while one member of the family contracts it from the breath or sputa of another? Said a leading physician and medical health officer to the writer: "We dare not; there would be a howl of indignation if we attempted to placard consumption. The law does not warrant us in so doing." And while this negligence little short of criminal goes on, the inoffensive cow is made the scapegoat, and, by means of an unreliable and injurious test, the great live-stock industry of the

country, just now emerging into an era of expected prosperity, stands in jeopardy of being driven to the wall. We speak advisedly when we say the situation is extremely grave, and if the Government is well advised they will avert the danger brought about through drifting into an untenable position, and one which, while serving no good purpose, either to human beings or animals, has already wrought very great damage.

This is not the occasion for regrets or recriminations, nor technicalities regarding official consistency, but, as Hon. John Dryden elsewhere clearly and forcibly points out, the time for decisive action has come for doing now what is right and just, and the sooner steps are taken by

experience with the disease, that the test is no criterion whatever of the seriousness of the disease or otherwise, even if any be indicated.

Another objection to the test is that, in the purchase and sale of animals, it is necessary to apply it under all kinds of circumstances when the animals are naturally unfitted to receive the test, and at such times as no experienced and skillful veterinary surgeon would desire to apply it. It can be of service only when employed properly by a competent man, and when the cattle are tested at appropriate seasons. Much harm is reported from various quarters to pregnant cows and also to young bulls. A valuable yearling bull sold by me last summer was impotent for some four months after, but is now all right. At the same time a yearling heifer was sold in calf, and a short time after aborted.

Under all the circumstances, therefore, my mind is clear that the test, as applied, affords no real protection whatever, and is a considerable source of embarrassment and annoyance to those who are seeking to build up the cattle interests of this country.

None of us can quite understand why those who are investing large sums of money in superior cattle should be thus hindered and tormented, while those who deal in comparatively worthless or inferior animals are not molested in any particular.

I have no hesitation in saying that it is the duty of the Dominion Government to at once cancel the regulation requiring this test on imported animals. The Canadian Government was the first to institute it, and for years after the arrangement had

been made with the United States Government for the imposition of the same test on cattle coming into that country the regulation was not enforced against cattle from Great Britain, as was the case in Canada. As our Government was the first to institute it and to request a conference with the United States authorities leading to a similar regulation in that country, I am strongly of the opinion that they ought to be the first to acknowledge the utter futility of the test as at present being applied in both countries. If such a course were taken, I have no doubt that it would serve as a strong incentive towards a similar course being adopted in the United States. Recent issues of English periodicals show that the same state of feeling and objection to the test exists in that country as elsewhere.

JOHN DRYDEN.

Shall Tuberculin Hinder Live Stock Improvement?

To the Editor FARMER'S ADVOCATE:

SIR.—It is not necessary to discuss the question whether the imposition of the test does or does not hinder live-stock improvement, because, owing to the fact that such a test imposed on importers produces in them a fear of consequences, which may mean financial hurt, is evidence enough that the continuance of the test for imported stock will undoubtedly hinder live-stock progress, such progress being dependent to a large degree on the influx of fresh blood from Great Britain. The agitation for and against the test has no doubt forced otherwise reasonable people to go to extremes in their statements, and from which they cannot be entirely excused. The stockman has undoubtedly a grievance, whether he exaggerates or not in stating his grievance. If it is necessary and advisable to test imported cattle, why is it not just as necessary to test with mallein all horses used for breeding purposes imported from other countries? Such a procedure would be far more reasonable, because glanders is undoubtedly capable of being transmitted from horse to man; in fact, more logic would be shown in enforcing a test with mallein, because glanders in man is practically only got from diseased (glandered) horses or mules. The motion of Arthur Johnston and Alex. Smith, at the Guelph meeting, is eminently fair and correct in its statements. Among other things, they draw attention to the fallibility of the tuberculin test.

In this connection, readers of the live-stock papers will doubtless have noticed the results of investigations by the Royal Agricultural Society of England—not a body of extremists, by any means. The results obtained by them are as follows: In a list of 31 head, 18 failed to react, three (3) of which were tuberculous, an error of 16.4 per cent.; of the 16 reacting, 3 were found not to be tuberculous, an error of 18.7 per cent., a total error of 17.61 per cent! A cow can now be seen at the dairy barn of the Wisconsin Experiment Station, twice tested and twice said to react, by the student bacteriologists conducting the test. Three subsequent tests, by the animal husbandry staff, at intervals of six months or more, showed her to be a non-reactor, and tests of her neighbors show that they also are free. Marshall (Michigan), writing of the management of tuberculosis, says: "When we consider the generality of tuberculosis, testing of imported animals seems to be of questionable utility." The wisdom is only seen in the rare possibility of some imported tuberculous animal getting into a herd free from tuberculosis, and this we maintain is something which each individual stockman should be held responsible for. I wish to repeat right here, however, that repeated tests may show an animal to be all right!" an instance of which is mentioned above, in the W. E. S. herd, and which Dr. Marshall says he has shown in previous statistics. Many cases when slaughtered show the intestinal lymphatic nodes only to be affected, the animal often being in good flesh, etc., the chances of infection from such cases being at the time practically nil. As to veterinary authorities, we cite the most recent, and the text-book used as an authority in the veterinary colleges of Canada, United States, Great Britain, France and Germany, namely, the work of Freidberger and Frohner. They state that the making of a positive diagnosis during life (*intra vitam*) is impossible, and that slaughter of all cattle affected would demand very extraordinary sacrifices. The same authorities also state that they venture to doubt the wisdom of veterinary police regulations, of which the enforced use of the tuberculin test is one form, against tuberculosis. As to the infection of man from animals, five such cases are reported, cited by Scherming, of Copenhagen; Pfeiffer (Weimar), Law, Rich and Ravenel (Phila.), all such being the result of wound infections got at post-mortems. As a result, one might lean to the opinion that the bovine germ would cause the disease in the human being. Let us, however, review the statistics: Tuberculosis in all its forms in England and Wales has decreased 30.1 per cent. in thirty-five years. At the same time, intestinal tuberculosis in children under one year has been said to have increased 27 per cent., due, as some would have us believe, to the use of milk from tuberculous cows. Autopsy statistics with regard to the above show those lesions (intestinal) to be secondary, the primary lesions being in the lungs, thus weakening the case against milk. With regard to the danger from milk and udders, let us consult the report of the medical officer of Manchester, Eng. Six hundred and three (603) city cows were examined, only twelve udders being affected, and only one (1) of which was tuberculous. Of the other five hundred and fifty-five (555) cows examined outside the city, only thirty-nine (39) udders were affected, two (2) only being tuberculous, and eight were indurated. Going further, seven hundred and twenty-nine cows, on twenty-nine farms, were examined. Thirty-three (33) showed udder affections, three



DALE AND DOLLY 5TH.

Champion Herefords at the International Live Stock Show, Chicago, December, 1900.

the Minister of Agriculture to relieve the tension, in so far as he has authority, the sooner may we hope for reciprocal action on the part of the United States Government and a removal of the barriers to business which are at present exasperating the stock breeders of both countries.

Hon. John Dryden on the Tuberculin Test.

To the Editor FARMER'S ADVOCATE:

In answer to your request for a statement of my views on the question of the desirability or otherwise of the continuance of the tuberculin test on imported cattle, I have to say that my opinions are so decided and clear to my own mind that I have no objection to give them to you for publication over my own signature, if it is thought desirable.

It is my opinion that a mistake was made when, by order of the Department of Agriculture, this test was first instituted many years ago. Whoever was responsible for its conception no doubt had before his mind the possibility, by the employment of the test and the butcher's knife supplemented by a grant from the Government of several thousand dollars, of ridding the country entirely of bovine tuberculosis. This being accomplished, the testing of cattle coming into the country would, in his opinion, prevent its introduction.

Since that time no attempt has ever been made to entirely destroy the diseased cattle at present existing in the country, and I assume none ever can be made. Such a scheme would provoke a rebellion among those whose interests would be affected, and, in addition, it would be undertaking an impossibility.

This being the case, the application of the test to imported cattle is of no real service. There is no more reason why animals purchased in countries outside of our own territory should be tested than those that are purchased within our own borders. No man can satisfactorily tell me why I am permitted to buy an animal, say in Manitoba, without notice or hindrance, and yet am not allowed to buy a similar animal in Scotland without the interference of governmental authority, as I am as likely to buy disease in one country as the other.

It is now admitted and is perfectly clear that the test as ordinarily applied is not authentic. Even the best authorities in Europe will not say that it is always reliable. It may frequently prevent the purchase and reception of a very valuable animal which would undoubtedly live to old age without the possibility of communicating the disease to any other member of the herd, while at the same time it permits an animal to pass unnoticed which may be diseased in such organs as would make it possible for the disease to be communicated.

It is also admitted by those who have had some



LINCOLN YEARLING WETHERS.

Winners of first prize and silver clip as best pen of Longwools at the Smithfield Club Show, 1900.

only of which were tuberculous. The final examination had to do with the milk of 2,000 cows, out of which only twelve cows were shown to have udders affected with tubercular trouble and capable of conveying the disease. On twelve farms visited, only five cows were found with tuberculous udders. Freidberger and Frohner state that in post-mortems many cases are termed tuberculous when they are not, and they also state that a positive diagnosis cannot be made, unless backed up by a microscopical examination. Yet, how many cases post-mortem ever reach the stage of a microscope? The list of diseases apt to be mistaken for tuberculosis need not be recapitulated here. Some time ago, in company with a bacteriologist, the

writer injected tuberculous material from a tuberculous subject into the udders of two cows, and, after allowing some time to elapse, the milk being examined at intervals, no effects were shown either in the milk or the udders. It will be remembered that the udder is said to be an ideal spot in which to grow germs. In the 16th and 17th annual reports of the Wisconsin Station, Farrington and Russell state that pasteurization practically limits the probable or possible danger as far as milk is concerned, and when we consider the danger from meat we find it classed as practically nil! Repp, in the *Phila. Med. Journal*, Aug., 1900, states that the transmissibility of tuberculosis to man by means of meat is only presumptive, and, if such was the case, an efficient system of meat inspection would practically eliminate the danger! We have shown the liability to error in the tuberculin test, and the comparative freedom from tuberculosis of cows' udders; also, that tuberculosis is decreasing in the human family, and that efficient pasteurization and meat inspection render any probable danger to man from animal products from this disease practically nil! We are forced to deprecate the attitude of several newly-fledged veterinarians, in which they advocate slaughter based on the tuberculin test, men whom we know to have had practically no experience with the disease. It is well to again draw attention to the fact that owing to the reliance placed on a test proved to be fallible that proper precautions with regard to hygienic rules, etc., have been neglected (Christmas number *ADVOCATE*, quoting *London Live Stock Journal*), as have rational methods of handling the disease! Again, we must draw attention to the contagiousness of tuberculosis as between man and man, and it is the acme of folly to overlook that fact and endeavor to fasten the major responsibility on the domestic animals. If the same zeal was only shown in the education of man re tuberculosis, how soon should we note even greater changes? To debate further the chances of error in the tuberculin test would be futile, as we know positively that such may occur, such chances increasing, of course, when the test happens to be in the hands of incompetents! Many influences tend to impair its absolute reliability; by so stating we do not claim that it is valueless, but do state and affirm that it is not infallible, consequently the test should not be used as a part of the Governmental machine. Let each individual use it or not, as he pleases; and let us endeavor to promote a system of education and investigation so that more exact knowledge may be available. Considering the various phases of the question, we are *unhesitatingly* one with the stockmen in asking for the abolition of the tuberculin test as a part of a quarantine system.

VETERINARIAN.

Opinions of the Press.

The FARMER'S ADVOCATE is read with delight and profit in every farm home it reaches.—*Bois-sevain Globe*.

The Home Department of the FARMER'S ADVOCATE is of the usual high standard of excellence. The Christmas number is profusely illustrated with engravings which are real works of art. The FARMER'S ADVOCATE can be confidently recommended to all farmers as a thoroughly up-to-date practical journal.—*Holland Observer*.

The whole number is superbly illustrated on every page. It is without doubt one of the most ambitious and happy efforts in the line of agricultural and home journalism which we have ever seen. The Christmas number of the FARMER'S ADVOCATE for 1900 is one of which the publishers may well feel proud, and one which its many readers will long treasure and remember.—*Nepawa Press*.

One cannot be surprised at the strong hold the FARMER'S ADVOCATE has upon the people everywhere. Apart from its incomparable strength in regular issues as an agricultural paper, the Christmas number goes to every subscriber without extra charge, while the readers of other periodicals are charged forty or fifty cents extra for holiday issues.—*Edmonton Bulletin*.

The FARMER'S ADVOCATE has issued a Christmas number that is a credit to the proprietary, and to the country. The production is not only elegant, but the matter the number contains is of value and interest to the farmers of the Northwest. The number is profusely illustrated with pictures of prize stock, of model farmsteads, and portraits of prominent agriculturists. Among the last are several Northwest friends, including Angus MacKay, J. A. Turner, Prof. Thomas Shaw, and S. A. Bedford.—*Regina Leader*.

Among the Xmas numbers of magazines that have been laid on our table during the past week, the FARMER'S ADVOCATE takes a very high place. It contains contributions from many of the brightest minds of the century. It is a farmer's paper in very truth—useful, bright, cheerful, full of most useful information along many lines. It is little wonder that it has taken such a place in the hearts of the Manitoba farmers. We cannot help but congratulate the ADVOCATE on its success.—*Carberry Express*.

Government Horse Breeding.

The exploitation of a scheme for the establishment of a ranch and remount depot in the Canadian Northwest for the breeding and training of army horses for the service of the Empire has been discussed at considerable length in the daily papers by military men in the last few weeks. The proposition, briefly stated, is that a free grant of land in the Alberta district, sufficient to support 25,000 horses, be offered by the Dominion Government to the British Government for the purpose indicated, and that the two Governments co-operate to bring it about, provision being made for the payment of an adequate staff of officers and men, with the inevitable accompaniment of a pension on the event of superannuation. We have seen or heard no expression of opinion by farmers and stockmen in regard to the proposal to take out of their hands to this extent the market for a class of stock which they are engaged in producing; but we shall be surprised if they regard it with approval or even with indifference. They have hardly yet forgotten the experience of less than ten years ago, when good horses were sold for less than half the cost of raising them, and we judge it will not be a welcome suggestion that just when prices have reached a figure where it pays to produce them the Government shall employ public money to compete with private enterprise in supplying horses for a purpose for which the animals raised by the farmers of this country have proven themselves superior, in quality and endurance, to any other in active service in the South African war. Visionary theorists can readily map out a scheme on paper which, from their standpoint, looks plausible, and farmers can well understand the penchant of the average military man for a soft place in times of peace; but when it comes to a question of successful breeding of horses or stock of any kind, experience has shown no very brilliant successes in Government establishments or enterprises along this line. The scheme adopted by the Dominion Government some years ago of hiring stallions at a high rental from the Haras National Company, of Montreal, and placing them at the various Experimental Farms, where their services were held at a nominal fee in order that the farmers might avail themselves of what was considered by the politicians a favorable opportunity of improving their stock, proved a miserable failure, the farmers knowing better what they needed than did Government officials, and, as a consequence, the stallions stood in their stalls till they were stocked and worn out with waiting for work, while enterprising men with their own means brought in the class of sires they knew were needed, with the result that high-class horses are now readily available in most districts. Even at the Government Experimental Farms, where high-priced imported animals have from time to time been placed, little that is complimentary can be said of the success scored in keeping up the standard of the stock; indeed, it is perhaps not going too far to say that the opinion prevails that in most instances there has been registered a gradual but sure decline in the quality and character of the stock placed in these establishments, so much so that it has become a question whether money is wisely spent in putting high-priced stock into them to any greater extent than is needed for the instruction of students in the study of breeds where there is a school in connection, but that the work of these institutions should rather be in the direction of experiments in feeding, in order to arrive at conclusions as to the cost of production and the relative value of different feed stuffs.

The science and art of breeding comes not from fine-spun theories, but is largely an intuition which comes to the man who lives with his stock, studying their nature and individual characteristics, watching and directing their feeding and development; and about the only successes in stock-breeding worth naming have been the result of intelligent and well-directed private enterprise.

The question of providing a supply of army horses is also being discussed in the English papers, and a letter on the subject recently appeared in the *London Times* from the pen of Sir Walter Gilbey, himself a successful breeder of horses and a prolific writer on the subject, in which he states very clearly that he is no advocate for Government supervision or control of horse-breeding in England. He says: "It is not, I think, desirable that the British Government should embark upon costly horse-breeding operations in emulation of foreign Powers. Private enterprise in England has succeeded in producing domestic animals of all kinds so far superior to those bred in other countries that the best of our English stock, whether horses, cattle, sheep, or swine, are purchased, at 'fancy prices,' to improve their kind in every civilized part of the world; and breeding industries would not benefit were the independence of the individual undermined by Government help which relieved him from the necessity to exercise his own energies and judgment."

While the present aspects and prospects of the business of breeding horses are favorable, and there is every encouragement to produce the best class of saddle and harness horses, it should not be forgotten that good judgment is required in the selection and mating, in order to breed the proper type to bring the best prices, and that, with the mixed classes of mares in this country, unless great care is exercised in this regard, we may look for a very large percentage of misfits, which must be sold at low figures; so that while men who have

studied the needs of the market for the best class of light horses may, with a fair degree of success and profit, engage in producing that class, the rank and file of farmers will find themselves on safer ground by breeding and raising a good class of heavy drafters, for which there is always a fair demand at good paying prices. In this class there are fewer failures, and a slight unsoundness or blemish does not so heavily discount their value. These are needed in times of peace as well as of war, while the army horses bred this year will not be available for sale for five years to come, and there is no certainty what the demand may be at that time.

The *London (England) Live Stock Journal* of January 18th says: "The latest horse scheme is a great Canadian stud farm, which will throw into Great Britain annually 25,000 horses. It is questionable if Great Britain has ever given any indication that it wants 25,000 horses, or even 2,500 horses, per annum, but just now everybody will have it that fortunes are to be made in this direction. Matters will no doubt settle down by and bye."

Army Remounts in the West.

There are in parts of the West numbers of tough, hardy, light horses, which, while not up to the standard of army remounts in a time of peace, are surely the equal in usefulness and endurance of the horses being picked up by the thousand in foreign countries for the immediate use of the British army in South Africa. The Chief Veterinarian of the Dominion Department of Agriculture, who personally selected the horses for the Strathcona Horse, must be fully aware of the available horse supply of the western ranch country, and yet there seems to have been no effort made by our Government to draw the attention of the buyers of British army remounts to this field of supply. With the reported satisfaction given by the horses which went from Western Canada with the Canadian contingents to South Africa, it cannot be said that our horses are unsuitable. What, then, is the matter?

We publish below a letter addressed to the Hon. Sidney Fisher, Minister of Agriculture, by Mr. C. W. Peterson, secretary of the Territorial Horse Breeders' Association. We doubt if the plan proposed by the Territorial Horse Breeders' Association would work out satisfactorily. Dealing in horses is quite another thing from dealing in butter:

The Honorable Sidney Fisher, M. P., Minister of Agriculture, Ottawa:

SIR,—I am directed by the Executive Committee of the Territorial Horse Breeders' Association to call your attention to the fact that, although over one hundred thousand head of horses and mules have been purchased in the United States and a considerable number in Eastern Canada for use in the South African campaign, for which satisfactory prices were paid, no attempt has apparently been made by the War Office authorities to secure any portion of this enormous number of remounts in the Territories, in spite of the fact that both the Western contingents which left Canada for service in South Africa were mounted entirely on Western horses, and that it has not been satisfactorily established that any difficulty was experienced in obtaining a sufficient number of a satisfactory type, although the notice given the ranchers in both instances was entirely inadequate, owing to the hurried preparations.

It is well known to Western breeders, and the fact is deeply deplored, that the impression evidently prevails in Eastern Canada that there are not enough horses raised in the Territories as yet for any practical purposes. This impression, however, is entirely erroneous. It is true that during the years of low values breeding operations were largely discontinued, but it is also a fact that the absolute want of a remunerative and stable market for horses of certain standard types is not alone working a distinct hardship upon a vast number of small breeders, but it is also exerting a most baneful influence upon the development of the horse industry here, as it effectually discourages breeding operations. No person will, for any length of time, expend money and labor upon high-class breeding stock without a reasonable assurance of ultimate satisfactory financial returns from his efforts.

Vast portions of the Northwest Territories present such topographical, meteorological and soil conditions that general farming or cattle-raising can never be successfully prosecuted therein. Such being the case, it necessarily follows that these enormous areas must eventually be devoted, if utilized at all, to the raising of horses, or, in the more favorable localities, to sheep-raising. It is, therefore, clear that the business of horse-raising must, perforce, ultimately develop into one of the most important branches of agriculture in the West. But, even if these circumstances were not in themselves sufficient to bring horse-breeding operations prominently to the front in the Territories, the local conditions are such that no horse-producing country in the world could successfully compete against our cheap pastures, rich in lime and favorable climate, enabling horses to range out winter and summer, at little or no expense to the owner.

The present position of affairs is simply unbearable, and I am directed by my committee to urge

you, as emphatically as lies in my power, to come to the rescue of our breeders in some way. The market for heavy draft horses is all that could be desired at present, but the conditions here are not nearly so favorable to the production of this class of horses as to the raising of light horses, and it is particularly in connection with the latter that Government assistance is needed.

After devoting considerable thought to the matter, I am directed by my committee to suggest, as a feasible means of putting this industry on a proper footing, that your Department should deal with it somewhat on the same basis as has been adopted in respect to the dairy industry in the Territories. An amount of money might be appropriated, at the forthcoming session of Parliament, sufficient to enable you to purchase, as an experiment, a limited number of horses in the West, conforming to the cavalry, artillery and mounted-infantry standards, at a fair minimum price. At least two months' notice should be given to breeders here of the dates and places where your agent would purchase, and also full information respecting the types of horses required and to what extent they should be handled. The Association would undertake to look after the local organization, advertising, etc., and would otherwise render your Department every assistance possible. Ample notice is *absolutely essential*, as horses are usually ranging out and it takes considerable time to get them in and properly handled. This will not, under ordinary circumstances, be done until there is a sale in sight. Three months' notice would be better than two. In the meanwhile, negotiations could be opened up with the Remount Department of the British War Office, with a view to having a purchasing officer sent out, as soon as your Department had gathered a sufficient number of horses, to inspect them and select all those coming up to the army standards.

There would, doubtless, be a certain number of culls, no matter how carefully the horses had been purchased. But those would, in centers like Toronto, Montreal or Ottawa, in most cases be worth nearly as much as your Department paid for them, and if the prices offered Territorial breeders for their animals were fixed at their approximate value for army purposes, less the cost of transportation and other expenses (which would still leave a very satisfactory figure), it is unlikely that any considerable loss would be sustained by your Department in the whole transaction. Any trifling debit balance would, of course, be amply justified by the impetus which would be given horse-breeding operations in the Territories.

Even granting that the necessary financial arrangements could be made to enable this Association to successfully handle such a scheme itself, it could not hope to do so as economically and efficiently as it could be done by the Federal Government. You have in the person of the Live Stock Commissioner an official well fitted to do the organization work required. At every considerable point in the Territories there is a Mounted Police divisional headquarters, where assistance could be obtained in purchasing, holding and shipping these animals, and where an experienced veterinarian, in the employ of your Department, would be available. In fact, the cost of handling the scheme, in the hands of your Department, could be reduced to a mere minimum.

It is anticipated that if an arrangement such as outlined could be continued for five or six years, under a Government guarantee, the production of military remounts in the Territories would easily double, and if proper representations were then made to the Imperial Government, based upon actual knowledge of the number of suitable horses available annually, and the record for endurance and constitution which Western horses would by that time undoubtedly have made for themselves in the service, it should prove a feasible proposition to induce the War Office authorities to establish regular remount depots at various points throughout the West, such as are now maintained in the Argentine Republic by the British Government in connection with the Indian army.

In conclusion, I am to express the hope, in behalf of my committee, that its representations may meet with favorable consideration at your hands.

The Best Yet.

E. C. JACKSON, Yorkton, Assa. :—"I take your paper, and will continue a subscriber for it as long as I am in the Northwest."
January 5th, 1901.

GEORGE KINNON, Cottonwood, Assa. :—"I like the FARMER'S ADVOCATE exceedingly well. It is truly the agricultural paper of Canada."
January 16th, 1901.

DAVID MARWOOD, Echo Valley Farm, Treherne, Man. :—"The Christmas number of the FARMER'S ADVOCATE has arrived, and it is a beauty—the best yet. I would not be without the FARMER'S ADVOCATE if the subscription price were twice as much as it is. It is a real, live, up-to-date farm paper, and should be in the home of every farmer and stock-raiser in Manitoba and the Northwest Territories; in fact, it should be in the home of every Canadian farmer. I consider it the cheapest paper in the Dominion, considering the amount of valuable reading it furnishes. Long may you live, for I know much good you will do. I wish you a prosperous New Year, and I know you wish every farmer the same."
January 5th, 1901.

Fall Wheat in Alberta.

For several issues back we have published letters from settlers in Alberta, relating their experience with fall-wheat growing. From the testimony given by these correspondents, it would seem as though it might be possible to grow fall wheat in commercial quantities in some sections at least of Alberta. Spring wheat in many parts of Northern Alberta, where the soil is excessively rich and full of vegetable matter, is inclined to grow too rank crops of straw, especially when the season is a fairly moist one, and on account of this luxuriant growth of straw, the grain does not come to maturity early enough to escape the fall frosts: hence, if fall wheat would succeed, it might be worth the extra time necessary to obtain a crop in order to insure a fully-matured sample. The Canadian Pacific Railway Company are interesting themselves in the matter, and, we understand, propose to supply seed of varieties of fall wheat most likely to suit the condition of Alberta at cost: that is, they will lay it down at first cost, making no charge for freight. Parties desiring to secure seed should make application in good time to the Company's agents.

We are in receipt, through the courtesy of Mr. Geo. H. Shaw, Assistant General Freight Agent of the C. P. R., of samples of fall wheat grown in Alberta by Mr. C. Smith and Mr. C. Black, a few miles west of Strathcona. Mr. Smith's wheat is Early Clawson, sown August 17th, 1899; harvested about August 1st, 1900. So impressed have the Railroad Company become with the possibilities of growing fall wheat in Southern Alberta that they purpose assisting in the introduction of varieties that are likely to prove most suitable, and to that end the following circular has been issued by Mr. Toole, the C. P. R. Land Agent at Calgary:

"As fall wheat has been grown very successfully in Southern Alberta for some years, and experiments during the past few seasons have proved almost conclusively that the same satisfactory results can be obtained in the central and northern portions of this district, the Company have decided to import, for the benefit of the farmers holding lands north of township seventeen, a limited quantity of the most suitable variety of fall wheat seed, and sell it at net cost, less all freight charges.

"The seed will be put up in bags containing two bushels each.

"Farmers desiring to take advantage of this offer should send in their applications as early as possible, stating lands held by them, acreage they expect to crop this season, number of bushels of seed required, and the most convenient station to take delivery of the wheat.

"All applications must be in this office before the 1st of April next."

Strong Appreciation and Good Suggestions.

I don't think the FARMER'S ADVOCATE needs much improving. After looking over the last Christmas number, I should say if you improved any more you would have to be thinking about raising the price. I consider it ahead of the ————, published at \$2.00, especially for the Manitoba farmer. Now, I suppose every farmer has his own ideas of what should constitute a farm paper. My idea in a new country like this is, first, try to keep pace with the times. I think your plan of giving cuts of barns and houses is well worth the subscription price to any farmer, especially if fully explained. Have no use for a nice engraving without description. The appearance of the building outside will not put one dollar in any farmer's pocket without a full description of the inside lay-out. One thing which, I think, would be of interest to many farmers just now is not so much the lay-out of ground-plan as the lay-out of the frame part. For instance, take our own case: One year ago we started to build a barn, but never gave a thought to the frame till we had the basement finished, and at that time we knew just about as much about a solid frame as a pig knows about flying. Since then I have talked with quite a few farmers, and I find about nine out of ten are the same or worse. One farmer, for instance, the carpenter told me changed his mind about half a dozen times as to where he should have the driveway. This is where, I think, a practical hand could prove a friend in need. In Manitoba we can't get the best of timber for frame, so that strength should be one main essential. Before building, I thought I would see a few of the large barns round Brandon, and in nearly every case they were either sagged down in the center or bulging on either sides or ends. It would be far easier to build them right in the first place than to straighten them up after, providing that people knew how. Some people will say, if the carpenter is any good he will know how to do all this. Well, probably he does, but I find that too often if the farmer does not know, the carpenter takes the easiest way. I have heard practical men say that ours is as good a frame as they have seen in Manitoba, and, to my idea, there are weak points in it.

I think the cut of W. D. Flatt's Shorthorns is a dandy. It is what they all should be—natural. Have no use for fancy engravings if they are not (as is far too often the case) like the stock they are supposed to represent.

Should like to hear from a few who have used disk drills. With best wishes to all in 1901.
Brandon, Man. MOSSBACKGAIN.

The Live Stock and Dairy Conventions.

The annual conventions of the Live Stock and Dairy Associations to be held in Winnipeg during the bonspiel, from February 19th to 22nd, promise to be of unusual interest, judging from the array of speakers that are announced. Tuesday, the 19th, will be Sheep and Swine Breeders' day; Wednesday, the Pure-bred Cattle Breeders'; Thursday, the Horse Breeders'; and Friday, the Dairy Association. With joint evening sessions each day, and running conjointly with these meetings, the Cheese and Butter Makers' Union hold a three-days' meeting in Maw's Hall. The Breeders and the Dairy Association meet in the council chamber of the City Hall, and the meetings are all open to the public without charge or even membership in any of the Associations being necessary. Among the speakers who are expected to address the Breeders' meetings are: Prof. Curtiss, Director of the Iowa Agricultural College, who will speak on "Practical Excellence in Beef Cattle," on Wednesday evening. Alex. Galbraith, Secretary of the American Clydesdale Association, will address the Horse Breeders. Prof. Geo. E. Day, of the Ontario Agricultural College, whose subjects are "Economic Cattle Feeding," "Stock Foods and their Uses, and Agricultural Education." J. H. Grisdale, Agriculturist of the Ottawa Experimental Farm, speaks on "Development of the Dairy Herd and Experiments in Beef Production." D. Drummond, of Myrtle, Ont., and T. G. Raynor, Rosehall, Ont., are being sent up by Live Stock Commissioner Hodson, who is unable to be present. S. A. Bedford, of the Brandon Experimental Farm, speaks on "Fodder Crops"; J. G. Washington, Ninga, on the "Care and Management of Pure-bred Stock"; and a number of others will take part in the various programmes, which have not at this writing been definitely settled. As noted in our last issue, Prof. Robertson, Prof. Ruddick, J. W. Mitchell, C. Marker, C. A. Murray and others will address the Dairy Association and the Cheese and Butter Makers' Union. Programmes may be had from the secretaries.

During the bonspiel, low rates are offered over all lines of railway.

Storing Ice in a Well.

Some of our patrons obtain good results from storing ice in shallow wells. Mr. Stonehouse, manager of our creamery at Yorkton, Man., during the past season, informs me that one of his patrons adopted this plan with a good measure of success. Where this plan is adopted, the well should be banked and so located that there will no trouble arise from surface water running into it. It should be made eight to nine feet deep and cribbed in the ordinary way, with a crib five or six feet in diameter, and should have a close but movable cover with a trapdoor in it, and over the well should be built a little house to protect it from the sun and rain. When filling the well with ice this may be done by hauling water to it in barrels or tanks from day to day and allowing it to freeze, or, if found more convenient, ice could be hauled and put into it, and enough water put in from time to time to fill the interspaces and make it one solid mass. It would be wise to consider the advisability of having this well convenient to the farm well, from which, in many cases, water could be pumped into it through a trough or conductor.

The use of a shallow well for storing ice should prove an efficient and inexpensive way. Where this plan is adopted, the milk and cream cans are suspended in the water contained in a cavity or basin formed in the center of the ice. The well must be bailed or pumped dry in the fall if there should be any water lying in it. During the time of filling the well, the covering should all be removed.

J. W. MITCHELL,
Dairy Supt., Assa.

Lectures on Tree Planting.

In addition to the regular series of Farmers' Institute meetings that are now being held, the Department of Agriculture has arranged the following series, and at these Mr. E. Stewart, Superintendent of Forestry under the Dominion Government, will deliver addresses on the plans proposed by his department for the encouragement of tree-planting and the protection of timber land. Mr. A. P. Stevenson, of Nelson, will accompany Mr. Stewart and speak on the practical side of tree-planting:

Virden—Tuesday, Feb. 5, 2 p. m.
Brandon—Wednesday, Feb. 6, 2 p. m.
Portage la Prairie—Thursday, Feb. 7, 2 p. m.
Neepawa—Friday, Feb. 8, 2 p. m.
Emerson—Monday, Feb. 11, 2 p. m.
Morris—Tuesday, Feb. 12, 2 p. m.
Crystal City—Wednesday, Feb. 13, 2:30 p. m.
Boissevain—Thursday, Feb. 14, 7 p. m.
Deloraine—Friday, Feb. 15, 2 p. m.
Melita—Saturday, Feb. 16, 7 p. m.
Hartney—Monday, Feb. 18, 2 p. m.

A Big Elevator.

It is reported that the Canadian Northern is to erect a 1,500,000-bushel elevator at Port Arthur this season, and that they will by the end of the season have completed their line to enable them to share in the grain trade of Manitoba.

A Manitoba Forestry Association.

At the instance of Mr. E. Stewart, Superintendent of the Department of Forestry, whose headquarters are at Ottawa, a meeting of those interested in this important subject was called by Major Mulvey, the Provincial Vice-President of the Canadian Forestry Association, at Winnipeg, on January 18. About 40 people, including several from provincial points, were present. Mr. A. P. Stevenson, of Nelson, read a short paper, outlining the conditions necessary to successful tree-growing by farmers, and indicating the varieties most suitable for general planting. His list, briefly stated, is in the following order: Box elder (native ash-leaved maple); cottonwood, Dakota, not Nebraska, the latter being too tender; Russian poplars; willows, laurel-leaved, sharp-leaved, and golden; native ash; evergreens, native spruce, Scotch pine, balsam, etc.

Mr. Bedford, Superintendent of the Experimental Farm, Brandon, also addressed the meeting briefly. He endorsed the list given by Mr. Stevenson, but would add the native elm, which he considered the best of all trees for avenue purposes. He also liked the birch (native) as a hardy, easily transplanted, and very beautiful tree. The cottonwoods with him had "rusted" badly, and while very useful for planting near rivers, were not as suitable as the Russian poplars for prairie planting. The great difficulties in the way of successful tree-planting in the West were the severe climatic conditions, the light rainfall and the hot winds, all of which could very largely be overcome by cultivation. Unless thorough and persistent cultivation could be given, it is only waste of time to plant trees. Shelter belts required thorough cultivation for four or five years; after that they would take care of themselves. Avenue trees required constant cultivation. Mr. Bedford strongly favored hedges, and recommended them in preference to shelter belts. The most useful tree for this purpose is the native maple, planted 3 feet apart and kept well cut back. A hedge could be made a much better wind-break than a belt of trees, and was not so liable to injury by snow drifts.

Mr. J. Caldwell, of the Virden Nurseries, spoke briefly, favoring Government action in encouraging and assisting farmers in the good work of tree-planting. He knew how anxious farmers were to have trees. It was his business to supply trees, and he contracted with farmers to supply and plant such trees as the native maple, Russian poplars, etc., by the thousand. He believed the more work that was done along this line, the greater would be the demand, and once farmers had provided themselves with shelter, they would then be able to grow small fruits, ornamental shrubs, etc.

Mr. Stewart, Superintendent of the Forestry Department, then spoke at some length, indicating the work that comes under the supervision of his department. He referred to the immense areas of timber on Dominion Government lands. Among other plans to prevent the destruction by fire of these valuable timber belts, the Department had appointed a number of fire rangers, men who lived in the neighborhood of their work, and these worked directly under Crown timber inspectors or other officers, and when their services were required to post the fire notices or guard the forests, they were employed, but in wet seasons, when there existed no danger of fire, their services were not called upon.

Reference was also made to the important part played by forest areas in connection with the water supply of streams and rivers, which nearly always have their origin in timbered districts, and were the timber destroyed, the results would be freshets of water in spring and dried-up streams at other seasons. He also pointed out that irrigation, such as was now being adopted in Southern Alberta, would be impossible unless the timber were preserved in the foothills at the head waters of the streams, to regulate the water supply. Mr. Stewart stated that after giving careful study to the systems in vogue in the United States, Germany, and many other countries, they had worked out a general plan which he believed would prove successful in assisting the settlers on the prairies to surround their homes with shelter belts, and in time these would certainly have a most beneficial effect upon the climatic conditions. One of the first things was to give instruction, to teach people *what* to plant, and *how* to plant. A person wishing assistance should communicate with the Department, and an expert would then be sent to advise with him as to the most desirable location for the plantation and as to the preparation of the soil, etc. The following year, when the farmer had everything in readiness, he hoped to be able to provide a supply of trees and of tree-seeds. An annual inspection of all such plantations would require to be made, instruction given as to proper cultivation, and care of the trees, and the Government should retain the right to all spare seedlings or available cuttings, to be used in the extension of the system. Mr. Stewart intimated that the details of the scheme were not as yet all matured, but he hoped that a start could be made this year and that applications would be received from those desiring co-operation, and he expected arrangements could be made to have the ground put in readiness to be planted with trees next year.

A number of those present took part in the discussion which followed, all those speaking being in favor of the general plan as outlined by Mr. Stewart. The importance of tree-planting to the settlers of this country is recognized as so great that any scheme likely to arouse general interest in it is sure to be endorsed at sight. On motion of Rev.

Dr. Bryce, seconded by Ald. Robert Barclay, it was resolved to form a branch of the Canadian Forestry Association, the annual membership fee of which is \$1 per annum. All members are entitled to the annual reports of the Association, to the reports of the Department, and a year's subscription to the monthly sporting magazine, *Rod and Gun*, in which several pages are devoted to questions of forestry. The following officers were elected provisionally: Hon. President, Lieut.-Gov. McMillan; President, Rev. Dr. Bryce; Vice-President, A. P. Stevenson, Pine Grove Nurseries, Nelson, Man. Directors—D. W. Buchanan, editor of the *Commercial*, Winnipeg; C. J. Thompson, Manager Provincial Mutual Hail Insurance Co., Virden; F. Schultz, Baldur; E. F. Stevenson, Crown Timber Inspector, Winnipeg; Wm. Martin, President Grain Exchange, Winnipeg; Alderman R. Barclay, Winnipeg; R. T. Riley, Manager Canadian Fire Insurance Co., Winnipeg. Secretary-Treasurer, George H. Greig, Editor *FARMER'S ADVOCATE*, Winnipeg.

Warts.

A veterinarian contributes the following article on warts and excrescences to an English farm journal, *The Farmer and Stock-breeder*:

Although the tendency of modern scientific study has been all in the direction of what has not been inaptly termed "the infinitely little"—referring, of course, to the germ theory—it is doubtful if the minor ailments have received their proper share of attention. Those of which we propose to speak are often much more important than would at first sight appear. These are warts and excrescences. In themselves often no more than a subject of merriment among familiar friends, or affording opportunities of practising the more innocent forms of sorcery, these abnormal growths still have a mysterious birth, and not less marvelous method of disappearing in obedience to some charm or nocturnal incantation carried out at the "witching hour of night, when churchyards yawn" and—cats upon the tiles do fight, etc. It is absolutely



FIG. I.

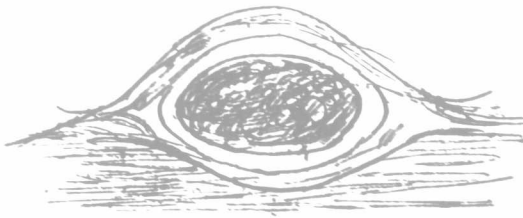


FIG. II.

useless to argue with even the least superstitious of men and women on the subject. They have seen or had warts themselves charmed away. In almost every community some individual exists who is believed to possess these miraculous powers, though, if the person in question is asked, he can offer no explanation, and, like the Irish "Whisperer" or the no less gifted Rarey, cannot impart the secret to others.

In the mystic side of the question, we might venture, at this privileged season of the year, to ask if any readers have known charms to act on animals, whose imaginations cannot well be affected by superstitions? As a veterinary surgeon I have met many claimants to the gift in connection with cattle, but my services have often been called in after their charms have failed.

WHAT A WART IS.

A scientific definition given in the "Encyclopaedia Britannica" is: "A papillary excrescence of the surface, most commonly of the skin, but in special circumstances also of the transitional and mucous membranes." Yes, that is the sort of wart numbered "1" in the figure above, in which I have attempted to delineate a central blood-vessel and very irregular branches. The central vessel is first pushed through from these circulating in the true skin, which must be distinguished from the epidermis or cuticle, which is constituted of layers of scales of material in a state of transition always, being produced and either worn away, as with the manual laborer, or falling off with time, as when the said laborer is confined to his bed and acquires a delicate white hand.

Under that insensitivelayer is the true skin, and it is highly endowed with blood-vessels, whose office it is to keep on producing what may be called natural gloves to bear the wear and tear of each day's work. Up to this point the high-power magnifier in the hands of the physiologist enables us to follow with scientific accuracy the soil in which warts grow, but when you ask the cause there is no satisfactory answer. All sorts of theories have been suggested, and that most commonly accepted by the medical profession is the repetition of some irritating agent

or friction to a part continuously applied, although the individual himself may not be aware of it.

If this were so, then those that handle the spade and the broom, the plow and the hoe, would be most frequent subjects, instead of little girls at school. A famous ecclesiastic said, "There are matters we must leave." This is one of them. What we do know is that the said little blood-vessels project themselves through the skin, raising the epithelium, and with it piled up in heaps (it looks under the microscope exactly like a stack of house tiles that have been rather badly used) the vessel proceeds to grow out of the irregular branches seen in the sketch. The object of these details is to show the reader the necessity of particular treatment, which will be presently gone into. The immense "angle berries" sometimes seen on cattle are of this nature, and there seems to be practically no limit to the size they may grow. I have removed them when more than 1 lb. in weight, and have no doubt many of you have seen them of great size.

Strictly speaking, and from the purely pathological point of view, we have described all the true warts; but we are not hide-bound servants, and we call other excrescences by the name of warts, and sometimes want to know how to get rid of them. There are, for instance, what surgeons call encysted tumors (everything in the way of an enlargement is a tumor in surgical language).

In figure 2 will be seen a solid body inside a space which in the living subject is filled with a watery fluid, and outside that fluid the distended skin. Such warts are found upon the belly and thighs of both horses and dogs. They can easily be distinguished from ruptures, as they feel like nuts inside a bag of water, and can be moved with little pain to the animal.

TO KILL WARTS.

The method of their growth having been explained, it will be easily understood that radical cure can only be effected by destroying their source of supply. Their tendency to recur is not owing, as popularly supposed, to infection from the blood running over the adjacent skin, but from the fact that any remedy which only cuts the blood-vessel of supply does not prevent it from sending out fresh branches to replace the old growth at or about the former situation. This is the main objection to the ligature, because it is commonly tied too tight, and severs instead of withers the wart. If it is decided to adopt that plan, a ligature should be chosen of rather stouter material than at first appears necessary, and it is better to tighten it in a few days than to put it on too tight at first. From fine to coarse twine the choice may be said to lie, but exceptionally large ones may need tarred cord or some of that thickness. All one has to do is to see that the whole of the growth is included in it, and not be afraid of losing a bit of skin. I am, of course, speaking of the lower animals, though the treatment is identical in man.

In the latter animal ligatures do not so generally commend themselves, as being for the moment painful, and as a rule not necessary. Besides, we can apply a remedy frequently: we haven't to be caught and twitched or otherwise constrained. A bottle of old-fashioned black ink will be good enough for us, if we will persevere with it. The iron and tannin will gradually wither up the vessel of supply if the wart is touched with the cork night and morning.

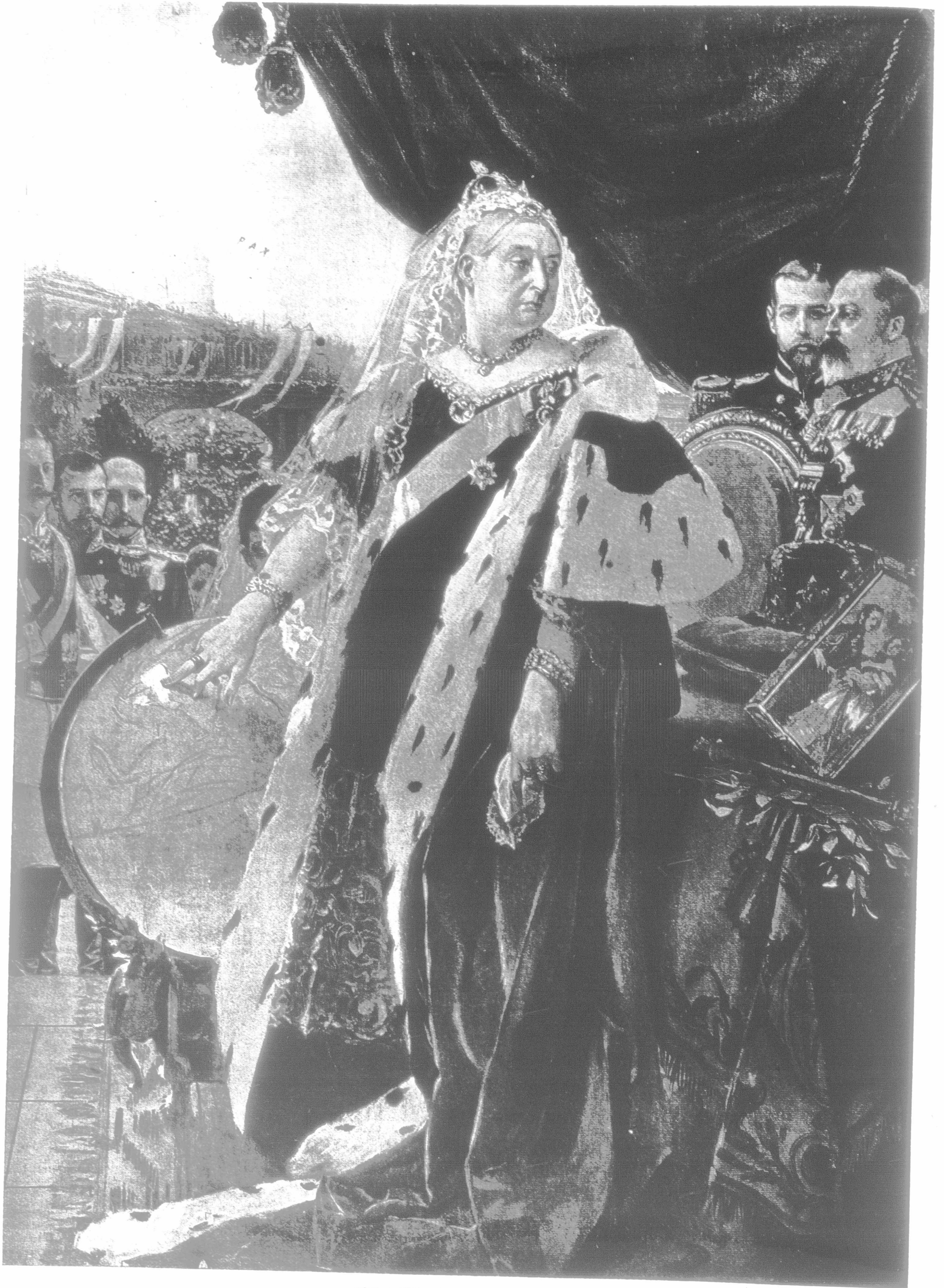
Many of the large angle berries in cattle are found to be strangling themselves with their own weight, and only need an energetic twist with the hand to break them off. There is nothing to be feared from hemorrhage, although they bleed very persistently at times. The vessel may be stopped by a touch of a red-hot iron or by the application of liquid perchloride of iron.

There are many warts with a diffuse base instead of a neck to be tied, and these must be got rid of with one or other of the various caustics. Among these may be mentioned yellow ointment (a very old-fashioned but effectual remedy), bichloride of mercury, chloride of zinc, sulphate of copper, lunar caustic, vitriol, nitric acid, and others too numerous to mention. The secret of their use consists in preparing the wart for their application. It is very little good applying the strongest of them to a hard, dry surface, from which the liquid runs and the powder drops off almost immediately. The growths need a thorough soaking to open the piles of epithelium. All alkalis have this effect; they make them swell up, and like a sponge, prepare to take up fluid of any other kind.

With a bucket of hot water and plenty of soft soap or a packet of Hudson's extract in it, the wart-killer should proceed and soak the excrescences thoroughly, then rinse with clean warm water, and lastly apply the chosen agent. They can stand but very few such dressings as this, and one is often known to succeed.

It is a farmer's own fault if he sends a beast to market with unsightly warts that depreciate his value. He doesn't need a veterinary surgeon for the job, and the work of removing them will probably pay him a good deal better than many of the things he has to do.

The treatment of the encysted wart is the very simplest thing possible—nothing more than squeezing the skin tight over it, making a bold incision with a sharp knife the whole length of it, and another squeeze, and out it jumps. No after treatment is needed.



OUR LATE QUEEN VICTORIA.

On the right, King Edward VII. and Czar of Russia; on the left, Queen Alexandra, Duke of Connaught, Duke of York, and Emperor William.

The Slaughter Cure Condemned.

Dr. Edward Moore, V.S., a widely-known practitioner of Albany, N. Y., contributes to a contemporary the following letter, which specially emphasizes one or two points to which attention has frequently been drawn in the FARMER'S ADVOCATE:

"You are well aware that the slaughter cure for tuberculosis was started on the excuse that the tuberculosis of cattle was commonly communicated to the human subject, and it was therefore imperative that the disease should be stamped out in order to save the human race. Most of the leading advocates of general slaughter were the students of Prof. Law, or men closely associated with him. Thus Law, Pearson, Salmon and one or two others frightened the people into acquiescence with the methods they proposed. New York State passed a bovine tuberculosis law and put it in the hands of the State Board of Health, inspectors were appointed and slaughter commenced. Other States copied New York, and many veterinarians throughout the country took it for granted that the doctrine preached by Law and the others was correct. Now, they had no facts of their own to show that the disease was communicable to the human subject from the bovine; they simply accepted the teachings of Prof. Koch and three or four veterinarians, who many years ago arrived at this conclusion. Thus men in high positions simply accepted theories

Lines on the Death of Queen Victoria.

BY FRANK LAWSON.

O Queen! the monarch widely great—
O Queen! the woman and the wife—
Emblem of Good in home and state:
Could death o'ertake so grand a life?
A nation weeps—the world is bowed:
And sympathy binds land to land:
And Britons, prosperous and proud,
Reach each to each a kindlier hand.

Thy subjects felt a common thrill
At Triumph's shouts—at Envy's breath,
And feel but one pulsation still—
Thy power could not pass with death.
Howe'er the Empire Fate expand,
Fruit of thy love will not be vain;
Briton shall grasp a Briton's hand
In kindlier kinship for thy reign.

Common Sense in Horse Rearing.

SIR,—As time rolls on and changes come, the old rule never fails—one extreme brings another. In regard to horses, we find that there is a scarcity in Canada and the United States. We can easily trace this to two reasons: First, the farmers almost, if not altogether, ceased to raise them in some sections because of an over-production. Second, the number that was exported to Africa to serve in the Boer war. In my opinion, when others cease raising any commodity on the farm, then is the time to keep right on. The first duty in this important enterprise is to use nothing but sound, healthy sires and dams. As like begets like, let us use a little common sense. Common sense, thou art a jewel!

The mare, in order to be a sure breeder, should always be in a nice thrifty condition. It seems to be a fact that a goodly number of foals when dropped are in a weakly condition, and a certain per cent. die. Now, speaking from my own experience, I must conclude that proper plain feed, exercise and fresh air play a very important part in this matter. After breeding horses for twenty years in a moderate way, allow me to tell you that I have yet to see the first weak foal. Our method of wintering mares is to feed on straw, roots and hay, more straw than hay, and about one gallon of oats at two feeds daily. The straw and hay is not cut. Make it better uncut. We grow about one-



HIS MAJESTY KING EDWARD VII.



HER MAJESTY QUEEN ALEXANDRA.

handed down to them, and have not attempted to verify them, but foisted them upon the people of this nation. The cost has been something awful, and up to date has been a damage rather than a benefit.

"If it were true that tuberculosis in cattle caused any amount of tuberculosis in the human, there could be some palliation for such methods; but that is not so. And again, if it were true that by the methods they have pursued they could in a short time eradicate tuberculosis from this country at anything like a reasonable cost, people everywhere would favor the plan, but tuberculosis is entirely different from the contagious pleuro-pneumonia which was eradicated from this country a few years ago by the stamping-out process. There is no possibility that they can handle tuberculosis in a similar way, and all the slaughter, expense and loss that we have thus far gone through have not resulted in ridding any one county, state or section of tuberculosis. While no one desires to cast reflection upon the veterinary profession for what a few of its members have done, people who pay taxes and stock-owners generally are entitled to protection. We must therefore condemn slaughter and expense and woeful waste of much of the best cattle blood in this country, when such methods absolutely fail to give the results aimed at. Therefore, before any general slaughter is allowed, it should be shown very clearly what is to be accomplished by it."

The suggestion that more attention should be given by the ADVOCATE to the subject of horse-breeding in its various phases meets with a generous response in this issue, and several excellent articles have been held over for future issues, owing to excess of matter in hand.

Keep the Colts Healthy and Growing.

In regard to raising colts, they should be kept healthy and growing all the time, and in order to do this they must have sufficient food and exercise. The first winter is probably the most important of the colt's life. If you have any skim milk to spare, by all means give it to him; it is easily digested, will make bone and muscle, just what the colt needs to develop into a strong, vigorous horse. For feed I prefer well-cured hay, oats and bran, with a few roots, a little ensilage or something of the kind for a change sometimes; about four quarts per day of oats and bran will do very well for ordinary colts. At present the mares in foal that are not working, and all the colts over a year old, get a feed of hay in the morning, cut straw and ensilage with a little oats and barley meal mixed in at noon; oats or bran and uncut wheat straw or the cut feed at night. We try to have them outdoors at least half the day, so that they get plenty of exercise, and they are all healthy and doing well. The mares are just as well working if you need them, but, of course, should be used carefully and will require better feeding. In early summer they will do very well on good grass, but as soon as it begins to dry up and flies get troublesome put them in during the day and feed a little grain.

Middlesex Co., Ont.

A. B. SCOTT.

E. COPLEY THOMPSON, Wethersfield Ranch, Vernon, B. C.:—"You ask for suggestions from farmers re improvements in your paper. Can suggest nothing. As a farm paper and advocate, I think it is as near perfection as it can be, if not quite so."

January 3rd, 1901.

eight wheat and a little flax. This mixture makes a grand feed when ground together. Flax is very much better than oil cake, as the flax contains all the oil. We all know the benefit of linseed oil.

By using a little all the time it acts as a preventive of many complaints. "One ounce of prevention is worth a pound of cure." If I find an animal not thriving, we use a little Epsom salts occasionally in their chop. Please do not forget a little salt daily. My custom is to allow plenty of fresh air to circulate through the stable. Oh, for more fresh air and light in our stables! In regard to exercise, I think it advisable to allow horses not working to run out two or three hours every day. When the weather is fine, turn them out together and allow them to run together if they are so inclined. Let us follow nature as closely as possible. We all like liberty. It is a bad plan to allow horses to eat all the hay or straw that they like. About as much as they will eat in an hour is enough. When the spring opens, we work the mares right along until the time of foaling. Motto: Moderation in all things.

Wintering Foals.—The first winter in a colt's life is a very important one. If the mare is in foal, it is a bad plan to allow the foal to suck too long, as it weakens the next one. After being weaned, it is an excellent plan, if one can, to use some warm skim milk along with some ground oats, the same as for grown horses, about 1½ gallons divided into three feeds, or a little less, and a turnip or two or carrots; but do not forget the fresh air and exercise. I allow them to run out every day along with the other horses. If handled in this way, they will come out in fine condition in the spring. Do not forget a little grain right along through the summer.

Ontario Co., Ont.

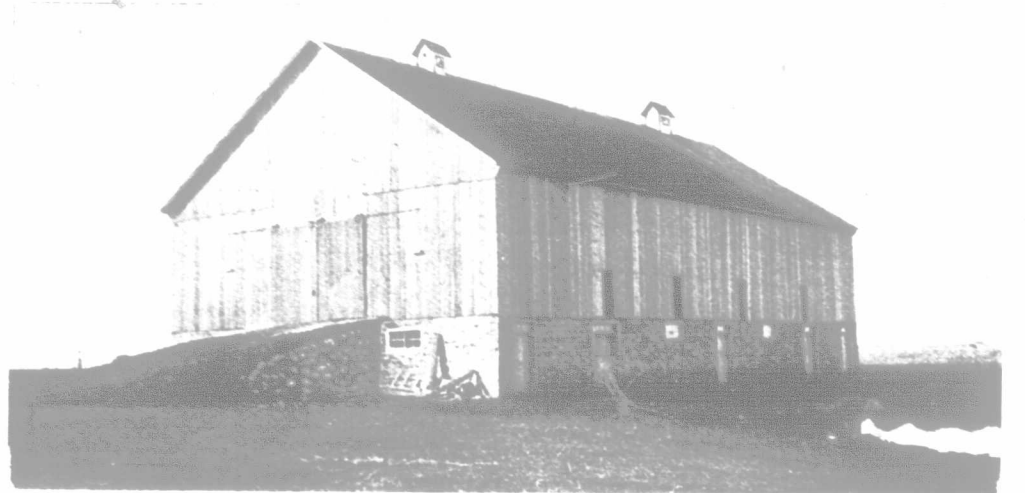
DAVID BURNS.

Two Substantial Barns in a Wheat Section.

Herewith we publish engravings of the two fine barns erected last summer by Messrs. Robert Kinnon, Sr., and George Kinnon, father and son, on their farms, which adjoin each other, in the Cottonwood district, north of Regina. The barn of Mr. Kinnon, Sr., was, at the time we took the photograph, completed; the other was not, and, therefore, it does not show to equal advantage. The former has a hipped roof, and the appearance is much improved by the two dormer windows in the roof. The latter is a somewhat bigger barn, and as completed, with cupolas on the roof, has a good appearance. These barns are built practically on the level, with bridged driveways at each end. Under these driveways comfortable poultry and hog houses are built.



STOCK BARN OF ROBERT KINNON, SR., COTTONWOOD DISTRICT, ASSA.



STOCK BARN OWNED BY GEORGE KINNON, COTTONWOOD DISTRICT, ASSA.

A diagram of the ground and upper floors is given, both being laid out on very similar plans. Horses and cattle are stabled in separate compartments, with good provision for loose boxes. On the upper floor, one-half is reserved for hay and straw, while the other half is used for granary, with bins for wheat, oats, chop, etc., with storage room overhead. It will be noticed that small side doors enable grain to be loaded direct on to wagons standing outside, without any lifting whatever. These farmers, while wheat-growers, appreciate the importance of retaining the fertility of the soil, and are providing for a rotation of crops with grass, the converting of hay and straw into manure through stock; in fact, for the adoption of mixed farming in the best sense, as against the soil-robbing system of all-wheat growing.

Mr. Robert Kinnon, Sr., sends us the following description of his barn: "I have drawn a sketch that will give anyone an idea of the lay-out of my

sketch, there are eleven full-sized windows, and fanlights over each door, which gives good light all through stable. The horse stable holds 14 head, with two box stalls; the cattle stable holds 30 full-sized cattle, and has three box stalls. The feed is put down as wanted through chutes at each side of drive floor in barn, also oats and meal into little boxes in passages, making it very handy to feed stock.

"In the barn there are 6 bents, 14-foot posts outside, 21-foot posts in center, 22-foot crown beams, 18 foot beams from outside posts to center post. All 8x8 inch wall plate and purline plate 6x8 inches, scaffold joists 6x8 inches on edge, 11 feet from floor, and another row of joists near top of center posts, and two rows of joists between outside posts 6x6. The mows are 16x18, drive floor 14 feet wide. The whole of the south side is divided into grain bins, having oat and meal bins over feed passages in stable below. Bins are 7 feet deep, overlaid with 2x8 joists and covered with shiplap, and suitable little doors that form slides to put grain into each bin from

The Propagation of Trees by Cuttings.

The proper preparation of the soil is not only of primary importance, but a condition of success. The soil must not only be good, but it must be thoroughly subdued and mellow before planting, and here I desire to point out the absurdity of the idea that a cutting will grow anywhere if only stuck in the ground. Acting on this idea, hundreds of thousands of all sorts of cuttings have been stuck in all sorts of soil by all sorts of people; the parable of the sower will illustrate the results.

The cutting plunged full length into a deep, rich, mellow soil, under the influences of heat and moisture soon begins to expand its buds and throw out its slender thread-like fibrous roots. If the ground has been properly prepared, these roots at once begin to draw nourishment for the young tree, the buds grow into branches, and in a few months you have a thoroughly developed tree, and the better cultivation given this young tree the more rapid the growth. On the other hand, the cutting stuck in the raw sod fails to get its roots

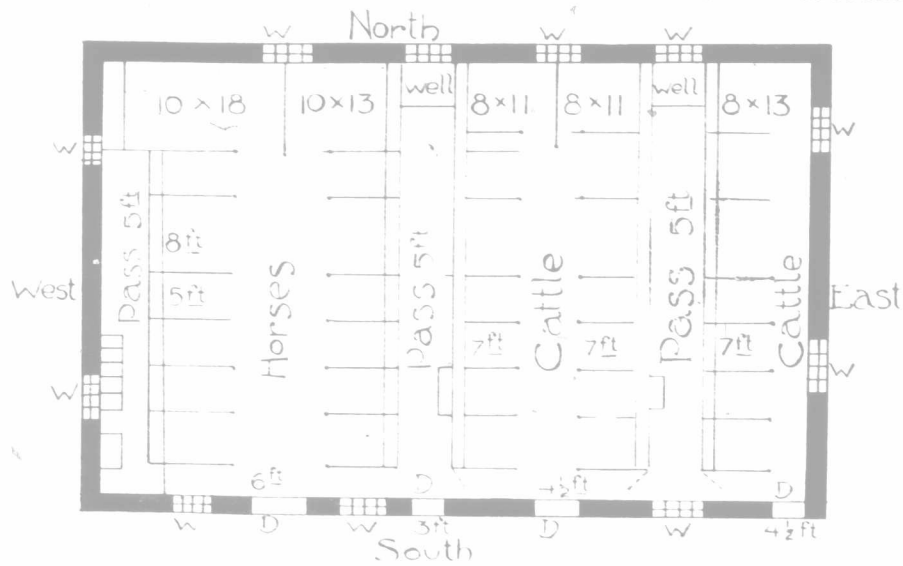
wagon on barn floor, and when emptying bins, the bags are filled in the passages between the bins and slid down into the wagon on the ground outside through small doors. We find it a very handy barn. Two men can fill it with either hay or sheaves from wagon on drive floor. For ventilation we have two boxes the whole length of the stables from east to west, with openings outside between two joists; in fact, it is just two joists boarded over, with slide openings in each stable. We generally have the slides open inside, and have a hinged board hung loosely over the openings outside to keep out snow. These are opened in mild weather, and it seems to answer the purpose well.

"As to cost, there are over 50,000 feet of lumber in it, all red fir, from British Columbia. Cost \$25 per M. for timber, and from \$20 to \$23 for the rest of the lumber. It took about forty-five square of shingles to cover it. The stonework was built for \$140, and the framework cost \$240, hardware about \$70, lime \$50. Not counting anything for hauling

into the hard earth, struggles along in a feeble sort of a way till dry weather sets in, and then starves to death, and the planter wonders what ails his trees, sometimes gets mad and uses "cuss words" about the man who sold him the cuttings.

But to go back. Break the prairie in June, breaking shallow; backset last of September, turning up two or three inches of fresh soil. If not in too great a hurry, it is a good practice to raise a crop before planting cuttings. A hoed crop is best, and if well cultivated leaves the ground in fine condition for tree-planting. If grain is grown before planting, too great care cannot be taken to get perfectly clean seed.

In growing a wind-break from cuttings for a single row, I would prepare a strip of ground not less than eight feet wide, by deep plowing and thorough harrowing. Have the ground mellow as an ash heap. Draw a line lengthwise in the center of this strip. About every 12 or 18 inches put in the cutting, nearly or quite full length, and at once



BASEMENT PLAN OF BARN OWNED BY ROBERT KINNON, SR.



UPPER-FLOOR PLAN OF BARN OWNED BY ROBERT KINNON, SR.

barn. It is not very true to scale, but perhaps it will answer the purpose. The outside measurement is 80x50 feet. The walls are two feet thick at ground and 21 inches at the top, 8 feet to joists, joists 10 inches, making it 8 feet 10 inches to barn floor. There is a stone foundation half above floor level under all the mangers, 12 inches wide under horse mangers and 8 under cows. The upper floor is carried on sills 6x8 inches on edge, resting on 6x6 inch posts. Those resting on the manger foundations are 7 feet long. The balance are 8 feet long, and rest on large flat stones sunk in the ground.

The horse mangers are 30 inches deep, 11 inches at bottom, 21 inches at top, projecting into passage 6 inches, partitioned from cattle, and provided with swinging doors to pass through. The cattle mangers are 11 inches at top, outside, with a 12-inch plank in front of each, and provided an next passage 18 inches and pass through to same 11 inches. On this projection, a well through the whole length of the cattle stable, and a well at north end of each passage, and a well by the

material and board for hands while building, the total cost would run pretty close to \$2,000.

"I have no floor in stable yet—the ground seems to stand fairly well so far—and this is the second year we have used the stables. We use lots of straw for bedding, but intend to put in cement when the floor gives out. I trust this will be of some use to some brother farmers."

The cow's stomach resembles a clock in one particular—its machinery is arranged to mark time; it is wound up to strike the feeding hour, and it strikes that hour almost to the minute. If the feeding time is changed for even an hour, the yield of milk will decline, and the flow of milk once lowered, is very difficult of restoration. Regularity in feeding and in milking are of the highest importance with good cows; the better the cows, the more important. It makes the difference between success or failure, gain or loss. Select whatever hours are most convenient, but when once selected, adhere to them rigidly.

tramp the mellow earth firmly around the cutting, and then make special efforts to keep that strip of ground clean, not allowing a weed or a blade of grass to grow on it. Keep the cultivator going up and down the margin each side of the row of cuttings, frequently till harvest time, after which, if any weeds come up, pull them by hand. Repeat this process the next season, and in the fall mulch heavily with good manure. By that time you will have that strip of prairie pretty well cleaned, and a wind-break started that won't dry out nor freeze out.

As far as Russian poplar and willow are concerned, spring is the best time to prepare the cuttings. Good, fresh, healthy ones are about as sure to grow, if properly handled, as potatoes. Failure is not necessary, if the work is done thoroughly and intelligently and at the proper time. After ordering cuttings, should they arrive in spring before you are ready, bury them in the ground till you are ready to plant.

Nelson, Man.

A. P. STEVENSON.

Dairying Up to Date--Breeding.

BY GEORGE RICE.

Although dairying is one of our main industries—and nobody doubts that the business is here to stay—yet, if you come to think of it, it is very strange that there is so much apathy in regard to growing the "raw material" that is, the dairy cow. Every pound of milk, butter and cheese must come from the cow, and yet very little attention has been paid to her development in this Canada of ours. The majority still plod along, satisfied to follow in the same old rut. Still, there are many instances of herds that have been brought to a high state of production. But this only emphasizes the need for more general effort to breed, develop and feed the dairy cow aright. "What man has done, man can do." There is no "royal road to success" in dairying. But a sure reward awaits all who apply themselves aright. There is no business on earth that calls for and responds to *thorough, painstaking management* like dairying. Look about and see the difference in product from cows developed to great production, and compare these with the "average cow." There are still too many people who think it does not pay to feed a cow much but straw through the winter. No doubt this is a step up, because our fathers used to tell us how they brought their cattle "through" the winter mostly on brouse.

But "the world moves," and dairymen must "get a move on." Don't pay to feed grain to a cow, eh? Well, fancy a man trying to fat a steer on straw; of course it can't be done. Now, if it pays to feed a steer for a gain of two pounds a day, worth 5 cts. per pound, won't it pay to feed a cow that produces two pounds of butter, worth 20 cts. a pound? Perhaps your cows won't produce that; certainly not on straw alone. I feed all my straw, but that is not all I feed. It is not, however, a question of feed altogether. Feed will not make all cows produce two pounds of butter-fat a day, let alone three pounds a day, as we sometimes get. It is a question of *breed, care, feed*, from start to finish. The two-pounds-of-butter-fat-a-day cow can be produced with a reasonable degree of certainty. She is not a "sport." There are whole herds capable of that. Possibly when we grow in knowledge we shall be able to breed the three-pounds-of-butter-fat-a-day cow with *more* regularity. But the two-pounds-a-day cow calls for the exercise not of skill so much as common sense, all the way through. As a chain is just as strong as its weakest link, so will our success be in proportion to the closeness with which we follow certain fundamental principles in breeding and developing. It is really not necessary that one should purchase pure-bred cows to attain to a high-class herd. The two-pounds-of-butter-a-day cow must be bred, and can be bred in a few years from grade cows. The first step is, of course, to get a dairy-bred bull in the true sense of the word. Now, this does not mean that one must buy a bull from a dam who is a record breaker. Such a bull would be all right, but too expensive to breed on grades, as such bulls are wanted at extra prices to breed on pure-bred herds. Neither does it mean that one should buy a bull to use because he is registered, or even traces to some great-granddam, whose blood in him is bound to be weak in any case, and perhaps all good may have been starved out. The length of the pedigree is important, but the records of the nearest dams is of first importance. If the price for a bull from a cow with one of the highest records is beyond you, don't be discouraged. For instance, if you buy a bull whose dam has a record of from 15 to 18 pounds butter a week, a breeder with such cows will likely have at the head of his herd a bull of superior breeding; and you get in your animal half his blood, so that your animal should be even better than his dam. The day will soon be here when herds of registered dairy stock will be tested officially. Some breeds are doing so now, and others must follow if they would "keep up with the procession." Then will dairymen be able to tell exactly what they are breeding from, and whether breeding pure breeds or grades, will breed with more intelligence. "The bull is half the herd," but remember, *only half*. In breeding from the best cows one has, there is still more required. The physician's advice to mothers is, be cheerful if you would have your children so. Similarly, if we would have the best result from the bovine mothers, we must keep them in proper condition, and the same may also be said of the bull. This may appear to be going deeper than most think necessary, but it seems to me all-important. This is the rock upon which so many sink their craft in starting out as breeders, and become discouraged. Before I tell how to raise a dairy cow, I want to know that the calf is worth raising. No system of education can make a scholar of a degenerate. No system of feeding can make a great cow from a calf born into this world with a lack of vitality—thrift. But with a calf from a dam in full vigor, and sire likewise, then as surely as like follows like, we have a calf worth raising. In fact, the calf is more than half raised. It is no trouble whatever to raise a calf born with full vitality. Whilst this would be true of breeding any kind of stock, it is of first importance in breeding the dairy cow, as so much depends upon her nervous energy. That is *one* of the reasons a cow cannot be satisfactorily judged from her form, as her performance will depend upon her energy, among other things. In fact, when we begin to study the dairy cow, we have a subject of abiding interest. It is true that calves from same dam, and even from same sire and dam, have not

proved of equal merit, and it is equally true that cows have not given as much milk some years as others, and if you but study the matter, you will find that the calf preceding the largest milk yield was in turn the better performer. I could give several instances, but lack of space forbids. It is a question of vital importance. It is a very simple matter to rear a properly-bred dairy calf. Keep it growing every day until two years old. I like to give new milk for four weeks, half whole and half sweet skim milk for two weeks more, then all skim milk, being very careful not to give too much the first two or three months. Some linseed meal may be put in the milk, but even that is not absolutely necessary. Give a handful of wheat bran to the calf at a month old, and gradually increase, with a little fresh hay. At two months old give a few whole oats with the bran. Feed so the calf will never leave anything. When a calf is three or four months old, and has been judiciously fed, it will be so vigorous that it can handle more skim milk! And if there is plenty of it, it can be increased gradually up to 30 or 35 pounds a day at eight months old; then they grow. Keep the calf thriving rather than fat. We can't develop thriftiness on a starvation ration, nor build and develop good digestive organs by alternate stuffing and starving.

The Manitoba Farmers' Prospects.

A GENERAL REVIEW.

The year 1900 was a black year for Manitoba farmers. That, at least, is the general verdict. We have so often been told when we meet with misfortunes that it is a "blessing in disguise," that the phrase becomes worn out; but still there may be a good deal of truth in it as applied to the past year. The experiences of the past year will set a good many farmers thinking. A large number of them, I imagine, will begin to see that they have got to be something different from mere wheat-growers. A man that grows nothing but wheat hardly deserves the name of farmer. It takes but very little skill to raise wheat in comparison to the care and management of stock. It is my purpose in this article to look into the prospects of the Manitoba farmer, to note some of the disabilities under which we labor, and offer some practical suggestions towards the improvement of our prospects. The prospect for high prices for wheat is very gloomy. More wheat is likely to be raised than the world can consume. I believe that the new Trans-Siberian Railway, which is now opened for traffic, is going to be a factor in reducing prices. It has opened up millions of acres of land similar to our own, the climate is similar, and they will produce hard wheat equal to ours. Then, they have the benefit of a Government railway, which carries its passengers and freight at a very low rate. Then, again, Argentina is raising more wheat every year. They are blessed with a fine climate and cheap labor. We cannot begin to compete with these countries. Will it pay us to raise wheat in large quantities at a low price?

I think there is a good opening in this country to grow barley for the British malting trade. We have been repeatedly told that we cannot grow barley good enough here, but I have never seen any tangible reasons offered as to why we cannot grow it. I have grown barley quite good enough for export. I know something about what is required, having had the raising of it on my uncle's farm in the Old Land. The present price of barley is 36 shillings per quarter, or about \$1.10 per bushel. The top price of wheat, at the same time, is 32 shillings per quarter. Last year the British farmers raised 63 million bushels of barley, against 53 million bushels of wheat, which shows even there which pays the best. I should like to see the tables turned in Manitoba and see barley take the place now occupied by wheat. Let barley be our staple export grain, and what wheat was raised would be eagerly sought by the Canadian millers, who would have to pay for it. The advantages of growing barley are: It is a cleaning crop; weeds will not thrive half as well in barley as in wheat; none of the cereals, in fact, encourage weeds like wheat. Barley can be sown a little later than wheat, and this also helps to check weed-growth. Barley is not such an exhaustive crop on the soil and we can easily grow double the quantity that we can of wheat. The kind of barley we would require to grow for the British market would be one of the two-rowed kinds, a clean, bright sample weighing 56 lbs. to the measured bushel. According to present prices, we should receive about 80 cents per bushel for it. I do not think there is any danger of the price going down, as it has been away above the price of wheat for the past 10 years. It would be pretty rough on the poor British farmer for us to capture his trade, but we would kindly invite him to come over here and try his luck. This trade would have to be started by the Government, as private individuals could not establish a trade. Good seed would have to be introduced, and it would have to be placed on the market under careful supervision.

The past year has taught us that it is not a good thing to have all our eggs in one basket. Those farmers who had a good bunch of steers to dispose of last fall can testify that mixed farming is a good thing. We have heard a lot about mixed farming during the past few years, until "mixed farming" has become somewhat of a byword. The average farmer of a quarter-section laughs and wants to know how he is going to keep cattle on a quarter-

section. I must admit it is rather a ticklish question in thickly-settled districts, but still it can be done. There is no reason why any quarter-section farmer cannot keep 20 head of cattle on an average. It is only about 4 months that cattle have to be shut out of the crop; the rest of the year they can easily be provided for. More oats and barley can be grown, which will keep his land cleaner, give him plenty of good straw and plenty of grain to be fed on the farm. During the 4 months when the crop is growing, the young cattle could be placed out to pasture at small cost, which would then only leave the cows to be provided for, and this could be done by a pasture of say 30 or 40 acres. Bromegrass is now acknowledged to be a good grass for this country. Of course, I am referring now to a solid grain-growing district. With 20 head of cattle on a quarter-section, that would mean about 7 cows. Two cows would keep an average family going, which would leave the product of 5 cows to sell. These 5 cows should bring in an average of \$5.00 per week for 6 months, estimating 7 lbs. per cow per week, at 15c. per lb. Any ordinary cow will make this if well kept. There are now creameries in most districts, or the butter could be made at home. I admit, however, the market is very unsatisfactory for butter made at home. If all the merchants would discriminate in price against bad butter, it would soon have a good effect, and those making good butter get value for it. Another advantage of keeping cows is in having refuse for the hogs. I claim hogs cannot be successfully kept without cows. The calves do not need the milk all summer. They should be far enough advanced to do without milk by the time the pigs need it. The cows should come in from January to 1st March. It makes better calves, as they get to a good size before the flies come. They will also be ready for the grass when it comes (although some people prefer to keep them in all summer, which I certainly endorse). Butter is also a good price in these early months, and we have more time to attend to the calves, etc.

Another advantage, and an important one, is the manure made by the stock, and we need all we can get. There is land in this district where manure is a positive injury, but all the high land will stand it; the edges of sloughs and alkali land will take all the manure we can make, and it will make barren land productive. The keeping of stock also provides winter employment. Those that have quite a bit of land can keep their men the year round. The practice of hiring men for 7 or 8 months is a bad one, and the labor problem is getting to be very serious. Men will not stay around all winter doing nothing. They go off to other places, and many of them never come back. It is a great drawback to a farmer to be continually getting fresh men. It is far better to hire men for the year and keep plenty of stock. But, I fancy some will object and say: "It will take all a quarter-section to grow to feed these animals." True, it would, the way some people feed; go and throw out green sheaves in abundance and let them pick the heads off and trample the rest under their feet. Dry cows can pretty well get their living at the straw stack, with a little feed at night and comfortable quarters. All the straw grown should be saved. Wheat chaff is most valuable feed. In England it is considered to be as good as the best cut hay, but they do not feed it alone, but mixed with pulped roots. It would be a wonderful saving in feed here if we could cut up all the feed and have plenty of roots. Most Manitobans seem to have an aversion to roots. I could not get along without them, and I do not think anyone could that has had experience in feeding in the Old Land. I have a good crop of roots every year; had a good crop last year, notwithstanding the drought. I keep them in a large cellar underneath the feed passage and mangers in the barn. Many people seem to think it takes up too much time to look after them. Well, there is nothing without labor. I find myself well repaid for the trouble. Our horses get a Swede turnip every night (a good feed in one of them, too, about 10 lbs. each). We never have to spend anything on medicines or condition powders. The sum up this article: The Manitoba farmer needs to change his tactics, grow less wheat, more coarse grains, keep more cattle and hogs, and (if he has good mares) raise a colt or two every year, feed all the coarse grain on the farm, spend the long winter evenings in planning for the next summer's operations, and, lastly, subscribe to the FARMER'S ADVOCATE. I have got many good pointers from it. JESSE CURTIS.

Beautiful Plains, Man.

Compensation for Animals Killed by the Railroad in the Ranch Country.

As noted in previous issue, the Western Stock Growers' Association waited upon the Canadian Pacific Railway Co. to endeavor to arrange some satisfactory basis of settling claims for animals killed on the track by passing trains. The deputation, consisting of Messrs. Andrews and Springett, report a very satisfactory settlement, in the shape of the following fixed schedule of figures:

Calves	\$12 50
Yearlings	17 50
Two-year-olds	25 00
Cows	25 00
Three-year-old steers	32 50
Four-year-old steers and up	40 00
Bulls	40 00

The Creamery Patron.

The most essential item necessary to the successful operation of a creamery is cream, and the cost of manufacturing a pound of butter is regulated very largely by the amount of cream available: the greater the quantity the less the cost. Many creamery managers, in this Province at least, would answer the question, "What is most necessary to make the business a success?" by simply saying, "Cream—more cream." As the dairy business settles down onto a permanent business basis, and the patron realizes a profit from his cream, the question of supply will regulate itself. There are many things that contribute to the patron's success, and a discussion of some of these by successful creamery patrons will be read with interest. Our creamery manager suggests that from his experience patrons need educating along the following lines:

Every man who owns six cows ought to have a separator. Proper handling of the cream when it comes from the separator, and keeping it sweet until the cream gatherers call for it, is decidedly the most important matter with us, and I think with all creameries.

Patrons at all seasons ought to support the factory, even if prices are higher in the store. And some will send their cream to the factory only when they cannot get a market to suit them, or want some ready cash. Factories can be run cheaper and cream gathered cheaper (per pound of butter) if all patrons were to send from start to finish. In our factory we have not much trouble that way, but I know that some creameries have.

Patrons ought to elect directors they have confidence in. Without the patrons have faith in the management they will not get along very well.

We recently submitted a few questions to leading patrons of some of the successful creameries, and append hereto the first batch of replies.

A HIGHER STANDARD DEMANDED—THE INDIVIDUAL CREAM CAN.

The dairy must play an important part in the agriculture of this Province in the immediate future. How to make it worthy of the importance depends partly and mainly on the farmers themselves; but the proprietors of the creameries must have some share in it as well. The main point, to my mind, is to establish confidence between the farmer and the co-operative factory. Granting that the factory alone can make in a larger quantity, and of a uniform quality, which is so essentially necessary to secure the confidence of the export market to which we must in future look, there are many difficulties in the way of a farmer wishing to make his butter on his own farm and find a suitable outlet for it. The factory finds a remedy for many of these, and the small producer—i. e., dairies of from 10 to 30 cows—will do well to give the factory a good chance, if placed within a suitable radius where cream can be delivered in good condition.

My dairy consists of from 16 to 20 cows. A great many cows cannot be handled on one farm owing to the difficulty of getting suitable help to milk and care for the cows as they ought to be cared for. I have read a great deal against the general purpose cow and as to the cost of suitably maintaining a good milk cow. I find the general purpose cow must obtain favor to a great extent among our farmers who wish to feed a cow as cheaply as possible and raise her calf on the same lines. My cows cost nothing for feed, milking them mostly during the summer months on grass feed, and wintering them on such wild hay and straw as the farm produces, with, perhaps, one dollar's worth per head of chopped feed after calving and until grass greens over in the spring. After freezing in October and November, a few loads of oat sheaves cost very little and act with great benefit. My calves all come in April, if possible, so as to get them strong for grass and three or four weeks old before the creamery opens. As it is cream we are talking about now, I will leave the calves here for the present.

Promiscuous cream can only make promiscuous butter. In order to make a uniformly good article, we must see to it that only good material is used. Right here is where many of our creameries fail to produce the best results. Cream is accepted in bad condition, and though ripening good and bad in one vat for 24 hours will equalize the whole somewhat, you can never have as good an article as if the whole was vatted in a sweet, cool, proper condition, and then ripened uniformly for churning. Many people think that a sour cream will return a better test than sweet cream. This is wrong, and depend upon it, you can never make the creamery return to the patrons more butter than the cream makes. If your test returns more butter than the cream will make, you are only robbing your neighbor who may send cream on the same route. I have no difficulty in keeping my cream sweet for two deliveries weekly, and use no ice. Immediately after separating, the cream is immersed in fresh-drawn water, temperature about 38°, and in the hottest weather renew the water in 30 minutes. This cream will be in good sweet condition and will return a fair honest test at the factory, and will give satisfaction to the creamery and to the patrons. When cream is run from the separator into the tub, and almost rot in hot water, a separator cannot follow, nor can the butter be tested with any accuracy,

and, as a consequence, guesswork results, with satisfaction to nobody. To my mind, there is no way to compel people to send in sweet cream, only to refuse altogether to take any which, in the judgment of the buttermaker, is not of first-class quality. Many teamsters are not fit to judge this. If every patron would invest in a can for his own cream and the test be taken only by the buttermaker after delivery at the factory, then each would get the worth of his cream and the argument would rest solely between the farmer and the buttermaker. I never got good satisfaction until I delivered the cream myself, and since I have done that I find very little cause for complaint.

How to increase the quantity of each factory I cannot say, only by increasing the value whenever possible to the best of the patrons. It goes against the grain for a careful man to try and increase his quantity when he knows that perhaps half of the cream sent is totally unfit to make good butter. Take in only the best, pay the best for it and let each patron know that a larger make will comparatively lessen the cost of making. Also let proprietors send circulars and inform patrons how cream is ripened and churned, butter weighed and partitioned out to patrons on the route. Let them see that the factory will give them the quantity coming to each one, and in no case more than that. Drop out any patron found guilty of sharp practice. Restore confidence all round, and let each one see that all must deal fairly or not at all.

Northwestern Manitoba. F. SIMPSON.

THE WANT OF ABSOLUTE CONFIDENCE KEEPS MANY AWAY—NIGHT PASTURES RECOMMENDED.

We have about 30 good grade Shorthorn cows, and we pick the ten best milkers to milk: the rest bring up the calves; some two, according as they have milk enough to do so. We have two men besides ourselves, but three of us do the milking and separating with an Alexandra separator, which, by the way, we are more than satisfied with. We made \$220 out of our cream last season, not to mention what butter we used in the house. The price paid at the factory was 15¢ cents, until October, when we got 16½ cents. We stable our cows always while milking, and turn them out again to feed in a 60-acre pasture during the night. In the day they have the run of a section and a half. We propose to lay down some Brome grass, and after getting our crop of hay off, turn in the milkers at night. This oat sheaves, in the fall, will increase both quality and quantity of cream. We were taking as much cream when the factory closed as we were in the summer, but not so much milk. We always have plenty of rock salt handy for the cattle to lick. We don't believe in shutting up cows (or any cattle, for the matter of that) in a corral all night, always more or less dirty. Very few of our neighbors will send their cream to the factory, preferring to make their own butter. They seem to think they get more that way, but we very much prefer the factory.

We should say a separator would pay a man with eight or more cows.

We keep our cream in a well and deliver it twice a week, using no ice. A good way of keeping cream sweet, if there is no well handy, is to pack a deepish, dry hole full of snow in winter, and keep the cans in the snow. If well covered, will last nearly all the season, but cold water is the better.

Don't know any other way to overcome this than by giving a higher price or refusing to accept cream unless sent the whole season through. The want of absolute confidence is what keeps many away.

CALLIS & DE WINTON,
Glenora Farm, Northwestern Manitoba.

GREAT BELIEVER IN SEPARATORS.

First, I try to milk about twenty cows, more or less, summer and winter, having them calve spring and fall. The only help I keep is a hired man, my wife helping us with the milking. I use a Melotte hand-power separator of large capacity 700 lbs. per hour. I have tried steam power, but prefer hand. I am a great believer in separators. I think if a man has over five cows it will pay him to have a separator, and not too small, as his herd will likely increase. I think the most practical way of increasing the quantity of cream to the factory is, first, confidence in the management, which, in my opinion, must be the Government, as here in the Northwest people have no confidence in private enterprise; and, secondly, regular monthly payments of two-thirds of the ultimate price, the balance at the end of season.

My cream is taken to the factory three times a week during the hot weather, and once a week in winter. After separating, we cool it off with cold water, about 45°, and never have any difficulty with sour cream. We are very particular to keep all our utensils perfectly sweet and clean. Re patrons stopping sending in winter, I think that will remedy itself in time, when patrons do more winter dairying. I think the principal trouble now is that they have not cream enough to send.

Northern Alberta. JOHN BROWN, JR.

THE PROFIT IN A CREAM SEPARATOR.

I keep ten cows, keep one man during the summer months. I look after the cows mostly myself, with what help I get from the house. I have a half-section of land, with about 150 acres under cultivation. As to increasing the quantity of cream, I

would give the cows good feed, keep only good milkers, and use a separator.

I will not specify how many cows a man should keep to make a separator pay, but will give my opinion as to profits derived from using one. Allowing the average cow to make 200 lbs. of butter per year, say 14¢ per lb., that would be \$28 a cow. The loss by the old system of raising cream I consider would be 20%, which would leave 40 lbs. of butter to the credit of the separator. That at 14¢ would be \$5.60 a cow. Taking 10 cows, that would leave a profit of \$56, so one can draw his own conclusions.

As to keeping the cream, a well filled with ice I consider the cheapest, but ice stored is preferable. Thoroughly chill the cream from the separator before mixing with any other.

This can only be overcome by a good set of directors, a good secretary and salesman. Have the patrons all shareholders and interested in the factory, give them a full statement at the annual meeting, have a good buttermaker, pay 17½¢ per lb. when the local stores can only pay 14¢ and 15¢ in trade, as our factory has done this fall.

Southern Manitoba. JOHN COWAN.

LOOKS SUSPICIOUS WHEN STOREKEEPERS PAY MORE FOR DAIRY BUTTER THAN CREAMERIES CAN.

I keep about 10 cows, as a rule. Two little girls and a boy do the milking. I think one of the ways of increasing the quantity of cream sent to factories would be to have the buttermilk returned to the farmer by the man who collects the cream, as the milk is quite a factor in hog-feeding. That is my only objection to sending cream to factories.

I use a separator, but I would not like to advise a man to buy one for less than say 8 or 10 cows, as I claim they cost too much.

I have a good basement cellar, and we find very little difficulty in keeping cream sweet in it, by simply putting creamer can in cellar.

If storekeepers pay more for dairy butter than a fairly-patronized factory can, they are paying more than it is worth, with the object, I assume, of creating trade. One storekeeper in Manitou told me it was the stores that killed the Manitou factory, and when I find a man is willing to give me more in trade for an article than he can get for it, my suspicions become aroused as to that man's honesty.

Southern Manitoba.

W. McFADDEN.

DIFFICULTY IN GETTING SUITABLE HELP.

In the first place, let me say that my dairy has by no means repaid me for the labor and annoyance it has caused me. My herd contains twelve cows, but I will have fifteen next summer. I find great difficulty in getting men to attend or milk cows, and have to do it mostly myself. I use a cream separator, which I run with a tread power in summer. I think one should have ten milking cows (not Shorthorns) to make a separator pay. I put the cream from the separator in ice water, and when cold add it to what I am gathering in the factory can, which I also keep in ice. I separate in a corner of the ice house, which I have partitioned off. I send, generally, as long as the factory remains open. I might say that I have no interest in the Morris creamery. My pasture is rough, mostly bush, and my cows are Shorthorn grades.

Morris Municipality.

JOHN S. DROUGHT.

HONEST DIRECTORS WILL OVERCOME MOST OF THE CREAMERY DIFFICULTIES.

I milked 16 cows last summer. I sent to the National Creamery, Winnipeg, in the months of August and September about 2,600 lbs. of cream. I was delivering to a creamery in June and July. They collected themselves and measured by the inch. There was a little more than the above quantity. In October I gave it to the collector again, as I had no time to take it to station. I think a man would be justified in purchasing a cream separator if he had six or eight cows. Persons having small quantity, and delivering only once a week, would require ice or a good underground cellar. Never mix the cream until cold.

When a man wants to stop sending his cream, he can get many excuses—some imaginary and some real—but, by having good honest directors, these troubles could be got over. I would like to see the creamery business a success, for then there would be more go into the business.

Portage Municipality.

L. W. McLEAN.

USE A SEPARATOR AND PATRONIZE THE CREAMERIES.

I am pleased to take a hand in this discussion, but being young and having only a limited experience in the dairy business in this country, and as there is a great difference in the way of handling stock here to that in which we were accustomed in the Old Country, my opinions may not be of much value to your readers.

We intend to milk seventeen cows next summer and have only two milkers. I believe it is possible for two to handle this number and run quite a farm, since we have a way of disposing of the cream. We send our cream to the National Creamery Co., Winnipeg, and the results have been very satisfactory to us. Under existing conditions, I consider a very good way to increase the flow of milk would be to have some green cut-outs to feed in the fall, when the

prairie grasses are dried up; also some mangels or turnips, but with the latter care must be taken to feed them immediately after milking, so as not to injure the flavor of the butter. We used a No. 2 De Laval separator, and would not be without it under any circumstances. I believe they are the most durable and simplest in construction, and, above all, the cleanest skimmers in use today. I consider that with four cows a man is standing in his own light by not using a separator. To have the cream delivered at the factory in a sweet condition, it is necessary to use ice and to be sure and cool down the cream before mixing it with the previous milking. We leave our cream twelve hours on ice before mixing. Of course, less time will do. I cannot understand why more people do not patronize the creameries, as I believe if they figure it out in the proper way, they will find they can do better than making butter. It is by sending the whole year round that it pays us best; therefore, I cannot see why some people stop in the winter time. We are getting at the rate of 20 cents for our butter, and most farmers that I know are selling their butter for from 15 to 18 cents. It is not hard to see which is making the most. Taking into consideration salt and tubs or crocks and shipping same to market, it takes at least 3 cents per pound to leave butter ready for market. But I believe that the creameries will have more patronage next summer than the past one. One item that I forgot to mention was that farmers ought to be careful not to let their cows on the stubble land after taking the crop off, as I hear complaints about French weed spoiling the butter; and anyhow, it is a poor policy, as our land will get overrun with weeds soon enough without enabling the cattle to scatter the seeds all over it.

ALEXANDER LONGMORE.

St. Francois Xavier, Winnipeg.
TERRITORIAL FARMERS SHOULD CO-OPERATE WITH THE GOVERNMENT.

I am not in the buttermaking business this year, but if you will allow me I will diverge a little from the question, and perhaps will be able to answer your enquiries.

Seven years ago I started with three cows, one a grade and two pure Jerseys. Last year I had twelve. All the help I had last year was my little girl, eleven years old, who helped me milk, etc. Of course, I did not sow as many acres or reap as many bushels as some who did not "bother with cows." Still, I was able to get in a few days' work. In the seven years I did not pay out five dollars for hired help to help run the farm or dairy. One of the leaks in the profit of a farm is the hired help. I do not wish it to be understood that in all cases hired help is unprofitable, for there are times when it is absolutely necessary, but my experience is that if the man sits in the house or spends his time visiting his neighbors while his hired help is doing the work, the loss is greater than the profit in ninety cases out of one hundred. My motto was, keep as many cows as you can handle with profit, plow and sow as much as you can. I have found this out, that there is more money in cows than grain.

Quality must go with quantity. First, get the very best cows for the purpose. If they are only scrubs, get the best scrub. Have cows that will respond to care and feed. Second, feed and care for the cows. Do not let them stand out all night in an open corral. Give them some protection from the cold winds and rain. The best place is the stable, where they can be comfortable and dry, especially (and I hope every farmer that has cows will heed what I say, for I consider most of the farmers are cruel to their beasts) do not let the poor beasts remain out in the corral night after night till long after the snow has fallen in the fall, and then swear that it does not pay to milk them, for they do not give enough to pay for their board, and turn them loose to roam the country or feed at the straw stack all winter. Many farmers do this, and then declare there is no money in dairying. Third, feed. If it pays to feed, it pays to feed well. Give the cows as much as they can handle with profit. Then keep your cows clean.

If I had only two good cows, I would have a separator. I would not try to raise cream again without one.

When the distance is not great, the best and I think most satisfactory way is to deliver or have it delivered every morning as early as possible. But where the distance is great and the cream is only carried to the factory twice a week, a deep, cold well or ice is necessary. I prefer the ice, and a clean, cool room. Keep the cream cans packed in ice, and if the party gathering the cream has the right appliances, the cream will reach the factory in prime condition.

Farmers, I think, are the most pig-headed class of people I know of. In almost any other business the business men will hang together and have a certain amount of trust in each other, while farmers seem to have no faith in each other. We had to contend with this very thing four years ago. The Moosomin factory opened up a cream-gathering route in one district. All the assurance the secretary of the creamery had was that each farmer would supply the cream of so many cows. I visited our neighborhood to see what could be done and was surprised at the results. One man had twelve cows, he would promise six; another had twenty-five, and he would promise the cream of ten—to see how it would work—and so on, instead of every man promising all he had and doing his best to make it a success. Then, just as

soon as the harvest was over, two-thirds of the patrons dropped off—excuse was they wanted to make butter for winter. A few of us stayed with the factory till it closed in fall. Results, when the accounts were balanced, myself and two of my nearest neighbors were requested to refund \$1.25 each, besides the loss of our October cream, as we had overdrawn that amount during summer. Ten cents per pound was the amount advanced during summer. So, you see, we made a big profit that year. Those that withdrew in September realized a good price for their butter.

The only remedy I know for this trouble is, that every patron should give a bond, binding himself to deliver as long as the factory is running for the season. Then, if the cows are fed and cared for as they should be, there will be plenty of cream for winter butter and quite a margin for the merchant.

What is necessary is good live directors, that take an interest in the factory's success; but especially is it necessary to have a good energetic secretary.

I hope the farmers will wake up to the fact that the Government is trying to help them, and try to co-operate with them, and if they do there is no doubt but that success will be the result.
Eastern Assiniboia. J. B. POWELL.

Further Evidence from the Creamery Patron.

In our last issue we published the testimony of a number of practical men on matters pertaining to the management of the dairy departments on their farms, and patrons' views of the farm separator and the cream factory as against the practice of home dairying. Below will be found some further interesting letters upon similar topics from practical men who are right in the business.

PERIODICAL PATRONS SHOULD BE CHARGED EXTRA.

Increasing the quantity of cream has always been a rather slow process. Growing of green oats for fodder, and not depending entirely upon wild hay, would help somewhat. But farmers must learn to study the form and type of cow and know a good cow when they see her.

I have used a cream separator for some years, and consider it the only practical way of handling milk. As to the number of cows that will justify the purchase of a separator, I would say any number over and above the one household cow. The use of a separator will, at the very lowest calculation, increase the butter yield from \$5.00 to \$10.00 a year per cow. Now, the lowest of these figures makes \$10.00 a year for two cows, or 10 per cent. interest on \$100.00, or the price of a first-class hand separator. My cows, 19 in number, paid for the separator in 5 months. It must also be considered that other milk utensils, costing something, are done away with.

I have used ice in summer time and find it the most satisfactory. It does not take much, 2 or 3 loads will suffice. Cream should be stirred occasionally and kept where there is no odor of any kind.

Periodical patrons should be charged, say one cent a pound, more for manufacturing butter than those who furnish continual supply. That would tend to drive them clear out or clear in. And it is simple justice, as periodical work is always paid higher than steady, all-year-round work.
Northern Alberta. A. P. OLSEN.

THE SEPARATOR MORE SATISFACTORY AND PROFITABLE.

The number of cows in my herd varies a good deal from year to year, and at present I have about 20, only a few of which are giving milk at present. I am farming on the mixed principle, and have no hired labor. Two mep could easily milk 20 cows, cultivate 100 acres, make all the hay necessary, etc., etc. While mentioning hay, I may remark, in passing, that for many winters all my dry cattle get nothing but straw and do well on it. Of course, year-olds or spring calves require hay.

I have had a cream separator for two seasons, and find it advantageous in many ways, increasing the quantity of cream by at least 20 per cent, and making it easier to keep it sweet, which we do with ice in an old-fashioned refrigerator. Much less work is necessary than under the old system of flat or deep-setting cans.

Any one with half a dozen cows would find it much more satisfactory and profitable to have a separator, which would pay for itself in a very short time. I have cream cans which hold about 100 lbs. These are easily handled, and having narrow necks with lids fitting deep into the necks, there is little or no leakage, whilst with padlocks and duplicate keys, pilfering is done away with.

Many farmers, no doubt tempted by the high prices of butter in winter, stop sending cream to the central factory, and some, even in summer, grudge the factory charge and go on in the old way, making and marketing the butter themselves, even in spite of proof that their average is often lower than the net average price given by the factory, thus losing labor, salt, etc. For myself, I think the central factory is the best plan by far, and the more it is patronized the better will it be for all concerned. I send my cream summer and

winter to the factory, and intend to continue doing so. No one would believe the saving there is in labor and worry at the farm by sending to the factory who has not tried it, provided, of course, there is a railway station within reasonable distance. The factory managers arrange everything with the railway, and the farmer has only to dump his cans of cream on the platform at the station and leave them there, the train as it comes along picking them up.

In a co-operative factory it would be absolutely necessary that the patrons should elect yearly thoroughly reliable men as directors, for they have to take so much on trust, such as the quality of the cream, the quality of the butter made therefrom, the price realized, etc., etc., that confidence is of the first necessity.
JOHN MORISON.

Winnipeg District.

AN ALL-YEAR PATRON.

I had 12 cows in milking last summer. I have my cows coming in at all times of the year. My herd numbers only 30 head.

I think about 8 or 9 good cows would justify a person in getting a separator. I have a De Laval Baby No. 2, which I think cannot be beaten. In the fall and during the winter I find it best to warm the milk a little before separating, and to put a half dipper of water in the separator, which warms the bowl ready for the milk.

When the cream is separated, let it cool before putting it in older cream, which I keep standing on ice in warm weather to keep it from souring.

I am sending my cream to the factory all the year round, to see if it won't pay better than making butter at home. So far it certainly has.

I would like to see the cream-gathering plan and the making of butter in Winnipeg by the carload made a success, as it will be a good thing for Manitoba farmers.
RICHARD GREENWAY.

Winnipeg District.

PROFIT IN MILKING COWS RATHER THAN LETTING THE CALVES DO IT.

I am very much like a great many others, not running my dairy as economically or profitably as it might be done. We started last season milking 40 cows, the same number we had milked for some years past, but owing to sickness in family, and help for dairy work being hard to get, and when obtained very unsatisfactory, we decided to put calves on all but 12 of the cows. It is not as profitable, by any means, raising calves on cows as milking them, selling cream, and raising calves on the skim milk. I find, with good care, during winter there is not very much difference between calves raised on skim milk and those that have sucked the cows.

Our cream is sent to Newdale factory. Home dairying is "not in it" when the creamery is running. The quantity of cream delivered to creamery I think is regulating itself each year, as nearly all factories report a much larger make each year. As the patron sees where the most money comes for his work, that is the direction he will take.

If I were only milking five cows, I could make more money out of them by purchasing a small separator than raising cream by deep-setting or any other way I know of at present.

I find the best way to keep cream is to set the cans in cold water in the dairy, always being careful to cool fresh cream before setting. Ice would be a great help during July and August, but I have not used it yet.

Newdale Creamery has no reason to complain of patrons only sending during hot weather, as nearly all send as long as creamery is running. I think directors would be justified in not receiving cream from such as only send when they cannot make at home. They would then see where their profits would come in for the whole season.

At the annual meeting patrons are supposed to elect such directors as they can place confidence in; if not, it is certainly no use to put them there; it is certainly not an enviable job for anyone, as it frequently necessitates attendance at meetings when it is hard to get away from home.
Northwestern Manitoba. DAVID JACKSON.

Important Points in Cheesemaking.

(SPECIALLY REPORTED FOR THE FARMER'S ADVOCATE.)

The Wisconsin cheesemakers were in session January 23rd to 25th inclusive, the occasion being the cheesemaking contests and convention. Addresses were given by Prof. Riddick, Ottawa, Canada, Assistant Chief of Dairy Division; R. A. Pearson, of Washington, D.C., and others. Prof. S. M. Babcock gave an address on "The Influence of Low Temperature in Cheese Curing," and showed cheese cured below 40 degrees F., and some cured below the freezing point, in the first case taking eight months to cure, and in the latter, eighteen months. This fact is destined to have an important bearing on the cheese industry. The cheese exhibited as made under such conditions was of good quality. Prof. Farrington's paper demonstrated a source of error in the turbine testers, due to too high a temperature, the readings of cream and whole milk tested being too high, for testing which a temperature of 110 degrees F. is high enough. For skim-milk testing, the higher temperature is advantageous, giving a more accurate test. In order to overcome the objection to the turbine holes, slides are now put in them by the manufacturers. A cheesemaker attending the convention stated that he overcame the difficulty by the steam through the exhaust of the turbine. In the cheese-making competition, Canada again scored. R. A. Murray, of Brookdale, Ont., winning the gold medal, with a score of 991. Mr. Murray is a graduate of the dairy department of the Ontario Agricultural College, Guelph. Second prize, silver medal (score 971), went to Wm. Nesbit, who learned cheesemaking at Ingersoll, Ont. These men won in strong competition, which numbered thirty contestants.
Madison, Wis., Jan. 25, 1901.

Operating the Creamery.

EXTRACTING THE CREAM.

Assuming that the creamery system of butter-making will best suit the interests of the great majority of farmers, let us now consider the best methods of extracting the cream, also the most satisfactory way of operating a creamery so that the greatest good may come to the greatest number of patrons, and that satisfaction (so often wanting) may be given to both proprietor and patron alike. I do not despise anyone who, having a good supply of water and ice, together with cans for deep setting, looks upon a cream separator as an unnecessary expense. But having tried all plans of raising cream, I can say that no other method compares equally with the separator, and while not advising anyone to go very deeply into debt for plant, the proper use of which he is unacquainted with, I may say that of dozens of my acquaintances who have purchased separators since I first got mine, eight years ago, not one wishes to return to the old system of raising cream. Some, who thought me a romancer when I said that the extra value of the cream obtained would pay for the separator in two seasons (and mine cost \$152), are now just as willing to make a similar statement on their own account. In my opinion, cream of a uniform quality, so necessary for the well-doing of the factory system, can not be obtained except by use of the separator. I admit that good cream can be got either by flat pans in a suitable place and moderate temperature, or by depositing in ice. But, all things considered, separator cream can be more easily kept in its prime freshness, and will in nearly all cases give a more accurate test, without which the co-operative system can not give satisfaction. As to which separator shall be used, I believe there are many makes to-day doing good work, and can be bought on easy terms, spot cash not being necessary, as was the case some years ago when they were first introduced into Manitoba. The hand separator will be more satisfactory than a large power one, as it will leave the milk fresh and warm for calves, etc.; also, the cream, being only about one twentieth part of the whole milk, can be easily hauled to a central point. I read lately in an Old Country paper how factory creameries were a considerable failure in Ireland, mainly because the milk induced sickness in calves, pigs, and even children who were using it. The plan was to gather the milk and separate by power at a factory, and after extracting the cream, return the separated milk to the patrons. This would necessitate a re-warming of the milk, both at the factory and again before feeding, and I infer that milk so treated would easily become unwholesome food. After eight years' experience, I have not found the milk to be in any way unserviceable, and the freshness and newness of separated milk seems to my mind to compensate the calves for the extra cream which some people say they have been robbed of when compared with other skim milk. We take the foam off the milk for pigs, and feed the calves at once before the milk cools, so that all vessels used are washed at once and put away, only the cream being placed in cold water. The more sweet cream can be delivered to the creamery, the better chance the buttermaker will have to ripen the whole of the gathering and make a first-class butter which will sell at a first-class price, and so enable the proprietor to give the patrons a better value for their product.

Whether the creamery shall be a proprietary one, or on the co-operative ownership system so prevalent among the cheese factories in Ontario, I would decide in favor of the former, though I admit the latter ought to obtain the preference. Having had experience of one of the latter kind as a shareholder and director, I shall be very careful indeed before I take up a share in another one, be the inducements ever so great. There seems to be, among the farmers as well as others, an overwhelming desire to obtain something for nothing. Alas that such things be, but we must look possibilities and probabilities well in the face, as a man will have to pay according to the company he keeps, and a limited company for the manufacture of dairy produce is no exception to the general rule. I have seen men who could barely write their own names or add up a line of figures move and second the passing of accounts far greater than the whole of their possessions would ever amount to, and by means of party, clique, relationship, or even church membership, carry, by vote, things which ought to put to blush anyone who desired an honest industry to prosper. The result has been chaos, and a factory standing for years merely a mark on the sky line. I believe our local Government advanced sufficient money to these co-operative factories some few years ago to convince anyone that they, at least, desired to give the factories a good chance, and I am told that very few of the loans so advanced have yet found their way back again. Many seem unlikely to ever do so. Thus the game of sharps and flats has gone on, and co-operative dairying has in many cases been killed and the confidence of many farmers been severely shaken. I prefer, under such circumstances, a proprietor and manager a few creameries who have succeeded thus after being more or less failures previously. A co-operative dairy may succeed, and ought to, but the men taking shares should put up cash for their shares before being allowed a voice in anything. I prefer one-man ownership, as he can settle prices, deal with complaints on their merits and at once, and will have

no favors to bestow on friends. He can treat everyone alike, and it is his personal interest to keep and encourage the best patrons. Above all, let patrons try to understand the factory system of making butter. They have a half interest in it, or ought to have. The more they try to understand for themselves what is being done with their cream, the less likely will there be any friction between themselves and the proprietor. If he pays them good value for their cream, and chooses to hold the butter for higher prices, that is his business, and he will lose or gain at his own risk. Remember that he does not put up his capital just for the fun of the thing any more than we milk the cows for fun. We are all trying to make something out of it, and by integrity and honest dealing we can all make the most substantial gain.

Northwestern Manitoba.

F. SIMPSON.

Curing Bacon.

The following is an extract from a lecture before an English Farmers' Club, by Prof. L. M. Douglas, author of "Douglas' Recipe Book for Bacon Curing":

The process of curing or salting bacon is a very simple one, but at the same time a thoroughly scientific one. The following is a description of the process in somewhat technical language, but it conveys actually what takes place: "Salting, as commercially practised, is a process of osmosis or diffusion; a crystalloid applied externally, either as a solid or in strong solution, diffuses into the interior, while the soluble albuminous matters pass out into the brine. Soluble mineral salts and sugar also act as partial desiccators by their affinity for water. The flesh is deprived of a great part of its putrescent constituents, but at the same time loses a corresponding nutritive value—Liebig estimated the loss at one-third to one-half—and leaves nearly insoluble fibrinoids partially hardened and less digestible." Deprived of technicalities, this simply means that we destroy a certain portion of the meat in order to preserve the remainder, and in the process we render the remainder more difficult of assimilation than it was when fresh. Salted or cured meats, therefore, are less valuable as foods than fresh meats. But as it is impossible to conduct the human economy on fresh meats, it is not likely that a general knowledge of this fact would alter the consumption.

The displacement of the albuminous compounds referred to is termed "curing" and is carried out thus: The sides are laid on benches and pumped in about 17 places with a pickle testing 100 degrees on the (Douglas) salinometer at 60 degrees Fahr. The pumping pressure should be 40 lbs. per square inch as indicated on an ordinary pressure gauge. The sticks of the pump needle are all into the flesh parts, the thin flank not being pumped at all. The pickle used consists of 55 lbs. salt, 5 lbs. saltpetre, 5 lbs. antiseptic, and (in winter only) 5 lbs. of pure cane sugar. These ingredients are made up to 20 gallons with fresh water and stirred until the whole are dissolved. The pickle is then allowed to settle until clear, and is better if it is boiled and skimmed. In any case the clear pickle is run into the cellar and is not used until it is of exactly the same temperature as the cellar. Immediately after the sides are pumped they are laid down, rind downwards, and covered lightly with an equal mixture of dry antiseptic and fine saltpetre. On top of this is laid a heavy layer of salt. The sides are "stacked" one on top of the other, and the thin flank or belly portion is kept up by the means of oak staves. The pickle, therefore, which naturally forms, collects in a sort of saucer formed by the ribs.

The stacks are not meddled with until their cure is complete, which is in ten days for 9 score and twelve days for 10 score pigs. After that time in salt the bacon is "struck," and, according to the market to be supplied, is drained, washed, trimmed and sent off. Much of the bacon consumed in England is smoked, and many factories have facilities for smoking. The smoke stores want a good deal of watching and care, and should always be under a competent man. Cured bacon is drained from seven to ten days, and is then washed, wiped and trimmed. It is then dusted over with pea meal and hung in the smoke store for three days at a temperature of 55 degrees Fahr. The smoking material used is oak sawdust. After the bacon is smoked, it is packed up in bales, with clean barley or wheat straw between each side, and is sent out. When the bacon reaches the provision shops it is cut up into recognized sections; there, so far as we are concerned, its history ends.

An equally important industry is ham curing. This industry is limited in England because of the difficulty of getting rid of the remainder of the carcasses. The two legs forming the hams bring a very high price by themselves, more especially in Paris. It, therefore, pays well enough to dismember the pig and convert it into hams, Cumberland cut bacon, rolls, etc. Hams require very careful treatment. The cure is on precisely the same principle as bacon curing, and the same curing materials are used. But if taint is to be avoided, "purging" has to be done so as to get rid of the blood in the blood vein. The general rule, so far as time for curing is concerned, is to allow one day to every pound weight, adding on three clear days for "purging." In most bacon factories where hams are cured they are dried also, another operation is conducted very slowly at a temperature of 80 degrees Fahr. If pale dried hams are wanted quickly they are dried in the smoke stores at a temperature of 95 degrees Fahr. for three days.

The Relation of the Shorthorn Breeders of Canada to Those of the United States.

A paper by W. D. Flatt, prepared for the annual meeting of the Central Shorthorn Breeders' Association, at Kansas City, Mo., January 29th.

I am only a young member of the fraternity of Shorthorn breeders, but during the few years in which I have been engaged in the cattle-breeding industry I have met Shorthorn breeders from almost every country in the world. I find them generous and open-hearted almost without exception. I find that wherever they live they are working along the same lines—that they are planning similar conquests and reaching forward to similar results. I find also that in every country they recognize their dependence upon those beyond the borders of their own clime. They seem to be in agreement as to the need of some interchange of blood, and that therefore it is not best that an individual breeder or group of breeders in any particular locality should undertake to live entirely unto themselves.

There seems to be a general consensus of opinion that Shorthorns for these modern days must be bred not merely to be looked at and to give pleasure to the man of means, who may care nothing for their usefulness, but that they must possess real merit, and that they must be bred with the thought of pleasing the consumer, who is the final judge of the quality of the product.

Breeders from the United States and Canada have been from the very commencement of Shorthorn breeding on this continent on the most intimate terms. In the early days, many of the herds in Canada were started from importations from the United States, and an interchange was as common between Canada and the United States as between one county and another. In later years the trend has been to secure foundation blood from Scotland, and many of our herds of recent date have been founded upon animals bought in that country. Breeders in the United States have not been slow during the past twenty years to take advantage of their opportunity to purchase additions to their herds in Canada. The result is that breeders living in the two countries are as familiar with each other as those who live nearer at hand, and sometimes more so; so that so far as Shorthorn breeding is concerned, we are practically one people; and now, as the twentieth century commences, in which the battle of the beef breeds will wage fiercer every year, it seems clear that the best work can only be done by the union of Shorthorn breeders of every country, regardless of boundary lines, in self-defence, and in order to be helpers of each other, with the view of furnishing the greatest possible number of superior animals.

We have an example of the efforts of the proprietors of some other breeds of cattle in organization. The Shorthorn breeders ought now to follow that example. The influence of the breed may be enlarged and increased in power by a combination of interests and organized effort.

We believe that Shorthorns, as improvers of the common stock of either country, have no equal. While we say that, we have no word of disparagement to offer in connection with any other of the beef breeds, but we believe that crossing with Shorthorns produces better quality and better results than can be obtained in any other direction.

While this is true, it must be remembered that the value of the breed for beef-producing purposes will be judged by the average quality of that which is seen generally throughout the country. This we think is rising rapidly year by year. Nor must it be forgotten that from the very beginning of the work of our most noted breeders, Shorthorns have been famous for their milk-producing qualities. The result is that as a general purpose animal for the ordinary farmer they have no equal.

This continent has now received some of the best blood that can be found in Great Britain. If the herds established upon this blood be utilized to the best advantage, there seems no reason why in the near future some of our choicest animals should not go back to the land from whence they originated to strengthen the herds existing there. This has been done within the last fifty years, and it would appear that Shorthorn breeders were never in a better position than now to work out a similar problem. But if these possibilities are within our reach, they will be accomplished only by combining our forces and working harmoniously toward the same goal.

Again, may I say that the relations between the United States and Canada should be harmonious and cordial, because on both sides we are met with common difficulties. At the present time, through the influence and power of a few prominent veterinarians, the business of Shorthorn breeding is endangered by the use of the tuberculin test on animals transferred from one country to the other. If something cannot be done to relieve the inconvenience now caused (which will probably spread still further, resulting in restriction still nearer each individual), many of our best men will undoubtedly quit the business. This would be an unfortunate circumstance, as it is manifest that in order to do the best work in Shorthorn breeding, two things must be combined, capital and skill. There are those who would make skillful and famous breeders who are handicapped because they have not the capital to buy where and when they see it is to their best interest to do so. Men of capital, therefore, will not consent to put their

money into a business where they cannot have greater freedom than is now accorded in this respect.

I believe that breeders on both sides of the line are unanimous in their opinion that this test, as at present applied, is of no service whatever, and that it has not given security or protection to any of us. The present regulations were brought into effect by a conference of the Governments of the United States and Canada. It appears to me that, if my contention is right, it ought to be removed by the same authorities, operating at the same time in both countries. In this matter the relation of the breeders ought to be one of perfect harmony and unity. Immediately after the resolution was passed at the Shorthorn Breeders' meeting in Chicago relative to this question, a meeting of the Cattle Breeders' Association of Canada was called and a similar resolution was passed by that body with perfect unanimity. At the present time, almost every breeder who has had any experience is complaining of injuries which have been the result of the test when applied. I am of opinion that reliable tuberculin, when applied with care, may be injected without injury; but, unfortunately, when cattle are sold at all stages of pregnancy and under all conditions, and require to be tested at the moment, these evil results are most likely to occur; and inasmuch as cattle must be tested at the time, whether they are in the midst of nervous excitement or otherwise, the probability of a reaction is much increased.

Of recent years I have had much experience with this test, and have come to the conclusion that, administered as it is, it is almost certain in many cases to bring about serious results. I have known cows to receive an injection of tuberculin in the morning and abort their calves the next day. A neighbor of mine had five cows tested, and three of them aborted the following day. I find that others have had a similar experience, and will no doubt add their testimony. The experience of several of our breeders with whom I have conversed on this subject leads me to the conclusion that many young bulls have become impotent for many months on account of the test.

All this wanton destruction of some of the most valuable animals is caused by this test without an ounce of profit or protection to anybody interested, except it may be the veterinary surgeon who performs the operation. The test is confessedly not absolutely reliable, and therefore ought not to be imposed on one of the most important branches of agriculture in either country.

This, then, I conceive to be an important question, demanding the united action of the Shorthorn breeders of both countries. In Canada, a strong demand is being made for a change by the cattlemen, headed by that friend of the Canadian farmer, Hon. John Dryden. We believe we shall succeed, and I do not think I am going too far when I say that we have assurances that no objection will come from the Canadian Government if a mutual understanding is arrived at to remove this test altogether.

Another question presents itself to which unity of action will be needed: The American and Canadian standards are similar, and both now are higher than that now obtaining in England. It would be a boon to Shorthorn breeders if the standard could be made the same in Great Britain as it is on this continent. If this matter is to be dealt with at all, it can only be dealt with successfully by the united action of both these Associations. I would suggest that negotiations should be opened up by a committee appointed from both Associations that could present the matter from our point of view, and would have power, after negotiating, to make such recommendations as might in their judgment be necessary.

There is still one other matter that should receive attention: The same standard of registration exists in Canada and the United States, but where animals are sold in either country to be transported to the other, the customs authorities demand the registration certificates of the country to which the animal is being sent. These animals will undoubtedly be registered in the country to which they are going, but it is often extremely inconvenient and causes unnecessary annoyance to be obliged to wait until the pedigrees are forwarded for registration before the animals can be shipped. These are matters which demand the most intimate and fraternal relations between those living in Canada and the United States.

We are now started on the 20th century, and many of us are wondering as we look back over the past and see the great advances that have been made, what the 20th century will reveal as to progress in the various lines of human industry. We who are gathered here to-day are more deeply interested in asking the question, What progress will be made in the breeding of Shorthorns—what forward steps will be made in that direction? Men of wealth and keen perception are now engaged in this industry in both countries. It is fair, therefore, to expect that with the added knowledge which has come to us in recent years, much improvement will be made. Let us all, therefore, having this object in view, not seek to separate ourselves into State or Provincial groups—which are certain to be antagonistic to each other in some degree—but let us in all parts of this continent continue to fraternize with each other as we have always done in the past. Let us take advantage of our splendid soil and climate, and by a wise interchange of animals put American Shorthorns to the front in the World's market.

Humus.

ITS IMPORTANT FUNCTIONS.

The following extract from the annual report of Prof. F. T. Shutt, Chemist of the Experimental Farm, Ottawa, should be carefully read by everyone who cultivates the land. No matter how new your land, the following information will be of service, and may help you to a system of cultivating your rich new soil so that you may never experience what it is to work land from which the humus has been exhausted.

Effect of Continuous Cropping Without the Application of Manure.—Every arable soil possesses its stores of plant-food in what may be termed two forms—though there may not be any strong line of demarcation dividing them—inert or locked-up and available. The former is practically of no value to the growing crop (though by good culture its conversion into assimilable forms constantly takes place); the latter is in a condition to be immediately made use of by the plant, and built up into its tissues, root, stem, leaf, and seed. Soils of low productivity, but which originally gave paying crops, are those whose stores of available food have been drawn upon until but very small quantities remain. This we have proven by chemical analysis. One of the first mineral elements to show depletion is lime.

Again, on comparing the analyses of such soils, the fact is revealed that the vegetable matter or humus has, in a large measure, been dissipated or destroyed by cropping during a number of years, and that with the humus the nitrogen has also diminished. The importance of a due amount of humus is difficult to overestimate. Not that in itself it nourishes plants, but that it is the natural store-house which conserves plant-food from waste, presenting it in compounds particularly acceptable for crop nutrition and use, and that it is the one great regulator of a soil's moisture and temperature.

We have already referred to the fact that the elements necessary for plant nutrition are present in soils in two conditions, as it were; for the most part, in insoluble inert form, but also, to a small degree in combinations soluble in water or readily dissolved by the slightly acid exudations of rootlets, and hence at once useable by plants. Recent research in the chemistry of soils goes to show that the basic humates—i.e., the mineral elements found in combination or connection with the soil humus—furnish more particularly this available plant-food. As the humus decreases we are to understand then that as a general rule not only the percentage of nitrogen decreases, but also that the percentages of available phosphoric acid, potash and lime decrease.

Since the difference between a small yield and a large one is frequently a matter of water supply only, it is apparent that a consideration of that agency which tends to its preservation in proportions best suited for plant growth is worthy of our most serious attention. Neither clays nor sands, unless duly provided with vegetable matter, can withstand seasons of drought; the first has shed the rain as surface water; the latter has allowed it to drain through and out of the reach of the crop's roots. Semi-decayed vegetable matter, by rendering heavy loams more porous, renders them pervious to the falling rain and melting snow, and then by its absorptive qualities serves to retain this water for crop use. In light soils, this latter property is brought prominently into play, rendering them able to support and nourish a crop otherwise quite impossible in dry seasons.

In addition to its useful function in retaining moisture, humus has a most beneficial effect upon a soil's texture, rendering clay loams more friable and mellow and allowing air (which is as necessary for the life of roots as water or food) to freely permeate their mass. It also serves to compact and otherwise improve the physical or mechanical condition of light and sandy soils. Without extensive root development there cannot be an abundant production of stem foliage and seed; this is only possible in a soil with fair mechanical condition, one in which the roots can freely forage for their food.

Before leaving this brief review of the part that humus plays as a soil constituent, we must refer to the useful purpose it serves in furnishing food for bacteria or germs, microscopic plants, which live in myriads in all fertile, aerated, moist and warm soils, and which among other functions perform a most valuable work in converting nitrogenous organic compounds into nitrates, the only form, as far as we know, in which farm crops, other than legumes, can obtain the nitrogen necessary for their growth. We must also suppose that these germs serve in some degree towards the predigestion of the mineral constituents of humus, thus preparing them for assimilation by plants of a higher order. This seems evident from the fact already mentioned, that the percentages of mineral humates largely indicate a soil's fertility.

To sum up, we shall narrate briefly the features that characterize partially exhausted soils and those of low productive power, and give some of the more important economic means whereby such soils may be improved.

1. *Poor Texture.*—Better and more careful and thorough tillage is required to render them friable, porous and mellow. If a heavy clay loam, drainage will be found necessary—indeed, essential. This is the true and only remedy for heavy, wet and sour lands and those underlaid by a hard and

impervious subsoil. Drainage deepens the surface soil by lowering the water level, and thus allows the roots an opportunity to seek their nourishment at greater depths than is possible in a water-soaked soil. It allows a soil to become aerated, a condition essential to the welfare of living roots. Drained soils are moister in dry seasons and drier in wet weather than those undrained. Occasional subsoiling, which is simply a loosening of the layer immediately beneath the surface soil, will be found of great value to soils underlaid by hardpan.

Thoroughness in working a soil is also of great value in promoting tilth or good texture. A hard, cloddy soil is an uncongenial medium for the growth of farm crops. Clay soils should not be worked while wet, if possible, for such tends to puddling and plasticity, destroying their porosity and drainage power.

2. *Deficiency of Humus and Nitrogen.*—We may take it for granted that a lack or abundance of the former means a lack or abundance of the latter. Constant working and cropping must diminish the stores of these valuable constituents, making it absolutely necessary that all lands (save, perhaps, those in pasture) should from time to time receive an application of a nitrogenous organic fertilizer, if fertility is to be maintained.

Naturally, the manure from farm animals takes precedence as a source of organic matter and nitrogen. Unfortunately, on many farms there is not sufficient produced to keep all the land in good heart. A very grave mistake has been made by many farmers in this respect, which must be rectified, if the soil is to be brought again to its original productivity. Dairying and stock-raising, if more generally practised, would soon have their effect upon the soil. It has been the continuous growing of grain crops and potatoes and the selling of these products, to the exclusion of other branches of farming, that has caused the impoverishment of much of our arable land in the older provinces of the Dominion.

Possibly a worse feature than the deficiency of manure is the waste of it that ensues on so many farms. First, there is the loss by drainage of much of the liquid portion in the stable, cow house and pigpen, and then follows leaching and excessive fermentation in the barnyard. We do not hesitate to say that losses from these causes frequently amount to from one-third to one-half, or even more, of the original value of the manure. The solid and liquid portions together, as voided, would contain approximately three-fourths of the plant food present in the feeds used, the liquid part containing practically all the immediately available constituents, and hence, by far the more valuable. It, therefore, behooves every farmer to see that the floors of the buildings in which animals are kept are sound and water-tight and that sufficient bedding is used to soak up and retain the liquids. In this connection, we would make two suggestions. The first is to cut the straw used for litter, and thus increase its absorbent power; the second is to use, in addition to the straw bedding in the cow house and piggery, a certain quantity of air-dried weathered muck when such material can be readily obtained, as is frequently the case. Muck not only contains a considerable amount of plant-food, especially nitrogen, which is set free by the subsequent fermentation in the manure pile, but by its great absorbent powers retains and saves from loss, as we have pointed out, the most valuable part of the manure. Air-dried muck frequently contains 75 per cent. or more of vegetable matter. This, by composting, is converted into humus-like compounds, and hence it is obvious that the employment of this naturally-occurring fertilizer in such a way as we have outlined is particularly valuable for such lands as we are now discussing.

A further important source of humus and nitrogen is green manuring—that is, the turning under of a green crop. For this purpose, we advocate especially the legumes, since they alone have the power (through the agency of certain germs that reside in the nodules on the roots) to assimilate free nitrogen from the air, thus enriching the soil with the most costly of all forms of plant-food from a source otherwise unavailable. A good crop of Red or Mammoth clover turned under will furnish as much nitrogen to a soil per acre as a dressing of eight to ten tons of ordinary barnyard manure. The benefits of this method of manuring (which indeed are hard to overestimate) are stated at length in the report of this Division for 1895. On soils too poor to grow clover, a beginning must be made with buckwheat or rye. These crops plowed under for a year or two, and the soil further enriched with a dressing of wood ashes (or a fertilizer supplying potash, phosphoric acid and lime) will be all that is necessary to furnish a condition suitable for the growth of clover.

We congratulate the FARMER'S ADVOCATE on its success.—*Winnipeg Telegram.*

The chief Home Department engraving in the FARMER'S ADVOCATE Christmas number is entitled "The End of the Skein," a rare and touching work of art. No go-ahead farmer should be without the FARMER'S ADVOCATE.—*Melita Enterprise.*

The Xmas number of the FARMER'S ADVOCATE is a gem. The cuts are of a superior quality, while the literary matters are of a great benefit to farmers. The publishers of this popular paper are to be congratulated on the success of the issue.—*Holland Observer.*

A Poor Man's Dairy.

To the Editor FARMER'S ADVOCATE:

In looking over the past copies of the FARMER'S ADVOCATE, I notice an article, by A. W. R., on a poor man's ice house, so I thought I would give you one Manitoban's way of building a poor man's dairy. Some years ago I built a dairy beside the well, it being on the level prairie. I had no bank to dig in, so I dug down three feet in the ground, ten feet square; then put up a building of logs four feet high on top of the ground, leaving a door at the north-west corner; then, desiring a pitch roof, I put up two posts opposite each other, having them project about one foot and a half above the logs; then placed a beam on top and laid good straight poles up and down like rafters, only close together; then filled the gables in with logs and fastened them to the posts by means of wooden pins. I then built a wall of sods eighteen inches thick, on the outside, up to the roof, covered the roof with one layer of sods and put three inches (or thereabout) of loose earth on top, leaving an opening at the opposite side from the door for ventilation. Thinking it would be cool enough, we left it that way for that summer, but to our disappointment, we had to put the milk cans and butter down in the well, and the dairy was of no use that summer. The following winter we took out twelve or fourteen cords of green wood, cut it into four-foot lengths. The next spring when the snow started to go away I cleaned all the snow away from the dairy and piled the wood around it, and about one foot higher than the peak; then laid logs on top of the wood across the building. I put a load of small poles and brush on top, covering the entire building, which kept the sun from striking down on it and kept the dairy quite cold all summer, besides drying the wood, which we used the following winter, replacing it with green wood as before, thus preparing our dairy for another summer's use.

I hope this will be of some benefit to the readers of your valuable paper.

Oak Lake, Man.

AN OLD SUBSCRIBER.

Grand Sweepstake Wether.

HOW BRED AND FED.

In reply to your enquiry as to the breeding and feeding of the winning sheep carcass in that competition at Guelph, I beg to state it was that of a grade Shropshire shearing wether, bred by Mr. S. Hoar, Woodville, Ont. His dam was a half-bred Shropshire, her dam being a good common-grade Leicester ewe. The wether's sire was the registered Shropshire ram, Fairview Sort 95519, whose sire was the well-known Newton Lord, and whose dam was Campbell 508, 50904, a first premium ewe at several Canadian shows, as well as at Madison Square Garden Show, New York City. We bought the wether in August, 1899. Till then he ran all summer on the roadside with his dam, and had no other feeding but what he helped himself to. When bought, he was weaned and given a run on rape and grass, with two feeds of grain daily. The grain feed was usually one part bran, two of oats, and one of split peas, with a trifle of barley, and sometimes a little wheat for a change. Five per cent. of ground flaxseed was added in October and November, when turnips took the place of rape in part, and most of the feeding was done in the barn. He was exhibited at the Winter Fair in London in 1899 and placed second. During the winter following, the feed was unthreshed peas in the morning, a liberal allowance of cut turnips at noon (mangels instead after April 1st till June), and clover hay and cut roots at night. In June, vetches and rape were ready for use. The latter was fed off in the field, and the other in the barn at noon. A small feed of grain was allowed, about half a pound, twice a day. He was on grass and rape morning and evening, and carried on in that way till October, when the care and treatment were about the same as during the previous fall. During November, the grain was increased, when about two pounds per day of the mixture was fed. As he was fed the same as our pure-bred yearling wether, the carcass of which was "faulted" for being overdone, at the Guelph Show, I suppose the conclusion we must arrive at is that the breeding has as much if not more than the feeding to do in making up topers.

JOHN CAMPBELL.

Shorthorn Prices in Britain in 1900.

According to the returns, compiled by Mr. John Thornton, the average price realized for the 1,906 head of Shorthorns disposed of at the leading sales of the breed held throughout the kingdom during the past year worked out to £32 19s. 9d., as against the £31 17s. 9d. realized by 1,844 head included in the previous year's dispersals. The top price of the year was £55 gs., obtained at the draft sale of Miss A. de Rothschild's herd in Buckinghamshire early in July. The distinction of making the highest average of the year fell to H. R. H. the Prince of Wales, whose draft of 51, disposed of at Sandringham on the 29th of June, averaged within a few shillings of £70 apiece. Next to this came the average of £63 10s., made by the draft of 55 disposed of at Mr. Dudding's sale in Lincolnshire at the end of July. Like so many of the animals which have been making big prices during the past few years, the bull which topped the past season's prices was secured by a South American buyer.

The Dairy School Graduate.

The status of the graduates of our Canadian dairy schools was illustrated by an incident at the close of the Western Ontario dairy convention. These great gatherings of factorymen, makers and patrons are utilized to a considerable extent for making arrangements for the ensuing season's work between the two first-named parties. At this convention a successful young maker of some four or five years' experience, both in cheese and butter making, and who would have no hesitation in undertaking to run a factory himself, was engaging with an eastern factoryman. Said he to one of the FARMER'S ADVOCATE staff: "The bargain was just about satisfactorily completed, when the factoryman asked if I were a dairy school graduate, and I had to confess that I was not. That settled it. He shook his head, saying that he preferred one having the additional advantage of the special training to be obtained in that way. I have therefore decided to take such a course, and have but little doubt that the time is not far distant when it will be very difficult, if not impossible, for any but those possessing certificates from these schools to secure situations of a desirable character."

Such is the tendency of the times in dairying. The makers who are to-day forging ahead are those who are qualifying themselves most thoroughly for the work. Each year the demands for general as well as special intelligence and skill are becoming greater. The trade becomes more exacting, the tastes of the consuming public more variable and critical, and to meet these, makers must qualify themselves. The problems of milk testing, bacteriology involved in the care and ripening of milk and cream, the curing of cheese, etc., ventilation, cold storage, as well as the fundamental principles involved in the proper care and feeding of dairy cattle, if the best results in milk are to be available—all these present a wide and necessary field for study on the part of every young maker who has any desire to rise in the profession. During the past twenty years the writer has been closely observing the progress of many of those who are now in the very forefront of the industry, and while the foregoing observations are true regarding the past, we believe they are more than ever applicable to present and future conditions. At these schools not only the lectures and technical training are of the utmost value, but the students come in contact with the wider knowledge and experience of the members of the staff, and in friendly competition with the bright, enquiring minds of fellow students from all parts of the country, which in itself is no small part of a liberal dairy education. The cost involved is so moderate that no one can afford to neglect the opportunity thus presented, and those who do so are simply standing in their own light.

Warm Feed and Drink and Cleanliness for Winter Eggs.

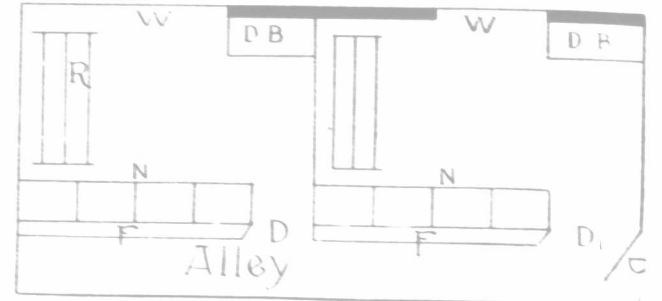
We always kept hens, but could never make them pay their board in the winter. The henhouse was cold: it stood on the north side of the barn, and was poorly lighted. I had eight pure-bred Brown Leghorns and fourteen others. So early in the fall I started to feed for eggs. I had read all the items in FARMER'S ADVOCATE on poultry-raising, and I knew if I was to make a success of it, it meant work. I kept warm water before them most of the time and gave skimmed milk once a day, at noon. Their morning meal consisted of boiled potatoes—small ones and the peelings. When these were done I left the water they were cooked in on them, took the kettle (one I kept for the purpose) to the henhouse, where I stirred all the shorts and bran I could in it. This I put in two flat pans, and the chicks would eat it while steaming. I take out a pail of warm water at the same time, which I put in two other tin pans; these I always empty before adding fresh water. I then go to the other end of the henhouse and scatter a few handfuls of grain in the litter on the floor. This would keep them busy. At noon I take out a quart of skimmed milk and feed some pulped sugar beets, apples or chopped cabbage, and on fine days I let them run out in the afternoon. About four o'clock I feed all the grain I think they will eat, throwing in the litter; this gives the exercise which is so important. I feed barley three times a week, wheat and corn twice. I take the corn to the house and heat it before feeding. The Brown Leghorns layed the best, but the others did fairly well; they averaged me ten eggs a day from November to the end of March. I kept chaff on the floor about six inches deep in one end of the henhouse. In the other end I kept a box of road dust, and another box with gravel in. I occasionally put a pail of ashes in the dust. I fed some meat occasionally; saved all my eggshells and dried them; these I also fed. The house was cleaned once a week and kerosene put on the roosts. I attribute my success to the warm feed, keeping drink before them, and cleanliness. L. R. F., Norfolk Co., Ont.

JOHN CLARK, Jr., Crowfoot Creek, Alta.:—"I am well pleased with the cut of 'Waldo' in the Christmas number. Think it could not be better." January 11th, 1901.

Poultry Houses.

The first thing to be done in establishing poultry quarters on a farm is to select a location. A great deal depends on whether or not the selection is made judiciously and for the best interests of the fowls. A good location would be on the side of a hill that slopes to the south; trees on the north and west provide a good protection. There is no best plan for a poultry house. The best plan is the plan you prefer. Much depends on the cost, the location, the breed, and the number of fowls.

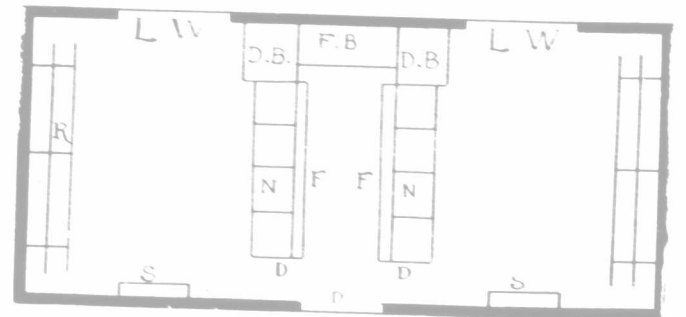
The ground plan of house No. 1 can be extended to any length desired, with the same interior arrangement. The dimensions of house No. 1 are 11x21 feet. In the ground plan, the alley at the north side of the building is 4 feet wide, and in houses of greater length should extend the entire



GROUND PLAN OF POULTRY HOUSE NO. 1.

length. F is the feed trough, being placed in the alley to prevent the fowls from getting into it and for convenience in feeding; N is the nest boxes, which are placed on a shelf 18 inches from the floor, and arranged to open into the alley, so that the eggs may be gathered without entering the pens. The cover over the nests should be placed at such an angle that the fowls cannot roost on them. The space under the nest boxes is lathed up, leaving space enough between the lath for the fowls to feed through. The partitions between the pens and over the nest boxes may be made of lath or wire netting. R is for roosts, which are placed one foot above a tight platform, the platform being placed two feet above the floor of the house. DB is for dust bath. D stands for each door, and W for each window. Floor may be either ground or boards, but good drainage is necessary.

Poultry House No. 2. The dimensions of ground plan of No. 2 are 11x28, with a 6-foot alley running crosswise between the two departments, and will accommodate 25 to 35 fowls (according to the size of them) in each department, and should be at least 7 feet high. The building should face with windows towards the south. It may be built of double boards with tar paper between. Roosts are placed at far side of each department, 10 inches above platform.



GROUND PLAN OF POULTRY HOUSE NO. 2.

It being about 2 feet from floor. The roosts may be cleated to crossbars lying across the platform. The crossbars may each be hinged to the wall, so that both they and the roosts may be lifted up and fastened to the wall while the platform is being cleaned. S is a small box containing small grit for the fowls. FB is feed bin. LW is large window on south side. DB is dust box. D D D is doors leading from the outside and into the two departments. N N is for nests, placed 20 inches above the floor on a platform, and are made to pull out same as a drawer, to gather the eggs, and may also be inverted so that setting hens can come off the nest to eat in the alley and no others can get on the nest to disturb her. The space between the nest platform and the ground should be lathed up, and fowls eat from trough that is in the alley.

CLAUDE BLAKE.

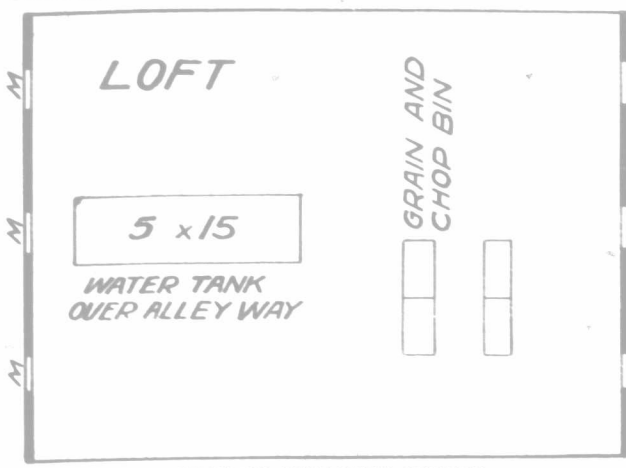
Hints on Breeding Poultry.

A great many poultry breeders make a mistake in putting too many females with one male. This is altogether a wrong method, especially in the Asiatic and American breeds, for many reasons: First, the fertility of the eggs is not as strong, and thus the chicks are not so vigorous, and a smaller number of the eggs will hatch. Every poultry-raiser will agree that it is better to raise 50 strong chicks than 100 weak ones. In breeding American or Asiatic fowls never mate over six or seven females with one male. The progeny will then be strong, and if the male is a good one (which he should be) he will reproduce himself in his offspring, whereas, if he were mated with twelve females he would not have the vitality he would when mated with six.

PERRY F. DOUPE.

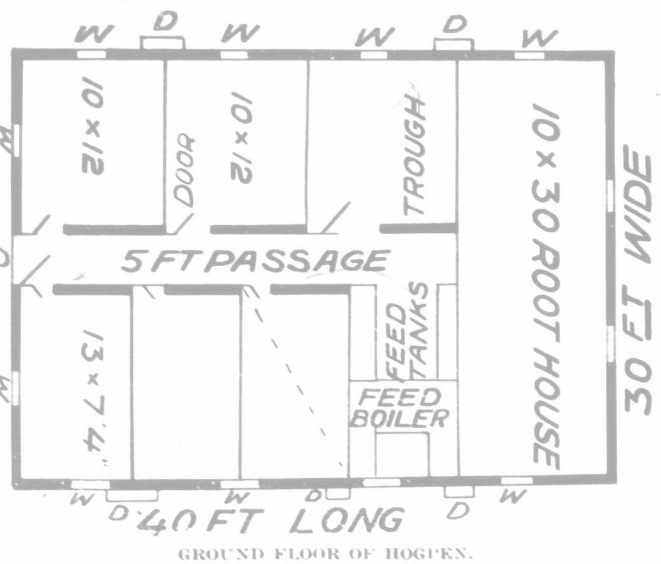
A Hogpen Illustrated and Described.

Sir,—I noticed in your paper a gentleman asking for a plan of a hogpen with "ten pens" or stalls. The plan I enclose shows three pens 10 feet by 12 feet, and three smaller ones 13 feet by 7 feet 4 inches. But if he does not wish a root house or boiler room, he can then have the ten pens by making three 10x10 of root house and one 13x7 of boiler room. By having a root house and pen together, you kill two birds with one stone: because your boiler cooks your feed, heats your pen in very cold weather, and your roots are near at hand. There are two doors to each pen, one opening to alley way, by which you may enter or change hogs from one pen to another, or be used to load hogs by passage. The other is a double frame door; that is, two separate swing doors (one for each pen) in one frame. To clean out the manure, you have to throw the manure out the entrance door, or you may make a large door with a small one inside the larger, by which the hog may leave or enter. In this way the house may be used for cattle or other stock if need be.



PLAN OF LOFT OVER HOGPEN.

The floor (cement) slopes to one corner, by which all water runs away through a tile in the wall, which is on a level with floor. There should be one tile to each pen. Some use pens with elevated beds. Each pen is ventilated by a 6-inch tile or ventilator passing through the roof. In the loft there is a water tank over passages. This brings the weight on the uprights between stalls. The tank may be just a large trough built wedge fashion. One water pipe runs to the tanks (feed tanks) and boiler. This enables one to fill them easy. Another pipe, to which is connected a rubber hose, is used for washing pigs, pens, etc. Above the soaking tanks are chop and grain bins, which are connected by chutes to tanks.



GROUND FLOOR OF HOGPEN.

The walls may be built of brick, stone, timber, cement or concrete (cement and stone). One cannot say which is the cheapest. Some people have part of the material, and prices differ in different localities. A 3 or 4 foot wall of brick, stone or cement, and then timber, makes a good pen. Of course, the boarded part would need to be double boarded and tar paper between, or you may use casing such as used on houses. An 8-foot wall is plenty high enough, but be sure and have a good amount of light. This shows 12 windows with four panes 12x14. The windows in root house are used as chutes by which roots are put in. Always get your floor a good deal higher than outside ground, say 1 1/2 feet more. This enables you to bank up your wall so as to keep the pen dry. If you do not it is sure to crack; and also give good drainage for all water coming from pen. **ARTHUR FRAYN,** Lambton Co., Ont.

Obituary.

The death is announced, at his residence, near Carman, of Henry Ardington, in his 68th year. Mr. Ardington was a highly-respected and successful farmer, and for several years had held the position of president of the Carman Farmers' Elevator, a most successful institution. Mr. Ardington had been an occasional contributor to the FARMER'S ADVOCATE.

This souvenir number of the FARMER'S ADVOCATE is a work of art, and should receive a place in the home of every farmer in Manitoba.—*Dauphin News.*

Wintering the Stock Stallions and Brood Mares.

In the first place, there can be no fixed rule of feeding and fitting stock through the winter, preparatory for the breeding season, as different temperaments and constitutions require different feeding. My methods for a horse of a nervous, excitable temperament are liberal rations, as follows: In the morning, dry oats, whole or chopped, fed with bran; at 11:30 a. m., three to four fair-sized carrots or two turnips; and at 12:30 p. m., cut sheaf, with bran, until near season time, then add a little chop. About 6 p. m., repeat roots; about 7 o'clock, more cut sheaf, mixed with boiled oats, and bran enough to absorb the hot water, with what hay they will eat clean. Have them eat all up clean at each feed under all circumstances. The caretaker must be the judge of the quantities to suit the constitutions of different animals. For a stallion of a rather dull, sluggish temperament, give dry oats in the morning, roots and dry oats at noon, with a little bran, and roots and cut sheaf, with chop, at night. Substitute boiled feed for the chop once or twice a week. Well-saved hay is by all means preferred. This rule applies to heavy stallions or geldings fitting for market also. A horse being well fed should have a large box stall on clay floor, with outside yard, the larger the better. The box should be only moderately warm during winter, as I find the legs keep in better form during the winter in a stall not too warm. About the middle of February begin to give them exercise at the line, beginning say two miles, and increase to five miles per day if possible. Plenty of exercise is absolutely necessary in all cases for health and to have him in fit shape for the season. By no means overfeed during idleness. Have them fed so when they start on their season's route you can increase their ration with a good kept appetite. This is a general outline of our winter treatment of draft stallions.

Regarding breeding mares in winter, circumstances differ so much that it is almost impossible to give anything like a regular system of care, as some must work their mares right along; others have nothing for them to do until spring. I would certainly say give a breeding mare gentle work right along, and a box stall also if possible. If you are working them, keep well shod sharp, as bare feet on slippery ground is most fatal to success with breeding mares. If you have no work, be sure to turn them out every day, unless wet or stormy. Letting them out only once in a while is dangerous, as they are more apt to overexert themselves and cause trouble. We generally feed brood mares straw in idleness, a small feed of oats, dry or chopped, in the morning; turnips at noon; and cut feed, with chop and bran, at night. A small quantity of ground flaxseed two or three times a week is good for either mares or stallions—say a teacupful. But plenty of exercise or gentle work, right up to the time of foaling, is the greatest means of success. We have found to our cost that pampering and high feeding is almost sure to bring failure. After foaling, milk the mares and keep the foal hungry for the first ten days, for the health of both mare and foal. By no means milk the mare before the foal sucks. Let the foal have the first, and when you think it has a moderate supply, stop it and do your milking. I believe there is many a foal lost by too much milk the first few days, by disordering the stomach. If your foal takes joint disease, knock it on the head at once and save yourself trouble and annoyance, as nine times out of ten it will die or be a deformed good-for-nothing, practically.

Now, Mr. Editor, I have told you my methods, and if it does no other good, it may open up a discussion so we can learn from one another, as no one knows it all. **A. INNIS,** Huron Co., Ont.

Spelt Again—A Better Showing.

To the Editor FARMER'S ADVOCATE: **SIR,**—After reading the article in last FARMER'S ADVOCATE, entitled "Tests with Spelt at the Guelph Agricultural College," I was about concluding spelt was not a cereal for the Ontario farmer; but as my neighbor alongside of me had a piece of ground in spelt last year, next my fence, I stepped across the field and interviewed him on his experience with this new grain. I found his report quite different from the result at the College. From 1 bushel of sowing he threshed 28 bushels as it came from the machine. There was no breaking of the beads in threshing, no claspings of the chaff to the grain after threshing. The threshing machine was of the ordinary kind, such as he did all his other threshing with, and on inspecting the bin I found the grain as clean and free of awns and chaff as ordinary barley coming from the machine. He is well pleased with the result, and intends to put in 8 or 10 acres the coming season. As he is keeping all the yield for seed, he can say nothing about the feeding qualities of the grain, but has no idea it is inferior to common barley. The farmer he bought the seed from last year raised 10 bushels from 1 1/2 bushels sown, while that one's neighbor raised 44 from the same amount of seed. I intend trying it, but will certainly give it up if I can't beat the O. A. C. in growing spelt. **JOSEPH OSBORNE,** Lambton Co.

Experiments for the Farmers' Benefit.

The work of the Experimental Farms of Canada is not only extending continuously, but becoming more and more definitely advantageous to Canadian farmers. During a recent visit to the Central Farm, at Ottawa, by a member of the FARMER'S ADVOCATE staff, many lines of activity were brought to notice. Dr. Saunders' chief personal work at this season of the year is seed testing and seed distribution. This is of incalculable worth to farmers who will avail themselves of their benefits. Small samples of grain are being received from farmers who have doubts as to the germinating qualities of their seed grain. From each of these samples 100 grains are indiscriminately taken and planted in a row in a box of soil kept warm and moist. At the end of a certain period, those who sent the samples are advised as to their germinating qualities.

The annual seed distribution is now in full progress. A staff of men are busily engaged in cleaning, weighing and sending out 3-pound samples of seed grain for testing on farmers' own land. By this means, farmers are enabled to get a start in first-class seed of the best known varieties of crops. The greatest demand for several years has been for oats. In addition to this, a sort of Experimental Union is getting into operation, similar to the Ontario Experimental Union, having its center at the Guelph Farm. The work of the Dominion Union is intended to touch every locality as far as possible. The farmers who engage in it are of Dr. Saunders' own choosing, from their proved fitness for the work as seen by their reports from year to year upon tests conducted with the three-pound samples of grain. The grains sent out in this work must be grown according to instructions, so that intelligent reports can be made upon them.

In the barns, under Mr. J. H. Grisdale's supervision, several tests in calf-rearing and cattle-feeding are in progress. In April, 1900, ten calves of about equal quality and age were divided into two lots. They were fed alike on new milk for three weeks and skim milk and good fodder through the summer following, with the exception that one lot received a grain ration up to three pounds each per day, and the others up to one and a half pounds per day. Late in the autumn, the grain was taken from the lighter fed lot and increased with the others. The test will be conducted until either lot is sold, one as baby beef at about two years old, and the others as more mature animals, at, perhaps, three years old. On Jan. 11th, the five better fed calves averaged fifty-five pounds per head more than the others.

There is also a series of tests in progress with steers of different ages. Yearlings, two-year-olds and three-year-olds are tied in rows and fed the same classes of foods. The test is to determine the comparative cost of producing beef with animals differing in age. Tied and loose steers are being compared as to economy of feeding, as well as other lines of investigation. Unfortunately for the test, the best class of steers could not be secured; in fact, some of those in the stalls and in the pens show unmistakable signs of possessing dairy blood, which must to a considerable extent reduce the value of the experiment. Considerable pig-feeding is in progress, different lots receiving different classes of roots and grains, in order to ascertain what are the best foods for the economical production of firm meat.

Soft bacon has engaged the attention and time of the Chemist, Prof. Shutt, for several months. Portions of soft carcasses fed on known foods have been analyzed in order to ascertain the consistency of their fats, also the foods and conditions that produce soft bacon. These tests are still in progress, and when concluded will throw considerable light on the hog-feeding question. Already it has been ascertained that all corn-feeding invariably produces bacon containing an excess of soft fats or oils, while other known foods and combinations yield more firm fats, and, therefore, bacon having a desirable consistency. Much good work is going on in the other departments, which we cannot now refer to.

Carrying Water by Siphon.

To the Editor FARMER'S ADVOCATE: **SIR,**—I notice a question by J. L., Grey Co., re conveying water by siphon. We have a siphon conveying water from a tank 4x6 feet and 4 feet deep, at a spring in the bank opposite my house, on the other side of the road. Eighteen feet from top of bank is a 3-inch galvanized pipe, laid over 3 feet deep in the ground, 300 feet to the well in stable, and down 36 feet in well. The pipe has to be primed with a small pump attached to pipe in tank, and when primed, screw it off and put a plug in pipe, so that not over one-third of the capacity of pipe is running, as the spring is not strong enough to allow the full capacity of pipe being taken, as the tank would be emptied before the well would be filled up to within 20 feet of top. If the spring was strong enough, it would fill the well 6 feet or more in an hour. By allowing only one-third the capacity to run, it takes over half a day to fill our well to the height of level between tank and well. It works well, and we have no trouble in keeping a supply of water for sixty-five head of cattle, besides a large number of hogs. **JOSEPH FEATHERSTON & SON,** Peel Co., Ont.

Symmetry and Quality in Breeding Stock.

Mr. John Treadwell, than whom there are few better known breeders in England, tendered some interesting advice to his brother stock-owners in the course of an address which he delivered at a luncheon in connection with a fat-stock show recently held at Aylesbury. Mr. Treadwell, who is himself a well-known breeder of Oxford Down sheep, and whose appearance is so familiar to frequenters of the sheep section of the Royal Shows, laid special emphasis upon the necessity for cultivating type and symmetry in the animals kept by them if they wished to maintain the status and breeding type of their herds and flocks. "If," said Mr. Treadwell, "breeders listen to all that is told them by their good friends the butchers, they will be soon led astray." Unless the symmetry of animals is studied they will not be of much use to breeders. He had had a pretty extensive experience of breeding for the last fifty years.

A Novelist as Agriculturist.

Mr. Rider Haggard, the novelist, has had another successful year as a farmer. As readers of his charming work, "A Farmer's Year," are aware, Mr. Haggard now owns a small estate in Norfolk, and since entering into possession of it some years ago his experiences have been somewhat of an inconclusive character. In 1888 he made a profit on the farm (the rent of which is about £200) of £122 15s. 4d., but in 1890 he not only had no surplus wherewith to pay his rent or the interest on the money invested, but he was £40 out of pocket as well. Last year, in 1900, the pendulum took another swing to the right side, with the result that the profit of 1888 was surpassed by a few shillings, the increase of the total receipts over the expenditure—everything included—being £123.

By way of comment upon the returns for the year, Mr. Haggard writes: "That these gains are not on paper merely is, I think, demonstrated by the fact that on October 11 last (Michaelmas) there stood to the credit of the farm account in the bank a sum of £461 13s. 3d. It will be noted that this year I print a third balance sheet, that for the poultry. Something over a year ago from last Michaelmas, in order to spare the steward's time and if possible increase the return from this source, Mrs. Rider Haggard took over the management of the fowls on the two farms, except a few which run at the home farmstead, whereof the increment is included in the item 'Miscellaneous produce sold.' The results of her first full year's enterprise show a gain of over £35."—*Farmer's Gazette.*

Breaking Horses.

Sir Walter Gilbey, in a letter to the *London Live Stock Journal*, on the subject of handling young horses, writes:

There is but little doubt that the chief cause of there being so many badly-broken horses is the lack of knowledge on the part of horse-breakers themselves.

It is most important to state that the essentials of a good horse-breaker are intelligence, patient endurance, and complete control of temper. Xenophon, more than two thousand years ago, says, "Never approach the horse in a passion"; and the Duke of Newcastle, in the year 1657, reports: "I have seen very few passionate horsemen get the better of a horse by their anger. On the contrary, I have seen the horse always get the best of them."

First of all, then, teach your scholar what he should do, repeating it often to him in a mild manner.

This excellent advice is worth remembering when commencing to instruct the unbroken colt, assuming him to be at that age—four or five years old—when he is coming into useful work. Before, however, he arrives at this age he should have been handled and taught to be led, and the best time to commence such lessons is when he is taken and weaned from his dam. All foals should be taught to lead at this period of their life. It only requires about fifteen minutes with each foal for five or six days to train them to be as tractable as you may desire, and such tuition is never forgotten.

Breaking Vicious Colts.

For breaking stubborn colts, take a thin, sharp rope thirty feet long. Form a loop at one end large enough to slip around the lower jaw. Have the knot on right side. Draw the rope overhead to left side and pass through the loop at the jaw. Pass back again to right side and under upper lip. Draw over head again and again through the loop at jaw. By this means, the wildest colt can be entirely conquered, and will make a decidedly handy horse. They can be made to stand on hind legs by a single hard jerk of this rope. —*FARMER.*

Grey Co., Ont.

[NOTE.—A fright-mad, nervous colt is too often mistaken for a vicious brute needing most severe treatment, whereas patient, intelligent handling, alongside of a steady, intelligent horse, is all that is necessary to get the youngling along the right line. The severe punishment which is recommended, placed in the hands of a cruel trainer that can control his temper, may be all right for some spoiled colts, but only by the hand of a very hot-headed fellow. The best way to break a colt is too cruel to be said. The most successful trainers seldom break a colt by any method that will cut him to the bone, but only to a slight degree. —*Editor F. A.*

Weed or Monday Morning Disease in Horses.

Weed or lymphangitis is a disease of frequent occurrence among heavy horses, more particularly at that time of the year when they are kept in the close, stuffy stables during very hot weather. It is of but rare occurrence among light horses, but it is notorious for being specially prevalent among certain strains of draft horses—animals of "soft" substance or inherent constitutional weakness. Animals which are known to be subject to this disease are commonly known as gummy-legged. Because of the fact that it occurs with such frequency among horses when left standing in stables from Saturday night to Monday morning, the disease has got the name of Monday morning malady. The disease generally manifests itself in a sudden enlargement of one of the hind legs: this enlargement has the appearance of being of a dropsical character, and when the animal is moved it manifests considerable pain. If the swollen portion of the inside of the thigh is pressed, great pain is evinced, and the animal shows great disinclination to move. In some cases there is very little constitutional disturbance, and the appetite is not much interfered with, but in others all inclination for food seems to disappear. When "weed" becomes chronic and recurs several times, there is a risk that the leg may become permanently swollen. To guard against this it is a good plan to arrange for having animals which are known to be liable to the disease regularly exercised for about an hour every Sunday. Such treatment is often found to keep animals which are prone to weed free from attacks of the disease. In mild cases the only treatment necessary may be a fair amount of gentle exercise. In those that are more severe, a purgative ball (aloes, 6 to 8 drams) must be given, warm fomentations applied continuously to the limb, and walking exercise as soon as the patient can be made to move. The purgation should be followed up by active diuretics (nitre, iodide of potassium), and when the inflammation has somewhat subsided, tincture of iodine may be applied over the swollen glands.

QUESTIONS AND ANSWERS.

Veterinary.

CHRONIC CATARRH.

"KNOW NOTHING," Assa.: "I have a filly rising two; had diphtheria last July; since then has had a slight discharge of a whitish color from one nostril, and seems to breathe hard through it. What shall I give her to remove the trouble? She seems in good health otherwise."

[Take half a pail of hot water, into which put one ounce of creolin. Put the pail in a bag and steam the nasal chambers for half an hour each day for ten days. Give in warm mash, morning and evening for two weeks, iodide of potassium, half a dram; gentian, pulv., one dram; liquorice, pulv., two drams. —*W. A. DUNBAR, V. S., Winnipeg.*]

MARE FAILING IN FLESH.

SUBSCRIBER, N. D. de Lourdes, Man.:—"I have a six-year-old mare, very little used; am feeding her well, good hay, oats and chop three times a day. She is failing in flesh, although she eats well. She does not seem feverish, but grinds her teeth and slobbers. Please give cause and treatment."

[Have your mare's mouth and teeth thoroughly examined. Examine beneath the tongue and see if there are any sores caused by spear grass. If you cannot discover anything wrong with the teeth or mouth, we would advise you to prepare the animal for physic by feeding exclusively on a bran-mash diet for at least sixteen hours, and then give the following dose: Barbadoes aloes, seven drams; calomel, one dram; powdered ginger, two drams; soap sufficient to form a ball. Continue the bran-mash diet until physic has ceased to operate. After this, give in food, night and morning for ten days, sulphate of iron, one dram; soda bicarb., nitrate of potassium and powdered gentian, of each, two drams. —*W. A. DUNBAR, V. S., Winnipeg.*]

ECZEMA IN HORSE.

A. McT., Grey Co., Ont.:—"Would you please give me a cure for mange? Have a horse that has been troubled for about four months with it. Have been doctoring him, but he does not seem much better. In fact, he is worse than when we started. He has hair all rubbed off under part of body, breast and inside of front legs, and his mane all rubbed out. I would like if you would tell me what would be best to make the hair grow on the affected parts?"

[Your horse doubtless has a form of skin disease called eczema. Mange in horses does not exist in this country. Cases such as you describe are difficult to treat. If your stable be warm and you are prepared to take very good care of the horse, I would advise you to clip him, as it makes it much easier to apply dressings to the skin. But horses that are clipped at this season require very careful attention. Give him a brisk purgative of 6 to 9 drs. aloes, according to his size, and 2 drs. ginger. Give all affected parts (better include the whole body) a thorough washing with warm soft soap suds applied with a scrubbing brush; then apply twice daily a solution of creolin, 1 part to 50 parts

water. This must be well rubbed in, and be sure it reaches the skin. Wash as described, once every 10 days. Give the following powders: Nitrate of potash, 3 ozs.; sulphur, 6 ozs.; arsenious acid, 4 drs. Make into 21 powders, and give one night and morning in damp food. Continue giving the powders until a cure results. It would be well to alternate the dressing, say every week, with one composed of corrosive sublimate 1 part, water 1,000 (one thousand). The hair will grow spontaneously when disease ceases. —*J. H. REED, V. S.*]

REMOVAL OF THE PLACENTA FROM COWS.

AMATEUR, Compton Co., Que.:—"In your May 5th number you speak of removing placenta from cow by hand."

"1st. Do you remove the cotyledons along with placenta, or not?"

"2nd. In case it is not removed, how long will it taint the milk?"

[1st. In removing the placenta (afterbirth) from a cow, all possible care should be taken to not remove the cotyledons; the membranes should be carefully separated from each cotyledon. If a few should unavoidably be removed, as is sometimes the case when a few days have elapsed after parturition, serious results are not likely to follow, but if many be removed it might prove serious.

2nd. The non-removal of the placenta does not necessarily cause a tainting of the milk, but interferes with the animal's health and causes a decrease in the secretion of milk. In some cases it causes death from blood poisoning, caused by absorption of the decaying membranes into the circulation. In mostly all cases the general health of the animal becomes affected, and the length of time it requires for all matter to escape varies greatly.

—*J. H. REED, V. S.*

FRACTURE OF RADIUS AND ULNA IN COLT.

S. W., Albert Co., N. B.:—"What treatment would you suggest for a 6-months-old colt which had its fore leg broken short between the knee and elbow? If bandaged, would you recommend bandaging from the foot to elbow? Would you recommend putting in slings or box stall, with short bedding, or would you advise killing? The colt is not halter-broken, and has been handled very little."

[If treatment were attempted in this case, the limb should be very carefully set and enclosed in a plaster-of-Paris bandage from knee to elbow (this is a very hard place to bandage, on account of its form) and the animal kept as quiet as possible. It would be better in slings, as if allowed to lie down it would in all probability injure itself in rising. If you can contrive some means of keeping it quiet, and its weight off the affected limb, the bones will unite in a few weeks, but this is almost impossible to do, and I think the least loss is the first one, and I would advise its destruction.

—*J. H. REED, V. S.*

RINGWORM ON CALVES.

W. J. P., Dromore, Ont.:—"I would like to know through the FARMER'S ADVOCATE the cause of ringworm, also the best remedy for same? Our spring calves are badly affected, while the rest of the cattle are entirely free from it. Is it a parasite, and why are calves more affected with it than grown cattle?"

[Ringworms are due to a fungus that affects the surface skin of cattle of all ages, but is frequently seen on calves. It produces spores, and spreads its infection from one beast to another. The spores will retain their vitality for months on walls, mangers, etc., where affected animals have rubbed. Pens that have contained ringwormy calves should be disinfected, or the disease may be carried over from year to year. To treat a ringworm, wash the spots with warm soft water and soap, rubbing off the surface scurf; then apply sweet or linseed oil three parts and carbolic acid one part, well mixed together. One application usually cures, but two may be necessary in some cases.]

INDURATED UDDER.

T. HARTLEY, Oxford Co., Ont.:—"I have a valuable Holstein cow which has been milking two months, and her bag is still caked, although I have given salts, bathed with hot water, rubbed with white liniment and lard. Sometimes it seems better for a day or two, then gets just as bad as ever. She has been kept in a good warm stable; only out once or twice on a fine, mild day. Her food consists of about 20 pounds of ensilage, 3 quarts of bran, besides hay and mangels. What would you advise?"

[Place cow in box stall and give good supply of bedding, in order to prevent as far as possible injury to the udder while she is lying. I find that Holsteins, being large and having large udders, are very liable to injure their udders while lying, by the legs dropping into the gutter and resting more or less on the udder, pressing it against the edge of the gutter. When this is the case, and a box stall cannot be provided, the length of the stall should be increased. Would advise you to give this cow 2 lbs. Epsom salts, and feed lightly for some time; give 1/2 drs. pulverized iodide of potassium in her food night and morning. Continue to bathe the udder with warm water, and rub the affected parts twice daily with the following liniment: Tincture of iodine, 1 oz.; iodide of ammonium, 1 oz.; alcohol, 10 ozs.; water to make 1 pint. The case will probably be tedious. —*J. H. REED, V. S.*]

COLIC—LAME HORSE.

SUBSCRIBER, Wolseley, Assa.:—“1. We have been bothered a lot this fall with colic, or colic pains, in our horses. They have run out in the day and been fed straw at nights, with perhaps three quarts of oats. Some of the oats had heated a little, but we thought the feed was too light to do any harm. Our horses are in good order and seemed to enjoy picking out during the day. What would you think was the cause, and what could be done to prevent it? What can be done to musty or heated oats to make them safe food?”

“2. One of our horses came in very lame behind the other night. The only thing we could find wrong was a crack across the front of the knee joint. Since then he has not improved, and the lower part of the leg has swollen up. What would be the cause and cure?”

[1. Improper food is evidently the cause of the colicky pains in your horses. Rations of frozen grass, straw and musty oats are not only in-nutritious, but are more or less poisonous, and when we consider that the digestive organs of the horse are not made of iron, either cast or malleable, it should not be a matter of surprise if such food were the cause of something much more serious than colicky pains. Change the diet to food of good quality, and the colicky pains will surely disappear. The boiling of musty oats, or exposing them to a strong heat, 190 Fahr., will, to some extent, destroy their noxious properties, and will make them more safe food.

The crack across the front of the joint would indicate that the trouble is probably due to some local injury or irritation. Would advise you to keep the animal in the stable. Prepare him for a dose of physic by feeding exclusively on bran mash for at least sixteen hours, and then give Barbadoes aloes, seven drams; calomel, one dram; ground ginger, two drams; syrup sufficient to form a ball. Apply the following liniment to the leg twice a day and use a bandage: glycerine, six ounces; creolin, half an ounce; tincture of opium, four ounces; acetate of lead, one ounce; water, five ounces. **W. A. DUNBAR, V. S., Winnipeg.**]

EPIZOOTIC CELLULITIS IN STEER.

T. G. S., Kent Co., Ont.:—“I have a steer, three years old, which had a scum come over both of his eyes last October. The scum disappeared after a little while, but the eye turned red, and he has been blind for nearly two months. He was on grass at the time. He discharged very little water out of the eyes, and seemed to be in no pain. The most of his hair came off, and he got covered with hard scabs on the shoulders and back. I washed him with ‘Hayward’s Liquid Sheep Dip,’ and took most of these off, but there seems like a thick dandruff forms on him now and peels off. I keep him in a box stall, feed clover hay and chop (corn, oats and barley). He is in good condition and feels good, and is hearty. Can you please tell me what ails him and what I can do for him, and do you think the meat would be good for beef?”

[The cause of blindness in your steer is a disease known as epizootic cellulitis, or infectious ophthalmia, which has been quite common in cattle for some time, and it is singular that your other cattle did not suffer from the same. When not properly treated during the first stages, permanent blindness sometimes results. I am afraid the sight cannot be restored now after two months’ blindness, but you might try the following: 10 grs. sulphate of zinc, 15 drops fluid extract of belladonna, 2 ozs. distilled water. Drop a few drops into the eyes twice daily. The skin trouble is not common in these cases, and may have no connection with the other, although it sometimes is present. Give the steer a good purgative of, say, 1½ to 2 lbs. Epsom salts, and wash the body with some good sheep dip. I do not consider the flesh would be unhealthful. **J. H. REED, V. S.**]

LUMP JAW.

J. F., Elgin Co., Ont.:—“During last July, three lumps appeared on one of my cow’s jaws. I had them cut out by a V. S. In a short time three more appeared, which I removed with lump-jaw cure, leaving the jaws apparently sound and smooth. The cow is due to calve now in a short time, and I would like to know whether or not her milk will be fit for human use?”

[If all appearance of the disease has been removed, it is probable the disease no longer exists, and in that case there is no reason why the milk should not be fit for human food. It is a disputed point whether or not the milk of a diseased cow be healthful, but in the case you describe, I do not consider there would be any risk. **J. H. REED, V. S.**]

ABNORMAL OESTRUM.

E. P. W., Norfolk Co., Ont.:—“A cow that lost her calf at seventh month and came in heat ten days after, was not in proper state for service, was she? And would it damage the bull?”

[I do not consider that a cow that had aborted would be in proper condition to breed in ten days, and it would certainly be unsafe for a bull to serve her. In ovarian diseases in cows (which can only be suspected), heat frequently occurs shortly after abortion, and in some cases, if served, she will conceive only to abort again. The same occasionally occurs in infectious abortion. It is probable the abortion in your case was accidental, but it would be well to not breed the cow for three months. **J. H. REED, V. S.**]

EVERSION OF THE VAGINA.

G. V., Royville Co., Quebec:—“I have a cow I bought last October, and she appeared all right till about middle of November, when she cast her vagina. After a lot of trouble I got it back, after having been washed with warm water and peppered. I then tilted her hind quarters up a bit, and she kept all right for a time. When I placed her back amongst the other cows, she cast her vagina again at about the third day. Since then I have kept her raised up behind, as before, and she has been to all appearances quite well. She is in calf, but I do not know when she is coming in. Would you advise me to sell her? Some of my friends advise that, while others say she may be all right after calving, but I do not like to run the risk of losing her at that time. I should be glad to know your opinion on this matter and if you think there is any remedy?”

[This trouble is known as eversion of the vagina. We have had experience of cases of it in both cows and ewes, and in every case they have given birth to their young at the proper time without any difficulty and with no after trouble, and have bred again without a repetition of the trouble, though we must confess we have not known a case where the protrusion was so great as it appears to have been in this instance. It is more liable to occur in the case of well fed animals in hot stables. The adjustment of the slope of the stall, as practiced by our correspondent, together with careful feeding to obviate either costiveness or diarrhoea, is generally a sufficient precaution, but in a bad case a rope truss may be used to advantage. Take two ropes, each more than double the length of the animal. Bend each double, and intertwist them at this bend so as to circumscribe an oval opening a little



TRUSS FOR COW.

larger than that of the vulva. This having been adjusted to this orifice, the two upper ends are carried around the rump, crossed over each other repeatedly in their passage along the back, and finally tied to a collar previously arranged around the neck. The lower ends are carried down between the thighs, one on each side of the udder, and forward on the sides of the abdomen and chest, to be fixed to the collar. It may be made as tight as seems necessary, and will tighten with every effort at straining, so that eversion becomes impossible. It may be made more secure by attaching the ropes to a surcingle as well. This truss must, of course, be removed when true labor comes on. It may be also used in a case of eversion of the womb after parturition, in which something of the sort is more likely to be a necessity.]

PIGS TAKE FITS.

L. W., Grey Co., Ont.:—“Have two litters of pigs about ten and eleven weeks old, apparently in good health and thriving, except when fed will commence to eat, take a few sups of milk and chopped oats and barley mixed, and will fall on floor as if in a fit or cramps, lying for a few minutes, sometimes longer, and then recover. Sometimes will resume eating as if nothing had happened. Others will stand in a dazed, stupid condition for some time.”

[This is an old complaint, which most pig feeders have had more or less experience with, and is one not easily accounted for. Perhaps the most reasonable diagnosis is that it is a sort of epilepsy induced by indigestion due to the nature of the food, and want of exercise. In all animals the brain is liable to be affected from stomach trouble, and as in this case the pigs are thrifty, it may be caused by a rush of blood to the head. It is claimed by some that blood-letting by cutting off a piece of the tail or slitting the ear gives relief, and if they are not fancy breeding pigs, it is worth while to try so simple a remedy. It will be well, also, to give for each pig Epsom salts or linseed oil 2 ozs. in their feed, once daily, till purgation takes place, and make some changes in the feed. If it is being fed thin and sloppy, try a thick mixture or dry meal in one trough, and the drink in separate trough. The pulped mangels you have been feeding should tend to keep the bowels of the pigs in good condition, but as something is not agreeing with them, we would try a change, such as cooking the mangels and adding a few potatoes cooked. After you have caused purgation, we would advise a little of the following mixture, say a dessertspoonful for each pig in food, once daily: Equal parts Epsom salts and powdered charcoal, and let them run out for a few minutes on fine days for exercise.]

EVIDENTLY SORE FEET IN MARE.

L. E., Cardwell, Ont.:—“I have a sick mare. She is able to work and eat, but seems in pain after work. She stands with the front feet as far from the hind ones as possible. She eats well sometimes, and sometimes not so well. Sometimes I think she has indigestion and sometimes I think it’s the water, but can’t tell. She seems worse when driven—is in pain for some time after.”

[The symptoms you give are very indefinite. You give no particulars at all, except the manner in which she stands, which indicates pain in the feet. I would advise you to give her a good pun-

gent of, say, 8 drs. aloes and 2 drs. ginger, either made into a ball with a little soap, or shaken up with a pint of cold water and given as a drench. Remove her shoes, pare the feet well down, and, if you can, give her a long rest; blister around the coronet every three or four weeks all winter. Use as a blister 2 drs. each of biniodide of mercury and powdered cantharides mixed with 2 ozs. lard or vaseline. Clip the hair off, rub blister well in; tie head up. In 24 hours rub well again, and in 24 hours longer wash off and apply lard every day until the scale comes off, when you will tie head up again and blister as at first. Let head down as soon as you wash blister off. If you cannot give long rest, poultice the feet with boiled turnips for a week or two, and after getting her shod keep up the poulticing at nights. **J. H. REED, V. S.**]

Miscellaneous.

STRAW FOR FEED.

A SUBSCRIBER, Wolseley, Ass.:—“1. What grain feed is best to feed with straw to make a balanced feed?”

“2. Which makes the better feed, wheat or oat straw?”

[1. You have not stated what kind of stock you want the balanced ration for. A horse at hard work would require quite a different ration from a dry cow. Nor do you give any idea of the quality of your straw. This year much of the straw, while badly weathered and very inferior looking, contains a large percentage of green stuff among it and a good deal of grain that did not come to maturity, and such straw is proving much better feed than anyone could have hoped for from its appearance when threshed. From general analysis, straw is low in flesh and fat forming constituents as compared with good timothy hay. In this respect, oat straw is much better than wheat straw. The following analysis is from *Feeds and Feeding*, by Prof. Henry:

	Protein.	Carbo- hydrates.	Ether extracts.
Wheat straw	0.1	36.3	0.4
Oat straw	1.2	38.6	0.8
Timothy hay	2.8	43.4	1.1
Wheat bran	12.9	46.1	3.4
Oats	9.2	47.3	4.2

But even if one had analysis of his own straw, and a formula for a balanced ration made out suitable for the purpose for which he was feeding, the individuality of each animal would have to be consulted as to its tastes and power of assimilation. Speaking in a general way, low-grade wheat or screenings and oats constitute the available grain feed of nine-tenths of the farmers, and lucky is he who this year has a liberal supply of these. In feeding straw it is largely a question of making it palatable and digestible, and this can be accomplished in no way so well as by running it through a cutting box, damping it and mixing in the allowance of chop grain and leaving it piled up to soften for twelve hours or so before feeding.]

PLAN OF BARN FRAME WANTED.

MIXED FARMING, Manitoba:—“I contemplate building a frame stable or stock barn (42x80, studding 16 ft.) next summer, and enclose herewith a rough sketch of ground plan and end view, which are subject to some changes. My mind is not altogether clear as to how the roof should be supported and braced to allow for the free use of a horse fork from either end and without cross timbers in the center between the purline posts, and yet be sufficiently firm to support a 14 or 16 foot windmill without danger of swaying the building. Feeding is to be done from the loft through chutes to each animal separately. There will be root cellars under the passageway of each of the cattle sections.”

“By giving an end-view draft of a substantial frame suitable for my purpose in your valuable journal some time this winter, together with some points on ventilating and other general information at your command, you will greatly oblige.”

[In next issue we expect to give some diagrams of barn frames, and will be pleased to receive plans and descriptions of strong, inexpensive barn frames for publication in the *Advocate*.]

BEST TREES TO PLANT.

P. W., Dauphin:—“I have already a large number of maples planted around my farmstead, but would like more variety. What variety would you recommend for this purpose, and for how many years do you have to cultivate the land after the trees are planted?”

[The following are among the best native trees for this purpose: White spruce, tamarack, black poplar, elm and birch. The following are among the best of the imported ones: Russian poplar, Siberian poplar and Riga pine. We usually cultivate our trees in the shelter belts for about four years. The avenues are kept cultivated all the time. **S. A. BEDFORD, Brandon Exp. Farm.**]

WHAT KIND OF ROOFING?

R. W., LITTLEJOHN, Kent Co., Ont.:—“Will you please tell me what you think of metal shingles for roofing a barn, or would you prefer cedar shingles? Have you had any experience with mica roofing or any of the paper roofing advertised?”

[None of our staff have used the forms of roofing referred to, but have heard them all highly spoken of by those who have. What has been the experience of our readers with them, including such points as durability, price, cost of laying, compared with shingles or slate, etc.?

BROME GRASS ON FOUL LAND—FLAXSEED FOR COWS.

W. T. H. Myrtle, Man.:—"1. Is Brome grass of any use to seed down a field badly covered with French weed? If not, which of the grasses would you recommend?"

"2. Is flaxseed liable to cause a cow to slip her calf? Am feeding three single handfuls to four quarts of crushed screenings three times a day. The cow is in milk."

"1. Yes. Brome grass would serve the purpose probably as well as any grass you could use. Native rye grass (*Agropyron tenerum*) should also be useful. Care should be taken that land infested with French or stinkweed be in good heart before seeding down, else the weeds would probably get the start of the grass, and by using up all the available moisture in the soil, starve out the tender young grass plants. It would be well to give the land thorough cultivation, similar to summer-fallow, during the early part of the season, and then seed to grass at an opportune time. In your section it may be safe to seed down with a crop; if so, barley would probably be the best, as it could then be sown later in the season, leaving time to give the land a thorough working up before seeding. If sown without crop, as generally recommended in the western parts of the Province, it will be necessary to run the mower over the land once or twice during the season, to keep down the weeds. The rubbish thus cut down may be left on the ground to serve as a mulch for the young grass plants. Of course, some stinkweed plants are sure to ripen seed before the grass fully occupies the soil, and the seeds of the stinkweed, like mustard, will be in the ground ready to come up as soon as the sod is broken, be that a long or a short period.

"2. Flaxseed contains no properties that would produce abortion in cows, but is very laxative, and by continual heavy feeding it might weaken the system and bring about abortion. Most feeders would hesitate to feed it as liberally as W. T. H., especially in conjunction with screenings, which nearly always contain a considerable proportion of weed seeds, such as lamb's-quarter, which are rich in oil and protein. Flaxseed is not used very extensively for feed, but small quantities are used in making an emulsion with skim milk for calves, as it takes the place of the fat removed from the milk better perhaps than anything else. It may, however, be used with good effect fed in moderate quantities two or three times per week. Professor Henry, in his valuable work on "Feeds and Feeding" (a book every live-stock owner should have. See our Farmers' Library offer), says: "When flaxseed was fed to cows at the rate of 8 pounds per head daily, no ill results followed such heavy feeding. Some feeders claim that flaxseed should only be fed in a very limited quantity, since it contains a cathartic (laxative) principle."

CURING HAMS AND SHOULDERS.

SUBSCRIBER, Wolseley:—"1. Kindly give directions for curing hams and shoulders."

"2. Is fine salt considered as good as coarse?"

"1. We reprint for the benefit of Subscriber and others, from our issue of January 20th, 1900, page 43, the following directions for curing pork without smoking: "We have found the following a satisfactory method of curing pork: We cut the sides into shoulders, sides and hams. If the pork is heavy, it is well to cut out the shoulder at the joint, so that the salt will permeate evenly. When cut up, the red spots should be sprinkled with salt-petre and the entire surface well rubbed with salt and laid on a table in a cool room or cellar. Turn the pieces and rub the surfaces every two days for two weeks, then enclose them in cotton bags and hang up in a dry place, where it will remain till warm weather. We then find it well to pack the pork in a box of dry oat hulls, in a cool, dry place."

"2. For dry salting, fine salt is better than coarse. Some dairy salts are too fine; they will form a paste instead of melting. In making a pickle for curing meat, coarse salt is generally used. We publish elsewhere in this issue an extract from a lecture by Prof. L. M. Douglas, author of a work on bacon-curing, before an English Farmers' Club, describing approved methods of curing bacon and ham."

GROWING PEAS AND OATS.

H. C. Stonewall:—"What do you think of sowing oats and peas together for pig feed? Will they stand up well enough to be cut with a binder, and if so, should they be sown together or separately? I use green-cut oat sheaves for hay exclusively. Do you think that peas mixed with the oats would be an improvement for this purpose. How would they cure this way?"

"Unless the crop is an exceptional one, or the season unusually stormy, we find that one peck of oats per acre will support the peas sufficiently to enable them to be cut with a binder. We usually sow from two to three bushels of peas and one peck of oats per acre. We mix them up together on the floor, and then sow them both at the same time. For cattle, a few peas mixed with the oats might be an improvement, but pea straw is not a safe feed for horses. You will find that the peas prevent the oat straw from curing well, especially if the weather is wet."

S. A. Beaton, Brandon Exp. Farm.

STANDARD OF PERFECTION IN WHITE WYANDOTTES.

NEW SUBSCRIBER:—"Please give standard of perfection for White Wyandottes in early issue of FARMER'S ADVOCATE."

[STANDARD WEIGHTS.]

Cock..... 8½ lbs.
Hen..... 6½ lbs.

THE MALE.

Head: Short, crown, broad. Beak, well curved, clear, bright yellow. Eyes, clear, bright bay. Face, bright red.

Comb: Rose, low, firm on the head, top oval in shape, and its surface covered with small corrugations, terminating in a small spike at the rear, the entire comb and spike curving slightly to conform to the shape of the skull, in color, bright red.

Wattles and Ear-lobes: Wattles of medium length, fine in texture, pendent, bright red. Ear-lobes, well developed and smooth, bright red.

Neck: Short, well arched: with abundant flowing hackle.

Back: Short, broad and flat at the shoulders. Saddle, broad, full, and rising with a concave sweep to the tail.

Breast: Broad, deep and fully developed.

Body and Fluff: Body, short, deep and well rounded. Fluff, full feathered, and well rounded.

Wings: Of medium size, well folded, or not carried too high or too close.

Tail: Well developed, well spread at the base. Sickles, of medium length, gracefully curving over the tail, the ends projecting slightly.

Legs and Toes: Thighs, short, stout, well spread, and well covered with soft feathers. Shanks, rather short and stout, free from stubs or feathers, and in color, bright yellow. Toes, straight, well spread, and in color the same as the shanks.

Color and Plumage: Pure white throughout. Black, gray, red or any shade of yellow in any part of the plumage to be considered a serious defect.

THE FEMALE.

Head: Short, crown broad. Beak, well curved, clear bright yellow. Eyes, clear, bright bay. Face, bright red.

Comb: Rose, similar to that of the male, but much smaller: in color, bright red.

Wattles and Ear-lobes: Wattles, rather short, fine in texture, evenly rounded, bright red. Ear-lobes, well developed and smooth, bright red.

Neck: Same as in the male, except being a trifle shorter and more compact.

Back: Short, broad, and flat at the shoulders, slightly cushioned, plumage abundant.

Breast: Broad, deep and fully developed.

Body and Fluff: Body, short, deep and well rounded. Fluff, full-feathered and well rounded.

Wings: Same as is described for the male, except the variation in shape of feathers on the wings, characteristic of the sex.

Tail: Well developed, well spread at the base.

Legs and Toes: Thighs, short, stout, well spread, and well covered with soft feathers. Shanks, rather short and stout, and free from stubs or feathers, and in color bright yellow. Toes, straight, well spread, and in color the same as the shanks.

Color of Plumage: The same as is described for the male.

TROUBLE IN RAISING CALVES.

DAIRYMAN, Prince Co., P. E. I.:—"We have had much trouble for years in raising calves, especially since sending our milk to the butter and cheese factory. We feed our calves new milk (½ gallon three times a day) until about a month old, then gradually change to skim milk (factory milk, if it is good), adding a little oil cake or oatmeal porridge (about ¼ pint, increasing to ½ pint) to the milk. When they begin to eat hay, we feed milk only twice a day. When about 5 months old we gradually wean them and turn out to pasture. Some years, after stopping the milk, or, in fact, before doing so, we gave them ground oats, cooked like porridge, in their milk or mixed with water. Another year we gave them dry ground oats (about ½ pint per calf) after their milk, continuing after stopping milk. This year we had four calves. We fed them no ground oats in any form, just milk and oatmeal or oil-cake porridge. Two of them are dead; the other two are fine calves. We also had four more, which we kept in the barn until the middle of September (when they would be about 5 months old, when we turned them out. They were fed the same as the other four, excepting that at noon they got a few roots with their hay. They all appeared smart when turned out except one, which has since died; another will soon follow (unless you come to his assistance), another is looking thin, while the fourth is a splendid calf. They were all fed exactly alike. The time they seem to commence going back is when we wean them. They become gaunt, and their hair stands up and looks dry. These are the first symptoms noticeable. If outside, they begin to pick around the fences. They have no life, and their appetite fails, except for drinks of any kind or whole oats; these two things they will take until the day they die. They will not eat hay or roots, or at least only a few mouthfuls. They will eat dirty straw or bark off fences, old dry grass or ferns, and all such rubbish, which seems to make them worse. I have tried all the remedies we have ever read, heard of, or could think of, without any good results, with one single exception. Last year we had two calves which were scarcely able to get up about Christmas. I gave them the following: Castor oil, 8 ounces; pepsin, 1 ounce; carbonate soda, 1 ounce;

mixed. One ounce at a doze. One of them got quite hearty and smart, but began failing again towards spring, but the grass came in time to save him. The other died a few days after getting medicine. I have tried this same remedy this fall, but without success. We have one cow whose calves always do well. Now, if you can tell the cause and give a remedy, I will be most thankful. Do you think the oatmeal porridge in their milk would hurt them? If you cannot give a remedy, perhaps you could tell me how to feed them another year so as to escape this trouble. Some of my neighbors, who take no care of their calves, seem to have no trouble, while we take every care and have trouble."

[The natural way to raise a calf is on its mother, so that when skimmed milk is used, nature must be followed closely or derangement of the digestive system will follow. By following nature closely we adopt the best treatment for indigestion—prevention. Skim milk is without the cream or fat, and this has a good substitute in starch, as starch takes the place of fat and serves the same purpose when eaten. Starch cannot be used to support life until it has changed to sugar. The saliva of the mouth has the power to change starch to sugar, and the more slowly the grain is masticated, the better it will be mixed with the saliva and the greater the proportion of starch that will be changed to sugar. Now, the cause of all the trouble with the calves has been the starchy food, in the form of porridge, they have taken with the milk without having a chance to masticate it. It has also passed the mouth and first stomach without being digested, not only doing the calf no good, but irritating the system, bringing on indigestion, scours, constipation and stunting. The remedy, then, is to feed new milk at blood heat till the calves are three weeks old, gradually changing to skim, always fed warm and sweet. Feed all the chop they get dry. Ground oats, with a small proportion of peas, corn chop or oil cake, is good. Calves are easily taught to eat chop by throwing a few handfuls into the pail just after they have finished drinking the milk. Careful watching will usually prevent any serious trouble. At first indications of scouring or loss of appetite, immediately cut down the feed. Milk pails and cans should be washed and scalded. For scouring, give one or two ounces of castor oil, or if the case is bad, ten or fifteen drops of laudanum each day until the trouble is checked. A cupful of lime water in the milk at each feed is good. Change feeds very slowly, as a sudden change often causes derangement. Avoid giving chop or meal in drink form, as it seldom fails to derange the system. A calf with an exceptionally strong digestive system may escape injury, but even it would do much better on chop fed dry and well masticated.]

Chatty Stock Letter from Chicago.

FROM OUR OWN CORRESPONDENT.

Following is a record of top prices for week ended January 23rd, with comparisons:

Cattle.	Past Week.	Previous Week.	Year Ago.
1500 lbs. up.....	\$ 5.60	\$ 5.90	\$ 5.00
1350 to 1500 lbs.....	6.00	6.10	6.00
1250 to 1350 lbs.....	5.90	6.05	6.55
1050 to 1250 lbs.....	5.45	5.75	6.25
900 to 1000 lbs.....	5.25	5.60	5.80
Stockers and feeders.....	4.70	4.60	4.75
Fat cows and heifers.....	5.00	5.35	5.00
Canners.....	2.75	2.70	3.00
Bulls.....	4.50	4.75	4.00
Calves.....	6.00	6.35	7.75
Texas steers.....	4.35	4.85	4.90
Hogs.....			
Mixed.....	5.45	5.47	4.75
Heavy.....	5.45	5.47	4.75
Light.....	5.35	5.42	4.67
Pigs.....	5.00	5.20	4.45
Sheep.....			
Fat wethers.....	4.60	4.65	5.00
Ewes.....	4.00	3.90	4.50
Westerns.....	4.50	4.45	4.80
Yearlings.....	5.15	5.30	5.35
Native lambs.....	5.60	5.60	6.25
Western lambs.....	5.50	5.50	6.25
Colorado lambs.....	5.60	5.50	6.25

A Chicago cattleman says: "Best cattle will sell at \$7 before they do at \$5 again. At the same time big, ripe, thick fat cattle, fed 18 to 24 months, have been selling at \$5.30 to \$5.60, and not giving producers enough to pay for the feed consumed; and the market is glutted with short-fed cattle, selling around \$3.00 to \$4.75, and being sacrificed with little or no profit or satisfaction to feeders, salesmen, packers or consumers. Some cattle sent in for "fat" cattle are being bought by feeders and sent back to the country. Many more of these "warmed up" cattle would be sent back to the country if the quality justified."

It is a significant fact that while the cattle averaging 1,500 lbs. and over are 60 cents lower than a year ago and the 1,200-lb. cattle are 80 cents lower, the 1,350- and 1,500-lb. cattle are only 50 cents lower. Last week's average price of hogs at Chicago was \$5.27, being the highest since September 29th last and 67c. higher than last week. The average weight of hogs dropped 31 lbs. to 25, but was only 1 lb. less than a year ago. The present average weight of hogs is the lightest since the week ended May 12, 1900. The quality of the hogs this week has improved, but there is a great scarcity of heavy hogs and packers are not at all reassured as to the future supply of hogs.

Prospects favor stronger prices for hogs. Hog prices a year ago were on the advance and advanced 90c. from about this time to the middle of April. Many look for a repetition of history in this regard, but it must be remembered that hogs are already a good deal higher than a year ago.

Sheep are only selling fairly. Best wethers are fully 40c. lower than a year ago, with lambs 60c. to 75c. lower. The export sheep being delivered at \$4.65 to \$5.00 are as high as a year ago, but they were contracted a month to two months ago.

Heavy weight sheep and lambs do not seem to be in strong demand for American market. It is very evident that Americans will buy comparatively lean mutton in preference to the prime luscious meat that can only be had from the animal that has been allowed to get really fat. Good ripe mutton or lamb, of course, means considerable waste. Prospects are that the Colorado feeders, who have over 700,000 lambs on feed, will be disappointed on prices for heavy weights.



Victoria the Good,

AS QUEEN, WIFE, MOTHER, AND FRIEND.

"Sans peur et sans reproche."

IN MEMORIAM, 22ND JANUARY, 1901.

Before the ADVOCATE can be in the hands of its readers, the sad news which has thrilled the world will have already reached them, that Victoria the Good—Victoria, Queen of the United Kingdom and Empress of India—Victoria, the example to the womanhood of all nations, as well as the mother of her people—has passed away. Column upon column of our daily papers throughout the Dominion will have been filled with details of the marvellous events which have happened since the formal announcement was officially conveyed to the royal maiden that into her weak young hands was to be committed, as her birthright, the sceptre of England, and that she was to be its Queen. The pages of past history record with what sweet humility, with what prayerful reliance upon a Strength greater than her own—a strength which she has ceaselessly invoked ever since, and which has never failed her—she accepted her responsibility, and how nobly and faithfully she has, through her long reign, fulfilled every duty it entailed upon her. Tributes have over and over again been paid to the unexampled sagacity and intelligence with which she has grasped the meaning and importance of each crisis as it has arisen, and to the accuracy of judgment which has prompted her either to action or inaction thereupon, her influence always having been thrown in the scale for peace, where peace could be possible, and in more than one instance that influence has been acknowledged as a pacific factor in the destinies of all Europe. In the year of Jubilee it was said of her: "Even amongst our most distinguished parliamentary leaders, where is the man whom we would have willingly trusted to rule the empire with anything like the caution, the reticence and calm historic sagacity which the Queen has displayed, both in yielding to popular wishes where it would have been folly to withstand them, and in delaying her sanction to them when there was evidence to her mind that they were dangerous and premature? We have reason to be grateful to a Sovereign who has not only known when to yield with grace to her subjects' wishes, but when to oppose a steady, though mild, resistance to abrupt or unwise change." Labouchere, the editor of Truth, a paper of democratic views and one given to very outspoken comment—more often adverse than not—of royal speech and action, does not stint his meed of commendation, which makes his words the more valuable and significant. He says: "Amongst the millions of her subjects there are but few who will not mourn for her loss as for one of their own household. It is not too much to say that never in the history of the world has a single death caused such universal grief. Alike in happiness and sorrow, she lived a life beyond reproach, without thought of self and unreservedly devoted to the duties of the hour. She has been indeed the mother of her people, and as a mother she will be mourned by them." Can we wonder, then, at the gloom which seems to have fallen like a pall upon every corner of her wide dominion when the tidings flashed across the wires that our Queen was dead? Can we wonder at the impulse which drew together as one that large crowd of mourners to the now historic spot below the steps of St. Paul's Cathedral, where at the moment of the crowning triumph of her life, England's Queen, during a breathless pause, stayed the procession that she might again invoke the blessing of God upon her people, as she had invoked it when He had first committed to her that wonderful stewardship—those ten times ten talents for which she is now, at the end of sixty-four long years, called to give an account?

Upon the wider issues of her reign we will not presume to enter, but surely there is a lesson for us all in this wonderful personality, its influence upon the homes and hearts of every woman who has read the sweet stories of her domestic relationships, in which, whether as daughter, sweetheart, wife, mother, or friend, she has idealized—nay, realized—for us the very truest and best in womanhood, and has become an example which we severally follow, even in our most limited sphere and amidst the most restricted surroundings of even the very narrowest of each of our lives, at least attempt to follow. And in so striving to do, what more fitting tribute could the women of Canada pay to the memory of Victoria the Good? H. A. B.

A Canadian-Girl in Dresden.

—NO. II.

DEAR NEIL,

I promised to tell you a funny fact I learned about Dresden the other day. I was reminded of it by the small boy who has a chronic cold in the head. It seems that the handkerchief was unknown as an article of the toilet till 1540. In that year a Venetian lady appeared in public, carrying a pazzoletto (i.e., a pocket handkerchief). The fashion once set, soon became common in Italy. From there it crossed to France, where it was immediately adopted by the courtiers of Henry II., but it was fifty years later before it reached Germany, where its use was a sign of royal birth or of great wealth. The people of Dresden in 1595 were forbidden by an edict to emulate their superiors by the adoption of a handkerchief. Picture to yourself the unfortunate who possessed neither birth nor wealth during an epidemic of la grippe. It is too horrible to dwell upon. The Germans are manifestly slow to rebel against custom, for even now the women of the lower classes seem to rank with the dogs. They pull the huckster's carts up and down the streets, shovel coal into the cellars, and, out in the Grosse Garten, they work with rake and spade, keeping the paths and pleasure grounds tidy. It is certainly a healthier life than being shut up in an office of a factory, and these sturdy dames are an advertisement of the fact.

Last week we persuaded Frau Bohn to leave her saucepans and go for a sleigh drive. She secured a kutscher, or coachman, and arranged the trip. We crossed the beautiful old Augustus bridge, built in the twelfth century, which is a quarter of a mile long and rests on sixteen fine arches, through the Neustadt, or New Town, and out into the Heidemuller, which is the King of Saxony's hunting ground. The country was lovely, and the frosty air so gay with sunshine and sleigh bells that Alice and I were in raptures, but much to our dismay, the kutscher landed us at an inn a few miles out and informed us we were to rest there half an hour. The room was crowded with clattering men and women smoking and drinking, answering perfectly to our idea of a "Kaffee Klatsch." The atmosphere was awful, and the unexpected entry I made by falling headlong on the slippery steps sent us in in rather hysterical mood. However, the place was clean, the floor sanded, and the guests respectable—indeed we were the only ones misbehaving. I am sure Frau Bohn was in terror lest some acquaintance should recognize her with two badly-behaved "missies." By mistake, we asked for tea instead of coffee. The tea caddy may have been kept in the same room with the kettle, but Alice was not sure even of that. There was absolutely no taste of tea in the stuff.

On New Year's Eve, Frau Bohn climbed the three flights of stairs to our étage, and brought up hot punch and cake. Just as all the bells in the city were ringing the years out and in, she kissed Alice and me, wished us luck and good husbands, then left us to enjoy the refreshments. Frau Bohn's impromptu collations are very dreadful. Alice took a sip of the punch. "H'm," she said, reflectively, "it tastes as if it were very good for you!" The cake was calculated to make any floating rib stationary, and as for sandwiches, whenever the good woman makes those particular dainties for us, we just tie them up into a neat parcel and throw it as far into the next courtyard as we can. Never into the street, because a policeman would be sure to bring it back to us the next morning, and we should have to sign no end of papers, stating why and when we lost it, and Frau Bohn would probably be called in as a witness. At least, that is what Alice says.

You would enjoy the Grosse Garten, where I walk almost every day. It is beautifully wooded—not laid out in the paper-of-pins style of so many of the forests here—and every little while you come upon exquisite groups of statuary nestling among the trees. The paths wind most seductively, and lead to all sorts of charming spots, pretty ponds lively with skaters, picturesque cafés, and everywhere little green-painted stands covered with rowan-berries and seeds for the poor birds.

Alice and I were buying hairpins in a queer shop the other day, and the appearance of the young man who served us was, to say the least, peculiar. Our entrance had interrupted the curling of his hair, half of which hung quite straight, while the other half was curled in tight little rolls. A girl with smoking curling tongs in her hand stood close beside him, impatiently awaiting our departure. But before we could leave, another disturbing element entered—a gentleman so ugly and so ill-dressed that Alice whispered, "He's either a duke or a saint!" His object was evidently far removed from toilet frivolities, for he silently handed both clerks and ourselves a printed notice, and then left the shop. "He's almost both," whispered Alice again, as we followed his example, leaving the artiste to her labor of love. "Look here," she continued, and sure enough, the notice was to the effect that Baron Matkowski would deliver a lecture on the Second Advent in the parlor of the Stadt Prag hotel on the following Thursday. We decided to go, but I'm afraid it was no hunger for the mystery of godliness, but rather to see what our uncouth friend was capable of in the way of a hortatory discourse. The lecture was for the benefit of the English community, but the invitation was but sparingly responded to. Some

day I will tell you all about it, as I hope to do about many other incidents, both grave and gay, which combined to make our Continental trip so thoroughly enjoyable, but even at the risk of my letter being over weight, I must make one more mention. There is one thing about Frau Bohn's establishment which makes it unlike most German houses, and that is that you can get a decent bath by using a little persuasion. Alice says that at the last pension in which she boarded, the Hans Frau used to rub her hands with delight over the big bath tub, because it was such a "lovely place to keep the potatoes in!" So no more for the present. From your affectionate friend, FAN.

To the Girls.

I am sure we have all read with great interest the article upon "Domestic Science" in the December number of the ADVOCATE. It is all only too true, and we only too keenly feel that women are the unpaid drudges of the farm. That woman's is the unconsidered work, and simply because she is a woman, is a foregone conclusion that she shall have small consideration, that she shall keep up appearances, and must be everlastingly trying to solve the problem of making one dollar do the work of five. It has been so for generations, probably ever since "Adam delved and Eve spun." So it is no use worrying, for, after all, life on the farm is the same as life in any other sphere: it is what we make it. We can live in the kitchen and work, week in and week out; scold about the men, live amid the small worries, small cares, and troubles; turn our backs upon beautifully-tinted sunsets; never listen with open hearts to the story the stars and birds are ever trying to tell us; always think of home as mother's and father's home, never as our home; never, perhaps, even try to brighten that home, but always be striving after the unattainable. Then we can be as miserable as we deserve to be. I shall never forget, one spring morning about twelve years ago, I was out in my garden feeling very disconsolate, for the chickens had scratched out my bulbs: the poor hyacinths with their budding spikes were lying half buried in soil, and the little crocuses completely out of sight. These lost treasures I was doing my best to restore when Mr. Weld, the founder of the ADVOCATE, drove up. I remember so well trying to hide behind a small shrub, but he saw me and asked me "why I was ashamed, being caught working among my flowers? I should be a proud and happy little girl to have such beautiful flowers to work among." Do you think he told me it was no use trying to grow flowers because we had chickens? No, indeed! He went to father and made him promise to get wire netting for the chicken yard, and encouraged me to work away in my garden. That morning, too, he showed me the beauty in the little catkins of the birches and flowers of the maples, which I never forgot. It awakened in me a sense of looking for beauty in the common things of every day, making me love my country home.

"There is but one life. The soul came from the same source whence came the golden-rod on the ground and Arcturus yonder in the sky. Thought and music are brothers of the oak and flowers." If we could only realize that it were so, living closely in touch with nature, having the sunrises and sunsettings become part of our everyday existence, then we should surely be happier girls. By reading the works of John Burroughs, the American author and naturalist, we should soon grow interested in these common things of every day. This spring I would recommend every girl in the country to keep a book wherein to note the first flight of the bluebird: to mark in what month there first appears our first spring flower, the skunk cabbage. Will you believe me when I say its round, green spear point is above the mould in December? Let her note in what month the katydids cry emphatically, "Katydid it," and when they dwindle to a hoarse, dying "Kate, Kate." Let her little book record when the evening air is first made vocal by the frog's love calls to his kith and kin in the marshes, as well as the thousands of other things of interest which come in the "annual cycle of animal and vegetable life." I hope the readers of the ADVOCATE will not think this a mere flight of fancy, only to be carried out by the ideal country girl we read of in books, who goes about in summer meadows plucking daisies. No, it is for the real girl, one of those who bake bread, churn, wash dishes and work every day of their lives, amid many discordant notes and jangles, but who can yet become "kith and kin to every wild-born thing that thrills and blooms." She may have to carry on her daily work amongst discordant notes, maybe, but only such as can be made to fade into a sweet symphony in which every note rings true, and a symphony which I will leave as my message for this our New Year: "Let the spiritual, unbidden and unconscious, grow up through the common." So instead of drudgery may you find new interests and pleasures in your farm homes.

ONE OF THE GIRLS.

A boy, entering a hotel in the village of G—, asked for a gill of whiskey. The barkeeper put it in his bottle, and the boy, putting it in his pocket, said—"My mother will pay you herself." The barkeeper, not knowing the boy, said "And who's your mother?" "Oh, she's fine," was the reply of the disappearing urchin.

THE QUIET HOUR.

Trifling Annoyances.

"Walk thy way greatly! So do thou endure
Thy small, thy narrow, dwarfed and cankered life.
That soothing Patience shall be half the cure
For ills that lesser souls keep sore with strife."

Let us look to-day at two pictures, painted thousands of years ago. In the first we see a man who has been flying from an unpleasant duty and is suddenly arrested in his flight by the resistless power of God. He is brought face to face with death. As far as he can see there is no way of escape. He shows no sign of cowardice, but bows with a grand and noble submission before his God.

Now look at the other picture. Here is a man indulging in angry, petulant words, not because a great calamity has befallen him, but only because he is uncomfortably hot. Instead of rejoicing over the fact that through his preaching an "exceeding great city" has been saved from destruction, he complains that God has been too merciful. He would rather see many thousand people perish than be proved in the wrong.

It seems hardly possible, and yet it is true, that the hero of the first picture and the petulant grumbler of the second are one and the same person. More than this, it is hardly necessary to go back to the prophet Jonah to prove that "the hero who has faced a battery without shrinking may be unable to take a cup of lukewarm coffee from his wife's hands without a grumble." Many a man proves himself a hero when he has to bear great troubles, and yet makes his family uncomfortable by constantly grumbling over trifles.

"The man worth while is the man who will smile when everything goes dead wrong." Even our Canadian soldiers, who have been so praised for the gallant way they endured great hardships and faced terrible dangers, may fret and storm if their collars are not stiff enough, or if they have to wait half an hour for dinner. They could wait many hours for dinner, or manage to live without collars at all—in South Africa! They could march cheerily in defiance of blazing sun and scorching wind! Why is it that the trifling annoyances at home—are so much harder to bear? It is not only the men who find it so. Many a woman is grand in her silent endurance of pain, mental or physical, who gets irritated at once if somebody leaves a muddy footprint on her freshly-scrubbed floor, or spills a cup of tea over a clean tablecloth. Many a mother would die for

her children, and yet makes their lives miserable by constant fretting and faultfinding. Now, there are two ways of looking at things, as a quaint old story shows:

"How dismal you look!" said a bucket to his companion, as they were going to the well. "Ah!" replied the other, "I was reflecting on the uselessness of our being filled, for let us go away ever so full we always come back empty."

"Dear me! How strange to look at it in that way!" said the other bucket. "Now, I enjoy the thought that however empty we come, we always go away full. Only look at it in that light and you will be as cheerful as I am."

Sometimes the irritability comes from overwrought nerves. The body is out of sorts, and that affects the temper. In such a case the Irishman's advice might be useful: "If you can't take things aisy, take them as aisy as you can." As a clever old lady once said: "If one person is cross, I suppose he is out of temper; if two people are cross, I still think it may be their own fault; but if everybody is cross, I go to my medicine chest." Many small worries can be avoided altogether. "If thou hast a bundle of thorns in thy lot, at least thou needst not insist on sitting down on them." Many people not only insist on sitting down on them, but also insist on making other people sit on them. Many a man is said to be so careful to display all the good things of the world, keeping them not as a treasure, but as a burden, that we need not be surprised if he is cross. I think one gets cross when one has a great many troubles, and when one has a great many small annoyances.

the first and not in the second. How often we have heard it said that a narrow escape from death or an unexpected opening in life was "providential," as though God only interfered occasionally in the affairs of this life. Let us look again at the history of Jonah. Not only the mighty tempest and the great fish are said to be "prepared" by G. d., but also the gourd that sheltered the prophet from the sun and the worm that destroyed it. If we only realize that these petty trials are "prepared" by God to test and strengthen our powers of patient endurance, we can accept them cheerfully as part of our training. A habit of fault-finding and grumbling at every little discomfort often produces more domestic misery than many a more serious vice.

"Since trifles make the sum of human things,
And half our misery from those trifles springs,
Oh! let the ungentle spirit learn from thence,
A small unkindness is a great offence.
To give rich gifts perhaps we wish in vain,
But all may shun the guilt of giving pain."

HOPE.

In reply to "Enquirer," I would suggest that anyone who ventures to write on a matter of world-wide interest, within the limits of a newspaper column, is liable to be misunderstood. I did not mean to infer that he could not read the ancient Hebrew documents, but referred to ordinary people like myself, who find translations more useful than the original MSS. Writing, as I supposed, for professedly Christian readers, I did not think it necessary to "prove" the inspiration of the Bible. Although men may differ about the meaning of the word, surely no professed Christian ventures to contradict St. Paul's statement that "all scripture is given by inspiration of God." The *Quiet Hour* is



"THE WELCOME HOME."

not written to convince doubters, but rather to cheer and encourage those who are honestly trying to copy the one perfect Life.

"The Welcome Home."

BY BENJAMIN VAUTIER.

Vautier is one of the most popular of the Swiss painters. Born at Morges in 1830, his education makes him a disciple of the Dusseldorf School, his instructor having been Robert Jordan. His admirable scenes of Swiss and German peasant life have rendered him a welcome member of the academy of Berlin, Munich, Antwerp, and Amsterdam. "The scenes which he places before us," says a German critic of Vautier, "are never superficially treated. He never expects us to be satisfied with the costumes in place of the characters of the people he represents. On the contrary, his figures, in their faces and in every line of detail, express with marked force their peculiar individuality."

In the present picture, amid a beautiful scene of chalets and blue mountain, a young bride is brought home by the groom to his father's house. The old man totters down the steep external staircase to meet her. The mother-in-law, no harsh caretaker in this instance, at least, is the first to smile upon and embrace her; her new sisters run from the fountain to greet, to welcome, to admire her. The new auspices are favorable indeed for this gentle but sturdy-looking girl, who brings into her lover's home her costume of another canton, the long braids of her silken hair and her engaging blushes. We look upon this picture

with as much confidence in its facts as if we saw the scene from a carriage window in the "beautiful Pays de Vaud." Here are no impossible beauties, no studio models in costume strange to them. Art is here a photographer, introducing us to the real aspect of life itself. We cannot but feel a reverence for the painter who observed so closely and reports so truthfully.

A few, though not many, of Vautier's highly-popular pictures have found their way to America. This, until lately belonging to the celebrated collection of Mr. G. I. Seney, is the most important.

THE CHILDREN'S CORNER.

Story Competition.

We are giving four prizes this time, as there were so many stories sent in about fifty altogether. For the sake of convenience, I have divided the competitors into four classes according to age. The winners are: Class I., Thos. S. Knight, Renfrew; Class II., Harvey E. Potter, Montgomery, N. W. T.; Class III., Ruby Carr, Trout River, Que.; Class IV., Ada B. Graham, Pomeroy, Man.

Nearly all the stories sent in were fairly good, but competitors especially deserving honorable mention are: Class I., Linda Hunter, Martha Kelleher, Cora Carr, Janet Willis-Croft, and A. D. Weir. Class II., Laura A. Shaver, Hilda Beaumont, Class III., Mabel Kitchison, Annie Bradley, Sarah Murphy, Mary A. Potter, Ruth B. Gibbens, and Bert Sutton. Class IV., Harold B. Lyon, Joseph Bety, Helen Gibson, Fred Gibson, and Nola E. Lyon.

The stories will be published in order of age. We shall not have room for all the prize stories in this issue. The names of three new recruits—Harold B. Lyon, Nola E. Lyon, and Sadie Kimbaird—were accidentally omitted last month. I am sorry you have been so long overlooked, children, but "better late than never," you know.

PRIZE STORIES.

CLASS I.—A LESSON FROM WATERLOO.

A good many years ago, a battle was fought between the French and English. It was the famous battle of Waterloo. The Duke of Wellington commanded the English army, and Napoleon Bonaparte the French. In the arrangements which he made before going into battle, the Duke of Wellington ordered one of his officers, who commanded a large body of men, to take position by a bridge, on a road leading off from the field where it was expected the battle would be fought, though some distance from it. He was ordered to occupy that position, and on no account whatsoever to leave it without orders. The officer marched his men there, and held the position assigned him.

The battle began. It was a long and bloody one. The

officer at the bridge was too far off to see what was going on, but he was within sound of it. He could hear the roar of cannon and the rattle of musketry, and as the day wore slowly on, he felt very restless at the thought of idling there while the rest of the army was fighting bravely. He wished with all his heart that he could join them. The longer he thought of it, the more impatient he became. At last he made up his mind not to stand idle any longer. He called out to his men, "Forwards—march!" and led them into battle. At length the English gained the victory, and the French were defeated and driven from the field. Their only way of retreat was along the road and over the bridge where the Duke of Wellington had stationed the captain and his company. This was just what he had expected. For this very purpose he had ordered the officer with his troops to occupy that position. If he had been faithful to his duty as a soldier, the Duke would not only have defeated the French army, but would have taken them prisoners. This was prevented by the misconduct of one man who had not learned the duty of faithfulness. The Duke was very angry when he found his orders had been disobeyed. He reproved the officer for what he had done, in the presence of the army. The sorrow and shame of the officer were so great that he died of grief. And here we see how useful this man would have been if he had been faithful. THOMAS S. KNIGHT (aged 15).

CLASS II.—LITTLE SCOTCH GRANITE.

Bert and Johnnie Lee were delighted when their Scotch cousin came to live with them. He was little, but very bright and full of fun. He

could tell curious things about his home in Scotland and his voyage across the ocean. He was as far advanced as they were in his studies, and the first days he went to school they thought him remarkably good. He wasted no time in play when he should have been studying, and he advanced finely. At night before the close of the school, the teacher called the roll and the boys began to answer "ten." Willie understood that he must say "ten" if he had not whispered during the day, so he answered, "I have whispered."

"More than once?" asked the teacher.
 "Yes, sir," said Willie.
 "As many as ten times?"
 "Maybe I have," faltered Willie.

"Then I shall mark you zero," said the teacher sternly; "and that is a great disgrace."

"Why, I did not see you whisper once," said Johnnie, that night after school.

"Well, I did," said Willie. "I saw others doing it, so I asked to borrow a book; then I lent a slate pencil, and asked a boy for his knife, and did several such things. I supposed it was allowed."

"Oh, but we all do it," said Burt, reddening.

"There isn't any sense in the old rule; nobody could do it, nobody does."

"I will, or else I will say I haven't," said Willie.

"Do you suppose I would tell ten lies in a heap?"

"Oh, we don't call them lies," muttered Johnnie.

"There wouldn't be a credit among us if we were so strict."

"What of that, if you told the truth?" laughed Willie, bravely.

In a short time the boys all saw how it was with them. Willie studied hard, played with all his might in play time; according to his own account he lost more credits than any of the rest.

After some weeks the boys answered "nine" and "eight" oftener than they used to, yet the schoolroom seemed to have grown quieter.

Sometimes when Willie Grant's mark was even lower than usual, the teacher would smile peculiarly, but said no more of disgrace. Willie never preached at them or told tales; but, somehow, it made the boys ashamed of themselves, just the seeing that this sturdy, blue-eyed boy must tell the truth.

It was putting the clean cloth by the half-soiled one, you see, and they felt like cheats and story-tellers.

They talked him all over and loved him, if they did nickname him "Scotch Granite," he was so firm about a promise.

Well, at the end of the term Willie's name was very low down on the credit list.

When it was read, he had hard work not to cry, for he was very sensitive, and he had tried hard to be perfect.

But the very last thing that day was a speech by the teacher, who told of once seeing a man muffled up in a cloak.

He was passing him without a look, when he was told the man was General — the great hero.

"The signs of his rank were hidden, but the hero was there just the same," said the teacher.

"And now, boys, you will see what I mean when I give a little gold medal to the most faithful boy — the one really most conscientiously perfect in his department among you. Who shall have it?"

"Little Scotch Granite!" shouted forty boys at once; for the child whose name was so low on the credit list had made truth noble in their eyes.

— HARVEY E. POTTER (aged 13).

Both of these stories are very good, and I congratulate the two boys on their choice. The second explains the first. I am sure "Little Scotch Granite" would not have acted as the soldier did. A truly brave man is more anxious to do his duty, simply and honestly, than to seek glory and praise.

— CORA DOROTHY.

P. S. A report has just come in from Captain Bowman. I was glad to hear that the Christmas-campaign of Company "A" was a great success.

— C. D.

Things Worth Knowing.

When peeling apples, drop them in cold water as they are done, and they will not turn brown.

A nice way to fry potatoes is to dip them in egg and then bread-crumbs, and fry until brown.

Cleaning windows with borax, instead of ammonia or soap, takes much less time than the ordinary way, and is a success.

Next time you upset grease on your kitchen table, pour some cold water over it at once. This will prevent it from soaking into the wood.

Peas and beans are the most nutritious of vegetables, containing as much carbon as wheat and double the amount of muscle-forming food.

SEA PIE.

Take two pounds of steak, one large onion, one carrot, four potatoes, one pint of water, salt and pepper, half a pound of suet paste. Cut the meat into pieces about two inches, and fry them in a small quantity of dripping a nice brown. Cut all the vegetables into thin slices, put them on the top of the steak, add seasoning, and a pint of water. Make the suet paste in this way: Take half a pound of flour, a pinch of salt, half a teaspoonful of baking powder, three or four ounces of suet; mix with water. Shred the suet and chop it finely after removing the skin, mix well with the flour, salt and water, to make a light dough. Roll out on floured board, round to fit the inside of the saucepan, put it on the top of the vegetables to simmer gently for three hours. Then lift out the suet paste, place the meat, vegetables, and gravy, on a hot dish, cut the paste into nice pieces, and put them round the edge of the dish.

Ingle Nook Chats.

MY DEAR HOSTESS: (That's the orthodox mode of address for a "hostess" to use, isn't it.) The hospitality of our Ingle is being accepted by some of our readers, but we have accommodation for many more, so do not fear to inconvenience us by coming in pairs or trios.

My dear friend, in acknowledging receipt of her prize book, says: "It is very, very pretty, and I am much pleased with it. Thank you, little Abund, for your kind wishes. I hope you have not as much snow as we, or you will not be able to walk so far to school. Come again and bring your big brother."

The following extract is from a letter from Chas. S. Edwards, one of Uncle Tom's old boys:

"I like your suggestion of 'Ingle Nook' for the chats. I agree with you, we do like to see our name in print. Oh, how proud I was to see my name among the solvers when I first sent puzzles to the ADVOCATE! If you could get the 'Ingle Nookers' to discuss a subject or gossip with one another, it would certainly be very interesting. I also like the writing of verses; one can sometimes express one's self much more concisely and artistically in verse than in prose."

I quite understand and sympathize with Charlie's feeling of pride on the memorable occasion of seeing for the first time his name actually gracing the printed page of a magazine. I've been there myself, and I admit that it was one of my red letter days of my childhood — nay, why not say of my life, for the joys and triumphs of youth are just as great as those of later life; greater perhaps, as is then our capacity for their enjoyment. In the very bottom of a little old trunk are the first letters I received from Uncle Tom with prize-money. Often when I am tidying up I think I shall burn them, but somehow they are one of the bonds of happy childhood's days that I am loth to sever, and so I reverently lay them back in the same old corner. I often wonder where Fair Brother, Harry Woodworth and the other old-time puzzlers have gone. How I would enjoy hearing of or from them again!

In a bundle of old manuscript sent me from London recently I found one of my own old letters to U. T. Its merit not being sufficient to warrant my handing it down to posterity, I kindly consigned it to the embrace of the flames, where it shed a transitory glory all about the Ingle.

Margaret and Mai, you two old chums, do you ever deign to glance at our little column now, or are you too busy to drop in for a chat. Kind regards from Great Scott!"

W. J. G. — Yours duly received. Do you happen to know anyone from your neighborhood who ever used the title "Weary Wiggins?" W. W. was a namesake of yours.

OUR COMPETITIONS.

As there are now three contests announced, I shall not give any this time, but I expect a large list of contributors to all those now announced. I anticipate a lively time in the conundrum contest announced in last issue. Get your memory to work and send five of the best conundrums you can remember to me. See last issue for particulars.

A pretty valentine to you all. THE HOSTESS.
 Address, "The Hostess," Ingle Nook Chats, Pakenham, Ont.



"Mary had a little lamb,
 Its fleece as white as snow,
 And every where that Mary went,
 That lamb was sure to go."



Till Mary got a bike.

"Farmer Joe."

BY HERBERT T. COLEMAN, HANLAN, ONT.

Joe is a farmer down our way,
 Plain and humdrum some may say,
 Made perhaps of the commonest clay,
 With some sand thrown in, if the reader choose.
 Yet from the crown of his old felt hat,
 Down to the toes of his hobnail shoes,
 He's a nature's nobleman for all that.

He doesn't believe in lengthy creeds,
 That exist in words and not in deeds,
 And blind our eyes to our fellow's needs.
 "There'd be more of pleasure in life," says he,
 "If we pesky mortals would only agree
 To let the sun shine when it will."

He's the old ideas of wrong and right,
 And black to him is black as night,
 And selfish interest can't make it white.
 He calls those persons arrant fools,
 Whose consciences the occasion bends,
 Who think that using the devil's tools
 Can be for aught but the devil's ends.

The birds that sing from the maple tree,
 A chorus of summer minstrelsy,
 According to his philosophy,
 Teach a grander lesson than schoolmen know,
 That our greatest lack is a sincere love
 For all that's mortal here below,
 And a confidence in God above.

Sunburnt visage and roughened hands,
 Bound for life by duty's bands,
 To the prosy subjects of stock and lands,
 Yet I think when life shall merge in death,
 In the course of time's resistless flow,
 When earth shall fade with the passing breath,
 There'll be room in heaven for Farmer Joe.

Only a Spray of Blossoms.

It was only a spray of blossoms
 From the farm-home far away,
 But it lightened the toil and the grinding mill
 Of a weary worker's day.

A whiff of the fragrant petals
 In their pink and peary gleam,
 And the worry and wear, the hurry and care,
 Were lulled in a boyhood dream.

G. W. Churchill.

The best government is not that which renders men the happiest, but that which renders the greatest number happy.

A Nourishing Drink.

Beat a fresh egg to a stiff froth, put half a teaspoonful of sugar into it; put it into half a glassful of milk, and stir a little and then drink it. This is pleasant to taste and a very nutritious drink, quite as much so as beef tea.

Remedy for Insomnia.

M. K. — Insomnia is one of our worst enemies. Give up all idea of sleeping draughts; any drug which induces sleep is bound to lose its effect sooner or later. A warm bath at night is beneficial, or a walk in the open air will often induce sleep. Some people find they can sleep better if they read after going to bed, but that is bad for the sight, and therefore should not be indulged in to any great extent. Have you ever tried that old-fashioned remedy — a supper of boiled onions? If not, the very novelty of the thing may prove successful.

Would You Comfort an Invalid?

Then forget to say, "Oh, this is a gloomy day." Don't say, "It will be many a day before you will wear these boots again."

Enter the room quickly, but not stealthily — as though you belonged there, never peering slyly through a half-open door.

Let a few cool, fresh blossoms that are not overpoweringly sweet touch the feverish face: they seem to bring rest with them.

Allude not to personal appearance, especially to say, "You look like a ghost," or, "I know by your looks that you are worse."

Laughable Letters.

A young Irishman in want of a five-pound note, wrote to his uncle as follows: —

"Dear Uncle, — If you could see how I blush for shame while I am writing, you would pity me. Do you know why? Because I have to ask for a few pounds, and do not know how to express myself. It is impossible for me to tell you. I prefer to die."

"I send you this by a messenger, who will wait for an answer. Believe me, my dearest uncle, your obedient and affectionate nephew. P. S. Overcome with shame for what I have written, I have been running after the messenger in order to take the letter from him, but I cannot catch him up. Heaven grant that something may happen to stop him, or that this letter may get lost."

The uncle was naturally touched, but was equal to the emergency. He replied as follows: —

"Dear Jack, — Console yourself and blush no more. Providence has heard your prayers. The messenger lost your letter. — Your affectionate Uncle."

The following letter was sent by a man to his son at college: —

"My dear Son, — I write to send you some new socks which your mother has just knit by cutting down some of mine. Your mother sends you ten pounds, without my knowledge, and for fear you would not spend it wisely, I have kept back half, and only send five. Your mother and I are well except that your sister has got the measles, which we think would spread among the other girls if Tom had not had them before, she is the only one left. I hope you would do honor to my teachings. If you do not you are a donkey, and your mother and myself are your affectionate parents."

Perhaps it was the same parent who sent to a Health Officer this brief note: —

"Dear Sir, — I beg to tell you that my child, aged eight months, is suffering from measles as required by Act of Parliament."

Humorous.

Meg "I wonder what it means when the stamp on a letter's upside down? I got one frae Jock at the New Year, and that's hoo he had it on." Bet — "Weel, I think it wud mean that he mun hae been gey drunk when he put it on."

Overheard in a public house some time ago. — Soldier (with medal on his breast, to old worthy with black eye) "Hello, old boy! How did you get that nice face?" Old Worthy — "Oh, jist the same way as you got yer medal — it was by fechtin'!"

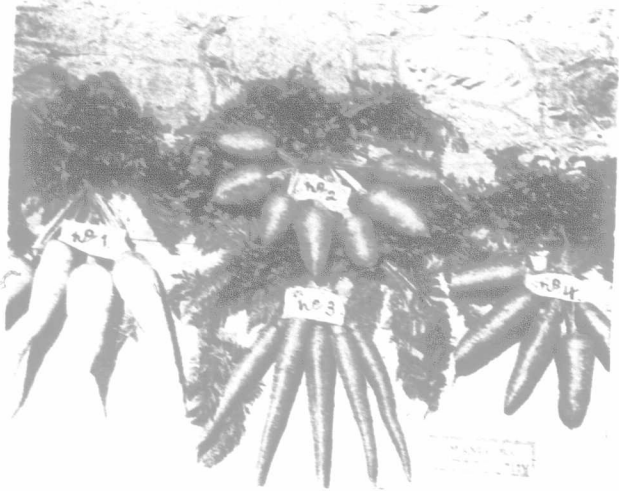
Once a woman took her boy for a holiday. She went by an excursion train, and when she arrived at her destination the ticket collector said to her "Is this your boy?" "Yes," said she. "Well, he is too big to travel for half fare." "He may be that now, but he wasn't when we started," she replied.

A Border worthy, known by the name of "Colter," who was more of a knave than a fool, was taken to Melrose Asylum as a dangerous lunatic. One day while walking in the grounds he observed an inmate planting leeks. Going over to him, and shaking him by the shoulder, he shouted "Hi! man! Dae e want tae less yer place? Man, that's no' a daft man's trick. Stick them in wi' their tails doon, ma laddie."

HE WAS NOT GREEDY.

The following was overheard in a chemist's shop: Small Boy "Tuppence worth of castor oil an' dimma gie's much. It's me that has to tak' it."

FLEMING'S MANITOBA SEEDS



Are better suited to this northern climate, and more productive than any other kind. We select our varieties upon the special experience of the Experimental Farm, from which we get a report yearly. This year we have added several new varieties to our list, which will be found especially good. We have hundreds of letters stating that those who have used

FLEMING'S SEEDS

have had the very best satisfaction, and you could not pay many of these people to use any other kind. We give special rates to clubs and societies who wish to order together. Write us for our catalogue and clubbing rates. Address all communications to

FLEMING'S SEED STORE
DEPT. B., BRANDON, MAN.

REMOVAL

AFTER THE 20TH OF JANUARY
THE OFFICES AND STORES OF

THE DE LAVAL SEPARATOR COMPANY

WILL BE AT

248 McDERMOT AVE.
(Formerly occupied by J. Y. Griffin & Co.)

All correspondence should be directed to the De Laval Separator Co. We are taking over the business formerly carried on by the Canadian Dairy Supply Company at 238 King St., and are taking care of and closing up their accounts.

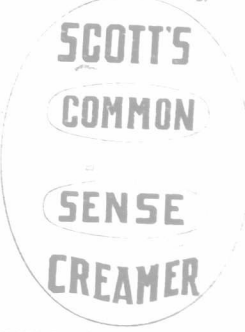
The De Laval Separator Co.

Canadian Offices and Stores:

248 McDERMOT AVE., WINNIPEG, MANITOBA.

Canadian Works: MONTREAL, P. Q.

General Offices: 74 CORTLANDT ST., NEW YORK.
Western Offices: RANDOLPH & CANAL STS., CHICAGO.



ECONOMY OF PRODUCTION is the best motto for 1901. If you have 10 or 12 cows and are financially in a position to buy a Cream Separator, without becoming a slave to those who own your means of production, you should have one. Drop me a p. c., and get full particulars of a Cream Separator in which you will get full value for your money in good material, workmanship and perfect separation. Otherwise you should get one of those Creamers, made to suit the times, and better than a Cream Separator for the farmer of limited means with a small herd of cows. Consignments of butter handled to shipper's advantage. Address:

WM. SCOTT,
206 Pacific Avenue, WINNIPEG.

GOSSIP.

Mr. A. M. Robertson, an extensive breeder of S. C. B. Minorca, changes his advertisement in this issue, offering eggs for hatching of a few fine Minorca cockerels. Battered by rough flocks are added to his list of offerings. Mr. Robertson offers for sale a pair of the same variety as a standard. Mr. Robertson has lately of his Minorca cockerels, and a pair of the same.

we are advised the birds in these pens are in better condition, have good vigorous constitutions, thus ensuring the best results from the egg-setting. A few early laying pullets are also available to those ordering at once. In the case of eggs, ordering cockerels, they are also available. Mr. Robertson gives him an opportunity to see the same. Mr. Robertson has lately of his Minorca cockerels, and a pair of the same.

Clydesdales and Hackneys.

Draft stallions that will sire heavyweight market geldings. Breeding, size and color right. Several horses thoroughly acclimated. Hackneys that are high-steppers. New catalogue sent on application. Inspection by critical buyers is requested. Visitors met. Telephone connection.

A. B. McLAREN, AURORA, ILL.

First prize for Creamery Butter, Toronto and Ottawa. The highest awards for cheese, World's Fair, Chicago.

Winnipeg Creamery and Produce Co.

LIMITED.

CAPITAL STOCK, \$50,000.

S. M. BARRE,

MANAGER.

DAIRY SUPPLIES AND PRODUCE.

238 AND 240 KING STREET.



Owing to the large increase in all departments of our business, we have organized a stock company with sufficient capital to meet all business requirements. We are now open to receive consignments of all kinds of farm products, including butter, cheese, eggs, poultry, etc. Our creamery will be operated all winter, and farmers would do far better to send us cream than to make butter.

For further particulars please address: S. M. BARRE, MANAGER, Winnipeg Creamery & Produce Co., Ltd.

"Post" Fountain Pen

SOMETHING THAT EVERY MAN, WOMAN, BOY AND GIRL NEEDS.

It is a wonderful tribute

to the greatest invention in fountain-pen construction of the age.

THE PRICE OF **\$3.00**. IT CANNOT BE PURCHASED IN THE POST IS **\$3.00**. ORDER THIS PRICE ANYWHERE.

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

A Great Offer:

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



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

Lew Wallace

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



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



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



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

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

Frank Sankey

The Wm. Weld Co., Ltd., Winnipeg.

KENDALL'S... SPAVIN CURE



The old reliable remedy for Spavins, Ringbones, Splints, Curbs and all forms of Lameness. It cures without a blemish because it does not blister.

North P. Acton, Ont., Feb. 10, '98.
Dr. B. J. Kendall Co.
Dear Sirs—Will you please give me a remedy for heaves. I have a mare that is afflicted. I take pleasure in stating that I have cured a Curb of four years' standing with your Kendall's Rister, by using it only once and then applying your Spavin Cure. As long as I have horses, I will not be without Kendall's Spavin Cure and Kendall's Rister in my stable.

Very truly yours,
ADOLPHUS GAUTHIER.
Price \$1.50 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. B. J. KENDALL CO., ENOSBURG FALLS, VT.

MAPLE GROVE FARM.

High-class Shropshires, Rams and Ewe Lambs for Sale.

My sheep are stock bred by John Campbell and Hamner & Sons, the noted Ontario breeders. Won all first prizes with my Shrops at Winnipeg this year.

D. E. CORBETT, SWAN LAKE, MAN.

YORKSHIRES.

Farmers who keep pigs might just as well keep good ones. Once purchased, they are easier kept and give better returns than poor animals. Now is the time to improve your stock. Seven choice young boars and some fine sows for sale. Address

KING BROS.,
WAWANESA, MAN.

TWIN GROVE FARM.

We lead, others follow, in Yorkshire pigs, which are the best that have come into the Province. Entire stock for sale at a very low rate.

J. S. LITTLE, Proprietor, Oak Lake, Man.

Northern Pacific Ry.

TO ALL POINTS
SOUTH,
EAST
AND WEST.
Minneapolis,
St. Paul, Duluth, Chicago, Etc.

Excursion rates to all Californian, Mexican and Southern Winter resorts.
The only line running Through Tourist Cars to California points. Car leaves every Wednesday.
Through Tickets sold to all points; also Ocean Tickets to

GREAT BRITAIN,
EUROPE,
AUSTRALIA,
AFRICA, ETC.

For information call on your nearest Northern Pacific Ticket Agent, or write.

Condensed Time Table from Winnipeg.

MAIN LINE.

Morris, Emerson, St. Paul, Chicago, Toronto, Montreal, Spokane, Tacoma, Victoria, San Francisco
Lv. Daily, except Saturdays, 1:15 p.m.
Ar. Daily, except Saturdays, 1:30 p.m.

PORTAGE BRANCH.

Portage la Prairie and intermediate points.
Lv. Daily, except Saturdays, 4:30 p.m.
Ar. Mon., Wed., Fri., 10:35 a.m.
Ar. Tues., Thurs., Sat., 11:39 a.m.

MORRIS-BRANDON BRANCH.

Morris, Boland, Minot, Beldur, Brandon, Wawanesa, Hildesheim, Also Sault Ste. Marie, Grand Forks and Fargo.
Lv. Daily, except Saturdays, 1:15 p.m.
Ar. Daily, except Saturdays, 1:30 p.m.

H. SWINNEY, Ticket Agent, W. Winnipeg.
J. T. McKENZIE, Ticket Agent, S. Winnipeg.
CHAS. S. HILL, Ticket Agent, E. Winnipeg.

GOSSIP.

The Elder Bros., of Hensall Farm, Virden, report good sales of Berkshire swine. For the season 15 sales have been made. They are now in a position, with regard to the stock of brood sows, to offer some choice things for spring trade. Orders are being booked for spring pigs.

Andrew Graham, of Forest Home Farm, Pomeroy, reports that among recent sales of Shorthorns he has sold to John M. Robertson, of Kinistino, Sask., the eleven-months-old roan bull, Prime Minister 2nd, by Robbie O'Day, out of Forest Gem by Manitoba Chief.

J. A. S. Macmillan, Rovey Stock Farm, Brandon, Man., has issued a catalogue in which are listed his Clydesdales, with reference also to his Shropshires, Shorthorns, and Berkshires. The first page is devoted to the pedigree and description of the Clydesdale stallion, Pilgrim, the aged horse, winner of first prize, sweepstakes and cup for the best heavy stallion at the Winnipeg Fair in 1900. Of the horses recently purchased from N. P. Clark, of Minnesota, the following are prominently noted in this catalogue: The imported 4-year-old Royal Union (1044) by Royal Gartley, out of Blossom by Warrior; Cavendish 1052, also imported from Scotland, sired by Montrave Shar, out of Blackhills Bet by Flashwood's Best; Garland, also imported from Scotland, sired by McGregor (187), out of Mary by St. Lawrence; Glenbuck, imported, sired by MacHugh; Hillocks, bred by N. P. Clark, got by MacKlinker, he by McGregor, and out of Lethian Beauty by Lethian King; Prince Bonnybridge, another of Clark's breeding, by the World's Fair winner, Prince Patrick, out of the McGregor mare, Marjory McGregor; also the yearling stallions (bred by Mr. Macmillan), Pefer the Great, by MacTier, by McGregor, out of Margurite by McTopper; Baron of Avenal, by Nansen, by McTopper; out of Maid of Avenal by Brougham. A list of 15 Clydesdale mares is also given, and in addition to these, the imported Yorkshire Cleveland Bay stallion, Farndale Hero, by Salesman, dam by Emperor.

NOTICES.

Tree Planting.—John Caldwell, of Virden Nursery, Virden, Man., has issued a pamphlet on Tree Planting, giving 21 pointers on the planting and care of trees, and 21 brief remarks on the handling of large trees, summing up with the sentence, "Good, clean cultivation is almost the whole story, and is an absolute necessity to successful tree-growing."

The Brandon Machine Works Co. have decided to erect new shops this year. The business of the Company has greatly extended during the past year. At the annual meeting of the following officers were elected for the ensuing year: President, D. A. Hopper; Vice-President, E. H. Johnson; Manager, John Sheriff; Secretary-Treasurer, Fred Adolph.

Nursery Stock.—A. P. Stevenson, the well-known horticulturist, of Nelson, Manitoba, has handed us a circular of his Pine Grove Nursery stock. Twenty-five years' experience in this Province enables Mr. Stevenson to offer to his patrons nursery stock of small fruits, crab apples, as well as ornamental shrubs, evergreens, etc., of the very best varieties, and at remarkably reasonable prices. Home-grown nursery stock of all kinds has over and over again been proved much more satisfactory than imported stock.

A New Garden Spot.

The marvellous development of the mineral, coal, fish and timber wealth of British Columbia in recent years has given a wonderful impetus to that grand Province, and drawn attention to its rich heritage in fertile agricultural lands which are destined in the near future to be of immense value. When to the attractive considerations mentioned is added a salubrious climate, we cannot wonder that the eyes of many are turning in that direction. It will be of special assistance to those in quest of desirable properties for farming, fruit growing, grazing, etc., in the Pacific Province to consult the advertisement, elsewhere, of Hope, Grayley & Co., Hastings-street, Vancouver, B. C., who will gladly furnish complete information on the subject.

LUMP JAW



Lump Jaw means death of the animal and may mean the infection of your herd and pastures. The application of

Fleming's Lump Jaw Cure

means quick and permanent cure of every case. Can't harm. Leaves no trace of disease. A common sense remedy; easily applied. One to three applications cure. Endorsed by leading ranchers of the continent. Costs you not one cent if it fails to cure. Sent anywhere by mail. **PRICE, \$2.00.**

St. Ignace, Que., July 26th 1899.
Dear Sirs—Some time ago I bought a bottle of your Lump Jaw Cure and I succeeded in curing a bull so I thank you very much. One of my friends has a cow that has a swelling on the neck near the ear, and he wishes to have a bottle of your remedy. Yours truly,
NAPOLEON RIVET.

FREE—A practical, illustrated treatise on Lump Jaw sent free to readers of this paper.

FLEMING BROS., Chemists
Room J. 58 Bay Street, TORONTO, Ont.

NO SPAVINS

The worst possible Spavin can be cured in 45 minutes. Curbs, Splints and Ringbones just as quick. Not painful and never has failed. Detailed information about this new method sent free to horse owners.

Write to-day. Ask for Pamphlet No. 1.
FLEMING BROS., 58 Bay St., Toronto, Ont.

CHANGE OF CLIMATE

Not Necessary in Order to Cure Catarrh.

The popular idea that the only cure for chronic catarrh is a change of climate is a mistake, because catarrh is found in all climates, in all sections of the country; and even if a change of climate should benefit for a time, the catarrh will certainly return.

Catarrh may be readily cured in any climate, but the only way to do it is to destroy or remove from the system the catarrhal germs which cause all the mischief.

The treatment by inhalers, sprays, powders and washes has been proven almost useless in making a permanent cure, as they do not reach the seat of disease, which is in the blood, and can be reached only by an internal remedy which acts through the stomach upon the blood and system generally.

A new discovery which is meeting with remarkable success in curing catarrh of the head, throat and bronchial tubes, and also catarrh of the stomach, is sold by druggists under name of Stuart's Catarrh Tablets.

These tablets, which are pleasant and harmless to take, owe their efficiency to the active medicinal principles of Blood Root, Red Gum, and a new specific called Guaiacol, which, together with valuable antiseptics, are combined in convenient, palatable tablet form, and as valuable for children as for adults.

Mr. A. R. Fernbank, of Columbus, Ohio, says: "I suffered so many winters from catarrh that I took it as a matter of course, and that nothing would cure it except a change of climate, which my business affairs would not permit me to take."

"My nostrils were almost always clogged up. I had to breathe through the mouth, causing an inflamed, irritated throat. The thought of eating breakfast almost nauseated me, and the catarrh gradually getting into my stomach took away my appetite and digestion."

"My druggist advised me to try a fifty-cent box of Stuart's Catarrh Tablets, because he said he had so many customers who had been cured of catarrh by the use of these tablets, that he felt he could honestly recommend them. I took his advice and used several boxes with results that surprised and delighted me."

"I always keep a box of Stuart's Catarrh Tablets in the house, and the whole family use them freely on the first appearance of a cough or cold in the head."

"With our children we think there is nothing so safe and reliable as Stuart's Catarrh Tablets to ward off croup and colds, and with older people I have known of cases where the hearing had been seriously impaired by chronic catarrh cured entirely by this new remedy."—Advt.

BUFF LEGHORNS.

THE best layers known, I have them! If you can beat me either for laying or showing, come along! My layers are my show birds. Also W. Wyandottes and Fancy Pigeons. Stock and eggs in season. Correspondence solicited.

WALTER JOHNSON,
MARYLAND ST., SOUTH, WINNIPEG.



Owned by
H.A. Chadwick,
St. James,
Man.

As I have decided to go into the breeding of Plymouth Rocks exclusively, I will sell at reasonable prices my entire stock of prizewinning Brahmas, Langshans, Partridge Cochins and Bantams. My birds are top well known as prizewinners to require any further reference.
Fox Terriers and pedigree Collie pups for sale.

H. A. CHADWICK,
St. James, Man.

Will exchange my birds above mentioned for first-class Plymouth Rocks, but only for high-class birds as the birds I offer are all good ones.

FORT ROUGE POULTRY YARDS

HAS FOR SALE Golden Wyandottes, Indian Games, Langshans, Pekin ducks, Belgian hares. Seven varieties of pigeons. Also, White Wyandottes, Barred Rocks. Two breeding pens of Black Minorcas for sale, very cheap. FOR PRICE AND PARTICULARS WRITE—

S. LING & CO.,
WINNIPEG, MAN.

S. G. B. Minorcas.

Eggs for hatching now ready. English importations. Birds from the celebrated Pitt and Abbott strains? Our birds are in prime condition for ensuring good vigorous stock. Send in your order now and get some pullets laying early. A few fine S. G. B. Minorca cockerels for sale from above strains. Describe your hens, and I can have a chance to help you out in correct mating.

B. P. Rocks.

Eggs for hatching. Also a few fine cockerels for sale, from best Canadian strains—sturdy, vigorous stock.

A. M. Robertson, Caledonia, Ont.

WILD AND IMPROVED LANDS FOR SALE.

Several good farms at present for sale, or rent, in the celebrated Edmonton district. All unproved. Terms reasonable. Apply for information to
O. C. PEDERSON, Box 185, Strathcona, Alta.

Unparalleled Subscription Offer

TO WEEKLY
FREE PRESS

Subscribers

"The Paper of the West for
the People of the West."

COMMENCING November 1st, 1900, arrangements have been made to present, every two weeks, to every subscriber to the Weekly Free Press, Winnipeg, a fine reproduction printed on art paper, suitable for framing. The pictures will be specially-made half-tones of the highest quality, well worthy of preservation, and calculated to adorn the home. They will include late portraits, specially taken for this series, of the leading men in the public life of Canada, beginning with Sir Wilfrid Laurier and Sir Charles Tupper.

With these portraits, which will constitute a valuable gallery of the most eminent Canadians of the times, there will be interspersed half-tone reproductions from Art Works, showing Manitoban and Western views, pictures depicting typical scenes in Canadian life, military pictures and general views, the whole forming a most desirable collection of the highest interest and value.

Whether used for framing or kept as a portfolio of 30 attractive Art Works—for that will be the number received in the course of about a year—these pictures will be well worth having. The presentation every fortnight, of these pictures, will be but one respect in which the Free Press will commend itself during the coming year as better than ever before.

With new presses, new machinery, new type and improved facilities, it will continue to strive to deserve the reputation it has earned, of being "the paper of the West for the people of the West."

By ordering at once, new subscribers will obtain the Weekly Free Press to 1st January, 1902, and all the pictures, for \$1.00 only.

The Horses that made Janesville Famous.

For twenty years past Janesville has been associated with all that was high-class in the line of horses, and the name of "GALBRAITH" is familiar as a household word to every horse breeder of any note on this continent. The undersigned respectfully invites an inspection of his present stock of

CLYDESDALES.

which are believed to be fully equal to the best ever maintained during the palmy days of the business. Ample size, superior breeding, great individuality, moderate prices, and the best of guarantees, are among the inducements offered buyers. An assortment of Percherons, Shires, Suffolks and Hackneys also on hand. The only place where the best of all the breeds can be compared alongside each other. Prominent prizewinners at the recent International Live Stock Show at Chicago. Send for catalogue.



ALEX. GALBRAITH, JANESVILLE, WISCONSIN.
GRAND'S REPOSITORY



53 to 59 Adelaide St. W., Toronto, Can.
Auction Sales every Tuesday and Friday at 11 o'clock.

IMPORTANT AUCTION SALE THOROUGHBREDS,

Tuesday, March 12th, at 11 o'clock.

By instructions from MR. N. DYMENT, Barrie, Ont., and MR. JOS. DUGGAN, Toronto, we will sell, without reserve, on the above date, a splendid collection of

Stallions and Mares.

ALSO THE FOLLOWING VALUABLE

Thoroughbred Stallions:

Imported Sentinel—Seal brown, small star, 9 years, 15.3 hands. By Hawkeye (by Uncas, out of Jennie Howlett, dam of Chittabob). Dam Fair Kent, by Wisdcm, sire of Sir Hugo, winner of the Derby. A grand young horse of fine quality, plenty of bone, compact, short coupled, lots of substance, beautiful conformation and excellent action. Purchased specially for Canada from Dr. Haslewood, Buxton, England, by

MAJOR DENT,

of Malton, England, whose judgment is famous at the leading agricultural shows in England, and who was appointed by the War Office to purchase remounts in Canada for the South African war. In purchasing Sentinel for service in Canada, Major Dent says: "I have not endeavored to buy a horse that is only fit for the showing himself, but one whose produce has been winning prizes regularly in the best agricultural districts in England in strong competition. I consider this type of horse the best to breed to, from a commercial standpoint, as his get from the ordinary mares I have seen in Canada will be easily sold for remounts, and, in any case, are the most salable class for riding, driving and general use. Sentinel has proved himself to be a wonderfully successful sire. All his foals are extra large, strong, compact, with the remarkable beauty of their sire in every case. No fault can be found with the conformation or substance of any of the get of this grand young sire, whose three-year-olds have all outgrown him."

Homecrest, No. 12498—Chestnut, foaled 1897. American Stud Book, Vol. 7, page 160. 16.1 hands. Bred by Mr. Frank M. Ware, New York. Consigned by Mr. Frank M. Ware, New York, as a specially desirable sire on account of his size, substance, splendid breeding and graceful action. When put into training he was valued at \$10,000.00, but, on account of growing so fast, it was found he would not develop speed enough to insure profit for this year, and the owner was persuaded to sell him as a sire. He shows any amount of substance, short, strong back, powerful quarters, and bred on the best producing lines in the world. Sired by Cheviot, by Traducer, out of Idalia; dam Carmen, by Fiddlesticks, out of Camille. Extended tabulated pedigree will be found in catalogue, which may be had on application. Before being put into training, Homecrest was fired in front as a precaution to save his tendons, but is perfectly sound.

Catalogues of all the above may be had on application.

50 HORSES

Of all classes will also be sold on the same day, including first-class well-broken drivers, saddle horses, carriage pairs, general purpose horses, etc. And on the following day,

WEDNESDAY, MARCH 13TH, AT 11 O'CLOCK,

100 New and Second-hand Buggies and Carriages

Of every description will positively be sold, regardless of cost, to make room for new consignments.

WALTER HARLAND SMITH,

AUCTIONEER AND PROPRIETOR.

British Columbia.

Anyone thinking of farming in British Columbia should write for descriptive pamphlet of farms for sale in the Lower Fraser Valley—the garden spot of the Province.

We have compiled the largest and most complete list of farms, orchards, cattle-grazing and garden lands, and fishermen's attornments, in the Province. It has been very carefully selected, and we have a personal knowledge of every property described. Prices range from \$3,000 per acre to \$250,000 per acre, and in extent from 1 acre to 1,000 acres. In the Lower Fraser Valley, and on the coast lands around Vancouver, we rarely have more than a month of frost and snow at outside, and the thermometer has only sunk to zero twice in ten years.

HOPE, GRAVELEY & CO.,

536 Hastings St. VANCOUVER, B. C.

PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP.

Mr. James Smith, manager of Mr. W. D. Platt's Shorthorn herd at Millgrove, near Hamilton, Ont., writes:—"Our last importation is all safe in the stables. I consider them even a better lot than those sold at our Chicago sale last August. Our herd now numbers 86 head, and we expect over 20 calves between now and May. Sales are numerous and enquiry good."

W. H. Beattie, Wilton Grove, Ont., writes on Jan. 25th, 1901:—"The year 1900 has been one of the best, I having made more sales of Shropshire sheep than in any one year of my thirty-three years of breeding and dealing. My flock now consists of thirty ewes coming two years old, twenty-five ewe lambs, and forty ram lambs, all of good quality. I have also a fine flock of White Holland and Bronze turkeys. My exhibit at the Ontario Poultry Show won more first prizes than all other exhibitors combined. I have an exhibit at Madison Square Garden, New York, this week, and thought I could sell all my birds without advertising, but found it a mistake. The heavy advertisement in FARMER'S ADVOCATE will sell the rest."

CLYDESDALE STALLIONS FOR SALE.

Fourth consignment will arrive about February 15th, 1901.

A High-class Lot, of Good Size and Quality, and of Most Fashionable Breeding.

Parties desirous of securing high-class horses will do well to see these or write us before purchasing.

Dalgety Bros., 463 King St., LONDON, ONT.

HAWKEYE GRUB AND STUMP MACHINE

Works on either Standing Timber or Stumps. Pulls an Ordinary Grub in 1 1/2 Minutes. Makes a Clean Sweep of Two Acres at a Sitting. A man, boy and a horse can operate it. No heavy chains or rods to handle. You can not longer afford to pay taxes on unproductive timber land. Illustrated catalogue Free, giving prices, terms. MILNE MFG. CO., 886 8th St., Monmouth, Ill. Address Milne Bros. for SHETLAND PONY Catalogue.

THE BIG FOUR.

GREAT PREMIUM PICTURE OFFER.

For obtaining new subscribers to the "Farmer's Advocate" at \$1.00 per year.

"Canada's Ideal"—Admitted by judges, breeders and artists to be the most magnificent engraving of high-class modern Shorthorns ever issued in any country. 24 x 36 inches. Twelve animals.

"Canada's Pride"—Nine celebrated draft horses.

"Canada's Glory"—Eleven celebrated light horses.

"Canada's Columbian Victors"—13 celebrated Ayrshire cattle.
Your choice of any one of the above for ONE new subscriber, or all four beautiful pictures for only three new subscribers.

Our Self-Binder, HANDY, DURABLE and ATTRACTIVE.

Made to contain the 24 issues of the year. We will forward this Binder, postpaid, to anyone sending us the names of two NEW subscribers and \$2.00.

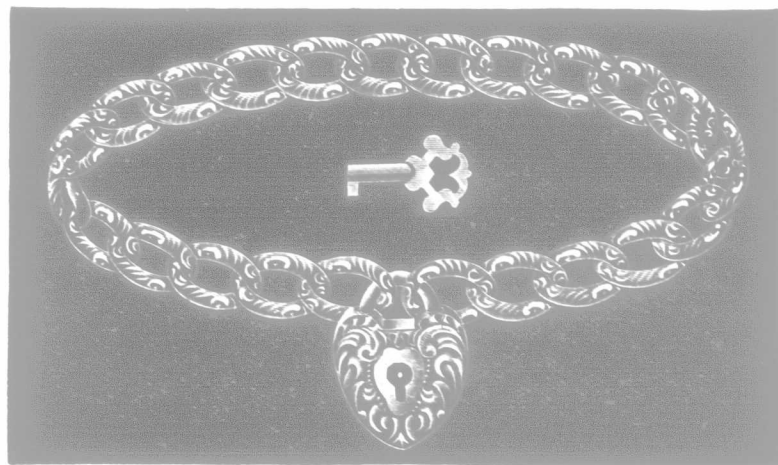
Bagster's NEW COMPREHENSIVE Teacher's Bible,

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

HOW TO OBTAIN IT—

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

Handsome Curb-link Silver Bracelet with Padlock and Key.



For 2 new subscribers. For each additional new subscriber, two Sterling Silver Friendship Hearts.

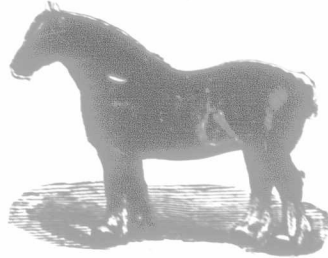
Write for a sample copy of the Farmer's Advocate, and begin to work for these premiums right away. In every case cash must accompany the new names.

The William Weld Co., Ltd., Winnipeg.

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.

ONTARIO Provincial Auction Sales

PURE-BRED CATTLE and SWINE

will be conducted under the auspices of

THE DOMINION CATTLE, SHEEP AND SWINE BREEDERS' ASSOCIATIONS,

Guelph, Ont., Feb. 27th, 1901

Ottawa, Ont., Mar. 6th, 1901.

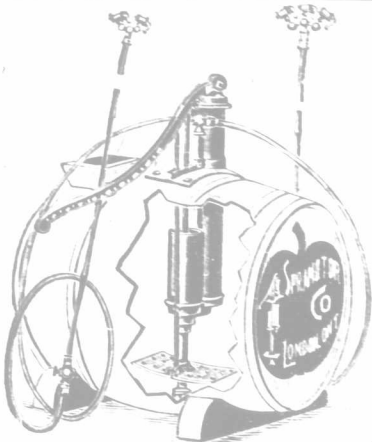
SELECTED STOCK.

Nothing but good representatives of each breed will be allowed to enter and be put up for sale. Orders to buy may be placed with the secretary, and will be honorably discharged.

REDUCED PASSENGER RATES. SPECIAL RATES TO BUYERS.

A grand opportunity for anyone wishing to procure registered stock. For copy of rules, catalogue and full particulars, apply to

A. P. WESTERVELT, Sec., Parliament Buildings, TORONTO, ONT.



There was a time, not long ago, when there was a doubt as to the advisability of spraying, and after that the doubt was as to which sprayer to buy. The Government has settled both. The first by demonstrating in 150 places in Canada during the last five years, showing with the

Spramotor

the proper way to spray, and the results; and the latter, by a contest of sprayers at Toronto, under judges appointed by the Fruit Growers' Association, whereat a newly-invented Canadian machine, THE SPRAMOTOR, was awarded FIRST PLACE.

These acts of the Government should send the farmers of Canada millions of dollars annually. That it is saving money for other countries is clear, as thousands of Spramotors are being used in the United States, Australia, New Zealand, India, and Russia. Do you still doubt? Don't you think the judgment of these judges is worth your consideration. There are hundreds of sprayer outfits, but only one Spramotor. It will protect your holdings, and kill the wild mustard in your garden, and without injury to the crop. For more information

SPRAMOTOR CO., 68-70 KING ST., LONDON, CAN.

A treatise of 4 pages FREE on application. Postage. Address 68-70 King St., London, Can.



Elgin Watches

possess accuracy and endurance under all conditions and in all degrees of temperature.

Full Ruby Jeweled. Sold by jewelers everywhere.

An Elgin Watch always has the word "Elgin" engraved on the works—fully guaranteed.

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OAKLAWN FARM

AS ALWAYS, VASTLY IN THE LEAD.

PERCHERONS, FRENCH COACHERS, SHIRES.



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

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

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

The superiority of the Oaklawn Percherons was also shown at the INTERNATIONAL LIVE-STOCK EXPOSITION at Chicago, December, 1899, pronounced by press and public the greatest live stock exhibition ever seen, where Oaklawn's exhibit was awarded

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

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

320-ACRE FARM FOR SALE.

South half Sec. 6, Tp. 16, R. 29, W.

320 acres thoroughly fenced and subdivided with three wires. 150 acres under cultivation. 36 acres summer-fallow the past season, and 15 acres of fall plowing, ready for wheat in the spring. The farm has been worked on the 3-year rotation system—summer-fallowing one third every year, and land in first-class state of cultivation, yielding from 40 to 45 bushels wheat per acre. There is quite a large portion in virgin prairie, with bluff of good young poplar on it. Frame house, lathed and plastered twice, making two dead-air spaces, and well-finished in every respect. Main part, 29 x 30 ft., containing dining-room, kitchen, pantry, and breakfast room; 4 bedrooms, and linen closet and rest room; and a lean-to on north side, 19 x 29 ft. There is a good stone cellar, with brick partition, under house. House cost \$1,200, not counting labor of drawing sand, stone, etc., and finishing. Stable, 26 x 10 ft., concrete; hay loft above, and frame implement shed, 15 x 10 ft., on north side. Henhouse, frame; pigeon, frame. Pig-fence yard. Granary, 22 x 31 ft. All shingle-roof buildings, one frame stable, 22 x 13 ft., with sod roof. There is also a new or failing well. Seed and tool can be bought by purchase at market prices. Situation 12 miles from "Moosehorn" 2 1/2 miles from church and school. The N. W. C. R. R. whose present terminus is 2 1/2 miles east, is expected, during the coming summer, to run within 3 miles of the farm.

This is undoubtedly one of the best opportunities of obtaining a good homestead at a moderate price. For further particulars apply to

G. R. Coilyer, or **G. P. Coilyer,** Welwyn, Assa., or LONDON, ONT.

NOTICE.

Founders and Breeders. A. J. Morgan, London, Ont., holds a first-class line of incubators, which he has sold in quantities on a large scale, at 1000 Wellington Street, London, Ont. He has also a large stock of incubators, and is prepared to supply the public with the best quality of incubators, and the latter are guaranteed to hatch. He has also a large stock of incubators, and is prepared to supply the public with the best quality of incubators, and the latter are guaranteed to hatch. He has also a large stock of incubators, and is prepared to supply the public with the best quality of incubators, and the latter are guaranteed to hatch.

GOSSIP.

Oaklawn Farm, operated by Durham, Fletcher & Coleman, Wayne, Illinois, is well prepared for a rushing season's trade in high-class Percherons, French Coachers, and Shire horses. They have on hand over 500 stallions and mares, many of which are world-beaters, all possessing first-rate pedigrees. Their liberally illustrated catalogue of over 100 pages is a handsome volume, containing a wealth of information on Percheron breeding. It is a notable fact that most of the animals described in the catalogue are black in color. There are also a number of grays in the stud, and several of brown color. See their advertisement in this issue and send for their 1901 catalogue.

A. W. Smith, Maple Lodge, Ont., writes: "Prof. Day, of Ontario Agricultural College, Guelph, recently visited our farm and selected for that institution from our herd two superb young Shorthorn heifers. One 14-months-old roan, got by imported Knuckle Duster (72783), and out of our first-prize cow at the Provincial Dairy Show at London, 1899. She was by Jocelyn Bess, by imp. Vice Consul (60123), and out of imp. Julia, by Golden Prince (38383). The other, a red 10-months-old heifer, is by the successful breeding and show bull, Abbot-ford 1946; he out of imported Village Blossom, bred by Mr. Cruickshank, and dam of the great champion, Young Abbot-burn. This heifer's dam is one of our best milkers, got by the Cruickshank Clipper bull, Conqueror—827—, so long and success-fully used in our herd, and afterwards in that of Hon. John Dryden. We sold last week to Mr. A. H. Slop, Brussels, a very promising bull calf by Abbot-ford and from one of our best Constante cows, a very heavy and persistent milker. Our demand for stock from good milking strain of Shorthorns increases every year."

SOME CLYDESDALE STALLIONS.

George Isaac & Brothers, Bomanton, Ont., write: "Our stallion, Prince Harperland 9577, has done exceedingly well during the winter, and is, as might be expected from his superior breeding, being sired by that renowned horse, Prince Alexander, a model Clydesdale horse in every particular. He is a very heavy horse, of uncommon ambition, and during last season proved to be a sure foal-getter and a great favorite with breeders. Raphael, which was imported last August, is a horse of clean bone, excellent style, and a very promising appearance. Sired by Sir Everard and half-brother to Baron's Pride, the best stock horse in Scotland, he cannot fail to produce stock of superior quality. Gay Gordon is rising 3 years old, was imported last August, is a beautiful bay with very little white, and promises to make an extra large horse of good quality. He is sired by Prince Robert, and is half-brother to Hiawatha, which is considered to be the best show horse in Scotland at the present time. Gay Gordon is a very desirable horse for any locality and any intending purchaser. Anyone desiring to purchase a horse would do well to see him before purchasing elsewhere. Baron is a beautiful dark brown, with small star on forehead. He is somewhat smaller than the others, being thick, low-set, and of extra quality. He is rising 3, and was imported when 1 year old. He is sired by Royal Connet 10271, and is a horse of great action and splendid temper. All these horses are in splendid condition and fit for service the coming season. We will give an account of our importation of Shorthorn cattle in another issue."

4 Imp. Clydesdale Stallions

From such well-known sires as Sir Everard (3333), Prince Roberts 7135, Prince Alexander 8899.

2 Imp. Shorthorn Bulls, 4 Bulls Imp. in Dams, 2 Canadian bred Bulls, 7 Canadian-bred Cows and Heifers.

21 Imp. Cows and Heifers, 7 Canadian-bred Cows and Heifers.

GEO. ISAAC & BROS., BOMANTON, ONT.

FOR SALE.

Clydesdale stallions, mares and fillies, representing the best blood in Scotland—Prince of Wales, Darnly, Macgregor and Lord Lyon—including the great sweepstakes winner, The Marquis (1182), a grandson of Prince of Wales and Macgregor; also the first-prize 3-year-old at Ottawa this season.

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

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



90 HEAD

High-quality, Early-maturing

Herefords

Prizewinners.

Young bulls, cows, heifers.

The blood of "Corrector," "Eureka," "Ancient Briton," and "Rupert," on an "Anxiety" foundation. Send for illustrated catalogue.

H. D. SMITH, COMPTON, QUE.

HEREFORDS FOR SALE.

THE HERD of upwards of 90 head of registered animals contains the blood of the best English herds, with imported True Briton and Likely Lad at the head. Stock of both sexes and all ages for sale. Correspondence or a personal visit invited.

A. S. HUNTER, DURHAM, ONT.

Clydesdales and Ayrshires

Imported and home-bred. Also Dorset Horned sheep, and the leading varieties of poultry.

ROBERT NESS & SONS, Howick, Ont.

PLEASE MENTION FARMER'S ADVOCATE.

BLEEDING PILES

And All Other Forms of this Common and Annoying Disease, Cured by the Pyramid Pile Cure.

Thousands of men and women suffer from some form of piles without either knowing the exact nature of the trouble, or knowing it, carelessly allow it to run without using the simple means of a radical cure.

The failure of salves and ointments to cure piles has led many sufferers to believe the only permanent cure to be a surgical operation, but surgical operations are dangerous to life, and, moreover, very expensive, and by no means always, or even often, successful.

The safest and surest way to cure any case of piles, whether itching, protruding or bleeding, is to use the Pyramid Pile Cure, composed of healing vegetable oils, and absolutely free from mineral poisons and opiates.

Mr. Wm. Handschu, of Pittsburg, Pa., after suffering severely from bleeding piles, writes as follows: "I take pleasure in writing these few lines to let you know that I did not sleep for three months, except for a short time each night, because of a bad case of bleeding piles. I was down in bed and doctors did me no good."

"A good brother told me of the Pyramid Pile Cure, and I bought from my druggist three fifty-cent boxes. They completely cured me, and I will soon be able to go to my work again."

The Pyramid Pile Cure is not only the safest and surest pile remedy, but it is by far the widest known and most popular, because so many thousands have tried it and found it exactly as represented.

Every physician and druggist in the country knows the Pyramid Pile Cure and what it will do.

Send to Pyramid Drug Co., Marshall, Mich., for little book on Cause and Cure of Piles, mailed free to any address, or, better yet, get a fifty-cent box of the remedy itself at the nearest drug store and try it tonight.—Advt.

Shorthorn Bulls

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

GEO. MILLER, Markham, Ont.

JOHN DRYDEN, BROOKLIN, ONTARIO.

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

GOOD QUALITY AND CHOICE BREEDING.

Pure Scotch Shorthorns for Sale.

Two bulls, thirteen and fifteen months old, and three two-year-old and two one-year-old heifers. All right. Good ones. Meadowvale station, C. P. R. S. J. PEARSON & SON, Meadowvale.

SHEEP BREEDERS' ASSOCIATIONS

American Shropshire Registry Association, the largest live stock organization in the world. Hon. John Dryden, President, Toronto, Canada. Address correspondence to MORTIMER LEVERING, Secretary, Lafayette, Indiana.

YOUNG SHORTHORNS FOR SALE

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

A. & D. BROWN, M. C. RAILWAY, IONA, ONTARIO.

SPRINGHURST SHORTHORNS.

The herd is largely of Cruickshank and other Scotch sorts, and is headed by the Inverhonyon-bred bull, Knuckle Duster (imported) (72783). Herd has furnished the Fat Stock Show champion three times in the last five years.

Choice young stock (both sexes) FOR SALE.

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

HAWTHORN HERD

OF DEEP-MILKING SHORTHORNS.

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

Wm. Grainger & Son, - Londesboro, Ont.

FOR SALE: SHORTHORN BULLS AND HEIFERS

from such sires as Mariner (imp.), Royal Judd 1719, Sultan Selam (imp.), Grenadier 26251, and Roseville Abott 26571, on a Victoria foundation. Also one extra Knellar Stamp 10-mos. red bull. Come or write.

H. ROX CO. LTD., THOS. CUDMORE & SON, EXETER STATION, Hurondale, and Telegraph Office, Ontario.

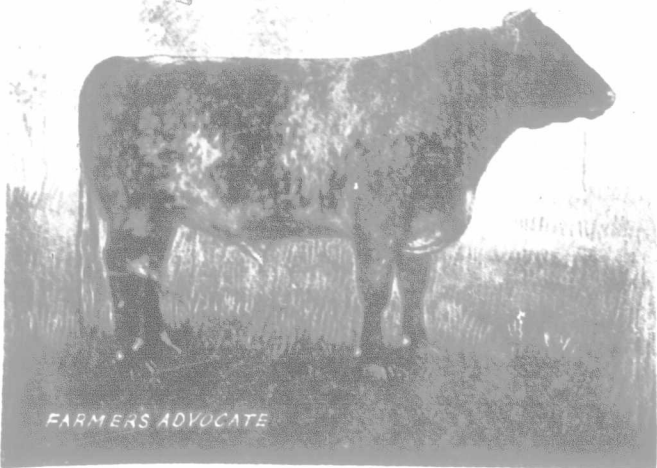
SHORTHORNS FOR SALE

Cows and heifers, also a few young bulls. I have employed sons of Lord Lovel, Royal Member, Perfection, Indian Chief, and Clan Campbell, on Lord Lovel and Abbot-burn females.

WM. HAY, TARA, ONT.

IT PAYS TO ADVERTISE IN THE

FARMER'S ADVOCATE



FARMERS ADVOCATE

IMP. FASHION'S FAVORITE.

FOR SALE:

Three imp. Yearling Bulls; Seven imp. in-dam Bull Calves.

Bred by Messrs. Duthie and Marr, from females imported by us, and sired by the best bulls in Scotland. All are excellently bred and first-class individuals.

Also the Standard-bred Trotting Stallion, PAVON (30760) A. T. R.

CATALOGUE FREE.

If interested, come and see us or write:

H. CARGILL & SON, CARGILL, ONT., CAN.

TROUT CREEK HERD OF SHORTHORNS.

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

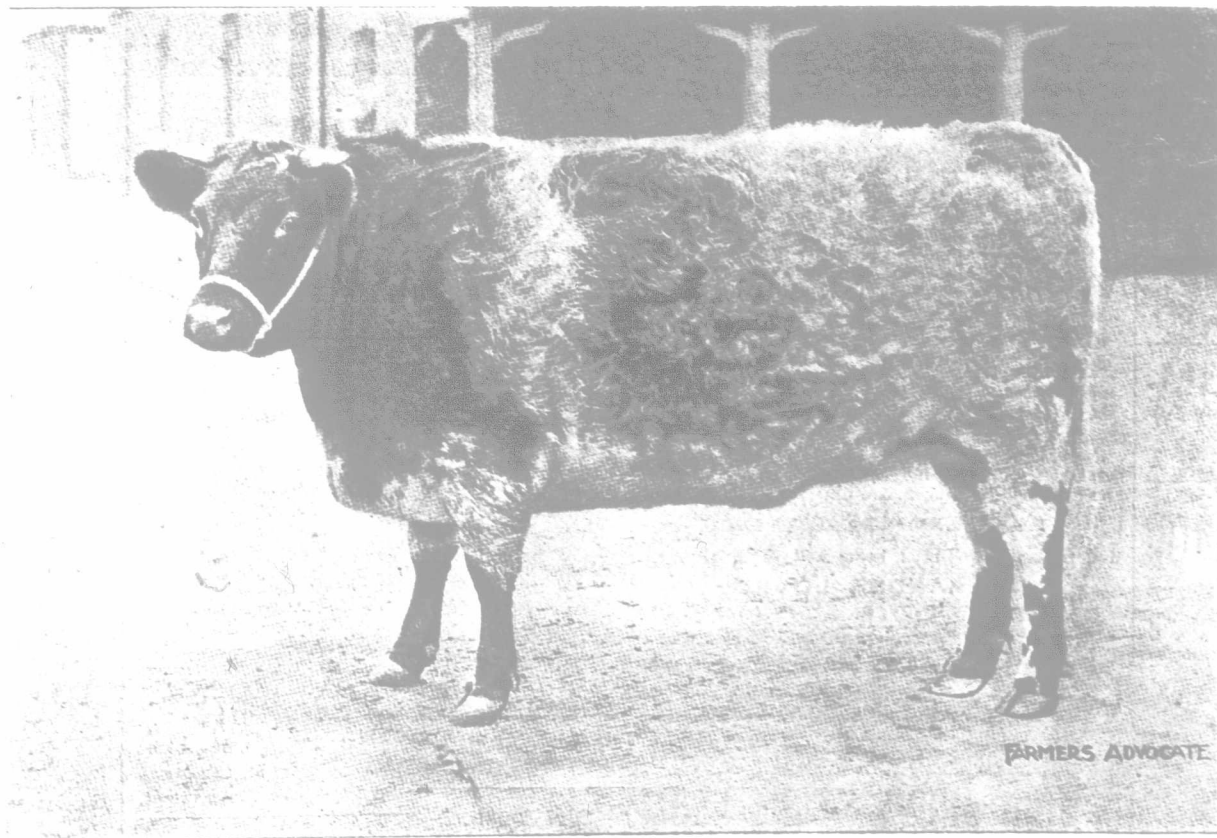
Imp. Lord Banff,

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

Imp. Consul,

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

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



FARMERS ADVOCATE

CICELY.

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

Imp. Silver Mist,

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

Imp. Wanderer's Last,

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

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

W. D. FLATT,

8 Hess St. South.

HAMILTON, ONT.

Jas. Smith, Manager.

FOR SALE — Three Beautifully - bred Clydesdale Stallions

Royal Erskine (imp.) [2529] [10431]

Brown; foaled May 3, 1896. Bred by Chas. Smith, Jr., Inchcrosie, Huntly, Scotland.

Dam Rosebella (1892), Sire Prince of Erskine (9647), W. S. Park (9647);
 2 Rose of Inchcrosie (7825), Lord Montrose (7973), J. Mettison (411);
 3 Susie of Inchcrosie (7822), Johnny (411), Wm. Kater (62);
 Black Samson (62), A. K. Leitch.

ROYAL ERSKINE is a grand young horse, and won Second at both Toronto and London in 1899 against strong competition, when in very thin condition, being just off the ship. PRINCE OF ERSKINE (9647), by Prince of Albion; dam Halton Beauty (5687), by the great Darley (222). LORD MONTROSE (7973), by Knight Errant (4483); dam Lady Jane (6491), by Model Prince (1255). JOHNNY (411), alias Nonsuch, alias Young Emperor, alias Rantin Johnny, was a prize-winner at the Highland Society's Show at Glasgow in 1875.

Balmedie Cameron Highlander (imp.) [2562] [Vol. 21, p. 134 S.]

IMPORTED IN 1899 BY H. CARGILL & SON, CARGILL, ONT.

Dark bay, white star on face, hind feet and ankles white, foaled April 7, 1898. Bred by W. H. Lumsden, of Balmedie, Scotland.

Dam Balmedie Doris (13511), Sire Royalist (6242), J. Lockhart (7454);
 2 Lady Dorothy (9858), Balmedie Prince (7973), J. Cranston (722);
 3 Maggie of Kirminnoch (5827), Darnley (1528), J. McIsaac (957);
 4 Jean of Kirminnoch (5826), Strathelyde (117), Mr. Cochrane (117);
 5 Young Conqueror (117), Cairn Tom (117).

BALMEDIE DORIS won the following prizes: only times shown — 1896, Second Prize as a three-year-old at Royal Northern, Aberdeenshire, 1897, Second Prize as yearling mare at Royal Northern, Aberdeen, 1898, Second Prize as mare with foal at foot, at Royal Northern, Aberdeen. LADY DOROTHY won the following prizes, and was one of the best mares left by that famous stallion, Darnley (222): 1891, Glasgow Show, Fourth Prize, Royal Northern, Aberdeen, First and Special for best mare in yard 1892, Royal Northern, Aberdeen, First with foal at foot, Highland and Agricultural Show at Inverness, First Prize, 1893, Highland and Agricultural Show at Edinburgh, Silver Medal, 1894, Highland and Agricultural Show at Aberdeen, Third Prize, 1895, Formentor Show, First Prize and Special for best female, Inverurie Show, First Prize and Special for best female. ROYALIST (6242), sire Darnley (222), dam Princess (6385), by Prince of Wales (673), is one of the Champion Clydesdale Stallions of the day, both in the show yard and at the stud, his progeny having taken First Prizes at the Highland and Agricultural Society, Royal English, and other leading shows. Royalist, in 1887, as a one-year-old colt, gained Third Prize at Kilmarnock, First Prize and Cup at Royal Northern Summer Show, Aberdeen, and Third Prize at Highland Society's Show at Perth. In 1888, as a two-year-old colt, he gained First and Challenge Cup at Inverurie Show, First Prize and Cup at Royal Northern Summer Show, Aberdeen. In 1899, as a three-year-old stallion, he gained First Prize at Royal Northern Summer Show, Aberdeen, and Second Prize at Highland Society's Show at Melrose; and in 1895, when seven years old, he gained First Prize and Challenge Cup as champion male at the Jubilee Show of the Royal Northern Society, Aberdeen. BALMEDIE PRINCE (7973), by Prince of Wales (673).

Royal Carruchan (imp.) [2561] (Vol. 21, p. 172, S.)

IMPORTED IN 1899 BY H. CARGILL & SON, CARGILL, ONT.

Bay, stripe on face, off fore and hind feet white; foaled May 3, 1898. Bred by David Walker, Coullie, Udry, Aberdeenshire, Scotland.

Dam Jess of Coullie (13647), Sire Prince of Carruchan (8151), J. McCaughey (8963);
 2 Balfarg Jess (5305), Mount Royal (8151), D. Mitchell (4119);
 3 Dainty of Kingsdale (8648), Corsair (760), J. Meiklejohn (1357);
 4 Jess 2nd (778), Seolman (778), R. Nourbray (778);
 5 Jess (778), Stirling Tom (778), R. Lozan (778);
 6 Mettle (778), Sir Colin Campbell (778), J. Hardie (778);
 Stirlingshire Champion (778).

PRINCE OF CARRUCHAN, by Prince of Wales, was First at Highland Agricultural Society Show at Dundee, as a two-year-old. First and Champion at the Highland Society, as a three-year-old, at Stirling. First as an aged horse at the Highland Society Show at Edinburgh; also winner of the Cawdor Cup twice at the Glasgow Stallion Show. MOUNT ROYAL won the following prizes: — 1888, First at Perth, 1889, First at Turrit, 1890, First and Champion for best entire, any age, Royal Northern, Aberdeen, First and Clydesdale Society's Medal for best entire, any age, Turrit, First and Challenge Cup for best animal, male or female, Inverurie, First and Lord Aberdeen's Special Prize for best entire colt, Aberdeen, V. H. Commended, Highland Society's Show, Dundee, 1891, First and Champion Cup for best entire, any age, Royal Northern, Aberdeen, First at Royal Northern Summer Show, Aberdeen, Second (to Prince of Carruchan) at Highland Society's Show, Stirling, 1892, First, Royal Northern Summer Show, Aberdeen, Fourth, Highland Society's Show, Inverness, 1893, Second, Glasgow, as sire of five yearlings, Kirriemuir Society's Premium horse, 1894, Kirriemuir Society's Premium horse, 1895, Short list of five for Glasgow Premium, Selkirk and Galashie Society's Premium horse, 1896, Windygrates Society's Premium horse. His stock has gained First Prizes at Huntly, Keith, Banff, Turrit, Insh, Kennethmont, Inverurie, Eyvie, Aberdeen, Glasgow, Edinburgh, Dundee, East Kilbride, Kirkintilloch, Girvin, Kirriemuir, Montrose, Forfar, Arbroath, etc. He is sire of Royal Garty (9844), the Cawdor Cup winner in 1895 and 1896.

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

Scotch Shorthorns

100 HEAD TO SELECT FROM. Offer for sale 20 young bulls, and cows and heifers of all ages...

J. & W. B. Watt, SALEM, ONT., BREEDERS OF Clydesdale horses, Scotch Shorthorn cattle, Leicester and Oxford sheep, Berkshire pigs.

Our SHORTHORN herd was founded over 30 years ago, and contains such tribes as the Village Buds, Matchless, Missies, Mildreds, Stamfords and English Lady...

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

Standard Sheep Dip (OIL OF TAR.)

Non-poisonous, cheap and effective. Destroys Scab, Lice, Ticks, Foot Rot, etc.

Write for Testimonials and Circulars.

Manufacturers: The West Chemical Company, TORONTO, ONT.

For Contagious Abortion use West's Fluid.

FOR SALE: Shorthorn Bulls, Cows and Heifers, carrying a combination of Scotch top crosses, and tracing through many popular strains on the dam's side.

SHORTHORN CATTLE AND LINCOLN SHEEP.

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

J. T. GIBSON, DENFIELD, ONT.

SHORTHORNS AND BERKSHIRES.

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

MAC CAMPBELL, Northwood, Ont.

High-class Shorthorns and Yorkshire Pigs.

One very superior bull, about 17 months old; three bulls about 5 months old, from imp. stock; cows and heifers due to calve this fall. Forty Yorkshire pigs, 2 months old, from imp. stock; imp. boar, 2 years old, and sows due to farrow soon.

JAS. McARTHUR, GOBLE'S, ONT.

Goble's Station, G. T. R., 10 miles east of Woodstock, 2 miles from farm. Visitors met.

Shorthorns and Tamworths FOR SALE.

Our choice, dark red, 8-mos. bull. Also a few 4-mos. sows of extra quality, with Nimrod blood.

COLWILL BROS., Newcastle, Ont.

SPRINGBANK FARM.

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

JAS. TOLTON, WALKERTON, ONT.

Maple Lodge Stock Farm

ESTABLISHED 1854.

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

LEICESTERS—Imported and home bred—the best.

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

Shorthorns FOR SALE:

12 young bulls, 10 yearling heifers and heifer calves, 10 yearling cows and young cows, 10 yearling sows and young sows, 10 yearling pigs, 10 yearling lambs, 10 yearling chickens, 10 yearling ducks, 10 yearling geese.

PLEASE REFER TO FARMER'S ADVOCATE.

Bonnie Burn Stock Farm

Forty rods north of Stouffville station, Ont., offers 5 Shorthorn bulls and some heifers, 30 Shropshire rams and ewes from imp. and Canadian-bred sires, at reduced prices.

D. H. RUSSELL, Stouffville, Ont.

ARTHUR JOHNSTON

Greenwood, Ontario, Canada.

HIGH-CLASS SCOTCH SHORTHORNS

(First Importation Made in 1874.) (My recent importation of 30 head has just arrived here from quarantine. Herd now numbers over 120 head.)

OFFERS FOR SALE: 40 Imported Cows and Heifers, 40 Home-bred Cows and Heifers, 11 Imported Bulls and Bull Calves, 13 Home-bred Bulls and Bull Calves.

Railway stations—Pickering, on main line of Grand Trunk Railway, 22 miles east of Toronto, and Claremont, 23 miles east of Toronto, on the C. P. Railway. Catalogues on application.

R. & S. NICHOLSON

SYLVAN P. O., PARKHILL STATION, IMPORTERS AND BREEDERS OF

SHORTHORN CATTLE.

OFFER FOR SALE: 7 Imp. cows, 3 Imp. heifers, 7 Yearling heifers, 7 Yearling bulls, 9 Cows.

Shorthorns, Cotswolds and Berkshires

FOR SALE.—One yearling bull and six bull calves; also a few cows and heifers. A choice lot of ram lambs, ewe lambs, and ewes in lamb. Young pigs of the long bacon type, from two to three months old. Write for prices.

F. BONNYCASTLE & SONS, Campbellford P. O., Ont. on

SHORTHORNS

Cows, heifers and bulls ready for service, by Scottish Chief = 2724 =, by Scottish Pride (imp.), Dam Faney's Gem, by Guardsman (imp.).

BERKSHIRES. Modern type, well-bred boars and sows, all ages.

ALEXANDER LOVE, EAGLE, ELGIN CO., ONT.

SHORTHORN BULLS FOR SALE.

We have Cruickshank Lovely, Fashions and Stamford females, and Matchless females bred by J. & W. B. Watt, Salem, Ont., with Lovely Victor 22170 at the head. T. MERCER, MARKDALE, ONT.

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.

GOSSIP.

W. G. Pettit & Son, of Freeman, Ont., write us that their herd is now getting in fine shape, and imported bulls have done exceedingly well. "We are having a fine lot of calves from our imported cows. Our herd now numbers 115 head." See change of advertisement in this issue.

The American Chester White Record Association held their seventeenth annual meeting at Columbus, Ohio, January 16th, and had a larger attendance than ever. Officers elected were: President, I. T. Cummins, Cedarville, Ohio; Vice-President, F. A. Branch, Medina, Ohio; Secretary-Treasurer, Carl Freigan, Dayton, Ohio.

The Montrave stud of Clydesdale horses has suffered a severe loss by the sudden death of the famous Prince of Albion (6178). He was found on Thursday morning lying dead in the yard adjoining his box. On the previous evening nothing was noticed wrong with him. He cleaned up his supper at 8 p. m., and looked healthy and strong. The veterinary surgeon who was called in ascribes his demise to acute peritonitis. He has been the most healthy of horses, never having had a day's illness. At Montrave his death was looked upon as a truly sad event, he being such a favorite with all, and one of the best tempered animals imaginable. The breed will be the poorer for his loss, and he had been let for next season on the very day of his death, will have to go far afield to find as good a one to replace him. He was the highest priced draft horse in the world, his respected and plucky owner, Sir John Gilmour, Bart., having paid Mr. James Kilpatrick, Craigie Mains, Kilmarnock, £3,000 for him when two years old, and he had proved a first-rate investment. He was first four times in succession at the Highland Society's shows, and won the Queen's gold medal at the Royal Jubilee Show at Windsor in 1889, and has carried off many other first prizes and champion honors. He was undoubtedly one of the most notable animals the breed has ever known. Amongst his female produce was the 1,000-gs. mare, Queen of the Roses, while he could claim as his sons Rosemount, Prince of Erskine, Prince Murat, Prince Albert of Roseburgh, and many other well-known prize-winners. He was foaled in 1886, and Mr. Kilpatrick still owns his full brother, the equally well-known Prince of Kyle. It is scarcely necessary to mention that his sire was Prince of Wales, and his dam, the noted Darnley mare, Mysie.—Scottish Farmer.

A QUICK, SHARP CUT DEHORNING KEystone KNIFE. Done with the DEHORNING KEystone KNIFE. The safest, Quick, sharp cut. Cuts from four sides at once. Cannot crush bruise or tear. Most humane method of dehorning known. Took highest award World's Fair. Write for free circulars before buying. Owned and Manufactured by R. H. McKENNA, V.S., Picton, Ont. THE LATE A. C. BROSH'S PATENT.

Maple City Jerseys.

One Jersey bull two years old. Some very choice bull calves from 2 to 5 months old, and a few high-grade heifers and heifer calves. All of the choicest breeding. Write for prices.

Box 552. W. W. EVERITT, Chatham, Ont.

BARRED ROCKS.

COCKERELS AND PULLETS, large, robust, healthy birds of the "National strain"; bred from a pen of 30 hens, selected for their good color and extra laying qualities, and an AI imported National cock. For prices write

W. C. SHEARER, Bright, Ont.

Butter Jerseys

FOR SALE: A granddaughter of Louise of H, the great cow whose yield and cost of feed were published in F.A., 8 months old; a son of Bella of H, full sister in blood to Louise, 7 months old; a great-granddaughter of the famous cow, Massena, 600 lbs. butter in one year, 19 months old, and in calf.

MRS. E. M. JONES, Box 324, BROCKVILLE, ONT.

FOR SALE.

6 YEARLING JERSEY BULLS, sired by Brampton's Monarch (imp.), and from tested cows; also registered and high-grade springer.

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

GLEN ROUGE JERSEYS.

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

W. R. Bowman,

We have five choice young bulls of various ages, also a few 30-calf heifers and sows from prize-winning stock, which we will dispose of at reasonable prices. We also offer for sale six Shropshire and Suffolk Down ewes of excellent breeding, and ability, at \$10.00 to \$15.00 each. All stock registered.

Mr. Forster, Ont.

Begin at Home. We teach by mail, preparing farmers' boys or girls to take positions in town or city where they can earn good salaries. We have prepared farmers' boys for WELL-PAID POSITIONS AS Draftsmen, Electricians, Surveyors, Stenographers, Book-keepers, Designers, Teachers. Write, stating subject in which you are interested. The International Correspondence Schools Box 1517, SCRANTON, PA.

HOLSTEINS FOR SALE.

I AM now offering 4 royally-bred Holstein bulls: Regulator DeKor, Pompos DeKor, Jessie 3rd s Inka DeKor, DeDicker's DeKor. All from heavy-milking dams, closely related to DeKor 2nd and Netherland Hengerveld, the greatest of Holstein cows. J. A. CASKEY, Madoc, Ont.

WE WANT TO SELL A FEW Holstein Heifers, coming 2 years old or a few young Cows.

THEY are of the richest and largest producing strains, fine individuals, and bred to as good bulls as there are living. We have a few bull calves and yearling bulls also for sale.

HENRY STEVENS & SONS, LACONA, OSWEGO CO., N. Y.

Maple Glen Stock Farm.

The home of officially tested, Advanced Registry, dairy test and showing-winning herd of SYLVIA HOLSTEINS, of Carmen Sylva now for sale. Price is in keeping with breeding and performance.

C. J. GILROY & SON, Brockville, on C.P.R. or G.T.R., Glen Buell, Ont.

Riverside Holsteins.

6 BULLS, from 2 to 18 months old, sired by our famous stock bull, Victor DeKor (Patented). Some are from imported or officially-tested dams. Also a few heifers for sale.

M. RICHARDSON & SON, Haldimand Co., Caledonia, Ont.

Maple Hill Holstein-Friesians

SPECIAL OFFERING: Four bull calves, born in August and September, sired by the great bulls, Count Mink Mercedes and Daisy Teake's King, and out of prizewinning and producing dams. They are show calves, about the best ever bred, one yearling bull, the first-prize calf at Toronto, 1900. Also a nice yearling heifer a bargain.

HARRISBURG STS., G.T.R. G. W. CLEMONS, GALT STS., C.P.R., ST. GEORGE P. O., ONT.

AYRSHIRE CATTLE AND POULTRY.

Three prizewinning bull calves, 8 mos. old, from 30 to 35 dollars each. One fine bull calf, 3 mos. old, 25 dollars. All fashionable color and choice breeding, from dams with heavy milk records and fine show qualities, and sired by Royal Star of the Ste. Anne's, first-prize bull at Toronto and London. Females all ages. Prices right. Twenty varieties of chickens, Pekin ducks. Also ten pair Toulouse geese, from \$1.00 to \$5.00 per pair. For particulars, write—

WM. THORN, Norfolk Co., Trout Run Stock Farm, Lynedoch.

For Sale: Six Ayrshire Bulls, ranging from 5 months to 1 year past. Also a few cows and heifers, thoroughbred fowls, and Scotch collie dogs.

WM. STEWART & SON, MENIE, ONT.

Maple Cliff Dairy and Stock Farm.

FOR SALE: Ayrshires 6 yearling bulls, females any age. Tamworths 40 boars and sows of different ages. Berkshires 3 boars, a number of sows.

R. REID & CO., Hintonburg, Farm 1 mile from Ottawa. Electric cars to farm. on

DAVID A. McFARLANE, KESLO, P. O. AYRSHIRES.

Young stock for sale from imported and home-bred foundation. Prices reasonable.

The Breed THAT FIRST MADE Hillhurst Famous

FIVE GRAND YOUNG SHORTHORN BULLS FOR SALE. 9 to 12 months old—registered; bred from milking sires of heavy and active, having been reared in a natural manner on pasture. Prices moderate, special inducements to clubs. A choice lot of

SHROPSHIRE

Ram and Ewe Lambs, by imported rams of Mansell's and Harding's breeding. **HAMPSHIRE, THE GOLDEN-FLESHED,** Ram Lambs all sold. Next crop due January, 1901. Ready for service in August.

M. H. COCHRANE,

HILLHURST STATION, COMPTON CO., P. Q.
17 miles from Montreal, on Portland Div., Grand Trunk Ry.; 12 miles from Lennoxville, C. P. R.

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

IMPORTERS AND BREEDERS OF
**Scotch Shorthorns
and Shropshire Sheep**

OFFER FOR SALE:
12 Imported bulls, 12 mos. to 2 yrs. old.
5 " " 9 to 12 mos. old.
20 " " cows, 3 to 6 yrs. old.
15 " " heifers, 2 yrs. old.
5 " " 1 yr. old.
6 Home-bred bulls, 9 to 18 mos. old.
20 " " heifers, 1, 2, and 3 yrs.

Our imported bulls are now getting in good shape. All our heifers of suitable age are bred to Pure Gold (Imp.), by Cyprus, and Scotland's Pride (Imp.), a Cruickshank Clipper, by Star of Morning.
Catalogues on application. All our imp. cattle were registered in the American Herd Book before the \$100.00 fee for recording was put on.

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

Rapids Farm Ayrshires.

REINFORCED BY A RECENT IMPORTATION of 20 cows, 2 bulls, and a number of calves, selected from noted Scotch herds, and including the male and female champions at leading Scottish shows this year. Representatives of this herd won the first herd prize at the exhibitions at—

Toronto, London, and Ottawa, in 1900.

Come and see or write for prices. Young Bulls and Heifers for Sale, bred from High-class Imported Stock.

Robert Hunter, Manager

for W. W. Ogilvie Co., Lachine Rapids, Quebec.

A MODEL SILO

BUILT WITH 86 BARRELS OF

THOROLD CEMENT.



Farm of A. C. Pettit. Silo built with Battle's Thorold Cement. Dimensions 30 feet high and 12 feet in diameter. Driving-house floor 26 x 36 feet.

Burlington, Ont., December 12, 1900.

ESTATE OF JOHN BATTLE, Manufacturers of Thorold Cement, Thorold, Ont.:

GENTLEMEN, Enclosed you will find a picture of my silo, built by your man, Mr. Ward Hagar. It is one of the most durable and looks the best of any make in our part of the country. I used 86 barrels of your cement to build the silo and lay a driving-house floor 26 x 36 feet, which is as hard as stone. Size of silo, 30 feet high and 12 feet in diameter. I would advise all parties intending to build silos to get your man, Mr. Hagar, and construct them with your Thorold Cement.
Yours truly,
W. G. PETTIT,
Importer and Breeder of Scotch Shorthorn cattle.

Estate of JOHN BATTLE, Thorold, Ont.

GOSSIP.

Mr. W. S. Marr, Uppermill, has sold by private bargain a highly-bred lot of Shorthorns to Mr. C. L. Gerlaugh, Ohio. The draft includes a three-year-old Red Lady, by Sittytown Pride, and from a William of Orange dam; a two-year-old Missie heifer, by Golden Victor; a two-year-old heifer of the Mountain Maid tribe, by Merry Mason, and her bull calf by Bapton Emperor; a yearling Clara heifer, by Captain Indlewood; a yearling Missie heifer, by Wanderer, this being a full sister of Mr. Flatt's Wanderer's Last; four heifer calves from the Emma, Princess Royal and Missie tribes, and got by such sires as Spicy Robin, Silver King and Lovat Champion.

Mr. James A. Cochrane, Hillhurst, Que., writes: "I am pleased to report that the first Hampshire Down lamb, a lusty, vigorous ram, arrived this morning (Jan. 2) on time, and is in all probability the first twentieth century lamb of his breed or of the Down family. Joy of Morning at twenty-four months old tips the beam at 1850 pounds; he has improved steadily since the shows. Scottish Hero in breeding condition now weighs 2,200 pounds at two years and seven months. Scottish Beau, the first of the Silver Plates imported to America (bred by Mr. Duthie, but calved at Hillhurst) is developing into a worthy assistant to the first named sires. For evenness of flesh I have never seen his superior of any breed. We have some capital calves by Hillhurst Baronet, and expect some very shortly from Joy of Morning, the first of his get."

Shannon Bros., Cloverdale, B. C., write: "We have recently sold one Oxford ram to each of the following: Jas. Jenkins, Port Kells, B. C.; S. Smith, Dewdney, B. C.; W. H. Meier, Island, B. C.; O. H. Oliver & Co., Whateam, Wash., U. S.; Hicks & Everett, Custer, Wash., U. S.; Isaac Sandwith, Doe Bay, Wash., U. S.; J. F. Boothroyd, Surrey Centre, B. C. We purchased from J. H. Jull, Mt. Vernon, Ont., one imp. 2-year-old ram, winner of first in the aged class at New Westminster, B. C., to head our flock. We have made the following sales of Berkshire boars: To A. J. McKinlay, Lac La Pêche, B. C.; Capt. Trench, North Saanich; Chas. Coulson, Langley; John Israel, Mt. Lebanon; Wellington Farm, Ladner's; Thos. E. Ladner, Ladner's; H. Ferguson, Port Haney. Sales of sows: To M. T. Johnston, Somenos; Jos. Nightingale, South Salt Spring; Jas. H. Nelson, Langley Prairie, one sow in pig."

NEW BULLS FOR UPPERMILL AND COLLYNIE.

Mr. W. S. Marr, Uppermill, Aberdeenshire, has recently purchased from Mr. J. Deane Willis, Bapton Manor, Wiltshire, the grand yearling Shorthorn bull, Bapton Diamond, son of the Royal winning young cow, Bapton Pearl, imported last year by Mr. E. S. Kelly, of Ohio. His sire is Augustin, by Bapton Javelin, out of Augusta Countess, by Count Lavender, and of the Bruce Augusta family. Mr. Marr has thus two Bapton Manor bulls in service, having some time previously secured Bapton Favourite, and he thinks he has two of the best bulls in Britain. Mr. Duthie has also added to the bulls at Collynie, at a big price, the bull calf, Bapton Champion, bred by Mr. Willis, sired by Silver Plate, and out of the dam of Bapton Emperor, the Royal champion of 1889.

CLYDESDALES AND SHORTHORNS AT CARGILL.

H. Cargill & Son, Cargill, Ont., in their new advertisement in this issue, offer for sale three excellent young imported Clydesdale stallions, 2 to 4 years old, of good size and quality, and bred on best lines, having lots of the blood of Darley, Prince of Wales, Top Gallant, and other noted sires, and from prize-winning dams in Scotland. Parties looking for Clyde stallions will do well to see these, as they are good and can be bought right.

The herd of Shorthorns at Cargill, containing the largest number of imported Scotch-bred cattle on the continent, is in fine form, and increasing rapidly by the birth of calves from the imported cows. A grand lot of young bulls are held for sale at fair prices, and a few young cows and heifers also. If interested, write for catalogue or see the herd.

Meetings of Horsemen, Toronto.

Saddle and Carriage Horse Breeders' Association meeting—Wednesday, February 6th, 2 p. m., Albion Hotel, Toronto, Ont.

Canadian Hackney Horse Society meeting—Wednesday, February 6th, 7.30 p. m., Albion Hotel.

Dominion Shire Horse Breeders' Association meeting—Thursday, February 7th, 11 a. m., Albion Hotel.

Dominion Clydesdale Horse Breeders' Association meeting—Thursday, February 7th, 2 p. m., Albion Hotel.

Dinner by the Canadian Horse Breeders' Association—Thursday, February 7th, 7.30 p. m.

Canadian Horse Breeders' Association meeting—Friday, February 8th, 2 p. m., Albion Hotel.

Mr. Henry Wade, Secretary of the above organizations, advises us that persons coming to the meetings who purchase full-fare railway tickets on starting can secure return tickets at one-third.

Ayrshire Bulls: Write to J. YULL & SONS, Carleton Place.

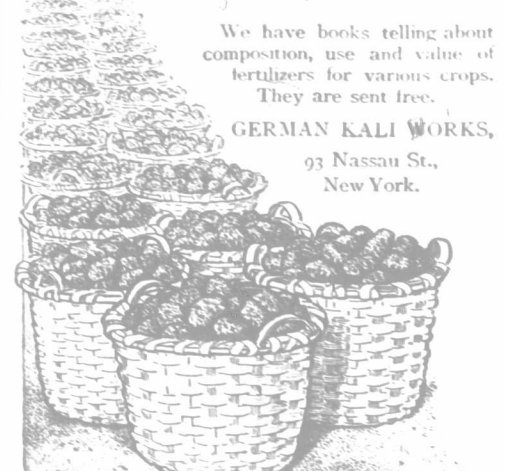
for special prices on Ayrshire bulls from 14 years to 6 months. Four over 15 months, fit for service, from special milking stock. Sired by prize bull, Jock of Burnside—1684—, also females of all ages. Shropshire sheep of all ages; a number of fine ram lambs. Berkshire pigs of either sex, of the best bacon type. B. P. Rocks.

TREDINNOCK AYRSHIRES

Imported bulls at head of herd: Glencairn 3rd, Napoleon of Auchinbrain, and Lord Dudley. Forty imported females, selected from leading Scotch herds, and their produce from above-named bulls. Size combined with quality and style, well formed udders, good sized teats, and capacity for large milk production. Bull calves for sale, also a few young cows and heifers. For prices and particulars, address—
JAMES BODEN, Mgr.,
St. Anne de Bellevue, Quebec.

Farm close to St. Anne Station, Que.,
G. T. R. & C. P. R., 20 miles west of Montreal.

Two hundred bushels of potatoes remove eighty pounds of "actual" Potash from the soil. Unless this quantity is returned to the soil, the following crop will materially decrease.



We have books telling about composition, use and value of fertilizers for various crops. They are sent free.

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

Choice Ayrshires, and Barred Rocks.

A number of cows and heifers in calf to Glenore Sultan. Several choice young bulls.



Plymouth Rocks of both sexes from prizewinning birds.

JAS. McCORMACK & SONS, ROCKTON, ONTARIO.

NETHER LEA AYRSHIRES, BERKSHIRES, YORKSHIRES, AND ROUGH-COATED COLLIES.
YOUNG STOCK FOR SALE.

I expect to import from Europe, in the near future, and can book orders for stock on commission, as I have a good connection in England and Scotland.

om T. D. McCALLUM, Danville, Que.

BROAD LEA OXFORDS.

Sheep of both sexes for sale, many of which are bred from the famous imported ram, Royal Warwick 3rd. Correspondence solicited. Visitors welcome. om

Henry Arkell & Son,
Phone and telegraph, Teeswater, Teeswater, Ont.

HUNTLYWOOD FARM

SOUTHDOWN SHEEP (IMPORTED AND HOME-BRED), ALSO DEXTER-KERRY CATTLE. A USEFUL LOT OF SOUTHDOWN RAMS NOW FOR SALE. APPLY TO—

W. H. GIBSON,
MANAGER, om

Hon. G. A. Drummond, Proprietor.
Beaconsfield, G. T. R. & C. P. R.
Pointe Claire P. O., P. Q.

FAMOUS ALL OVER THE WORLD. ALFRED MANSELL & CO., LIVESTOCK AGENTS AND EXPORTERS, SHREWSBURY.

BRITISH STOCK selected and shipped to all parts of the world. Write for prices to ALFRED MANSELL & CO., Shrewsbury, England, or to our American representative, Robert Miller, Stouffville, Ont., Canada.

W. W. Chapman,

Secretary of the National Sheep Breeders' Association,
Secretary of the Kent or Romney Marsh Sheep Breeders' Association,
and late Secretary of the Southdown Sheep Society.

Pedigree Live Stock Agent, Exporter and Shipper. All kinds of registered stock personally selected and exported on commission; quotations given, and all enquiries answered.

Address: FITZALAN HOUSE, ARUNDEL ST., STRAND, LONDON W. W.
Cables—Sheepcote, London.

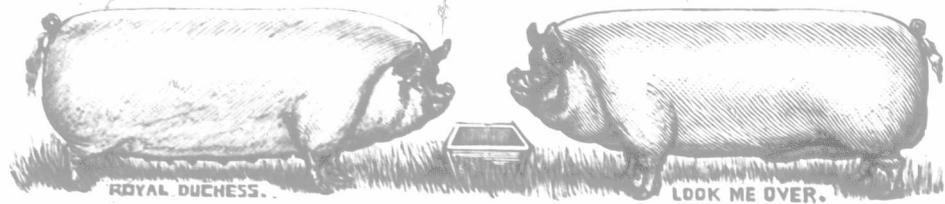
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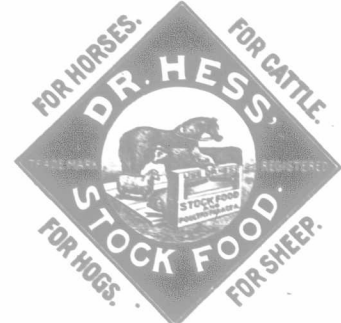
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It is not a stimulant, but a tonic. It aids the digestion, and thereby gets most muscle and fat and milk and wool out of the various foods that the horses and hogs and cows and sheep eat.

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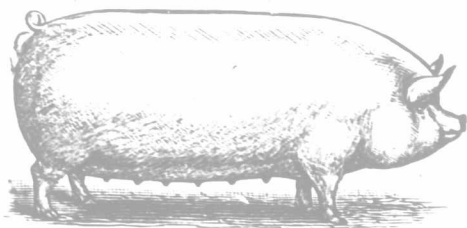
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The largest flock of imported Lincoln sheep in America, and contains more Royal first-prize winners than any other on this continent. Sheep of this flock won the first prize for the best flock at Toronto, 1900, and all the first prizes for rams at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

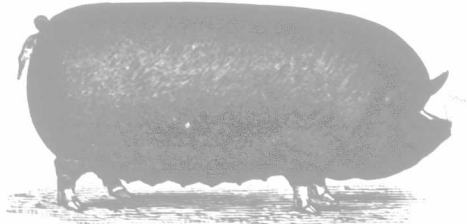
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Berkshires—Large, lengthy, English type. Five first-prize boars in service. Spring pigs ready for shipment. Boars fit for service. Sows ready to breed. GEORGE GREEN, Fairview, Ont.

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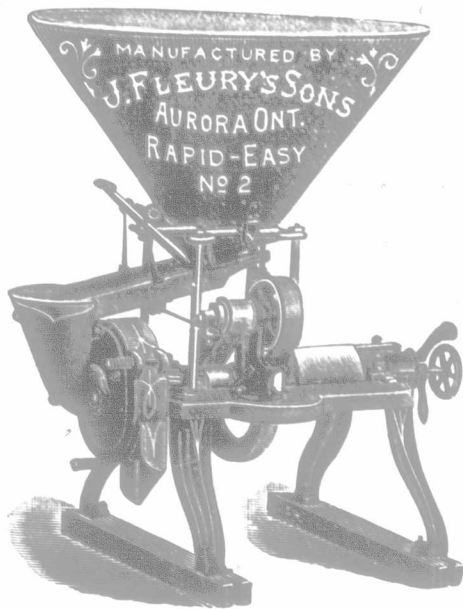
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Suitable for ANY POWER. Do MORE WORK with SAME POWER than ANY OTHER machines.

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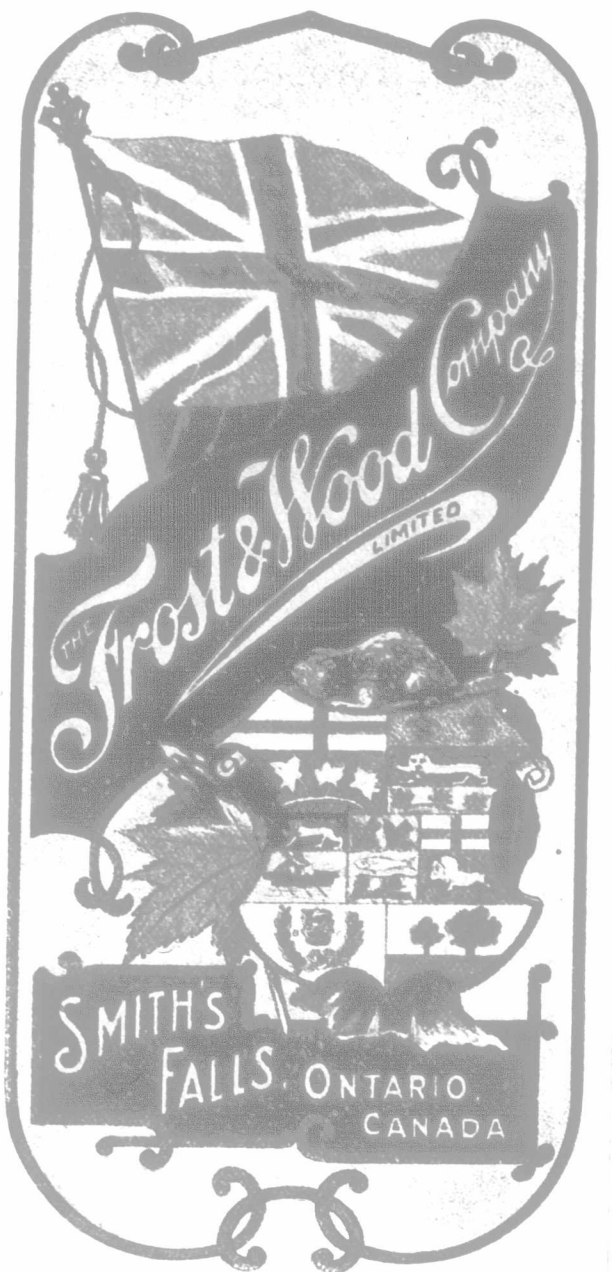
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