

J. H. Grisdale June 15, 02 Exp Farm

THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE SUCCEED FOUNDED 1866

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

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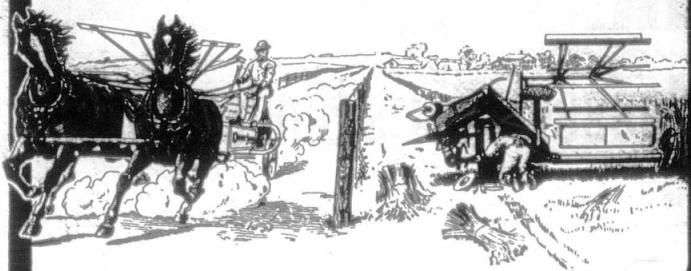
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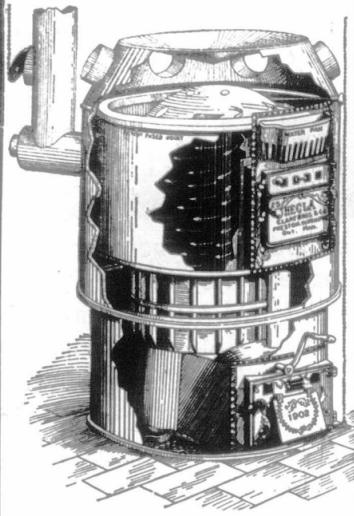
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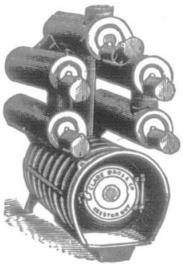
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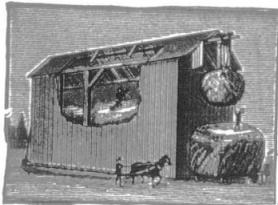
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The Farmer's Advocate

"PERSEVERE AND SUCCEED." and Home Magazine. ESTABLISHED 1866

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VOL. XXXVII.

LONDON, ONT., AND WINNIPEG, MAN., MAY 1, 1902.

No. 549

EDITORIAL.

The Rural Telephone.

The telephone and the trolley are two agencies that tend to equalize town and country conditions. The latter facilitates the rapid and economical transit of people and produce over the main travelled highways. Rural electric car lines are branching out in all directions, and will continue to do so. We are glad to notice the steady growth in cities and towns of a saner sentiment in regard to the true value of sunlight, pure air, and generally healthful surroundings, unclouded by smoke and dust, such as obtain in the country. The people of cities and towns are beginning to reach out eagerly for these conditions, and the telephone and the trolley both facilitate the movement. We hope before the next census is taken to see the tide of population flowing countryward. The telephone gives the country the advantage of town conditions in many ways. It is the greatest time-saver and annihilator of distance in modern life. Think of the thousands of miles of weary travelling every day by men, women and children and horses, and the incalculable time, that it saves! In a great many localities throughout Canada, physicians have been the first to establish local telephone systems for the benefit of the patrons, and these lines are, of course, used for more purposes than "calling the doctor" or the minister. Neighbors four or five miles apart talk to each other on business matters over the 'phone, groceries are ordered from the village store, grain or stock can be bought or sold that way, hired help engaged, and ladies can do their "calling" over the wire instead of tramping or driving for miles over a muddy road. Many large farms now have telephones to different departments connected with the residence of the owner or manager. In some cases two neighbors have a line between them and the country store, and in others there will be six or seven on the circuit. Often the line runs to a village where there is a railway station and telegraph service, which greatly extends the sphere of its usefulness without falling into the hands of the general telephone system of the country. As to the cost of local telephone lines, we are furnished the following statement: Depending upon the locality, good cedar posts about 20 feet long will cost from 25 to 50 cents each. They are put down four feet in the ground, 10 rods apart, or 32 posts to the mile. Then there will be the cost of hauling and putting them in. Porcelain insulators cost two cents each, and, in addition, small iron spikes or screws to fasten them to the posts or crosspieces. Glass insulators and blocks cost about six cents each. No. 12 galvanized wire will answer, and will require from 125 to 150 lbs. to the mile, costing from \$3.25 to \$3.50 per 100 lbs. Two men will put up a mile of wire per day. The instruments cost \$12.50 each, besides which some insulated wire and window tubes for the houses will be required. From time to time the water in the batteries will need renewing. Care must be taken that the lines are kept perfectly insulated at all points.

To such an extent has the country-telephone idea developed in the United States, that telephone-supply companies have been organized, doing a large and, we understand, a successful business. In Canada, the instruments have usually been obtained from the Bell Telephone Co. The duty on instruments imported into Canada is 25 per cent.

The Horse Show Problem.

The buoyant condition of the horse trade at the present time invests the question of horse shows with unusual interest. That the spring shows held in Toronto in the last few years, under the joint auspices of the Breeders' Association and the Hunt Club, have served and are serving a very useful purpose in setting a high standard of types and inspiring a love for and admiration of the better classes of horses is clearly apparent in the great improvement witnessed from year to year in the exhibits brought out. These exhibitions have served to enlist the co-operation of men of means in adding to their interest by investing in high-class saddle and harness horses and paying good prices for them, and have encouraged the breeders and importers of these classes to bring in such sires as are calculated to produce the desired stamp of horses for these purposes, while the steady demand at good paying prices for these has induced farmers and fanciers more generally to go into the breeding of the type that will meet this demand. The Toronto Show, which has been admirably conducted by the present management, reflecting credit on all its officers, has become decidedly popular with city people, who have patronized it liberally and loyally, and have doubtless felt well repaid for all that it has cost them by the pleasure experienced in witnessing such magnificent displays of highly-bred and well-trained animals. And the breeders, so far as we can see, have little, if any, cause for complaint of the position and part given them in the programme and arrangement of the show. The prize list has been fairly liberal, and the facilities for advertising their stock all that could reasonably be required. But the breeders of some classes have felt that a show held at so late a date in the spring, and having necessarily only a limited place in a programme so full of events that they could not reasonably ask for more in the short space of the three days allotted to it, fails to afford the opportunity for business, for the sale and purchase of sires for stud purposes, and are moving to secure some arrangement whereby, without detracting from the popularity and usefulness of the present well-established spring show at Toronto, they may hold at an earlier date a distinct show for heavy-draft stallions especially, and, we presume, for other classes (if their breeders so desire), at which selections and sales of sires may be made before the season arrives when their services are required and their circuits arranged.

While we should deplore any action that would detract from the interest and usefulness of the present established show, we see no valid reason why the breeders may not inaugurate a separate and special show for breeding stock at some point where a building suitable for stabling as well as for showing the stock is provided, where business may be facilitated and where judging competitions for young farmers may be arranged and lectures given, as at the Winter Fair at Guelph, thus making the event an educational as well as a business one. It is doubtful whether in mid-winter, and with breeding classes only, a show can be made popular with city people and a financial success, but, as in all educational enterprises, that is but a secondary consideration, and we think the Government will be justified in granting assistance in providing a prize list for breeding stock at both the winter and the spring shows,

while the two are not likely to seriously conflict, and both may serve a useful purpose in stimulating the improvement of our horses, which now hold a good reputation, and if bred on intelligent and up-to-date lines may continue to prove a valuable asset to the country. Every reasonable encouragement should be given the breeders, who have shown commendable enterprise in importing and placing at the service of the farmers high-class sires, and if some provision can be made whereby premiums may be given for the introduction of still better stallions than importers have felt warranted in bringing out, the effort may be well worth making and the necessary funds well expended.

Bran Should be a Staple Food.

One of the tendencies shown nowadays by the man wishing to be progressive is the being on the lookout for new grains and forage crops that will promise larger yields than the old standard varieties. While this ambition is a laudable one, and is ably assisted by the various experiment stations, the feeder and farmer in the enthusiasm over new feeds is apt to overlook some of the older kinds that cannot be surpassed.

Bran is a feed too often overlooked and underestimated, especially by Western people, and it is unfortunate that such is the case. If it were feasible, it would be of great benefit to Western agriculture if all the bran produced from wheat grown in the West were fed in the West, instead of being shipped east. No feed of the grains is more valuable for the growth of bone and muscle in young stock or for the production of milk, and yet many seem to consider it as little better than sawdust. Bran is not only valuable as a nutrient, but as a corrective and laxative for animals, and is a most valuable adjunct fed along with other grain. In the feeding of horses, bran added to oats in the proportion of one quart of the former to three of the latter will be found very useful and profitable. For young live stock, colts, calves, lambs, etc., bran is an essential to profitable raising, and should be bought by the ton, in place of by the sack. The stocker can be wintered better by the addition of bran to the straw ration than it can be without, and the touch of that animal will be much improved by this addition to its diet.

The practical man knows the feeding value of bran, and is backed up in that opinion by the feeding tests and analyses of the animal husbandman and agricultural chemist. Henry says that "the inner surface of the bran flakes is made of the aleurone layer of the wheat grain, which is very rich in protein, and in addition carries some starch." Bran contains, also, mineral matter, and when fed with another grain will prevent stock stalling (becoming cloyed), as they will do on a single-grain ration.

The series of enquiries from one of our subscribers in India, dealt with in our Questions and Answers Department of this issue, indicates how closely observant men in all quarters of the globe are studying the conditions under which agricultural operations may be successfully prosecuted. These are the days of close enquiry into every detail of the farmer's business, and we are not insensible to the evident appreciation of our readers of the efforts we are making in searching out trustworthy information and giving prudent advice, so far as we can judge, in the difficulties presented.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

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The Ontario Agricultural College Course.

To the Editor "Farmer's Advocate":

Sir,—I received my copy of your valuable paper for April 15th, and scanned its pages with more than ordinary expectancy. With the variety and usefulness of its contents, relating practically to every department of farming operations, I have no fault to find. Whether engaged in agriculture on a large scale or on a modest 50 or 75 acre farm, it must be conceded that so far as practical information goes, its contents are ample. But I do confess myself regretting that the letter of "Ex-Student," in the April 1st number, wherein he aired his views on the Ontario Agricultural College course of study, has thus far been allowed to pass without comment. A large and costly institution, projected and carried on in the interests of agriculture, towards the support of which farmers themselves contribute, it is a fair and proper subject for review in your columns. "Ex-Student" has evidently given the subject a deal of study, and he is entitled to our thanks for the vigor and fulness with which he has written. Whether we agree with him or not, it will be productive of good. In this enlightened age all public institutions, especially those of an educational character, are amenable to the X-ray of public discussion. If their procedure be sound, turning on the searchlight will only bring out the fact in bolder relief. If there be a tendency to dry-rot, or misdirection of policy, it will be disclosed, and the needed remedy may be applied. Results must tell the story sooner or later; wisdom is justified of her children. If changes be needed, they must come, or the institution will suffer. I am one of those who believe that the needs of the community in an age of publicity like ours must eventually shape the policy of public institutions to suit. Whether "Ex-Student" is one of those far-seeing discerners of the signs of the times, who in every era lead the way to improvement, remains to be seen. His letter is a welcome variation to the uniform chorus of praise of the Ontario Agricultural College, and calls the attention of farmers generally afresh to its purposes and management. It will start people thinking, and that itself is a gain. Now, I prefer to leave to some abler pen than mine to set forth to what extent and in what manner the length of course might, with advantage be modified, but what I do contend for is a reasonable amount of flexibility in the curriculum, keeping clearly and always in sight the greatest good to the greatest number. A limited percentage of our young men will be ambitious for a sufficiently advanced course to fit

themselves for professorships in similar institutions, which will continue to spring up for years to come on this continent, and the O. A. C. can surely continue to furnish that class of instruction and not allow them to drift to American institutions. Now, sir, permit me an aside just here to say that a few of our people—and "Ex-Student" has evidently caught the infection—are too prone to trot "across the lines" for their ideas and ideals. The distant fields of Uncle Sam's agricultural colleges and schools are not as verdant as they seem. In buildings and equipment some of them are simply immense, but they won't stand close scrutiny—for example, like the College farm at Guelph; as carried on under William Rennie and by his worthy successor in that department, Prof. G. E. Day. If any of your readers have had a glimpse at the wilderness of weeds and straggling grains designated experimental plots at some of these American institutions, they would come to appreciate, at a higher value, what we have at home; and if they traveled up and down a few States, they would get their eyes open to the fact that the general run of American farmers, notoriously in respect to live-stock rearing and general farm management, are so far behind the average Canadian that there is no prospect of their ever catching up. It will be a help if they continue to get a few more of their institutions well manned by Canadian graduates.

"Ex-Student" is right in his contention that still greater scope and prominence should be given live-stock husbandry at the Guelph College. If a hobby is permissible at the institution, let it be in that department. The successful farmers of the country (the leaders) are those whose forte is live-stock rearing, and as your readers very well know, the permanent success of agriculture depends upon it.

The present popularity of the short (two weeks) courses by no means demonstrates their permanent value. As a sort of college advertisement or appetizer for something more substantial and thorough, they serve a purpose, but what is imparted cannot in the very nature of things be more than a smattering, and should be followed up by wider and closer study. Want of thoroughness is the bane of American education. Newspapers are already assuring us that the problem of expert judges for the fall fairs will be solved by the graduates of the two-weeks' course. Think of it!

With regard to the student labor on the College farm, I am not prepared to offer an opinion further than this, that it has afforded many a worthy young man, possibly not as well circumstanced as "Ex-Student," the means of helping to work his way through the course, and I have an idea that they were none the worse for it either, and if the excellent condition in which the Guelph farm is found is in any measure due to student labor, the authorities might do well to think twice before deciding on its abolition at the ipse dixit of "Ex-Student." One of the fundamental principles of true education is that we learn to do by doing, and just why that is not applicable in relation to the work of an agricultural college passes my comprehension.

Again, this writer says the students "gag" at being obliged to "grind biology." I quite agree with him that certain literary and other subjects may be unduly magnified, but let us not take fright at the bugbear of a big word, B-I-O-L-O-G-Y, which, as I understand it, simply means the study of plant and animal life. If study and experience have taught me anything, it is that a knowledge of weeds and their habits, fungous diseases and insect pests and how to combat them, are of vital importance. As the country grows older and farming becomes more specialized, a more thorough knowledge of these subjects will become absolutely imperative, as those engaged in fruit-growing already know, in very many cases to their sorrow and cost. "Ex-Student" possibly did not intend to brand these as subjects that were not "practical," and calculated to make an agricultural degree, the laughingstock of the farmer. In his zeal for reform, "Ex-Student" has not, it seems to me, given some of the points which I have mentioned the careful consideration which they deserve. There is a fair increase in the attendance of students at the O. A. C., but when we stop to consider the vast number of farmers in this Province whose sons should naturally be drawn there, and deduct those attending from other Provinces and countries, it is a matter for grave concern why an institution possessing so many general excellencies has not a very much larger attendance. Is it because of undue length of term and expense, lingering prejudices regarding the utility of that sort of schooling, or because the curriculum does not appeal to the father as calculated to help the son succeed on the farm?

In conclusion, I would therefore suggest the propriety of opening your columns to a fair discussion of this question, with suggestions as to what modifications or new features might be adopted that would lead to the College being more generally taken advantage of by the farmers' sons of Ontario, and to give it the same popular hold as a professional school for farmers that it seems to possess as an institution for experiment and research.

TRUTH SEEKER.

The Cost of the Manitoba Dairy Department.

(From our Manitoba and Western Edition.)

A letter from Prof. H. H. Dean, in another column, descriptive of the work, attendance and cost of the dairy department of the Ontario Agricultural College, will furnish food for thought to our readers, especially those who are taxpayers, when they compare the cost of the dairy department of Manitoba with the one of which Prof. Dean has control.

The "Advocate," in taking this matter up, knows no party, but claims the right to criticise the expenditures, both amounts and methods, in the department of our Provincial Government, whose aim should be to benefit, educationally and otherwise, that great constituency to which an agricultural paper must cater, namely, the farming community.

When taking up the question of the reorganization of Farmers' Institutes, the "Advocate" suggested the sending out of travelling dairies, and the abolition of the Dairy School, until such time as an agricultural college was started, when a properly-equipped dairy department should be established. That our contention is correct, no one who will look into the matter impartially and thoroughly will deny. The amount of money devoted to dairying in this Province is out of all proportion to the importance of that industry when compared with the lack of attention given to other more important branches of agriculture.

It may be urged that the Dairy Association has endorsed the school. Such endorsement is valueless, as it is prompted, if not made entirely, by interested parties. To illustrate more clearly the exorbitant cost of the Manitoba Dairy Department, we submit the figures below; in one column the amounts in the grants by the Provincial Department of Agriculture for dairying; the other the cost of the dairy school at the Ontario Agricultural College each year:

Year.	Estimates Dairying Manitoba.	Guelph Dairy School.
1898.....	\$6,000.00	\$3,126.54
1899.....	5,000.00	3,352.23
1900.....	6,652.00	2,858.24
1901.....	8,500.00	3,903.03
1902.....	8,500.00	.....

Prof. Dean states further that the average yearly net cost of running the experimental dairy department is an additional \$1,500 to \$2,500.

The Ontario people get value for their money, as is at once seen from the work done, the influence of which is worldwide. In marked contrast is that of the Manitoba dairy department, which runs a dairy school for three months, turning out about half a dozen certificated students each year, inspecting the factories and creameries, and in addition doing some judging at local fairs, besides lecturing at Farmers' Institutes.

The work of other dairy schools might be cited; that of Wisconsin, at Madison, will serve, however, as the work done there is the admiration of the dairy world. The dairy department of the Wisconsin school costs on an average \$12,000 a year, has 130 students in the regular dairy course, 20 pupils in the summer dairy school, 182 students from the short-course class in agriculture (who get instruction in farm dairying), conducts a creamery all the year around, employs 15 instructors, carries on experiments, and has given to the world those great achievements—the Babcock test, the Farrington alkaline test, the Wisconsin curd test, bacteriological content of milk, and the curing of cheese at low temperatures. What a vast difference in the returns for the money expended in dairying in Manitoba and Wisconsin!

As the gathered-cream system is more generally in vogue in this Province than elsewhere on the continent, familiarity with the oil test becomes essential to the creamery operator. The superintendent and butter instructor at the Manitoba school claim to be better posted on the oil test than are teachers at other dairy schools. That the outside dairy world is in such utter darkness is awful to contemplate. What are such men as Dean, Farrington, McKay, Decker, and the great Babcock, doing, when such ignorance (!) is rife in their dairy schools.

One of the strongest reasons advanced for a travelling dairy is that instruction could be given closer to the farmer's home on the care of milk from the time it is drawn until creamed, and the care of the cream, in which lack of knowledge or neglect is said by creamerymen to be their constant and greatest trouble. If travelling dairies are sent out, only qualified men should be in charge, graduates of a first-class dairy school.

A significant fact that may be mentioned in comparing the dairy statistics of Manitoba and the Territories, where Prof. Robertson employs only graduates of up-to-date dairy schools, is that the butter from the latter Province brought for the season, on the average, a little over a cent a pound higher than did the Manitoba product.

HORSES.

Market Classes of Horses.

Nowadays the producer studies the markets, and thereby stands a greater chance to make money out of his work. A mass of useful information has been collected on the above subject by Geo. M. Rommel, B. Agr. (Iowa), Expert in Animal Husbandry at Washington, D. C., and has been issued in the form of an attractive bulletin. As the information is reliable, being got "right on the ground," the following excerpts will undoubtedly be of interest to our readers:

WHAT CONSTITUTES A MARKET CLASS?

By a market class we mean the demand that exists for a horse of certain characteristics definitely specified. We find the requirement that certain work shall be done in certain ways. This requires a horse of certain size, conformation, style and action, and becomes more exacting as time goes on and the demand for such a horse increases. For this reason it is readily seen that classes on the market at one time may be cut off by reason of a change in the kind of work to be done or a change in the method of doing it; such, for instance, as the substitution of electricity for horses as a motive power for street railways. On the other hand, we have an illustration of the creation of new classes in the opening up of the English demand for the omnibus horse. The increasing demand for hunters for both the local and export trade and the brisk trade in polo ponies are also instances of such conditions. The kind of work and the manner in which it is to be done, therefore, develop the buyer's demands, and thus create the market class.

WHEN WILL A HORSE SELL WELL?

The question naturally arises, When will a horse sell well? An animal will be in good demand when he meets the qualifications of a market class; the more clearly he does so, the greater demand there will be for him and the higher will be his selling price; and a horse that goes into a class because his breeder was successful in breeding him for that class is much more likely to sell profitably than one that drops into a class as the result of an accident in breeding, handling or fitting for the market. A breeder must determine for himself whether he can produce such a horse and dispose of him at a profit; that he will find a good demand for animals of the right type is certain. The individuality of the horse himself, then, will indicate his class.

AGE.

Mature and well-broken horses are always the best sellers. A year or two spent in waiting for a horse to develop, and educating him, means an expenditure of time and money on the part of the purchaser which is, as a rule, undesirable, unless the horse is bought specifically for the purpose of fitting him for the finished market. The ideal age is five years, buyers usually purchasing animals ranging from five to eight. The classes vary somewhat in this respect. A horse intended for draft purposes may be marketed somewhat sooner than a harness horse or saddler.

BREEDING AND SEX.

The breed to which a horse belongs has very little influence on his selling price. All that is required is that he be a good individual of his class. A good horse always sells. Geldings are preferred somewhat generally to mares.

COLOR.

Color does not figure so strongly as many would lead us to believe. Almost any color, with excellence to back it, will sell well, except white, flea-bitten grey, "mealy" bay, or any other color that might be termed "washed out." Among drafters, no special color seems to have a preference; with harness horses and saddlers, bays, browns and chestnuts have first preference, but grays and blacks sell readily if "good." Well-matched teams, both in harness and draft classes, usually bring higher prices than if sold singly.

CONDITION.

Condition is very often overlooked. It is absolutely essential that a horse be in good condition (well fed) to bring what he is really worth. This is particularly true of animals of the draft type. Whether it increases the animal's real value as a worker, it is not necessary to consider. The market demands high condition, and pays those men well who cater to it. The great lack of condition is shown by the fact that many horses are sent in for sale only to be reshipped to the country for further feeding. Condition is almost as essential as fat on a steer, and its absence cuts from 25 to 50 per cent. from the selling price of a horse. The requirements of the market in this line are well worthy of notice.

DISPOSITION AND INTELLIGENCE.

Every class calls for an animal of intelligence and good disposition, willing to pull at a good rate or set a fast pace on the driveway, and capable and cool-headed in an emergency. The use of horses on crowded streets, often among

a large number of pedestrians, makes the latter particularly essential. The need of these qualifications is more important in some classes than in others.

SOUNDNESS.

The most important requirement of a market horse is "serviceable" soundness; that is, he must have no chronic disease that will unfit him for work of a general nature. He must be sound in wind and in limb, able to do a reasonable amount of work without undue fatigue or premature breakdowns. The majority of the horses sold from a great market go to the city trade, and are compelled to do their work on hard, unyielding pavements, pulling heavy loads, or developing speed that is an even greater strain on the feet and legs. The average period of usefulness on city streets of a horse that was sound at the start is more than five years, and it is manifestly evident that this time will be materially decreased if he begins this work in an unsound condition. Broken wind, sidebones, unsound hocks, and all the various other ills that a horse is heir to, should be strenuously guarded against, as they greatly diminish his value.

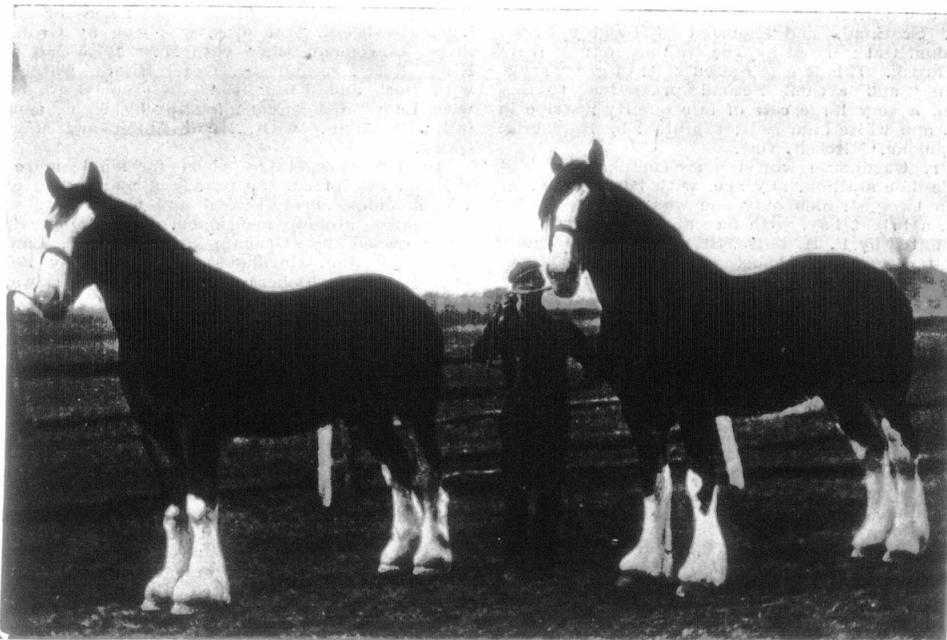
Forecasting the Future in Foals.

The ability to tell how a colt may be expected to turn out is a quality much envied by horsemen. With some men such a possession is almost intuitive; others may put themselves in a favorable position by studying the foal's formation. Depth of body and closeness of that body to the ground are good indications to go by. If good height is desired, it must be got, not by extreme length of leg, but by depth through the middlepiece. The way the legs are set on and the development of the joints, large size and squareness being desirable, will afford some indication at least as to future form.

The Canadian Horse Show.

The eighth annual Canadian Horse Show, held under the joint auspices of the Canadian Horse Breeders' Association and the Toronto Hunt, was held in the Armouries, Toronto, on April 10th, 11th and 12th.

The date was nearly three weeks earlier than usual, which gave the farmers a better opportunity to attend, as spring work on the farm had not yet commenced. As a result the attendance of visitors from outside the city was noticeably larger than usual. The show this year may be said to have been essentially a "Horse Show," there being only enough of the military to vary the monotony. Both in the point of attendance and in number and quality of exhibits, the affair was an unqualified success. In all harness and saddle classes the entries were numerous and of high class. Admirers of the fashionable high-acting harness horse were gratified and delighted with what they saw. He is hard to please who could not have chosen one or a team to suit. Noticeable in this class was the vete fan half-bred Hackney mare, South Africa. This mare won in all classes in which she was exhibited, but she had a very close call in class 12 when she went up against Mr. A. Yeager's Derby Sportsman, a five-year-old bay gelding with size, quality, speed and action. After considerable delay and argument among themselves, the judges awarded the red ribbon to the mare, although many of the horsemen at the ringside thought the decision would have gone the other way. The quality and performances of saddlers and hunters of all classes were above the average, probably the best ever seen in Canada. In the breeding classes the number of entries in some cases was not large, but in most cases the quality was good. The active condition of the horse trade and the demand for stal-



KING ROSE AND MOSS ROSE 2ND. Sweepstakes heavy-draft team, open to all breeds, Canadian Horse Show, Toronto, 1902. Moss Rose 2nd was sweepstakes Clydesdale mare at same show. OWNED BY GRAHAM BROS., CLAREMONT, ONT.

How the Imitation Hackney is Made.

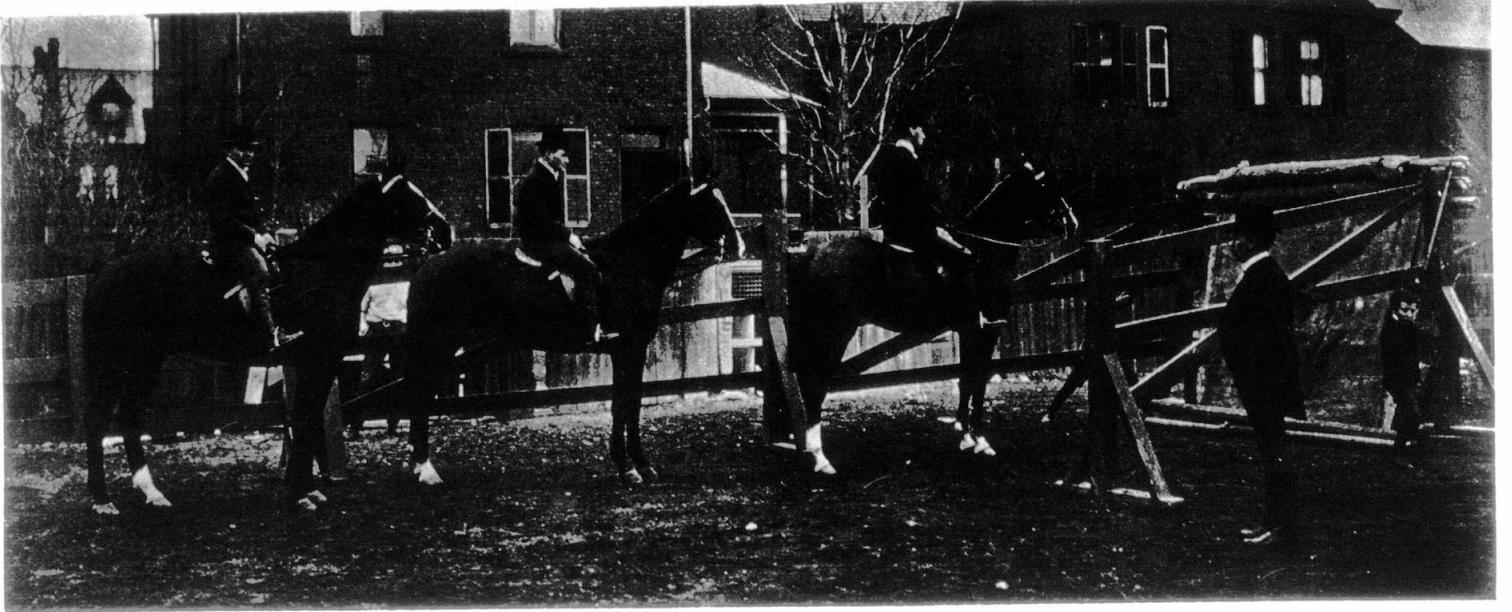
"Imitation is the sincerest form of flattery" is an old adage, the principle of which seems to be observed even in the horse world. At that great mart for all classes of live stock, Chicago, the process of turning Standard-breds into high actors for carriage purposes is continually going on. The writer has assisted at some phases of the operation, which is as follows: A speedy, well-crested Standard-bred stallion is procured, castrated, and after a certain length of time is docked and the tail set up by nicking, cutting those muscles on the under-side of the tail whose action is to depress that organ. Later on, with the aid of plenty of iron (shoe) and lots of foot, and several drillings to the accompaniment of whip-cracking music, the transformed trotter goes high and nearly touches his chin with his knees. So far the imitation is a good one, but have the horse pushed a little in speed, and instead of giving that hock action so frequently seen in the Hackney, he exhibits the wide type of going so frequently exhibited by the sulky-drawing track horse. To people that don't know the imitation from the real article such horses sell at good prices, profitable to the dealers engaged in the business. There is a demand for coach and carriage horses which could not very well be met unless in the manner above described; the demand has brought the method into being.

lions explains the absence of some of our best breeders from the show-ring. As usual, some complaints were heard by exhibitors who did not think they had been fairly used, but with few exceptions the complaints were groundless.

CLYDESDALES.

In stallions four years old and over, there were nine entries. This was a class of grand horses, probably not so heavy individually as has been seen on former occasions, but the quality, style and action was exceptionally good. It is noticeable that the fashionable Clydesdale or Shire stallion must have style, action, clean bone and good feather, even though this be to a certain extent at the expense of weight. The coarse, beefy legs with an abundance of wavy hair of a few years ago is, fortunately, seldom seen now.

In this class, H. G. Boag, of Churchill, won first with Lyon Stewart, a bay with hind feet white and possessing in a marked degree all the qualities mentioned, and weighs about a ton. Second place went to Lord Minto, a chestnut with white hind feet, a well proportioned, blocky horse, bred by J. W. Kennedy, Milliken, Ont., and exhibited by R. Canning, Hagerman, Ont. Third prize was given to Sherlock Holmes, a brown horse, with star and hind feet white, exhibited by Crake & Linstead, Queensville, Ont. The fourth prize went to Balmedie Marquis, a bay horse with stripe in face, hind and



LORD MINTO, KING EDWARD, AND THE BARD.

A trio of Mr. Geo. Pepper's (Toronto) Hunters that will be shown throughout the American circuit, and probably in England, during the year: Lord Minto on right, light-weight, record 7 feet; King Edward in center, middle-weight, 6 feet 9 inches; The Bard on left, heavy-weight, 7 feet.

near fore feet white; an imported horse, owned by Innes & Hill, Sonya, Ont.

In three-year-olds only two animals came before the judges. Mr. J. M. Gardhouse won first place with Strathcona, a bay colt with white face and white legs, bred by W. Finlayson, Stirling, Scotland, and imported by Dalgety Bros., London, Ont.; sired by The Gallant, out of Kate of Throsk. This is a fair-sized colt, of great style, quality and action. Second prize went to Bay Chief, a very large colt of fair quality; stripe in face, and white hind feet; exhibited by Skinner & Colquhoun, Mitchell, Ont.

Mr. Gardhouse won the sweepstakes for best Clydesdale stallion, any age, with Strathcona.

In two-year-olds only one was exhibited, Lion Boy, a bright bay, with face and hind legs white. Exhibited by P. H. Petre, Stratford, Ont. This is a colt of good size, substance and bone; sired by Bold Boy.

In Canadian-bred Clydesdale stallions Mr. H. G. Boag, of Churchill, won first with General Bobs, a bright bay, with stripe and four white feet; by Marquis of Salisbury, out of Lady Wigton. Second place went to Prince of Kinellar, owned by Innes & Hill.

In Clydesdale mares, Graham Bros. won with Moss Rose 2nd, by Imp. Macqueen, out of Lady Marmion. This is a grand bay mare, with four white legs. She has size, style, quality of bone and feather, and superb action. She won the sweepstakes for best mare any age in the class. Alex. Doherty, Ellesmere, Ont., won second with Daisy Belle, a good useful mare, while Royal Queen, a mare bred by D. & O. Sorby, of Guelph, and exhibited by Eastwood Bros., of New Toronto, won third. In Clydesdale mares under three years, Royal Queen, owned by Hodgkinson & Tisdale, Beaverton, Ont., won first.

SHIRES.

In the class for four years and upwards, three very fine representatives of the English draft horse came before the judges. These are all imported horses, and show a lot of quality and action, combined with size. The first prize was won by Blaisdon William, a bay with four white legs; sired by Hitchin Conqueror, and exhibited by Berry & Geiger, Hensall, Ont. This is a horse of exceptional style and quality. Second prize went to King Charming, a bay with white hind feet; exhibited by John Suggitt, Hillsburg, Ont. Third prize was given Jubilee Victor, a black horse with a star, and near fore and both hind feet white; shown by Jos. Vance, New Hamburg.

In three-year-olds four fairly good animals were exhibited. First place was given to imported Newnham Duke, a well-proportioned brown horse of good size and quality; owned by J. M. Gardhouse, Highfield. Second to imported Southport, a brown with stripe and hind legs white; owned by T. J. Berry, Hensall, Ont. Third to Pelham Boy, bay, star, near fore and hind feet white; owned by Morris, Stone & Wellington, Fonthill, Ont. Fourth to Duffield Conqueror, bay, stripe and white feet; owned by H. George & Sons, Crampton, Ont.

In yearling stallions only one was shown, viz., What's Wanted, a very nice trappy brown colt; owned by H. A. Gardhouse, Highfield, Ont.

In Shire mares three years old and over, three animals, any two of which would make a good team, were shown. These mares all have size, quality and action. First and third were won by Jno. Gardhouse, Highfield, with Laura and

Violet, while the second prize went to Rose, owned by Morris, Stone & Wellington, who bred all three. In Shire mares under three years, Mr. J. M. Gardhouse had no opposition to his black mare Victoria, bred by the exhibitor.

In the class for pairs of draft mares or geldings, any breed, first prize was won by Graham Bros., Claremont, Ont., with Moss Rose 2nd and King Rose; second by Geo. Moore, Waterloo, with Dock and Jim; third by Jno. Gardhouse, with Laura and Violet; fourth by W. C. Quickfall, Glenallan, with Maud Muller and Maggie Quick.

In the sweepstakes class for single mare or gelding, any breed, the pure-bred mares won over the geldings, first, second and third being won by mares already mentioned. First, Moss Rose 2nd, owned by Graham Bros.; second, Laura, owned by Jno. Gardhouse; third, Daisy Belle, owned by A. Doherty; fourth King Edward, owned by C. Wilmot.

The judges in the foregoing classes were James Henderson, Belton, and I. H. Kimball, Montreal.

CARRIAGE OR COACH STALLIONS.

In this class were seen the produce of the Thoroughbred, the Standard-bred, the Cleveland Bay, the Coach horse, etc., and most of them fine specimens of the carriage type. Mr. W. N. Scott, of Milton, won first with Performer. This horse is well named, as he certainly has high-class carriage action, combined with handsome conformation. He is by Phenomena, out of a mare by Derby. The blue ribbon was given to Lord Roberts, owned by J. L. Reid, Derry West; sired by Wiley Buckles, and out of Fuchsia. A horse of the same name, Lord Roberts, a registered Cleveland Bay, by Shining Light, out of Mountain Lass, owned by Albert Hewson, Grahamville, won third, while the fourth place was given to Boston Wilkes, by Red Wilkes, out of Lady Boston, owned by Ira Natrass, Millbrook.

In the three-year-old class only two animals were shown. First prize was won by General Buller, by Wiley Buckles, dam Hyacinth, owned by J. L. Reid, Derry West, while the second was given to Sir Wilfred, by Mark D'Orr, dam Flossie, owned by Skinner & Colquhoun, Mitchell. This is a good-looking colt, with style, substance and good action, and should develop into a grand coach horse.

STANDARD-BREDS.

In Standard-breds the entries were not numerous, but the quality was good. In the class for four years old and upwards there were six entries. First prize was won by the well-known chestnut race horse, Keswick, by Jay Gould, and out of Arnette. This horse has won in many cases. He is a large horse, of fair quality, and has a low mark, which justly places him ahead of others that to the ordinary observer probably beat him. Dashwood, a beautiful bay with quality and attractive action, by Sentinel Wilkes, dam Nutwood Queen, by Nutwood, owned by Jas. Wetherill, Galt, won second place; while the third went to Jim Bryson, by Bryson, dam Nellie D., by Diplomat, owned by F. J. Hassard, V. S., of Caledon East. This is a horse of good size, quality and action. There was no opportunity of showing speed, as they were shown on the halter, but they all, and others that did not win, showed ability to go fast.

In the class for youngsters, Brian Bonu, a two-year by Wildbrino, dam Jennie Hamilton, owned by Angus Kerr, Toronto, won first.

The sweepstakes was won by Keswick. The class was judged by Messrs. Harry Hamlin, Buffalo, and Geo. McCormick, London.

HACKNEYS.

As in the Standard-bred classes, the number of entries in this class was not numerous, but there was no lack of quality. Only three competed in the class for four years old and upwards. Robt. Beith, M. P., of Boymanville, had his new purchase, Alarm, by Wildfire, dam Garton Pride. He was bred by Mitchell Harrison, Chestnut Hill, Pa., and has been purchased by Mr. Beith to head his stud in the place of Squire Rickell. This is not a large horse, but he is full of quality and has very true, straight, extensive and high action. His produce out of Mr. Beith's large mares will be watched with interest by admirers of this fashionable class of horses. He won everything in sight. Besides first in this class, he won the sweepstakes for Hackney stallion, any age, and silver medal for Hackney stallion or colt by an imported sire from an imported dam. The second prize was won by Dante, by Dagenham, dam Bugthorpe Lily; bred by Jas. W. Marshall, Kirby Grindalthe, England, and owned by A. B. Campbell, V. S., Berlin. This is a beautiful, large, chocolate-chestnut horse, with near hind fetlock white. He has a great deal of quality, and, to judge him while standing, it is probable he could not be beaten by any horse in America. He has fair action, but not sufficient to win in first-class company. He should make a grand sire, and the breeders of Waterloo Co. are to be congratulated on being able to secure the services of such a horse. The third prize was given to Rosseau St. George, by Rosseau Performer, dam Lady Bird, owned by Skinner & Colquhoun. This is a very large horse of the Coach-horse pattern, with fair style and action.

The sweepstakes for stallions foaled in Canada was won by Robt. Davies' Thorncliffe Performer.

In the class for three years and under, three entries were present. The first was won by the two-year-old, Thorncliffe Performer, by Barthorpe Performer, dam Lady Lynn, owned by Robert Davies, Toronto. This is a colt of good size and quality, with trappy action, and he will probably develop into a high-class horse. The second place was given to the three-year-old Guelph Performer, by Square Shot, dam Miss Baker; bred by O. Sorby, Guelph, and owned by Hastings Bros., Crosshill. This is a stout, blocky colt, with fair quality and good action. Count of Roseberry, a chestnut-roan, two years old, by Lord Roseberry, and out of Althorpe Countess, owned by H. N. Crossley, Rosseau, Ont., won third prize. This is a tall colt, with fair action, but light in the chest. He will probably gain substance as he develops.

In the class for Hackney mares, three very good ones presented themselves. First was won by Mr. Beith's Titania, by Squire Rickell, dam Mona's Queen; second by Queen of the Party, by Rosseau Performer, dam Lady Cocking, owned by H. N. Crossley; and third by Princess Feodora, by Squire Rickell, dam Florence, owned by Mr. Beith.

The sweepstakes for Hackney mares foaled in Canada was won by Mr. Beith's well-known mare, Hermia, by Royal Standard.

The judges in this class, and also in the Carriage class, were Richard Gibson, Delaware, Ont., and Robert Graham, Claremont.

THOROUGHBREDS.

In Thoroughbreds, the entries were not numerous, but the quality was good. In the aged class, four good horses were forward. Mr. Wm. Hendrie's well-known horse, Versatile, by Rayon d'Or, dam Valleria, won first. Rothervale, by Morglay, dam Happy Girl, owned by the Telfer & Climie Co., Montreal, won second. This horse is the pick of the lot imported by Col. Dent to produce remounts in Canada. He won first at the Pan-American. The third prize was won by Dr. Smith's chestnut horse, Kapanga, by Imp. Spendthrift; while Rillet, by Riley, dam Plette, a brown horse owned by W. H. Smith, Toronto, won fourth.

In the three-year-old class there were but two entries. Mr. E. B. Clancy's brown colt, Pick Time, by Pickpocket, dam Fast Time, won first. This is a colt of considerable substance and quality. Mr. H. Gidding's good colt, Wire In, by Wickham, dam Lady Lightfoot, won second. This is a very breezy, racy-looking colt.

In the class for Thoroughbred stallions qualified to improve the class of saddle horses and hunters there were four present. It was probably harder for the horsemen present to understand the awards in this class than in any other class at the show. We do not like to criticise the work of the judges on general principles, as we recognize how hard it is for those outside the ring to detect defects or merits in horses viewed at some distance. Still, all will acknowledge that in a Thoroughbred we must have quality, and when the red ribbon was placed on Dracula, one of Col. Dent's importations, owned by the Telfer & Climie Co., expressions of wonder were heard all around the ring. This is a large horse, but he lacks quality to such a marked degree that it is not easily understood why he was imported. Still, he was placed first, and it would be interesting to horsemen to know what the judge sees in him to warrant the award. The second prize went to Sleight-of-Hand, by Uncas, dam Necromancy, owned by W. C. Edwards, Rockland, Ont. This is a large horse, of good style and quality. The Telfer & Climie Co.'s Irish horse, Ballymore, by Hollywood, dam Highland Girl, won third place; while the fourth went to Gamole Orr, by My Lud, dam Bee Bird, owned by Thos. Meagher, Toronto. Messrs. R. R. Pringle, Cobourg, and Geo. Torrance, Toronto, were the judges in this class. The judges of Harness horses were Messrs. R. P. Stericker, East Orange, N. J.; G. B. Hulme, New York, and W. J. Stark, Stouffville, Ont.; and of Saddle horses, the judges were Mr. J. N. Scatched, Buffalo, N. Y.; Major Ormsby Gore, London, Eng., and Capt. J. G. Miller, Toronto.

The attention of teachers of rural schools and trustees is directed to the article entitled "School Gardens" in the Farm Department of this issue, and to the three prizes offered in connection therewith.

STOCK.

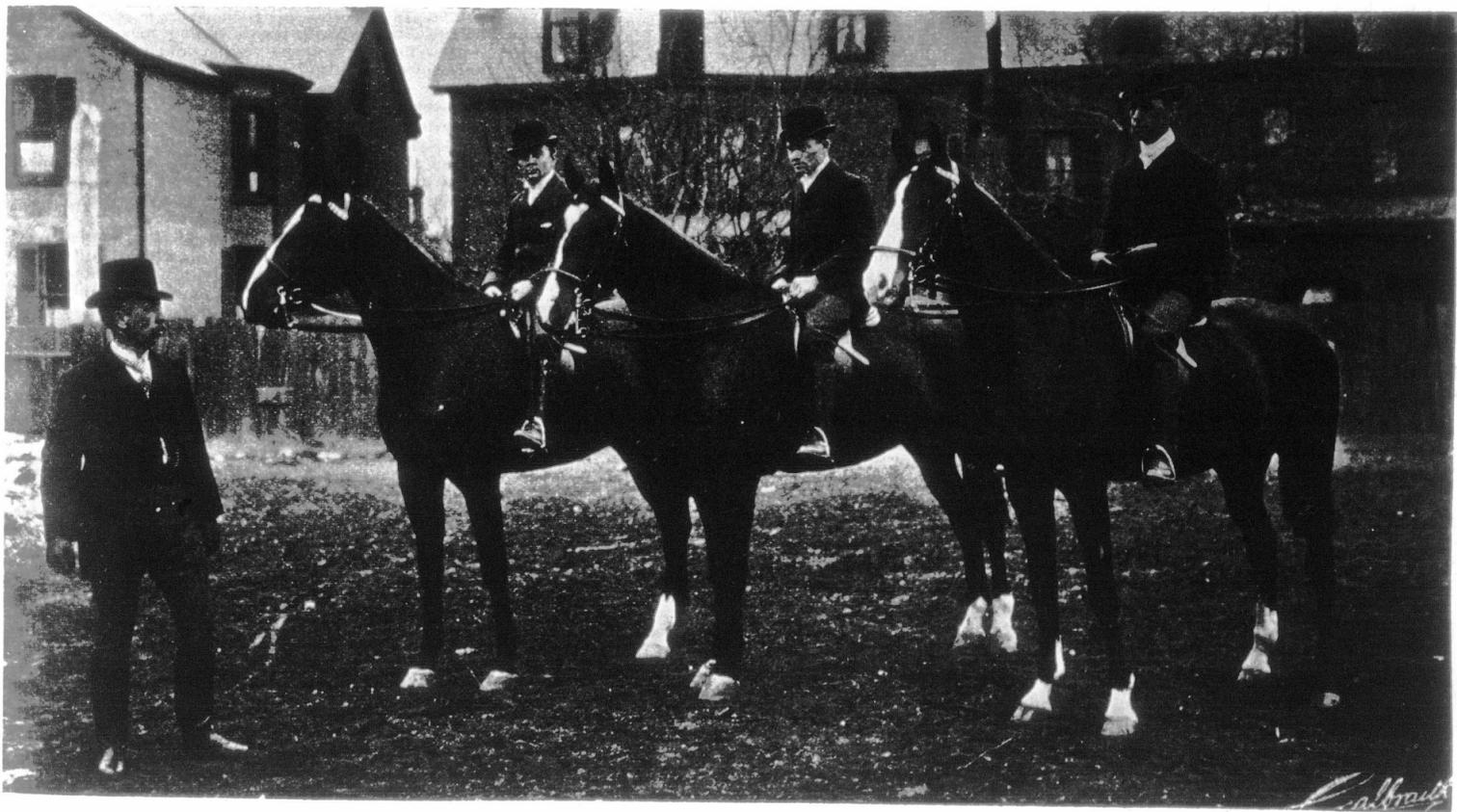
Dealing with Bovine Tuberculosis.

To the Editor "Farmer's Advocate":

Dear Sir,—Tuberculosis and the tuberculin test have very much agitated the public mind for some years past, and more particularly the minds of importers and breeders of pure-bred cattle in the past three or four years. In those years a great deal has been said and written on the subject, a very large portion of which we have read, as we are close readers of a large number of American and Canadian live-stock and farm papers. We have, therefore, been observers of what has been transpiring, pro and con, upon this subject rather than taking part in any controversy upon it. But, for the past four years, we have been carefully experimenting with what is called the Bang system, and very successfully so. We are, as a consequence, in a position to offer some opinion upon the subject, and we think it but fair that we should give to the breeders of pure-bred cattle, both in the United States and Canada, a short statement as to what we have been doing and the results. It will be four years in May or June next when, on having tested some young bulls for shipment to Wisconsin, we discovered that tuberculosis existed in our herd. The news came to us as a great shock, for we had no idea of its existence, and we had for years, with pride and satisfaction, been building up, at considerable expense, what we considered a great herd, so that our feelings of remorse at the discovery with us of tuberculosis can well be understood. After a few days' reflection and consultation upon the subject with veterinary authorities, we decided to have our entire herd tested, and at once separated all reacting animals from the sound ones, and before the time arrived again for going into winter quarters, we built an entirely new stable and yard for the reacting animals, well removed from our original farm buildings, and the reacting animals have been, both on pastures and in stables or barns, kept entirely separate and distinct from what we call our sound herd, since the day of separation. The stabling where the entire herd were originally housed was emptied of every animal and the building thoroughly cleansed, every window and opening closed up tight, and sulphur was freely burned for some twenty-four hours in iron vessels distributed over various parts of the building. Then a large steam jet was introduced and poured into the building for several hours, and, after drying, the whole inside was thoroughly white-washed, using carbolic acid in the whitewash. From the time of making the separation, we have raised calves steadily from what we call our diseased herd, and most successfully. We raised a number on sterilized milk, heating it to 185 degrees, by using two vessels, one inside of the other, giving a water space between, so as to avoid burning the milk. A much larger number

we have raised on nurse cows and a limited number we have raised by their own mothers, kept in other buildings entirely separate, and only allowed to come together long enough to nurse in an open yard. From the fact that of all the calves raised by us as we have described, only two have responded to the test, it may be regarded that each plan is successful. Our preference, however, is for the nurse cow, and it is this plan we practice most. By removing immediately from the cow on being dropped and using sterilized milk, we lost several calves when practicing this plan, added to which the system is more or less troublesome and laborious, and, as a consequence, we have discarded it altogether. Keeping the calves entirely separate and nursing in the open yard we think reasonably safe, and particularly so if there is no disease of the udder or in the glands of the milk secretion, but as our cows are generally very valuable ones, both in breeding and individuality, our practice is most largely to raise the calves on nurse cows, allowing them to suck the dam two or three times before removal. We regard our experiments as having been most successful. We have, of course, met with some serious disappointments and discouragements. Not one single animal of our own raising has responded after repeated tests, except the two we have named, but several of the animals purchased by us and quarantined (we quarantine all cows purchased and test them before we allow them to enter our herd) have responded to the test and have joined what we call our diseased herd. But, having set out in the direction we have, nothing will cause us to turn, and we shall continue on in the direction we have planned out.

Now, in all we have done there are certain conclusions we have arrived at, and among them are the following: That the veterinary authorities, in some instances at least, have been too exacting and perhaps a little too extreme on one side; and on the other, breeders and importers have gone, in our opinion, too far in denunciation and condemnation of the tuberculin test. In the inception, the veterinary authorities, or some of them, would have gone in for the destruction of every animal that responded to the test, and while in the light of subsequent events we do not think any could now be found who would do so, yet it is far too common among them to exact such conditions as to deter the ordinary breeder from an attempt to eradicate tuberculosis from his herd. As to the exactions of the Governmental authorities of the United States and Canada, in so far as it is possible for them to prevent the importation of tuberculous animals from beyond the seas or from crossing the international line, pro and con, and what is regarded by them as their duty in the premises, we make no remark further than this: that, in so far as practical results are concerned, their efforts cannot be effective unless the home herds in both the United States and Canada are first made sound. No good can be accomplished by an inflow of sound animals into diseased herds, and who can



PROFILE OF MR. GEO. PEPPER AND HIS GREAT TRIO OF HUNTERS—LORD MINTO, KING EDWARD, AND THE BARD.

tell what herd in the United States or Canada an imported animal is going into? And, while not for one moment presuming to dictate to the authorities as to what they may or may not do or what they may conceive to be their duty in the matter, we do most respectfully submit that the United States and Canada cannot achieve the proud position of having uniformly clean herds by the exclusion of diseased animals alone. The educational question at home, of the two, is by all means the most important, and just as long as the veterinary authorities make the eradication of tuberculosis so difficult and costly, it will never be accomplished.

We wish for a moment to refer to the much-abused tuberculin test and our experience with it, and, finally, we will give our opinion, based on our experience, as to what we consider the best means of eradicating tuberculosis from our herds. It is freely asserted by many that the test is not reliable and that it is dangerous, in so far as it causes in many instances abortion and other bad results. Well, as to this we can only give our testimony. For four years we have been steadily using the test in our home herd of Shorthorns, on our large dairy herd about sixteen miles from here, and on three other large herds on farms we have in the lumber woods, many miles from here. These various herds cover about six hundred animals, so that it can be imagined how many tests we have had made. Now, first, as to reliability. It is our opinion that, carefully and properly applied, the test is generally reliable. In a very small percentage of cases it may fail, but in our judgment the percentage is so small that no successful argument can be made against the test on this score, and, until some better agency is discovered for the purpose required, we shall be content to use it on our various herds. Now, as to injury from the test, we have absolutely failed to detect any. We have had cows tested at almost every stage of pregnancy, from a few weeks after service till a week or two before calving, and we have had calves tested from a few weeks old onward at all ages, and we have never had one cow abort as a result, nor have we been able to detect any injurious effect to any animal we have had tested. But, for reliability of the test, there are a few conditions under which we would not have animals tested if we could avoid it. We would not have any female tested when in heat, and, if we could avoid it, we would not have any animal tested when under any degree whatever of excitement. The animal should be in perfectly normal condition to give true results. An animal tested shortly after removal from home, among strange surroundings, is unfavorable; and removed from one farm to another or even from one stable to another, are unfavorable for true results. Perfectly normal and peaceful conditions are necessary. So strongly are we impressed with this, that no animal on arrival here is tested until it has become perfectly at home, quiet and contented. But with the results we have had we regard the test most favorably, and, until some better agency is known, we shall have it applied to all our herds. And now, finally, we desire to say this: that perfectly sound animals can be raised not only from diseased dams but from diseased dams and sires, and the primary requisites are: as much outdoor life as possible; good wholesome food at all times; and when the cattle are housed, abundant room for each animal—not too close housing; good sanitary conditions, good ventilation and abundant sunlight. Plenty of windows, together with the other requisites, are most important; and now, as to further treatment, we would advise proceeding according to conditions. The size and value of the herd is an important matter, as well, also, as the financial position of the owners. Where a party has but a few animals of small value and the disease is found to exist, we would recommend fattening the animals and turning them off to beef under proper inspection, cleansing the premises, and begin anew with assuredly sound animals. But with larger herds and valuable animals, we would recommend the application of the Bang system, observing the practice we have given here as closely as it can be done, making the best separation the conditions and financial position of the breeder will permit, but under no conditions allow a broken-down or breaking-down animal to remain in the herd one day. But let no breeder for one moment suppose that because his herd is in fine slick condition and healthy appearance, that he may not have tuberculosis throughout his herd, and while he may go on for years under, perhaps, his favorable conditions without having one animal break down, yet he must recognize that he and his fellow-breeders of pure-bred cattle are the very foundation of the stock interests of the country, and the aim of every loyal breeder should be to disseminate sound and healthy animals for improving purposes for the general herds, instead of disseminating, as, unfortunately, is often the case, disease which, under the less favorable conditions of the ordinary farmer, must go on increasing. It is not only possible, but reasonably possible, for the United States and Canada to possess sound and healthful herds. It should be the pride and ambition of the breeders generally

who are at the foundation of our great stock industry that this highly desirable condition shall prevail, and from our experience we cannot too strongly urge upon our fellow-breeders united action toward this most highly desirable achievement.

Russell Co., Ont.

Yours truly,
WM. C. EDWARDS.

Fair Boards, Encourage the Breeder!

The breeding of high-class live stock is an art—yes, even a science—and calls for the exercise of brain power to a greater degree than any other line of work in agriculture. As the permanence of the live-stock industry depends altogether on the ability of the breeder to produce what the markets demand, it is only fitting that that person should be encouraged, especially by our fair boards. Students of live-stock lore recognize the work done by Cruickshank, Bates, Booth, Duthie and others for the Shorthorn breed; by Watson, McCombie and others for the Aberdeen-Angus; by Tudge and others for the whitefaces; in fact, the roll of fame in the Old World stock-breeding circles is growing.

The need to-day in Canada is for more breeders of live stock, and when we say breeders we use the word in the fullest sense of the term. Dealers we have, men who deserve credit for their enterprise and what they have done for the pure breeds of live stock this side of the water, but the fact remains that the work and name of the breeder will endure long after that of the dealer is forgotten.

Our large fair associations could well afford to take the matter into consideration, and in their prize-list classes give added money or some tangible form of recognition to the exhibitor if he is also the breeder of a winning animal. The multiplication of sections or special classes at some of our fairs, with a view to helping the small breeder, has failed to accomplish the desired end, and we submit that fewer sections, with a greater number of prizes, be substituted; added money, say an addition of 10 or 20 per cent. of the prizes offered, being given to the exhibitor, who is also the breeder of the winning animal or animals. By this method, time would be saved in the judging, the value of a prize would, in the eyes of the public, be greatly increased, and the interest of the public maintained in the ring competitions, thus more strongly focussing the attention of fair visitors on the live stock. That done, the educational work of the fair will be to a great degree accomplished and improved live stock popularized.

A Great Procession.

Prof. J. J. Ferguson (Canadian), of the Michigan Agricultural College staff, in showing the value of animal husbandry work, gives the following data: "In the United States, domestic animals having a commercial value number over 140,000,000 head, with a value of three billions of dollars. On parade they would make a solid column, of more than 76 abreast, reaching from San Francisco to Boston, or if in single file a solid procession would reach six times around the earth and require twenty-one years to pass a given point, marching steadily at the rate of twenty miles a day. They would fill a solid stock train of 2,600,000 modern palace cars, over 20,000 miles in length; and, further, their value exceeds the total combined value of all the corn, wheat and other cereals, potatoes, hay, cotton, sugar, molasses, tobacco, lumber, wool, coal, petroleum, silver, gold and precious stones, iron, copper, lead, zinc and other metals produced annually in the whole country."

Periods of Incubation or Latency of Disease.

An outbreak of a contagious disease generally gives rise to investigation as to the source of the contagion. The length of time known that it takes for a disease to develop and exhibit itself in any animal will aid materially in tracing the disease to its source. The periods, as known, are as follows: Anthrax, $\frac{1}{2}$ to 1 day; dog distemper, 7 to 21 days; glanders and farcy, 7 to 42 days; rabies (hydrophobia), 10 days to months; tuberculosis, 14 to 60 days, or longer. As usually understood, the period of incubation refers to the time elapsing between the entrance of the germ or other causal agent and the development of the symptoms of the disease in question.

A Good Increase in Lambs.

Mr. John Bahan, Grassmere, Muskoka, Ont., writes: "I have eight ewes, two of them yearlings, that have seventeen lambs all living—two single, three pairs twins, and three have triplets. Who can beat that? The new subscribers are well pleased with the 'Advocate'; some of them would not be without it for two dollars a year."

Failure to Breed in Females. SOME CAUSES AND REMEDIES.

The difficulty oftentimes experienced by breeders to get mares with foal and cows with calf becomes a serious one, meaning loss of time and money to the owners. In all cases there are reasons for the barrenness, although such may not be apparent or easily understood. The following conditions may be mentioned as casual factors: Ill health; obesity (overfatness); acid condition of the womb or leucorrhoea, sequels to a retained afterbirth (a rare occurrence in the mare); diseased ovaries; in and in breeding; extreme sensitiveness of the generative organs; closure or displacement of the neck of the womb. Ill health and lack of condition not only show externally, but also affect the generative organs from the lowering of the animal vitality. Old, worn-out or very hard worked or starved females are rarely sure breeders. Although they may come in heat, the lack of tone of the womb renders conception improbable. The poverty of the blood in such cases affects the organs of breeding; as a result their work is done indifferently, by turning off an ovum of inferior vitality, or the lack of tone in the mucous lining of the womb renders it an unfavorable seed-bed for a fertilized ovum to grow in.

In all such cases, the animal must be toned up by good food—grass, and the judicious use of such tonics as iron and strychnine, the medicines to be used by direction of a veterinarian. Obesity, or overfatness, is a condition distinctly opposed to breeding. The ovaries may have undergone fatty degeneration, and when so the block in cattle, sheep and swine is the only way for the owner to get clear without total loss. Lack of exercise, high feeding, all tend to render conception difficult, a fact recognized among the breeders in the reluctance of those men to buy pampered show stuff unless indisputable evidence of the breeding tendency is shown. Among pure-bred cattle many heifers are bred to come in at two years or thirty months old, their owners being afraid that if allowed a longer time before being mated, the chances of those females turning out breeders decreases as they get older; while that is to a certain extent true, some men err by breeding immature stock. If a female in high condition is hard to settle, the reduction of the grain allowance, plenty of exercise, and an occasional purgative dose of Epsom salts, or the taking of a few quarts of blood, will have the desired effect. If a cow or heifer, turning her in a paddock with a few lusty young bulls may result in conception.

A retained afterbirth is rare in the mare, but comparatively common in cows, due partly to the peculiar connection existing between that membrane and the womb lining. If the afterbirth is left in for any considerable length of time, it decays, and may cause blood poisoning, with either death or permanent ill health as results. In other cases, the effect of the foreign matter, the decaying afterbirth, will be to cause a nasty offensive discharge, injuriously affecting by lowering the tone of the uterine mucous lining, and thus causing its natural sequence, leucorrhoea (whites). The course to follow in all such cases is obvious, immediate removal of the offending membranes, repeated flushings of the vagina and womb with an antiseptic solution; and in case of leucorrhoea, the use of an alkaline douche after the antiseptic; leucorrhoeal discharges are acid and deadly to the male fertilizing elements, the spermatozoa. Careful attention needs to be given the general health of the animal in such cases; mere local treatment is of little avail; tonics are essential to get the uterine mucous membrane into a healthy condition.

Where the ovaries are diseased, nothing can be done to render fertile the animal, which is often or continually in heat, a chronic buller (nymphomania) being the terms applied. In mares, the only cure is spaying, and in cows the same may be performed preparatory to feeding for the block. In and in breeding is such a rare contingency among Canadian breeders as to render few words necessary: the remedy is a vigorous outcross. Extreme sensitiveness of the genitals, while not very common, when it does exist is exasperating to the breeder. The female either refuses service or ejects the seminal fluid after mating is performed. In the first case, some form of restraint must be used or a calmative (such as chloral hydrate or laudanum) given, or even the taking of blood performed. The capsule method of artificial impregnation, described below, will often prove effectual in cases where the semen is ejected right after the service. When the neck of the womb is closed, or turned from its normal position, impregnation is not likely to take place—in fact, is impossible. Closure of the neck of the womb may be congenital (existing from birth), or may be the result of wounds to the neck of the womb from previous parturitions, bad services, or spasmodic contractions of the part. If the neck is diverted from its normal position a satisfactory service is impossible, and the semen is deposited on the floor of the vagina. In the first case, the neck of the womb must be dilated (or opened), thus rendering the employment of a veterinarian imperative. The following method should be tried: the finger

nails pared, the arms bared and smeared with clean lard or vaseline, and an endeavor made to introduce the finger slowly by a corkscrew-like motion. The operation may take several hours; in the slow cases the use of belladonna ointment on the finger tip will prove an aid. When displacement exists, some appliance will be necessary to keep the organ in position, or artificial impregnation by capsule or syringe will need to be followed. A cheap and effectual pessary for breeding purposes may be made out of a large rubber cork, through the center of which a large hole should be made; inserted into the womb neck before service, it will in many cases answer the purpose by holding that organ in place. If not successful, the capsule method should be tried—a pointed gelatin capsule, half-ounce capacity, should be procured. Service should be given the female, and some of the semen be dipped up from the floor of the vagina in the capsule or caught in a clean vessel during the withdrawal of the male organ, and the capsule filled, the cap being applied or the thumb held over the capsule mouth, when the charged capsule should, with as little delay as possible, be placed in the womb and left there. Females that seem to conceive, missing one or two periods and then again come around, have generally aborted, and should be treated accordingly.

The Large Black Pig.

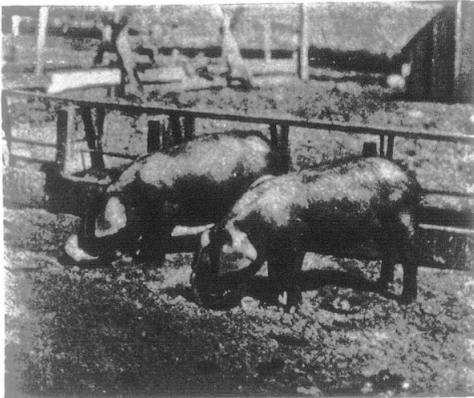
There is no theory nor any legend as to the evolution of this breed. The breed is, however, of undoubted antiquity, as there is ample evidence that the Large Black pig, with its characteristic whole color, great length, fine hair, lop ear, and splendid grazing capacity, existed in many parts of England at a date long prior to the memory of any of the present generation of breeders. Mr. R. S. Olver, of Trescowthorpe, and Mr. Geo. Lucas, of Leigh Barton, both in Cornwall, have bred this breed most carefully and continuously for over 50 years. The breeders who have had them for from 20 to 30 years are very many in the same county, which district would appear to be their ancient home. In addition to the above-named breeders, Captain Skewes, of Lidford, did much to improve the breed. A correspondent writes: "The late Captain Skewes took great pride in the breed, and was a very successful breeder and exhibitor. He bought a sow called 'Lady Ward' from Messrs Ward & Chown, and ever afterwards he was very seldom beaten in the showyard." The "Lady Ward" blood is largely represented nowadays in nearly every herd in England.

From Cornwall and Devon, pigs were taken to Yorkshire and Suffolk many years ago. Recently, with these three centers, as it were, the breed is rapidly finding fanciers, or breeders, in every part of Great Britain.

Twenty-five years ago, according to showyard records, pigs of this breed were fed to enormous size. More recently, however, breeders seem to be confining their feeding operations to smaller animals, and carcasses of from 160 to 190 pounds seem to be the fashion. At several Christmas shows in the last few years, Large Blacks have shown up well in the bacon classes open to all breeds.

Large Blacks are docile in disposition, and of a quiet habit. Their color is claimed to be an advantage, as it enables them to be pastured or field-fed during the summer months without suffering from sun-scald. The breed bears an excellent character for fecundity, which seems to be visibly supported by the capacity with which the sows are endowed in respect to length and depth of carcass.

The Large Black Pig Society was incorporated April 18, 1899. At a recent sale at Ipswich, Mr. Godfrey Hempson, auctioneer, remarked that the demand for pigs of this breed was constantly increasing. There are at present breeders of registered animals in 23 counties in England, and pure-



LARGE BLACKS.
Imported from England for the Central Experimental Farm,
Ottawa.

breeds have been exported to New South Wales, Tasmania, Austria, and Spain. Canada last year made a small importation, which so far have done well. At the above-mentioned Ipswich sale, prices ranged from £9 to £3 per animal, with a keen demand.

The president of the Society is The Right Hon. the Earl of Onslow, and the secretary, Mr. Ernest Prentice, 64 Oxford St., Ipswich, Eng.

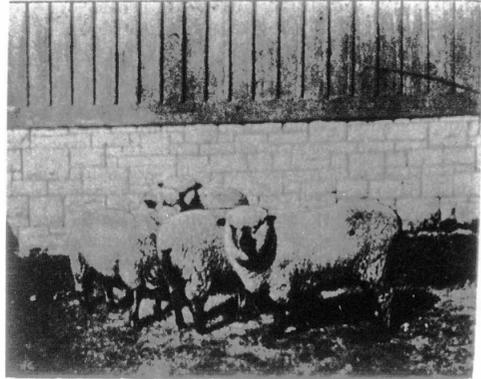
FARM.

Why Not Make Farming Pay.

The matter of making our farms more productive rests in a great measure with ourselves. In how many instances may we not recall time wasted on the farm, and how very frequently does this occur in the course of a year? We can recall whole days spent, it may be, on some trivial matter of business which men in some lines of life would have settled in a few moments. In looking around among the farmers of my acquaintance, I cannot find a single instance where one who made the most of his time has not succeeded, although he began with limited means. Such men, however, have not spent much time at the village store or post office. What some have done others may do if they only apply themselves with equal assiduity. We are too apt to look for outside aids to help us to build up a fortune. That "Heaven helps those who help themselves" is a well-tryed maxim which embodies in a small compass the result of much experience. The spirit of self-help is the root of all genuine growth in the individual. We are prone to put too much faith in systems and too little in ourselves. Help from without is often enfeebling in its effects, but help from within invariably invigorates and strengthens. Whatever is done for men or communities from outside sources so far removes the stimulus which prompts us to action. Since such is the case, why do we not put forth every effort within our power to make our calling a success? Our success, without a doubt, will be measured by our individual efforts, barring misfortunes. In the past we have been too anxious to get returns from our lands without considering the effect of this upon the production of the future. Had a proper rotation been adopted, we could have reaped quite as large returns, and at least saved the fertility of our soils. An instance comes to mind of a farm which had been long rented, which would not grow enough to supply the wants of an average family, and there are many such in Ontario. This farm had long been rented and cropped continuously, and had almost ceased to produce crops. After a time this farm changed hands, and by a judicious system of handling was again brought into a state of productivity, and without the addition of artificial manures. It was accomplished by sowing such crops in succession as were adapted to the soil. The success of a farmer is, of course, largely what he makes it, and it usually corresponds to his diligence. I have in my mind an instance of a farm of 200 acres, and from three acres of it no less than \$1,056 was realized in a single year. Another farmer in the same neighborhood from twelve acres sold produce to the amount of \$1,600. The first mentioned crop was berries, the last grapes. Other farms in the neighborhood may be no less productive, the chief difference in the results being found in the owners primarily rather than in the land. There is not even one farm in Ontario which could not be made more productive. On many farms little wastes are allowed to lie idle, which, if cultivated, would produce enough in many instances to maintain a family in vegetables and small fruits. Farming is now becoming quite a science, and the best equipped farmer is the one who is familiar with all the different kinds of soils, the means whereby their fertility may be maintained and their productivity increased. Too often do we see wide difference between farmers living side by side, with soils apparently possessing equal producing properties; one will be prosperous and successful in all his undertakings, his buildings neat, and his farm tidily kept, everything giving evidence of prosperity; the adjoining farm appearing as though it had lost its owner, and was in search of a tenant, the fences down, the buildings going to decay, the soil producing weeds and thistles. Thus differently is farming carried on where the soils may be similar and other natural advantages equal. That industry which is so necessary to complete development is not sufficiently heeded. We are not quick enough in learning the lesson that our present comfort depends more on our expenditure than we are aware of, nor are we sufficiently alive to the extent to which this expenditure may be regulated. The cutting off of little expenses may mean the difference of going backward or forward. To sum up, let us banish discontent with our lot, make the most of the opportunities that lie within our reach, keep alive to the importance of our calling, and thus elevate farming to that position of which it is deserving at our hands, always remembering that farming is what we make it.

JOHN C. SHAW.

Oxford Co., Ont.



FOUR SHROPSHIRE LAMBS
At Central Experimental Farm, Ottawa.

Advantages of Underdraining.

Why do not farmers do more tile draining? How many farms have several acres of low, wet land lying waste which, if it were underdrained, could be producing crops year after year, and would be the most productive land on the farm? A neighbor of mine had a piece of low, wet land, about ten acres, that had never been broken up, and was covered with bogs and rushes. He made up his mind to tile it, which looked like a very uncertain undertaking, as there was a great deal of quicksand in it; some of the tile had to be laid on boards and clay drawn and put around them to keep them in place, and also to keep quicksand from working into the tile and filling them. The field was broken up the next summer, and put into corn the following spring, and yielded an abundant harvest. The tile are still working well. It is ten years since they were put in, and this field continues to grow better crops than the rest of the farm. I have put in tile drains that have paid for themselves in two years. They will not all do this, but the majority will in four years. The farmer who has his land well drained has many advantages over his neighbor who is plodding along in the old rut, digging out ditches every spring and fall. Being able to work the land a week or two sooner in the spring is a great advantage. We all know the earlier we get our spring grain sowed the greater the yield. Before I had my farm underdrained part of the fields used to get far too dry before the low spots were dry enough to work; now the thing is changed, the low ground is the first to dry off. It is not only in the spring that tile helps, it helps many other times when the land would otherwise be muddy. Then, too, my crops over the tile are nearly double what they are on the rest of the field. Indeed, the advantages of underdraining can scarcely be over-estimated. At the outlet of the tile drain I use a box about four feet long, fit one end tightly over the last tile, and tack a coarse screen over the other end; this keeps anything from going up the tile. Then the long box is not so easily washed out of place as the tile would be. In case of a large main drain, when the diggers have laid the last tile, I have them extend the ditch about six feet farther; this I fill in with cobblestones and pieces of brick, which keep the earth from washing into the tile, and the water finds its way to the tile sooner. I always have my drains put in in the spring, as my land, which is a heavy clay loam, digs easier then than at any other time. It pays, if one has not had experience, to hire an experienced man to do the work.

FARMER.

Norfolk Co., Ont.

Another Job which the Windmill Can Do.

Having occasion to build quite a stretch of Crabb fence this spring, I thought that there was quite a big job to cut and point the stakes with bucksaw and adze. So we loaded up the stakes and rails and took them to the barn-door. When purchasing the windmill we also got a circular saw with a swing front for sawing wood. This is about the nicest-working machine I ever saw. We cut the stakes in suitable lengths, and then put on a small ripping saw and a small table, having first removed the swing front. We pointed the stakes very nicely with this saw, and it did not take a very heavy wind to do it. It was much easier work than cutting with the bucksaw and pointing with the adze, and then we had all the chips and cuttings in a heap on the barn floor, where it was not half the work to gather them that it would have been had they been littered about the field in the old way, and I think we did the work in less time. I think the little ripsaw will be very handy in ripping out a double-tree, or in doing any ripping that is necessary on a farm.

D. LAWRENCE.

Oxford Co., Ont.

Storing Fodder Corn in the Western States.

The account published in the "Farmer's Advocate" for March 15th, of the burning of Mr. S. A. Freeman's large and valuable barn through spontaneous combustion arising from the storage of a large quantity of shredded corn in a barn mow, has occasioned a great deal of discussion and emphasized the need of some care in handling fodder in that way. It is a common practice in the Western corn States, where the atmospheric conditions possibly favor dry curing rather more so than the moister climate of Eastern Canada. Enquiries addressed to the heads of the Experiment Stations in Illinois and Iowa have brought us the following information, which we give for the benefit of Canadian farmers. The general practice there is, we understand, to remove the ears before shredding.

ILLINOIS.

The farmers in our State have stored hundreds of thousands of tons of shredded corn the past season without any disastrous results. In some cases the stored fodder when put in the barn damp, or green, or was not packed sufficiently, heated. By tightly closing the barn, however, allowing the least possible air to enter, this heating was no serious consequence, and the fodder came out of the barn as bright as the day it was put in. In all events, when the fodder becomes heated, air must be kept away from it. The heating process is due to the action of certain organisms, which require oxygen to carry on their work. By cutting off the supply of oxygen as by tightly battening the barn, the work of the organisms will be prevented, and the heating of the fodder will cease.

A. D. SHAMEL,

Dept. of Farm Crops.

Illinois Experiment Station.

IOWA.

In the corn-belt States, the corn that is preserved for fodder or stover is generally cut during the first half of September. The period of cutting may vary five or ten days with the season. The most desirable condition is reached when the ears are fully formed and well dented and the leaves of the corn plant beginning to turn brown, although in some seasons the denting stage of the ear arrives before any of the leaves have dried and changed color. The method of storing shredded corn fodder depends largely upon the condition of the plant at the time of bringing the crop from the field. It has been found by chemical analysis that corn fodder standing in the field for thirty to forty-five days after cutting usually contains about 40% of water. This will also vary somewhat with the conditions of the season. Thirty days later it usually contains about 25% of water moisture. Corn fodder containing 25% of water may be shredded and stored in an ordinary haymow or similar apartment without any danger of spontaneous combustion, although there will be considerable rise of temperature for several days after the product is first stored. When corn fodder contains as high as 40% of water, the heat formed in storing the stover will be much greater, and there will be correspondingly greater danger of burning from spontaneous combustion. The corn fodder that is shredded and stored in October is usually in this condition, except in cases of very dry autumns and unusually favorable conditions for early maturity of the crop. Corn fodder that is left in the field and not stored until the latter part of November or December, seldom contains enough moisture to endanger its keeping qualities.

C. F. CURTISS,

Iowa Experiment Station.

MICHIGAN.

Regarding the best method in use for the storing of shredded corn fodder among the farmers of this State, I would say that there is a very great difference of opinion on this point. The corn shredder has come into very general use, and is preferred to the ordinary cutter so much used in Canada. The advantages claimed are, that the shredded fodder is much more easily handled, since it can be carried around with an ordinary fork, dispensing with the use of a basket or feed truck. Most farmers tell us, further, that there is not so much danger of loss from overheating of the shredded material as occurs when the fodder is finely cut. We know that there is a great deal of trouble experienced where large quantities of corn are run through the cutter and stored on the feeding floor or in a mow.

At this College we have fed a large amount of shredded fodder during the last two years with uniformly satisfactory results. We believe more of the fodder will be heated when it is cut and mixed with cut sheaf oats, clover hay, or pulped roots, as the case may be. With the shredded fodder animals have a much better chance to pick out the more appetizing parts of the fodder and reject the coarse fiber. We find that while there is a large amount of shredded fodder rejected, more especially as the season advances, it is not wholly wasted, since it is in the very best possible con-

dition to be used as litter, making a first-rate absorbent.

As to the best method of storing the fodder, the first essential is that the fodder shall be well dried and well cured. Many of our feeders prefer a sufficient amount of moisture to encourage a mild fermentation, resulting in the development of a flavor approaching that of mild silage. This winter we shredded a large quantity of fodder early in the season, running it directly into a mow, and storing it to a depth of eight or ten feet. We think it essential that the fodder be piled up as loosely as possible, hence we used a machine with a blower attachment. If the shredded fodder be tramped down solidly it is much more likely to become overheated.

The mixing of straw or clover hay with the shredded fodder does not seem to improve matters very much, as we have known of cases where a large mass of alternate layers of fodder and straw became entirely worthless. We think the chief factors for success in the storing of fodder are to have it well dried and loosely piled up.

J. J. FERGUSON.

Michigan Agricultural College.

Road Drainage.

Many, if not most, country highways could be considerably improved by thorough sub-drainage. Most roads need underdrainage even though water does not stand in the side ditches. Most people appear to think that the sole object of tile drainage is to remove the surface water, but this is only a small part of the object of the underdrainage of roads.

The most important object of underdrainage is to lower the water level in the soil. The action of the sun and the breeze will finally dry the surface of the road, but if the foundation is soft and spongy, the wheels wear ruts and horses' feet make depressions between the ruts. The first shower fills these depressions with water, and the road is soon a mass of mud. A good road cannot be maintained without a good foundation, and an undrained soil is a poor foundation. A dry subsoil can support almost any load. A friend of the writer, an intelligent man and a close observer, claims that even in a dry time the easiest digging on or around a farm is just under the surface of a road having no underdrainage. His theory is that except in the road vegetation is continually pumping the water up from the subsoil and giving it out into the air, while in the road the compact surface prevents evaporation of the water in the subsoil. Therefore the road needs underdrainage more than the field.

A second object of underdrainage is to dry the ground quickly after a freeze. When the frost comes out of the ground in the spring, it thaws quite as much from the bottom as from the top. If the land is underdrained, the water when released by thawing from below will be immediately carried away. This is particularly important in road drainage, since the foundation of the road will then remain solid and the road itself will not be cut up like untiled roads.

A third, and sometimes a very important object of subdrainage is to remove what may be called the underflow. In some places where the ground is comparatively dry when it freezes in the fall, it will be very wet in the spring when the frost comes out—surprisingly so, considering the dryness before freezing. The explanation is that after the ground freezes, water rises slowly in the soil by hydrostatic pressure of water in higher places; and if it is not drawn off by underdrainage it saturates the subsoil and rises as the frost goes out, so that the ground, which was comparatively dry when it froze, is practically saturated when it thaws.

The underdrainage of a road not only removes the water, but prevents, or greatly reduces, the destructive effect of frost. Frost is destructive only where there is moisture. The upheaving action of frost is due to presence of water. Water expands on freezing, and loosens the soil; when thawing takes place, the ground is left spongy and wet, and the roads "break up." If the roads are kept dry they will not break up. Underdrainage helps to keep them dry.

It is the universal observation that roads in the low places which are tiled dry out sooner than the untiled roads on the high land. The tiled roads never get so bad as those not tiled. There is no way in which road taxes can be spent to better advantage than in tiling the roads.—I. O. Baker, Illinois.

Mr. Geo. H. Armstrong, Russell Co., Ont., writes that he is well pleased with the "Farmer's Advocate," finding "great reading" in every part of it. As he is only just starting in farming himself, he finds it hard to follow the footsteps of some writers of ample means in improving their stock, but still, he adds, "I can't eat, if it is mealtime, till I open your paper, as I am a lover of horses, and see those good engravings."

Is Buying Preferable to Raising Feed or Grain Under Nova Scotia Conditions?

A friend of mine, who is agent for several prominent milling firms in Ontario, recently told me that during a trip of several days to the most advanced, rich and fertile farming section of this Province (Nova Scotia), he sold four carloads of Ontario grain and feed among the farmers of that district. Now, to my mind, this affords food for reflection. The old statement of carrying coals to Newcastle comes to my mind, for if any section east of Montreal is capable of grain and root production, that district is; but the fact remains the same. Farmers all over this Province buy enormous quantities of imported grain for feeding purposes that in nine cases out of ten they could profitably raise. Many a farmer will take to town ten bushels of oats (this being the staple grain of the Province), sell them at 45 cents per bushel, and take back home 18 bushels of the poorest bran or four bushels of corn meal, and think he is making a great exchange. The average farmer, when asked if he could not raise a substitute for this imported feed, looks at you with the information that is always an excuse for laziness or ignorance, and says, "It won't grow." "Did you ever try to raise corn and roots as a substitute?" "No; takes too much manure." Every question is evasively answered in order to give the information that such a thing won't grow or costs too much to grow, and thus, beyond a bit of hay, a few oats and taters is his sole reliance. In the old days, when hay was all cattle got from October to June, there was some excuse, but in these times, when agricultural knowledge is so widely diffused, there is no reason whatever but that a good farm should produce everything in the way of feed without buying. Here in this Province we have the best soil and climate for corn and roots of anywhere in the Dominion. Peas, oats and buckwheat grow to perfection, and barley would do equally as well as oats; still, strange to say, a person driving through this Province will seldom see more than half an acre devoted to these crops and the rest of the farm in hay, the most of it eight-inch wire-grass and brown-top. It is time that the won't-grow argument was properly answered. Why, if the same money spent for imported grain was invested in fertilizer, and the same crop or a substitute grown, would it not be money both earned and saved to the farmer? Take corn meal, for instance. Farmers invariably tell you that corn won't ripen sufficiently for that purpose. The whole truth is they never gave it a proper trial. At the late exhibition there were nearly a dozen varieties of ripe ears exhibited, and that was the first of September. There is no reason whatever that it could not be more cheaply raised than bought if the right varieties were planted and more fertilizer and care in cultivation used. Barley, oats and buckwheat could be more extensively grown and their cost of production cheapened, and they are equal, if not superior, to imported wheat and corn. Green corn, turnips and mangels have been raised in immense quantities by some farmers, but the great majority consider them more trouble than they're worth and do not attempt to grow any. If one half the land that is now in wire-grass and brown-top were turned over, properly fertilized, and good seed of clover or the improved grasses sown, it would lessen the necessity for buying so much grain; but the argument that seed and fertilizer cost money is quoted in every case. They apparently do not consider that buying grain takes money also, and does not result in the improvement of their farms, but rather the reverse. Is it any wonder that farming, except in a very few cases, is looked on as a losing business by many Nova Scotians, and that the exodus to the United States and the cities is not abated? When the day comes, which I trust will soon come, when the people see the capabilities of their neglected farms when treated to more generous fertilizing and an application of brains, and resolve never to buy anything that they can profitably raise or a substitute, then will prosperity increase and the people will be more happy and contented, instead of dissatisfied with their condition and the country, as far too many are at present.

NOVA SCOTIAN.

Pleased with Paper, Pictures and Knife.

I received the four large pictures—"Canada's Pride," "Canada's Glory," "Canada's Ideal," and "Canada's Columbian Victors"—in good condition, and am very much pleased with them. I thank you heartily. They are just as described in the "Advocate." One person who saw them offered me 50 cents for one, but I told him to get one or two new subscribers, then he could get two of the pictures or the four. My father also thanks you very much for the knife, with which he is well pleased. He thinks it of good quality. One of the subscribers he secured said that the Christmas number alone was worth the money, and said he would not like to be without the "Farmer's Advocate" any more, and the rest of the subscribers are well pleased too, so we shall endeavor to get more subscribers for your valuable paper.

Perth Co., Ont.

M. COOK.

Feed or...

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Ills of Hedge Fences.

A valued American contemporary has the following to say regarding the disadvantages of hedge fences, the results of observations gleaned from the costly experience of the southern farmer, who underwent the skinning process at the hands of hedge-fence companies years ago. The "Advocate" was the first Western agricultural paper to warn the farmer against buying a hedge fence at a price far above its value, paying therefor by a lien note, which was practically a mortgage on the man's farm.

Ten or fifteen years ago there was a general craze that went over the country for the hedge fence, and a good many farmers in many localities were taken with the idea, and put out shoots that were to eventually develop into the great panacea of the fence question.

The first great difficulty with the hedge fence is the fact that it is expensive to plant and grow, requiring a secondary fence to protect it and also to turn stock.

Another trouble is the length of time that the owner must delay before he can hope to secure any returns from the hedge. The fence must grow and gradually develop into its form, and this requires time.

A third trouble comes when it is considered that the hedge does not make itself, but must be guided and shaped by the hand of a skilled pruner. This means regular attention every year, or the hedgerow will become a greater nuisance than it is worth.

A similar trouble is that the attention required never ceases, but must be given regularly in the shape of replacing and trimming just as long as the fence exists. Branches are continually growing that must be cut back to keep the row within bounds. Shoots are sure to die out, that must be replaced or there will be openings through which stock will readily pass.

As a matter of fact, we have seen very few, if any, fences of this sort but what had holes somewhere all the time that needed patching, so that frequently barbed wires were stretched either through the hedge for the shoots to form themselves about, or else wires were stretched by the side of the hedgerow. In either case the conditions were the same, and the owner was practically at the expense of two fences instead of one.

We have seen a good many so-called hedge fences, but very few that were really so in fact, and we venture that these had actually cost more in time and money than the ordinary farmer can afford to put into them.

Ordinarily the hedge is set out and given some attention for the first year or two, and then it gradually falls back into an uncared-for, neglected hedgerow that is unsightly, spoils a rod or two of good land, and continues to get worse every year that it is allowed to stand.

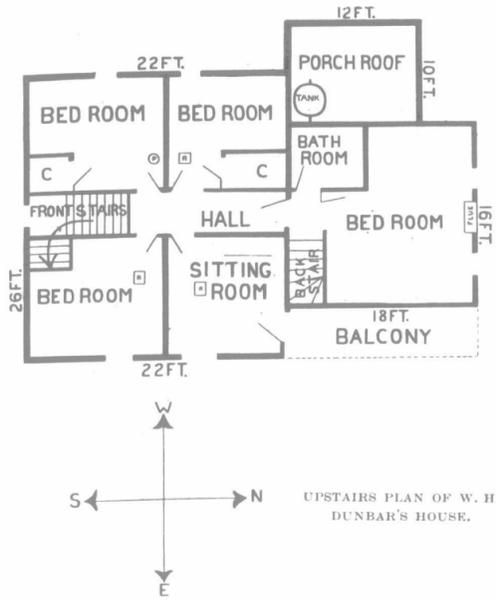
We venture that a hedge fence requires more space than almost any other kind, even with good care, and if neglected will demand more room than any two or three fences ought to occupy.

When the farmer tires of one of these fences he awakens to the fact that he has one of the greatest jobs on his hands when it comes to removing it that he ever tackled. The entire growth must be literally grubbed out, root and branch.

We are of the impression that the hedge fence has had its day, and almost invariably so with the man who has had a little experience with it. As far as we are able to judge, we find very few hedge fences being put out at present, and save in possible cases where one desires a dense hedgerow to serve as both wind-break and fence, we believe there will continue to be fewer as the years pass.

Knife.

Canada's... Ideal,"... in good... with them... described... saw them... im to get... d get two... so thanks... he is well... One of the... Christmas... d said he... mer's Ad... subscrib... deavor to... paper... COOK.

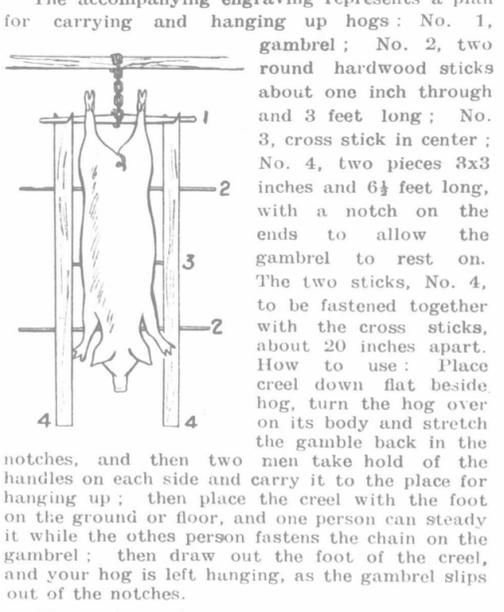


UPSTAIRS PLAN OF W. H. DUNBAR'S HOUSE.

Feeding Value of Rape for Swine.

In the annual report of the experiment station of Wisconsin for 1897, Professor Craig reported the results of two feeding trials with pigs, the object of the experiment being to determine the feeding value of rape for swine. The first trial was begun with twenty pigs about eight months old. They were divided into two lots of ten each. Lot 1 was to have rape in connection with grain feed composed of two parts corn and one part shorts, and lot 2 was to receive grain only. The plan was to keep both lots of equal weight, as it was thought that this was the best way of arriving at the feeding value of the rape plant. The experiment was completed in seventy-six days, and the results as given are interesting from a practical feeder's standpoint. Lot 1 ate the rape from almost one-third of an acre, and required 710 pounds less of corn and 352 pounds less of shorts than lot 2, which received no rape at all. The gains made in the two lots were about equal in both cases. The area of rape eaten was therefore equivalent to 1,062 pounds of grain, or one acre of rape pastured under these conditions would result in a saving of 3,318 pounds of grain. In another feeding trial reported the same year, but which was conducted in 1896, there were thirty-eight pigs used. This trial was not so favorable for the rape, but a little over one-half acre of rape pastured resulted in a saving of 886 pounds of corn and 444 pounds of shorts, making a total

Carrying and Hanging Hog Carcasses.



The accompanying engraving represents a plan for carrying and hanging up hogs: No. 1, gambrel; No. 2, two round hardwood sticks about one inch through and 3 feet long; No. 3, cross stick in center; No. 4, two pieces 3x3 inches and 6 1/2 feet long, with a notch on the ends to allow the gambrel to rest on. The two sticks, No. 4, to be fastened together with the cross sticks, about 20 inches apart. How to use: Place creel down flat beside hog, turn the hog over on its body and stretch the gambrel back in the notches, and then two men take hold of the handles on each side and carry it to the place for hanging up; then place the creel with the foot on the ground or floor, and one person can steady it while the other person fastens the chain on the gambrel; then draw out the foot of the creel, and your hog is left hanging, as the gambrel slips out of the notches.

This device will save a great deal of hard work in carrying and hanging up hogs, as you can take your time in fastening the chain. Hoping this will prove of some use to farmers. WM. CARRUTHERS, York Co., Ont.

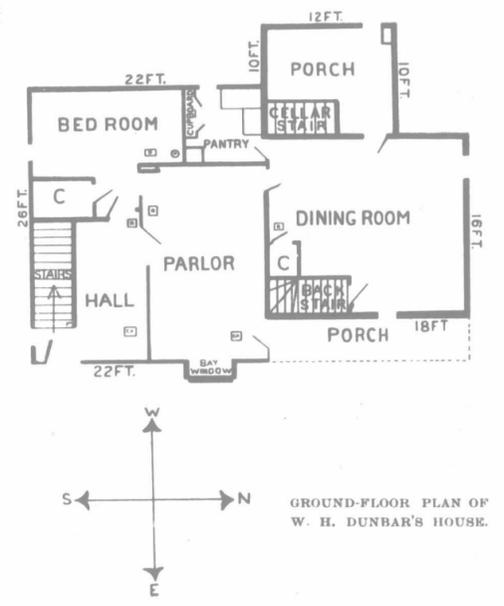


THE COMFORTABLE FARM HOME OF W. H. DUNBAR, BRANDON HILLS, MAN.

A Comfortable Farmhouse.

I enclose the ground and upstairs floor plans of my house. One of my boys drew the plans. The cellar wall is built of cement, lime, gravel and broken stone, one part of cement being used to four parts of lime. The wall is faced with a thin coat of cement and sand. The cellar floor is four inches thick, cement and gravel. The wall is built wide enough to allow for brick veneering the house when necessary. The house has three ply of lumber outside, one ply sheathing, one of shiplap and siding with two-ply paper. The first two ply are nailed to the window jambs, the latter being made of two-inch stuff, checked out for the sheeting and for the plaster, which makes an air-tight job. The house is heated with a wood furnace made by the Brandon Machine Works, which takes in cord-wood, stick lengths. Brandon Hills, Man. W. H. DUNBAR.

saving of 1,330 pounds of grain. An acre of rape in this case therefore was equal to 2,217 pounds of grain. Still another feeding trial was made and reported by Professor Carlyle at the same station during the following year. The object of this trial was to test the comparative value of rape vs. clover pasture for young growing pigs. Forty pigs were selected for this experiment and were divided into two lots of nearly equal in every way as possible. The pigs were between five and six months old at the beginning of the experiment. The grain feed given was the same in character and amount to both lots, and consisted of two-thirds corn meal and one-third shorts. The pigs on lot 1 were pastured on a small area of rape by means of a movable fence, a fresh portion being given them as they required it. The pigs in lot 2 had the run of a ten-acre field of second-growth clover, one-half of the field having been mowed in August. The pigs were given the same care and management in all particulars. The results of this trial indicated that rape was to be preferred to clover as a pasture for growing pigs, since the average increased gain of the nineteen pigs on rape over the nineteen pigs on clover was five and one-third pounds for each pig in a period of nine weeks, or a trifle over one-half pound per pig per week. In the summary of the results of this experiment it is noted that it required 439 pounds of grain to produce 100 pounds of live-weight gain in the lot of pigs on the clover pasture, while it required but 391 pounds to produce 100 pounds of gain in the lot of pigs fed rape, making a difference of forty-eight pounds of feed saved for every 100 pounds of gain in favor of the lot fed rape.



GROUND-FLOOR PLAN OF W. H. DUNBAR'S HOUSE.

School Gardens.

[NOTE.— Will the reader kindly show this to the teacher.]

When Arbor Day (first Friday in May of each year) was instituted ten or fifteen years ago, its ostensible purpose was the planting of school grounds with suitable shade and ornamental trees. As the average school ground is somewhere about three-fourths of an acre, it can contain but a limited number of trees; hence it might be supposed that by this date every school yard in Ontario is supporting all the trees for which there is room.

But a trip through the country impresses the fact that not one school yard in ten is well planted with all the trees required for shade, protection, and ornament. Enough, and more than enough, trees to cover all the space may have been planted, but the planting has been so ill done that many of the trees did not survive the first, or, at most, the second year. A tree is not likely to thrive if set in a hole excavated in hard packed ground. In clay ground, as firm and impervious to drainage as a school yard becomes, preparation for tree-planting should be made the previous fall.

Many school grounds are so small that the room for trees can not well be spared. A single line of trees standing round the yard is neither artistic nor favorable to their best growth. The need to restore the tree effect to the landscape in the older parts of the country is admitted on every hand. Planting a belt of trees a rod or two in width around the school yard would give the opportunity to do the work in a skilful and educative manner, and would produce in a comparatively short time the desirable shelter and ornament that a fine wide line of trees only can give.

Another line of educational progress that the farmers should enthusiastically support and promote is the school garden as a department of nature study. A little plot, two or three rods square, or a belt a rod wide and two or three rods long, properly cultivated and planted by the

The plan of making the garden and the selection of plants in it will necessarily vary with the circumstances. In many cases it will be advisable to rent two or three square rods in a suitable place outside of but adjoining or convenient to the school yard. The little plot can be fenced off with a woven-wire fence. The seeds and garden tools should be, and doubtless will be, cheerfully supplied by the school board.

Besides the little garden plot, there is always a place where flower-beds may be made near the gate or just in front of the door. Flowering vines may be planted to trail over the porch, and shelves placed on brackets just under the window-sills in the inside of the room for flowerpots or boxes in which to start tender seeds.

In addition to the encouragement that the trustees and people should give this laudable departure from the stereotyped school routine, the local fair boards can do something. We are sure that every fair board or agricultural society in the country has in its directorate some one who is in sympathy with the improvement of agricultural education. Let it not be forgotten, then, when the prize list is a-making up, to offer two or three prizes for the best school gardens in the district. The school inspector and a director could easily visit the competing sections, if the territory were not too large, to award the prizes. Another method of judging would be to ask drawings and reports of the gardens, and a judge could visit the three or four whose reports were best in order to verify them. Prizes might be offered, too, for cut flowers raised on school grounds.

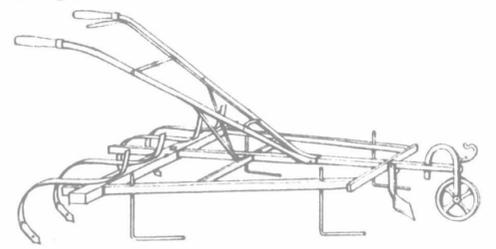
Prizes Offered.

In order to encourage the idea suggested in the above article, the "Farmer's Advocate" offers three prizes, to become the property of the school having the garden. These prizes will consist of books to the value of \$7, \$5, and \$3, respectively, and besides being of interest and value to the scholars, would constitute the nucleus of an agricultural and horticultural library for the school section. The prizes will be for written reports of the school garden

Cultivation of Ensilage Corn.

To the Editor "Farmer's Advocate":

In growing corn for the silo, I find it a success to spread manure on sod in winter. After the spring seeding is over, I plow the sod down so that the furrows will lie flat, about four inches deep, then roll it. Cultivate it lightly the first time, deeper the second time, then harrow well and roll. I always try to have it sown by the 20th of May. I find the land is more free from weeds on sod than stubble land, but if one has a dirty piece of land there is nothing better than corn to clean it, if properly worked. I find, on sod, 14 lbs. corn to the acre gives best results for ensilage; drills 36 inches apart. If the ground is



CORN CULTIVATOR.

dirty and requires harrowing after the corn is up, it will take about 17 lbs. to the acre. A drill set to sow 1 1/2 bushels of corn or peas, generally sows 14 lbs. per acre, with two spouts. I have sown the Mammoth Cuban, but I prefer the High Mixed. Corn should be harrowed before it is through the ground, to kill the weeds, and may be harrowed once afterwards. Scuffle it lightly when about three inches high, and use the scuffer freely after that. I have seen different kinds of scuffers, but the best I find is the common wooden scuffer, with the spring teeth of a cultivator bolted between two inch boards and fastened to the hind part of the scuffer. Sometimes I put the thistle-cutters on the spring teeth: they help to throw the dirt up to the corn and smother the weeds. JOHN JONES. Wellington Co., Ont.

Pigpen Construction.

1. What is the best wall for a henhouse or hogpen, wood or cement? We hear cement condemned on account of dampness.
2. If wooden, would it be advisable to have it double-boarded (with tar paper between) on the outside and matched lumber on the inside (6-inch studding)?
3. If wooden walls as above, would this 6-inch air-space be a harbor for rats or mice?
4. What kind of floors would you recommend, cement or wooden?
5. Building with one-sided roof, what height would walls need to be?
6. If felt or tar paper were placed on sheeting and then shingled over, would that be warm enough?
7. How many square feet of floor space is needed (a) for a hen, (b) for a hog (I mean on an average)? E. W. V. Perth Co., Ont.

- 1st.—For pigs or henhouse, the wooden wall on a cement or stone foundation, raised a little above ground, is now generally preferred, though we hear little complaint of dampness from those who have cement walls in use. They are drier than stone.
- 2nd.—Double boards with tar paper between, having the outside boards matched, is sufficient, without a second board on the inside studding or frame.
- 3rd.—The six-inch air-space would inevitably be a harbor for rats, mice, and other vermin.
- 4th.—We would advise a cement floor, with a raised plank for sleeping bed, or an elevated berth, just large enough to accommodate the number of hogs in the pen when sleeping, such as described in the "Farmer's Advocate" for March 1st.
- 5th.—Your pen should have a ceiling with a space above for straw, and from floor to ceiling should be not less than seven feet high.
- 6th.—Shingles laid over felt or tar paper on the sheeting will be warm enough, providing you have a ceiling, as suggested above.
- 7th.—About eight square feet of floor space will be sufficient for a hen, and fourteen feet (square) for a hog.

The Knife Premium.

Reports continue to reach us from subscribers who have secured one of our premium pocket-knives by sending us two new subscribers. They are all delighted. Every farmer and farmer's son in Canada should have one of these beautiful knives. A new lot have just reached us from the maker, Sheffield, England. Like the two previous lots, they will go quickly.

Dew-berry	Honey-suckle Tartarian	Black-berry	Rasp-berry	1901—Oats, rye 1902—Rye and fodder corn 1903—Oats and peas, rape	1901—Wheat (grass) 1902—Grass 1903—Grass 1904—Corn
Spirea	Spirea	Goose-berry	Currant	1904—Oats, rye 1905—Rye and fodder corn 1906—Oats and peas, rape	1905—Wheat (grass) 1906—Grass
Asparagus	Rhubarb	Rose-bush	Moss rose	1901—Fodder corn 1902—Oats and peas, rape	1901—Grass 1902—Grass 1903—Corn
Timothy	Bromus	Red clover	White clover	1903—Oats, rye 1904—Rye, fodder corn 1905—Oats and peas, rape	1904—Wheat (grass) 1905—Grass 1906—Grass
Corn	Sorghum	Broom corn	Kaffir corn	1906—Oats and rye	
Wheat	Oats	Barley	Millet	1901—Oats and peas, rape	1901—Grass 1902—Corn
Tomatoes	Potatoes			1902—Oats, rye 1903—Rye, fodder corn 1904—Oats and peas, rape 1905—Oats and rye 1906—Rye, fodder corn	1903—Wheat (grass) 1904—Grass 1905—Grass 1906—Corn
Lettuce	Radishes				
Beans	Peas				
Cauliflower	Cabbage				
Parsnips	Sugar beets				
Carrots	Table beets				
Asters	Zinnias				
Petunias	Verbenas			Permanent grass White clover Red clover Timothy Bromus Kentucky blue grass	1901—Wheat (grass) 1902—Grass 1903—Grass 1904—Corn 1905—Wheat (grass) 1906—Grass

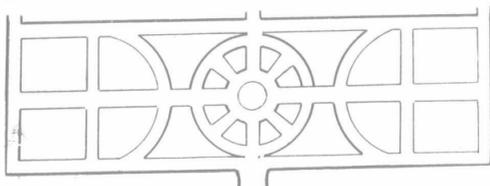
The area is one rod square.

The eight plots on the right are to represent a farm of eight fields, three of them to show a three-year rotation, and four to show a four-year rotation. The dotted lines mark off the cycles. The lowest field on the left is to show a permanent pasture of five mixed grasses. Slight modifications of this garden would suit many a school in Ontario.

teacher and children, may furnish a better series of lessons than those in any single subject taught in the schoolroom.

The above diagram is one approved for a rural-school garden, copied from the report of the Superintendent of Instruction for the State of Minnesota.

The garden of the elementary school under the management of Dr. John Dewey will this year occupy a plot lying along the south side of the schoolroom, 60 yards long and 33 yards wide. The part not walled off by the schoolhouse is enclosed by a wire-netting fence six feet high. Adjoining the schoolhouse is a strip of lawn 8 yards wide, then a strip containing a series of flower-beds, then another strip of lawn. South of the latter is the garden proper. It is laid out in a very ornamental design, as shown in the following diagram. Various grains, vegetables, etc., will be planted in the fields.



as conducted this season, with a drawing showing the design, and must reach the "Farmer's Advocate" office, London, Ont., not later than Oct. 1st next. An important part of the report will be the educational use made of the garden. The name of the school and teacher, or secretary of the school section, must accompany each description entered in the competition. Before the awards are finally announced, the competing descriptions of gardens will be subject to verification by the school inspector of the district in which the school is situated. There is yet ample time to begin a school garden in a modest way for the present season, as elaborate results are not looked for at first. Make the effort faithfully, and give a carefully-prepared statement and sketch of what is done during the season and the results. It will be helpful to the section and all concerned, and bear additional fruit in future years. Further announcements regarding the prizes, etc., will be made in later issues of the "Farmer's Advocate." As soon as any school makes a beginning with a garden for this competition, we wish them to write us to that effect at once.

Constructing Cement Barn Approaches.

All over Canada bank barns are going up with cement-concrete foundation walls, and this involves the necessity of good strong approaches to the floors over which the loaded wagons, threshing machines, etc., pass. These approaches are usually made of heavy wooden stringers and planks, the space underneath being utilized for box stalls, root cellars, milk-rooms or other purposes. The ends of the stringers rest on posts or a cement wall, 10 or 15 feet out from main wall of barn. They soon rot or give way, however, and there is a good deal of enquiry for something more permanent. We have received several enquiries like the following from Frontenac Co., Ont.:

"I am building a barn with basement stables. I want to put a root house under gangway going into barn, and would like to know the best way of covering the same so as to keep out frost as well as rain?" THOS. I. ELLIS."

Cement arches have been successfully constructed in several sections of the country, and one of our readers, Mr. Robt. H. Henderson, of

24th of June, 1901. The supports and wooden circles were taken out from underneath about the 7th of October, and the separator went over it about October 21st.

"The barn should be raised before the arch is constructed, so as to help basement wall withstand side pressure of arch. Mr. Usher cautioned us about this.

"To construct the arch, 17 wooden half-circles were made and were placed on timbers, which were placed inside and at the top of the 5-ft. walls, and were supported from the ground by uprights. These half-circles were placed 3 ft. apart and were covered with two ply of inch boards. On this the arch was built in the same way as you would build a basement wall. We kept the arch well soaked with water for a long time after completion.

ROBT. H. HENDERSON.

DAIRY.

The Production of Milk by the Average Cow.

BY PROF. E. H. FARRINGTON, CHIEF WISCONSIN DAIRY SCHOOL.
(Continued from page 303.)

METHOD OF MAKING THE FARM TEST.

The milk of each cow was weighed and sampled at the morning and night milking one day in each week, every two weeks or once a month, as the farmer desired. The testing day was selected by the farmer.

Each dairy was supplied with a pair of scales for weighing the milk, a box of bottles for milk samples, a small one-ounce tin sampling dipper, and a record book. Each cow was given a number, which was placed on the label of a two-ounce sample bottle, the cow being known by this number throughout the test. About one-half gram of potassium bichromate was added to each sample bottle to keep the milk sweet until tested. The box of samples and the record book were sent to the University creamery, where the samples were tested; the tests were recorded in the patron's book as well as in the permanent record at the creamery, after which the book and box of sample bottles were returned to the farm.

The following instructions were plainly written on the first few pages of the record book sent with each box of sampling bottles:

DIRECTIONS.

1. Give each cow a permanent name or number.
2. Provide a place for using the scales at milking time.
3. Select a milk-weighing pail or bucket.
4. Record the weight of this empty pail or provide some sure way of deducting its weight from each lot of milk.
5. After milking a cow dry, pour all her milk into the weighing pail.
6. Record the weight of this milk in the proper place in the book.
7. Pour milk from weighing-pail into milking-bucket and immediately dip a sample from it into a bottle having the number of this cow.
8. The sample from the first milking should only fill the bottle one-half full.
9. At the next milking repeat the weighing and sampling and pour the second sample into the same bottle that was previously half filled.
10. Each sample bottle should contain a mixture of milk from two consecutive milkings of one cow.
11. Cork the sample bottles to prevent evaporation.
12. Weigh and sample the milk of each cow once, twice or four times per month.
13. Note time of each milking.
14. Record the date each cow calves.
15. State how many days each calf was fed its mother's milk.
16. How did you dispose of each calf?
17. Weekly statement of cow's feed, including the weight, price and kind of grain, if any, with the amount and kind of hay, cornstalks or other coarse fodder.
18. Health of cows.
19. Note any change of milkers.
20. Record date when cow was dry.

One farmer with twelve cows estimated that fifteen minutes' extra time was required to weigh, sample and record the milk of his cows on testing days. At another place the records were taken by a boy who was too young to milk, but capable of doing the extra work required at milking time on testing days. At one farm this work

was done by the women, who strongly objected to it, especially when it was necessary to use a lantern at the barn in winter.

ACCURACY OF THE RECORDS.

The accuracy of such methods as these is necessarily influenced by conditions common to nearly all farms. Milking is usually done with more or less haste, especially at the planting, haying or harvesting seasons. The milkers, as a rule, are not accustomed to the use of scales, and often consider a weight within one pound of the true figure to be "near enough." They do not understand the necessity of promptness in sampling milk after it has been poured from one pail to another before the cream has begun to separate. In spite of these and other disturbing factors, our results show that tests of dairy cows can be made by the farmers themselves with sufficient accuracy to give a very satisfactory knowledge of the performance of each cow.

From these weights and samples taken at the farm, the total annual production of a cow is found by multiplying the average of the daily weights of milk and of butter-fat taken each month by the number of days in the month and adding the products together. The money value of the milk of each cow is found by multiplying the monthly weight of butter-fat by a certain figure which, during the year ending August 1st, 1898, was one-half cent less than the average Elgin market price of butter for that month; in 1900 and 1901 it was the average Elgin price. The figures obtained for each month are added together to get the production for the year.

FEED AND CARE OF THE HERDS.

The cows at each farm were fed and cared for during the entire year according to the usual practice of their owners. As far as we could ascertain, all the cows at one farm were fed in the same way. No attempt was made to vary the feed of each cow, excepting that where grain feeding was practiced it was usually stopped while a cow was giving little or no milk.

At farm C the owner kept a careful record of all grain bought and fed to his cows during 1898. His estimate of this feed is given below:

ESTIMATED FEED COST AND RECEIPTS FROM TWELVE COWS.

Expenses.	
*Grain bought during year.....	\$180.00
30 acres cornstalks, \$2.00 per acre.....	60.00
10 tons hay, \$5.00.....	50.00
10 acres good pasturage and 15 acres woodland.....	65.00
Total cost of feed.....	\$355.00
Receipts.	
Received for milk at creamery.....	\$572.00
Sold 12 calves at \$5.50.....	66.00
60,000 lbs. skim milk, 10 cents per 100 lbs.....	60.00
Receipts exceed feed cost.....	343.00
	\$698.00

* The grain feed consists of corn and oats ground together, corn meal and bran, or about 15 tons of grain at \$12.00 per ton in 1898.

This shows that the estimated cost of feed at farm C was nearly thirty dollars per cow, and the average receipts per cow were a little over \$58. Assuming that the manure will pay for the care of a cow, the owner of this herd received an average profit of \$28 per cow.

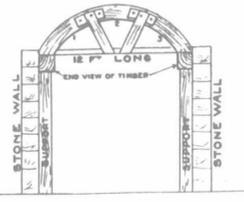
Each cow at this farm was fed about the same amount of grain and hay during the period of stable feeding—November 1 to May 1. The grain was fed dry just before milking, 10 to 14 pounds per head being fed per day to cows in milk. Hay was fed the last thing at night after milking. During day time the cows were turned into a sheltered yard, where they were fed cornstalks that had been stacked near the barn at husking time. The cornstalks were well eaten, and it is probable that the cows satisfied their differences in appetite on the cornstalks, if, as stated, each one was given the same amount of hay and grain. The cows had access to well water during the entire year, and were in pasture from May to November. When cows were fresh, the calf was allowed to have its mother's milk for about three weeks, when it was sold for veal.

No exact feeding records could be obtained except at this farm. At the other farm, corn, bran or shorts, ground oats, pasture grass and a very little hay were fed in uncertain amounts, and apparently with no definite plan. At one farm no money was spent for feed during the year, but the corn and oats raised at home supplied all the grain the cows received, except that some oats were exchanged for bran to give the cows a variety of feed.

Although there was quite a contrast in the feeding and management at the different farms, the method of weighing and testing the milk of each cow was the same in each case.

These tests are, of course, more valuable to the owners of the herds tested than to anyone else, but some illustrations of general interest may be drawn from them.

The cows on one farm were tested for three years. The average receipts per cow in 1898, from the creamery, were \$36.30; in 1900, \$39.20; and in 1901, \$38.92. The figures do not show much indication that the owner has profited by the tests. The cows that did not produce milk enough to pay a profit on their feed were kept in the herd for three years, and five other cows pro-



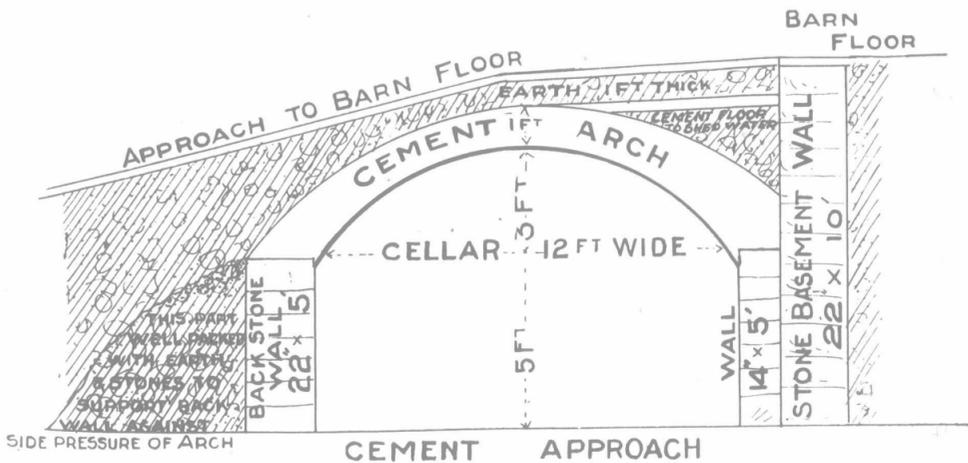
ROUGH SKETCH OF CIRCLES USED.
Half-circle made of three pieces and nailed together where the supports met them.

Wentworth County, kindly sends us, for the benefit of his fellow-farmers, a description of how his was built, with sketches to illustrate same. His description is as follows:

"The root cellar is 48 ft. long, 12 ft. wide, and 8 ft. high at crown of arch, inside measurement. The barn is 90 ft. long; the drive-floors 14 ft. wide, and a 20-ft. mow between them. There are two entrances from basement to cellar. These are underneath each drive-floor and are 3 1/2 ft. wide and 5 ft. high, and, no doors being on, are constantly open; thus animal heat from stable goes in. This winter was our first experience with keeping roots in it, and it has proved entirely satisfactory. None of our roots were frozen, we having had no trouble with frost, as many expected we would; neither was the cellar too warm, and the roots were kept in excellent condition.

"On the crown of arch, and directly in line with the inside post of each drive-floor, are two holes, two feet square, for filling cellar with roots and are very convenient. The frames for these holes are made of oak, 3 in. x 12 in., and have scantling nailed around them on the outside in the middle; these being imbedded in the cement, hold the frames in their place. The ends of the arch are built of stone walls, 22 in. wide and 5 ft. high, and on top of this, in each end, is a window the same size as those in basement walls, about 30 in. x 48 in. The remaining parts of end walls are built of cement along with arch, and this forms one solid piece. In the construction of this arch we used 71 barrels of Queenston cement, purchased from I. Usher & Son; we also used about 35 yards of gravel. The proportion was 'one of cement to four of gravel' in bottom of arch, and 'one of cement to three of gravel' for remainder of arch, as it gradually got thinner and had also more strain upon it. The less the span and the greater the rise, the stronger will be the arch. For a 12-ft. span there should be at least 4 ft. of rise in arch, and 10-ft. span should have 3 ft. rise.

"Our arch, as illustrated, has proved to be eminently satisfactory. It was completed about



duced less than \$30 worth of butter in a year.

The annual production of the mature cows during the three years shows that the poor cows did not improve from year to year, but continued to give less milk than required to pay for the feed consumed.

The one good cow was equally persistent in doing well. The creamery value of her milk for three years was \$200. This is \$110 more than the cost of her feed, when we take \$30 per year as the value of a cow's feed. The butter produced by the other five cows tested for three years amounted to only \$114 more than the cost of their feed during the same time. The milk of one cow, therefore, paid the owner within four dollars as much profit in three years as the milk of five cows in the same herd for the same length of time.

In another herd the excess of butter over cost of feed of two cows was worth \$60, while that of five other cows was worth only \$58.

Thus the owner received, at the creamery, \$2 less for the milk of five cows than he did for that of two cows in the same herd.

The entire herd of twelve cows owned by one farmer only paid a profit of \$75 in a year, and three of the twelve cows paid \$50 of this amount, leaving \$25 as the combined profit of the other nine cows in the herd.

Another herd of twelve cows paid a profit of \$228 in a year, but in this herd there was one cow that earned only \$2 profit, and another that earned \$31 profit, a difference of about 400 per cent. in the annual butter value of these two cows to their owner.

Many more startling illustrations might be given from the records of the different herds, but a summary statement of the best and the poorest cows is sufficient to show the value of this kind of work to the farmer.

Table showing variations during one year in the butter value of the cows in each herd

Patron.	No. of cows in herd.	Creamery paid—		Creamery value of—		
		Total cash.	Average per cow.	Best cow.	Poorest Average cow.	
A — 1888	12	\$421	\$35.11	\$53.35	\$28.72	\$36.30
A — 1900	11	405	36.82	82.23	20.18	39.20
A — 1901	11	424	38.55	64.93	23.51	38.92
B — 1888	5	...	...	58.21	44.83	50.00
C — 1888	12	572	47.70	60.72	37.96	43.83
D — 1888	6	228	38.00	53.49	39.60	44.12
D — 1900	6	...	...	51.28	28.40	44.42
E — 1888	5	227	45.40	67.47	44.40	58.40
E — 1900	5	...	...	68.16	43.47	61.20
E — 1901	4	...	...	70.72	59.47	62.11
F — 1888	9	...	...	60.29	34.00	...
F — 1900	7	...	...	58.70	31.90	44.00
G — 1900	14	563	40.00	72.21	39.52	56.57
H — 1900	8	338	44.75	66.08	17.23	50.00
H — 1901	8	332	41.50	62.71	46.65	56.00
I — 1901	24	...	...	67.85	14.56	39.00
J — 1901	7	270	38.60	51.14	37.58	46.00
K — 1900	8	293	37.00	54.61	22.35	39.00
K — 1901	8	248	31.00	46.81	36.69	42.00

* Figures are not obtained because patrons did not bring milk to the creamery during the entire year; samples of each cow's milk were, however, tested.

If, as stated, each farmer fed all his cows in the same way, and the time and labor of milking and feeding the cows was approximately the same for both good and poor cows, it follows that it did not cost any more to feed the best than the poorest cows in the herd. The information furnished by such tests as these may be very valuable to the owners of the cows, and should be of importance to the cow, as her life ought to depend upon the record she makes. Previous to making the tests the owners of these cows had very little, if any, accurate idea of the relative value of their cows, but the records show that the information gained is worth many times the cost of a milk-weighing scale, a Babcock test, and the time necessary to use them.

THE CARE OF MILK.

It matters not how profitable the cows may be if the milk they produce is spoiled by the milker. Very few, if any, food products are so susceptible to defects or so easily contaminated as is milk, and still the protection of its purity until it reaches the consumer is largely a matter of common cleanliness—a very simple duty, but one which, when faithfully performed, will more than pay for the effort made.

Directions for the proper handling of milk have been printed over and over again. The rules given generally include an old story, familiar to many a milk producer, but I am repeating it in order, first, to refresh the memory of some who may need to be reminded of things forgotten; second, to induce others to do as well as they know how to do; and third, to overcome any tendency all may have to slight the little things that are known to be important for preserving the natural purity of milk.

In taking up the discussion of this subject, it is hoped that some of this old story may make a new impression on those who have heard it many times before, and that it may possibly furnish a new idea or two to those who are less familiar with the subject.

The Milker's Responsibility.—When a man is milking he should bear in mind that he is handling a food product which will undoubtedly be placed on the tables of many people in essentially the same condition that it is obtained from him. He should be just as particular and as careful when milking to supply his customers or for a

factory as he is when filling the glass pitcher which his wife or child brings him when milking and asks to have it filled for his own supper table.

Milk and its products are, as a rule, used raw with all the impurities that may have gotten into them on the way from the cow to the table, and the consumer does not like to be reminded of these possibilities of contamination by the appearance of the milk when he gets it.

Milk is sometimes a source of positive danger to a community, as it has been demonstrated that diseases may be spread by this food product from one farm to many households. When such contagious diseases as typhoid fever, diphtheria, scarlet fever, etc., occur in a family selling milk, the fact should at once be made known to the proper authorities, and the milk produced on that farm should be disposed of as directed by them.

No loud talking should be permitted during milking. Go about this work promptly and quietly, with as much regularity in the time of milking as is possible. Some successful dairymen milk their cows "by the watch," and are very particular about the exact time each cow is milked. They are also careful to have the same cows milked by the same men in the same order. Experience has taught them that regularity in milking aids in developing a tendency to prolong the period of lactation.

Always milk with dry hands. Moistening the hands with milk or water during milking is one of the most filthy practices imaginable.

Wooden pails should not be used as milking pails, as they easily get sour and can only be kept thoroughly clean when new. Tin pails ought to have all seams and cracks flushed smooth with solder in order to make them easy to clean. This soldering should be done when the milk pails are bought and before they are taken home.

The Cow Stable and Yard.—Cows ought to be milked in a comfortable, clean, thoroughly-drained and well-lighted place. Ventilation is best secured by some well-constructed and easily-operated device rather than by loose boards or accidental holes in a window. The walls and ceiling of the stable may be purified by a coat of white-wash, which can be effectually applied with a spray pump. This ought to be used several times in a year. Some cow stables are covered with straw or old hay placed on boards with large cracks between them. No amount of whitewash will keep such a ceiling in a sanitary condition. Chaff and loose straw dropping through the cracks are a constant source of dust and dirt during milking; the floor above the cows ought to be as tight as the walls of the stable.

The gutters and mangers of the cow stable should be cleaned out daily, and land plaster (gypsum) or clean bedding spread over the floor.

Cows should be tied or stalled in a humane way, made contented in every particular and liberally fed. No loud talking should be permitted during milking, and anything that will excite the cows must be avoided. Driving them from pasture in a hurry or chasing the cows with dogs will diminish both the quantity and the quality of the milk.

Cleaning the Cows.—A gentle brushing or carding of the cows every day will be found to be very beneficial to them; if this is not done regularly, the flanks and udder of a cow should be brushed just before milking in order to remove all loose hair and dirt that might fall into the pail during milking. The mud which cows have gotten on their legs and udders should be brushed off before milking is begun and before the pails are brought to the stable, so that the dust will not settle on the tinware and thus get into the milk.

Milk the Cows Dry.—A great many milkers are in too much of a hurry to get through milking to milk the cows dry. This loss may amount to one-half a pound of milk from each cow at every milking, as was found to be the case by a farmer who followed his hired man and milked all the cows after him. By this second milking he got over a pound from some cows and less than one-half a pound from others, but from ten cows he got five pounds of strippings at one milking. This to some does not seem to be a very large amount of milk to bother with, but if milking in general were done so carelessly, the total loss of milk in the United States from lazy milking would amount to sixteen million pounds per day. This startling figure is undoubtedly as correct as the statistical reports which give the number of milch cows in the United States as 16,292,360, and it shows that a great saving may be made by milking the cows dry. The last milk, or strippings, is also much richer than the first milk, so that it is worth an extra effort to obtain it.

Another point which should be considered in milking cows is the quickness with which the milking is done. Fast milking has been found to give better results than slow milking.

The Milk Cans into which the milk is strained must not be left standing in the stable where the cows are being milked. The stable odor or dust may contaminate the milk unless it is at once taken to another room or into the pure outside air where the straining into cans may be done.

Pure Water.—This is as essential for cows as it is for humanity, and nothing but deep well,

spring or pure running water is fit for cows. Pond holes or stagnant water must be fenced in so that the cows will not drink from them; serious defects in milk, butter and cheese have been traced to a pond hole or to swampy land through which the cows had walked. The mud and dirt from such places clings to the legs, body and udder of the cow, and if these are not groomed the dirt gets into the milk and contaminates both it and the products made therefrom.

Straining Milk.—If a covered milking pail has not been used, the milk must be poured through a cloth strainer made of cotton flannel or of four thicknesses of cheese cloth. A wire gauze strainer is not sufficient, and when the milk is dirty or a large amount of it strained, the cloth should be changed as soon as any accumulation of dirt from the milk is noticed on the strainer. Milk should never be strained in the stable.

Aeration of Milk.—Milk is benefited more from mixing pure air with it as soon as possible after milking than from almost any other method of handling. The flavor is especially improved by aeration, and when the milk is also suddenly cooled at this time it will keep sweet much longer than milk which has not received this treatment.

A great many good milk aerators are on the market. A certain amount of aeration may be obtained by dipping the milk with a long-handled dipper, lifting it high in the air and pouring it into the can again. This dipping should be repeated occasionally for an hour or more after milking, but as it is not so thorough and takes more time than pouring the milk over an aerator and cooler as soon as each cow is milked, it is recommended that an aerator be bought and used.

Cooling Milk.—Immediately after milking, the temperature of milk ought to be reduced to forty or fifty degrees, either by pouring it in a thin layer over a smooth metal surface, which is kept cold with water, ice or brine, or by setting the cans of milk into cold water and stirring frequently to hasten the cooling. The quicker this is done the better, as the sudden chilling of milk is very beneficial—it improves the flavor and hastens the separation of cream.

There are many good milk coolers on the market, and in making a selection the purchaser should be sure to get one that has capacity enough to thoroughly and quickly chill all the milk run over it. The cooler should never be crowded with too much milk.

Keep Night and Morning's Milk Separate.—Never mix warm milk with cold milk, as this will spoil both. The morning and night's milk should be kept in separate cans until thoroughly cold. The cans of milk must be loosely covered and kept in a perfectly clean place, protected from dirt and bad odors. In winter the milk should not be allowed to freeze, and in summer it must be kept sweet without the use of any kind of preservative. In some States there are strict laws against the use of preservatives in milk.

Delivering the Milk.—During transportation the cans of milk must be filled to prevent churning, and must be closed with tightly-fitting covers and jackets or a canvas placed over them as a protection from dust, mud or rain. These coverings will aid in keeping the milk cool in extremely hot weather and in winter they may prevent the milk from freezing.

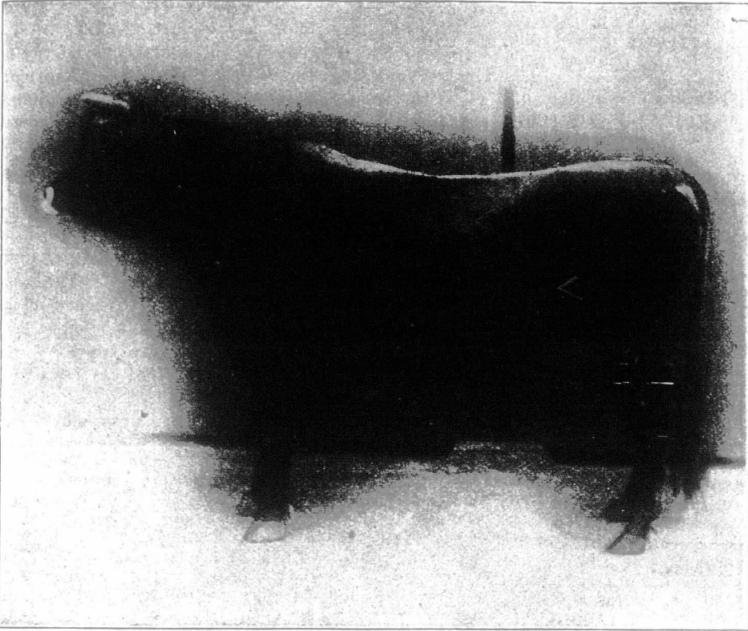
Buttermilk should not be returned in the sweet-milk cans, as the sour taint is very hard to remove from them.

Washing Cans, Pails, Strainer Cloths, and Tinware.—All efforts to produce clean milk that will keep sweet for a reasonable length of time are useless if the pails, cans, etc., are not faithfully washed and scalded every day. After emptying the milk, the cans should be rinsed with cold water, then scrubbed with frequent changes of warm water, using a brush to clean all the seams and cracks inside and outside the cans; they should be rinsed with scalding hot water and set to dry in the sun, if possible, but protected from dust. Tinware should not be wiped dry with a cloth, but scalded with boiling hot water. All the joints and corners in pails and cans should be filled smooth with solder, as before stated, and those having rusty iron spots ought not to be used, as these places may cause taints in the milk. One of the hardest taints to remove from cans is that caused by allowing milk to sour therein. The cans should be emptied and cleaned as soon as they are returned to the farm and left to dry and air in some clean place.

Inspection.—When a can of milk is emptied, the last quart should be as free from sediment as the first. There will be no dirt in the bottom of cans if the milking has been cleanly and the cans have been protected from dust.

Both the odor and the taste of milk should be pure and sweet when the can cover is first removed. Perfectly sweet milk will have an acidity of less than two-tenths of one per cent., as is shown by the alkaline-tablet test.

The Purity of Milk is entirely within the control of the milker. If the cows are healthy there is no excuse for dirty, tainted or sour milk. The defects most commonly met with in milk may be avoided by following the directions given in this brief outline.



GREAT NAME 54245, IMP.

Used in the herd of the late Mr. Chas. Lutz, Williamsville, N. Y. Son of Nameless, P. S. 3222, H. C. (See Gossip, page 362.)

"Little and Often" in Calf Feeding.

One of the secrets in the successful raising of calves on a pail-fed diet lies in the regularity of the feeding of moderate quantities of milk. It may be stated that for the first two weeks of a calf's life it should be fed four times daily, and from that time until three months old three meals per day will not be too many. In the hurry and rush of seeding and other work, the meals of the calf are apt to come too far apart, and too large quantities of food are offered and taken, as the calf, from a long fast, is quite hungry. Few meals at long intervals means loss to the calf grower. Scouring is a common result, and while the calf may survive the attack at the end of the summer it is not a specimen of which any person would be proud. Cold milk, a sudden change from whole milk to skim milk, sour milk, etc., all have detrimental effects on the growth of a calf. The use of limewater in the milk is often valuable to help overcome undue acidity in the stomach, an ounce (two tablespoonfuls) to a quart of milk will be about the right quantity. Limewater is easily and cheaply made by anyone who will procure a piece of fresh lime, say the size of an egg, and place it in half a gallon of water, letting the preparation stand in a stoppered bottle or jar for 24 hours, the clear solution being used.

Cheese Factory Instruction.

The directors of the Western Ontario Dairy-men's Association have appointed three instructors to devote the whole of their time to assisting the cheesemakers, factory managers and patrons to raise the quality of the product of the cheese factories of Western Ontario to the very highest standard of excellence, and, by so doing, to retain the pre-eminence in the British markets that we have for so long a period enjoyed. Besides increasing the number of instructors, the Board has been able to materially reduce the fees payable by the factories. It is to be hoped that every cheesemaker or factory manager in Western Ontario will take advantage of the opportunities now offered, and make application for services of instructor for the district in which his factory is situated.

For instruction purposes the territory is divided into three districts, as under:

1. Northern—Being all north of the main line of the Grand Trunk Railway running west from Toronto via Guelph and Stratford.
2. South-eastern—Being all south of such G. T. R. main line east of, and including, the counties of Oxford (except West Nissouri) and Norfolk.
3. South-western—Being all south of such G. T. R. main line west of, and including, the Township of West Nissouri and the counties of Middlesex and Elgin, and also the portion of Perth south of the G. T. R. main line.

The following have been appointed instructors: James Morrison, 13 Fleet St., Brantford, for the south-eastern district; James Bristow, Bright, for the south-western district; John F. Millar, Listowel, for the northern district. The fees to be paid by the factories are: For one visit of one day's duration, \$3.00; for two or more visits, each of one day's duration, \$2.00 per visit.

Applications for the services of the instructors should be made to the secretary, George Hately, Brantford, Ont., as quickly as possible.

Arrangements regarding instructors at summer creameries will be announced later.

English Jersey Butter Records.

The English Jersey Cattle Society has done good service in publishing an account of the various tests which were made in the past year, for the figures which are the result of these tests should be sufficient to satisfy the most confirmed opponent of the claims of the Jersey breeders to pre-eminence for their cattle as butter producers. During the past 15 years over 1,300 cows have been tested, and these animals have yielded on the average, in round numbers, 31½ lbs. of milk and 1 lb. 10½ ozs. of butter per day, the ratio being, in round numbers, 19 lbs. of milk to 1 lb. of butter.

In 1889, at the London Dairy Show, Baron's Progress yielded 37 lbs. 6 ozs. of milk, which produced 3 lbs. 5 ozs. of butter, the ratio being as 1 to 11.3. In 1889, Mr. Cornish's Flora produced 2 lbs. 7 ozs. of butter, giving a ratio of 13.87, although there have been many cows which have exceeded this yield and beaten this ratio.

At the Jersey trials last May, twenty-one cows averaged 1 lb. 12½ ozs. of butter, while, omitting the worst four, seventeen averaged 1 lb. 15½ ozs., their ratio being 16.1, although they averaged 164 days in milk. The largest yield of butter was made by a cow 96 days in milk, her production having been 2 lbs. 10½ ozs. from 45½ lbs. of milk, but at this meeting, where no less than eight cows exceeded 2 lbs. of butter, the winner gave 2 lbs. 4½ ozs., with a ratio of 1 to 14, after 220 days in milk.

At the Bath and West of England meeting last year, twenty-two Jerseys, under 900 lbs. weight, averaged 1 lb. 13¼ ozs. of butter and 33 lbs. 3 ozs. of milk, while six Jerseys over the above weight averaged 2 lbs. ¾ oz. from 34 lbs. 15 ozs. of milk, the average days in milk being 166. In this case twelve of the Jerseys exceeded 2 lbs. of butter in the day, three of these exceeded 2 lbs. 10 ozs., and two of the three had been over 100 days in milk, while another of the best performers had been 205 days in milk. In this competition the cow Em, fifty days in milk, yielded 2 lbs. 11¼ ozs. of butter; the same cow turned up at the Islington trials, where she gave 2 lbs. 1 oz. in October upon dry food, after being 188 days in milk. Again, the cow, Buttercup 3rd, 46 days in milk, gave 2 lbs. 1¾ ozs. of butter in May; in June, at Weymouth, she gave 1 lb. 10 ozs., and in October, at Islington, precisely the same weight, although 184 days in milk. The cow, Gloaming 4th, gave 2 lbs. 6¼ ozs. in May, with a ratio of 15.48, while in October, at Islington, she gave 2 lbs. 1¾ ozs., with a ratio of 14.6, having been 193 days in milk. The cow Lorna, 112 days in milk, gave 2 lbs. 2¼ ozs. in May, and 1 lb. 6¼ ozs. in August at Tring, 187 days in milk.

At Tring, 38 Jerseys, 98 days in milk, averaged 1 lb. 10¼ ozs. of butter from 36¼ lbs. of milk; 24 of these Jerseys gave a much better average, 1 lb. 13¼ ozs. of butter, but as there were several inferior performers, the ratio was not so good as it might have been. At Islington, the 25 Jerseys, averaging 142 days in milk, gave 1 lb. 9½ ozs. of butter.

When it is remembered that in all public trials there are cows entered for competition that fail to come up to a high standard or their normal production, from the fact of having been long in lactation or adversely affected by their strange surroundings,

it must be concluded that these average performances are exceedingly creditable, and if the inferior ones were eliminated, the showing would be a very brilliant one indeed.

The Cream Gathering System.

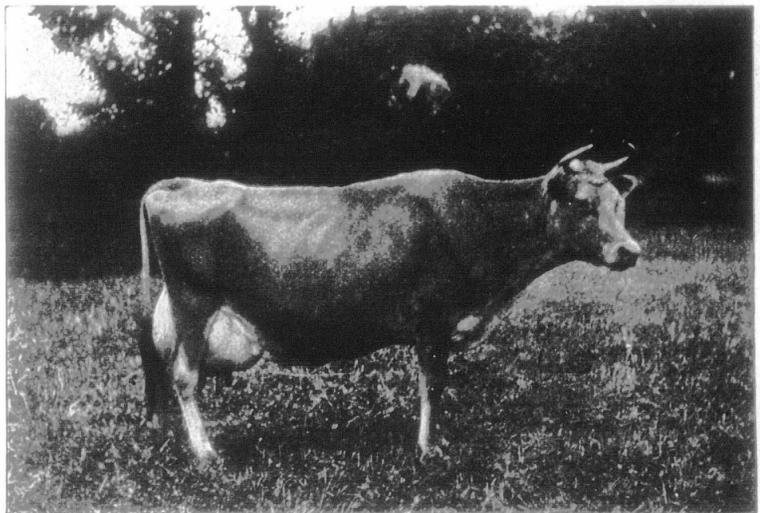
To the Editor "Farmer's Advocate":

Sir,—I see in your April 1st issue that Mr. I. W. Steinhoff has introduced a subject of the greatest importance to this country, and I hope there are others who will take part in the discussion of it. Mr. Steinhoff denounces the cream-gathering system of creameries because the butter does not reach the market in good salable condition, and "sounds a warning" against the extension of such creameries. He admits that at the Pan-American, at which he was a judge, two cream-gathered creameries secured prizes, with scores of 97½ and 97½ points. Mr. S. must have considerable liking for cream-gathered butter, for at the meeting of the Western Dairy Association, held at Woodstock in January last, the first prize for points was given by him to butter made from cream three-fourths of which was gathered from patrons (ahead of 18 other creameries), with a score of 97½ points. Mr. S. says: "Instructors and those advocating making more butter, should also advocate the establishment of separator creameries only." This is all right where the farmers have gone largely into cows and a sufficient milk supply can be secured within a reasonable distance. But there are large districts where a man who has 6, 8 or 10 milkers is counted as an extensive dairyman, and in such places, if butter is to be made, it is only on the cream-gathered system. Farmers are awakening to the value and necessity of having skim milk for young stock, and as this is all lost when patronizing a cheese factory, they would sooner send to a creamery; also, we have to face the hand separator. Thousands of dollars are invested in hand separators, and farmers are not going to pay out a hundred dollars for a separator and then set it aside to please the separator creameryman. The hand-separator wave is increasing, and instead of trying to turn these down, special efforts should be made to find out how the gathered cream can be handled to the best possible advantage for making butter with better keeping qualities. It is not much wonder that some of the butter from such creameries is "of a sort of stale, sour, heavy flavor." Cream is gathered only twice a week through the hottest July and August weather; all sorts of "stuff" is accepted; it is gathered in ordinary milk cans on a wagon without a cover; and it is not properly treated when it eventually reaches the creamery, etc. What other results could follow! No, you cannot stop the increase of cream-gathered creameries, but there is barrels of information and education required, that if given and followed will not only greatly improve the quality, but make it equal to the article turned out by the separator creameries. What do you think, Mr. Steinhoff?

Middlesex Co., Ont. W. K. MACLEOD.

I have been a reader of your paper for over a year now, and I feel as though I was at liberty to write to you and tell you how much I enjoy it. I always look forward to its visits to Rest Cottage, which is the name of our home, with pleasure. I think it contains valuable information for everyone, but especially for the farmer, and I hardly see how we could get along without it now.

Halton Co., Ont. JOS. S. SWITZER.



NAMELESS, P. S. 3222, H. C.

Winner of second prize over Jersey in 1893; first in 1894 and champion prize in 1895, 1896 and 1898. Dam of Great Name 54245.

Oleomargarine Ingredients.

Many of our readers have doubtless been curious to know of what materials oleomargarine is made from. The following list will afford the required information, which is taken from the B. A. I. report just issued. The quantities are given in percentages: Neutral lard, 34.27; oleo oil, 26.82; cottonseed oil, 4.67; sesame, .53; coloring matter, .16; sugar, .12; glycerine, .01; stearin, .07; glucose, .02; milk, 15.57; salt, 7.42; butter oil, 4.76; butter, 1.72; cream, 3.86.

Oleo oil is another name for animal fat; the other terms explain themselves, sesame being a grass growing in the Southern U. S.

GARDEN AND ORCHARD.

A Good Garden.

SOME HINTS ON PLANNING AND CARE THROUGH THE MONTH.

Through the greater part of Canada the first week in May comprises about the busiest part of the gardening season, as nearly everything needs to be planted at that time to be sure of a crop, except the more tender vegetables. The farmer's garden is too often planted with little thought as to looks or ease of cultivation, and thus much of the profit and pleasure of gardening is greatly lessened.

The best piece of land on the farm is none too good for a garden, especially when handy to the house, and if planted in straight rows sufficiently far apart to permit cultivation, the work of caring for it becomes a pleasure instead of a trouble and bother, as a garden planted in little patches is sure to be, to say nothing of the appearance. The first vegetables to be sown are onions, parsnips, lettuce, radishes, and other roots and salads. To secure the best effect, which contributes much to the looks of the garden, all tall-growing crops, such as corn and pole beans, should be put on one side of the garden, as when a row of these runs through the center, they break the view and shade the crops near them. This can be prevented and the garden made a thing of beauty by pursuing the following plan, which I have practiced for several years with good effect. Suppose the main walk runs through the center of the garden, then next to the walk, on either side, plant a root crop, such as parsnips or carrots; next, several rows of bush beans or dwarf peas; then turnips, cabbage and tomatoes, having the dwarf-growing crops nearest the walk and the tall-growing ones at one side. This takes very little time put into practice, and the appearance of the garden will contribute greatly to the owner's satisfaction. As soon as the seeds are up, cultivation should commence. A weed killed when breaking through the ground is worth a dozen two weeks later. For this purpose there is nothing better than a sharp steel rake drawn between the rows close to the young plants. When only a small quantity of radishes, early turnips or like vegetables need to be sown, a good plan I find to be is to sow them with a later-maturing crop. When sown with late beets or turnips, they can be used before these take up the room, without checking their growth.

As to the best fertilizer or manure for the garden, the character of the soil should be considered. If light and loose, stable manure should be applied in a well-rotted condition if possible; while on a heavier, richer soil, chemical fertilizers, especially those containing considerable potash, are best. Wood ashes are excellent, but hen manure gives better results on the lighter soils, as if used on a heavy, rich soil, too rank a growth from an excess of nitrogen is liable to give trouble. Grow all the ordinary vegetables and some of the extraordinary, as Swiss chard, kale, Brussels sprouts, etc.; an earlier crop and greater variety greatly increases the pleasure as well as profit gained therefrom.

The flower garden should not be neglected this month, as the earlier it is planted the better will be the results. The easiest to grow and most popular kinds of flowers are pansies, petunias, pinks, asters, snapdragon and sweet peas. The last-named should be planted first, in a row running east and west, in order to get the full benefit of the sunshine. A good plan is to sow them in a shallow trench, the soil first being deeply dug and manured, and draw the soil toward them as they grow. Being thus deeply rooted, dry weather does not affect them and they flower longer. The other sorts do best and look most attractive in beds of round, oblong or triangular shape, slightly raised above the surface. The soil should be made as fine as possible before sowing the seed, and some finely-sifted old compost or manure worked under the surface. The plants should be thinned and transplanted into other beds or spare spaces, leaving the plants four or five inches apart, as one good stocky plant will produce more flowers than a dozen crowded and spindly ones. Considerable finger-work has to be done in weeding and transplanting, and one of the little hand-weeders or forks is a great help to the flower-

gardener. If the plants are not coming on well, I sprinkle dry sifted hen manure or nitrate of soda over the beds, and the next heavy rain washes it into the soil, producing a quick and healthy growth.

To treat of the many gardening operations of the month requires more space than I can command in this issue, but most of them are well known and others are not practicable to the farmer or his wife, who have little time to experiment with them. However, these few suggestions may be useful, but the main facts should be kept in mind, namely, planting of vegetables in long, straight rows to ensure easy cultivation; not waiting till the weeds are big enough to pull; a weed killed when coming through is worth ten later on. Put the tall-growing crops at one side of the garden and the roots at the other, thus helping to make it attractive, and have a good plot of flowers, and you will be pleased instead of discouraged with the garden, and gain no little interest and pleasure from your work. Next month I will give a few hints and helps that I have found best adapted to the cultivation and care of the garden during the month of June, gained from observation and experience, as have been my previous articles on gardening.

Halifax Co., N. S.

E. MACKINLAY.

Orchard Cultivation.

While experimenting with a lime mixture sprayed on fruit trees to prevent the swelling of the buds in early spring, Mr. W. T. Macoun, of the Central Experimental Farm, discovered that the trees thus treated were practically rid of the oyster-shell bark-louse, an insect which does a great deal of injury to apple trees. The lime destroys the gelatinous matter which binds the scales to the tree, and the scales are then removed by the action of rain, frost or wind. To be most effective, the spraying should be done in the autumn, and there should be two applications, so that all the scales may be covered. Lime used in the proportion of two pounds to one gallon of water has been found to be the best formula so far, but it is possible that one pound of lime to a gallon will be sufficient if the lime is good. This new remedy for the oyster-shell bark-louse is simple, cheap, and very effective, and should prove a popular one.

Kerosene emulsion has been usually used for this purpose, and with good success when the insects are running, but as they only run four or five days in the first week in June, it is difficult to kill them all off in this way. By covering the trees with lime you are able to get at the scale, and the lime makes the trees white, so that you can see whether all the scales have been covered or not.

Many orchards have been neglected so long, and have reached such an age, that it would not be profitable to attempt to renovate them. The best plan in such cases is to plant young trees. On the other hand, there are many orchards where the trees, if cared for, would be in the prime of life, and neglect is the only cause which prevents profitable crops from being grown. The trees, to begin with, should be pruned, not too heavily at first, but enough limbs should be taken out to open up the top and permit a free circulation of air and the admission of sunlight to it. The trees will, probably, be much moss grown, and both they and the fruit may be affected with various diseases. Injurious insects, too, are almost certain to abound.

Spraying should be begun early in the season, and the trees should be kept covered from top to bottom with Bordeaux mixture and Paris green until the fruit is almost fully grown. Scraping the trunks and large branches of the trees may be done if there is much moss, but as soon as the tree becomes more vigorous, and air and sunlight are admitted, much of the moss will disappear. If the oyster-shell bark-louse or other scale insects infest the trees, they should be sprayed with the lime mixture or other material already mentioned.

As the orchard, if neglected, is almost certain to be in sod, the soil should be plowed shallow in the spring, turning under a good dressing of manure if it can be procured. If the sod is not too thick it might be worked up with the disk or spade harrow. The ground should then be kept thoroughly harrowed until July, working in other fertilizers if the land be poor and manure is not to be had; and then red clover seed sown at the rate of twelve pounds per acre, and the ground rolled. A good cover crop should then be formed by autumn. This would conclude the first season's work. The results would, probably, be a greatly-increased vigor in the trees, and the fruit, though perhaps not plentiful, would be cleaner.

The second season, additional, but less, pruning should be done, the trees kept thoroughly sprayed as before, the clover plowed under in the spring, and the land kept harrowed or cultivated until July, and then seeded down to clover. The fruit should be better than the year before, but not until the third year should the trees be expected to bear heavily and the orchard be in good condition.

A City Orchard.

Five winters ago, at about this time, I was called on by an agent who persuaded me to try a few trees just to see how they would do. Skeptical as to the trees thriving as I was, he at last made me consent to get a dozen. They consisted of two cherry, four plum, four apple, a peach and a pear. I set them out, when they arrived, in two rows about twenty feet apart, and between each apple I set two plum trees, they being quick growing, and not likely to take up as much room as the apple. As I had limited space, I had to put them about ten feet apart in the row. The soil consisted of fresh turned sod and a heavy clay loam, but the drainage was very good. Before setting them out I trimmed the ragged edges of the broken roots with a sharp knife, and cut back the limbs to a strong bud. Some of the neighbors considered me crazy when they noticed me doing this, but I had the laugh on them when every tree took root, and grew much faster than if they had not been cut back. When they were trimmed I set them upright in the holes, put some rich loose surface soil around and on the roots, and a shovelful of old stable manure, next taking care not to put it directly on the roots, and then filled in the hole with soil somewhat coarser. The garden was made up around the trees, gooseberry and currant bushes were set between them, and beans, peas and other shallow-rooted vegetables planted, the ground being well manured. The trees grew luxuriantly, some of them making three feet in growth, besides growing firm and stocky. The next summer some of the rankest growing shoots were cut out, and the trees began to look ship-shape. One of the plum trees bore a few plums, and so far this tree has been the best and earliest variety. It is the Moore's Arctic, a great bearer and very hardy. That spring I sent up to E. D. Smith, the Ontario nurseryman, for a half dozen more trees; they arrived in splendid condition, and so far have proved to be very hardy, fast growers and early bearers. The Burbank plum tree is an especially fine specimen, and many came to see it in the past summer when in fruit. It produced half a bushel of magnificent plums, which were so large they were thought by those who saw them to be peaches. That this variety, which was formerly considered to be too tender for this Province, thrives and produces good crops for its age in this section of the sea-coast district speaks well for the fruit-growing capabilities, if properly managed, of many districts considered unfavorable. Every year since the trees were set out garden crops and bush fruits have been grown around them, and always producing a good crop, and it is my belief that if the soil is well fertilized the growing crop acts somewhat as a mulch, and if any of the fertilizing elements leach down below their reach, the roots of the trees take it up, and the thrifty condition of my trees, which has been commented on by experienced orchardists, confirms me in that opinion. As to the varieties, the Ben Davis is the only apple in bearing, of which there are three trees. One of them bore well the second year from planting, and the tree appears to combine early bearing, thriftiness and hardy character to a marked degree. Several Astrakhan and Gravenstein have made good growth, and appear to be perfectly hardy. The Moore's Arctic is the best plum so far, but the Burbank comes close, together with the advantage of larger fruit. The Abundance plum, of the Japanese class, is the least hardy and appears delicate. The Black Heart and Napoleon cherries have made enormous growth, and are great bearers, but the birds are troublesome when the fruit is nearly ripe. The Lawson, a summer pear, has done best so far. Still, with those few trees looked after, much astonishment and surprise has been noticed in this district, and the consequence is that probably more trees will be set out in this district the coming spring than ever before, especially in gardens of those interested in my success.

Halifax Co., N. S.

E. MACKINLAY.

Improving An Old Meadow.

I have about 15 acres of old timothy meadow on heavy clay land that has become thick and matted in bottom; would like to take crop of hay off same this season. Will you kindly let me know, through "Advocate," what would be good to sow on above to force growth? What do you think of plaster or salt, and how much to the acre; also where it could be obtained? E. Northumberland Co., Ont.

Ans.—The only thing we can suggest is top-dressing with short barnyard manure and harrowing it well. If manuring is not practicable, a thorough harrowing both ways may help it. Land plaster is most effective with broad-leaved plants, such as clover and peas. We should not expect any appreciable advantage from its use on timothy or blue grass, nor should we expect any benefit from salt in this case. It is beneficial to some grain crops, and also to mangels.

APIARY.

Apiary Work in May.

"April showers bring May flowers." At least, such is the comforting assurance we have always had during a cold, wet spell in April. As flowers generally (not always) secrete nectar, and nectar is gathered by the bees, surely the month of May should be one of interest to the beekeeper. If the latter part of April has been warm and pleasant, considerable pollen and some honey will have been brought into the hives, the stronger colonies will be quite populous, and the apiarist should take time by the forelock and make preparations for the honey season proper in the months of June and July. As the fruit trees come in bloom, all the colonies should have a thorough examination as to their condition and for the purpose of clipping the queens' wings. True, some beekeepers do not clip their queens, but the majority of extensive honey-producers do, and I think if anyone practices it for one season he will always clip afterwards.

As to the advantages gained, the chief, of course, is the large amount of control the apiarist has over his bees in the swarming season. No climbing of trees to get down a high-minded cluster; no chasing absconding swarms across the fields when the mercury is up in the nineties, or no scraping off bees from posts, limbs, etc., with stings galore and other unpleasant complications. If the queen's wings are clipped, when a swarm issues the queen will fall in front of the hive. If you happen to be in the yard, just take her majesty prisoner in a wire-cloth cage provided for the purpose. Then move away the hive from which the bees have just issued and put another hive, previously prepared, in its place. In a short time the bees in the air will miss the queen and come rushing back pell-mell to the same place (so they think) they left a short time before. As they start going in release your queen and let her run in at the entrance, and presto! your swarm is hived with but very little exertion on your part. If no one is in the yard when swarming takes place, the swarm will go back again; if the alighting board reaches the ground, the queen will crawl up in the hive and very likely swarm again the next day. Should the queens not be able to get back, you will generally find them under the hive with a small cluster of bees. Another advantage is that you can find the queens more readily if they are clipped, owing to their being more conspicuous, and it is the only way I know of keeping track of the ages of the queens. While I might possibly get along with a yard at home without clipping, I certainly would not know how to run an out-apiary without taking this precaution.

In clipping, different methods are used, all having the same object in view. Some are so proficient that they can with a small pair of scissors clip off the wings (one side) as the queen is running around on a comb. Others grasp all the wings between the thumb and first finger of the left hand and then with a very sharp knife sever the wings quite close to the body. Care should be taken to hold the queen near the combs, so that she does not fall far. Another way, the method I use, is to catch the queen by the wings with the right hand, then transfer her to the left, holding her gently but firmly by the legs; then with a small pair of scissors clip off the wings on one side. Do not be afraid of getting stung, for, while the queen has a stinger, she will never use it except in combat with a rival. It is a good plan for a beginner to practice on the drones if he is a little nervous at first. Each hive should have a piece of cardboard attached for the purpose of marking down condition of each colony. If your hives are numbered, an account can be kept in a book kept for that purpose. Number of combs of brood, quality of queen, etc., should be put down for future reference. If the queen of a populous colony is very weak, that stock should be specially marked, as they will be sure to supersede the queen, and are very likely to swarm under supersedure—i. e., with a young queen, unclipped of course. Beginners had better leave spreading of brood alone. While in the hand of a skillful apiarist it can often be done to advantage, it is very apt to result disastrously if undertaken by the unexperienced. To keep down swarming it may be necessary to give surplus room to the stronger colonies. The old adage, "A swarm in May is worth a load of hay," etc., does not hold good any more. The practical apiarist doesn't want swarms in May, and will hold them back if they are so inclined. The reason is very easily explained. For example, say a swarm is hived on the 25th of May. At that date apple bloom will be over and clover will not yield before the 12th or 15th of June in our locality; in the meantime, scores of those bees will have died, none have taken their place, there will be a lot of brood to care for, and very little, if any, surplus will be stored. On the other hand, if this swarm had been hived say on the 15th of June, when honey was coming in freely, a large amount of surplus would likely have been stored in a few days. Often between fruit bloom and clover there

will be quite a dearth of honey, and if there ever is a time when stimulating is necessary and beneficial, that is the time. A very easy way to do this is to uncap sealed combs of honey and put them back in the hive again. This should be done in the evenings. If they run short of stores, by all means supply them with plenty, as every bee raised now will be of use in the honey harvest. In our locality, wild mustard often bridges over this period, so that feeding is not necessary. As the season for spraying fruit trees is now on, be on the lookout for someone who, through ignorance or otherwise, may think of spraying trees while in bloom. It is a good plan to have a short write-up inserted in your local papers each spring. I have always found the editors quite willing to insert such at any time. You need have no fear of the up-to-date horticulturist poisoning your bees. It is the man who knows it all, and would not waste a dollar to sign for a paper, that needs looking after. Should you have trouble with any such, if possible be argumentative with him rather than aggressive. As all experiments have gone to show that the delicate blossoms are injured when they come in contact with Paris green and other poisons, and also that the bees are of immense benefit to the fruit-grower, you should have no trouble in convincing the most obstinate. It is wonderful how soon a man will agree with you if you once succeed in convincing him that his pocketbook will be affected by thinking and acting otherwise.

York Co., Ont.

J. L. BYER.

POULTRY.

Poultry Selection.

BY MYRON A. GEE.

The two objects of the universal flock of chickens on every farm is to provide eggs and meat for table use, and the surplus is for sale, the man of the house usually declaring that the hens eat their heads off; but I venture to say that if he had to reach down in his pocket for the cash to buy the poultry products that are consumed on his own table, as well as what groceries are got in exchange for what is sold, the poor, down-trodden hen would be looked up to with greater respect.

For lack of selection, in both type and performance, many a flock does not pay nearly the profits it should, and perhaps people often wonder what would be the best course to pursue in order to be more successful than they have been. There are excellent individuals in nearly all flocks, and by breeding from your most persistent layers you are able in a short time to largely increase your egg production. Feeding has to do with it also but for lack of space to deal with this I will touch on selection of right birds for hatching purposes, and a cheap, handy way to care for them.

Choose your best layers, and, at the same time, use a proper male bird, so the surplus cockerels at four to five months old will be in fine shape for market. This brings up the question of breeds, and for general purposes Plymouth Rocks and Wyandottes are the best fowl. They are easily procured, are hardy, quick growers, with flesh of best quality; not inveterate sitters, but good mothers and will raise a brood well. Every farmer should have pure-bred fowls; they are more uniform in size, color and shape, dressing and selling to better advantage.

It is not all done when you have a pure-bred flock. Keep weeding out culls and drones, and aim to have a good even flock of good layers. You must select best layers, pen them by themselves and set only their eggs, and allow no male bird to run with the hens you sell eggs from. Don't aim for too much size, for over-large hens are usually indifferent layers. Choose an alert, quick-turned hen, oblong-shaped body, and not too coarse in the bone. Mate with a male bird with a deep, round body, short legs, well set apart, leaving lots of room for breast, and avoid a knock-kneed bird or one that has a sharp-pointed breast bone; you want flesh to cover that bone up on your fattened chicken. A good thick-fleshed bird will feel as solid in your hands as a turnip, and weighs more than he looks. Be careful and get a bright red comb and wattles, snappy eye, and strong curved beak. These are sure signs of vigor; and no vigor, no chicks. Good strong germs are the secret of good hatches and good results in raising young chicks.

A cheap and convenient way to keep a pen of fowls as described above, is to build a coop 4x4 ft., 4 ft. high in front, 3 ft. behind, made of inch boards and battened. A yard in front, either separate or joined, 6 ft. long and 4 ft. wide, 2 ft. high. The frame of the yard is made of 3x1 inch strips lengthwise, on bottom and top, with a small 2-ft. post at corners. The sides of this is covered with 2-ft. wire netting, and the top with 4 ft. of same (each 2-in. mesh). At front of yard have slatted up and down, so birds can get water or feed in trough that is there. A window in front and slide for fowl to get in and out completes it, except roosts and nest boxes. The roof can be hinged in front, and you have a cheap and inexpensive house for a breeding pen; light, so it

can be moved readily to clean place, and if lined with tar paper and put in a sheltered place would winter 12 hens nicely all winter.

The proper way to care for a breeding pen in order to get good fertile eggs will be a subject for another paper.

Haldimand Co., Ont.

Hatching Eggs.

BY JOHN B. PETTIT.

While man's inventive genius has produced an apparatus to take the place of the hen in carrying on the work of incubation, there are thousands who do not make use of the new method, but resort to the old way and allow "biddy" to carry on her natural labor. While nearly everyone that has once operated a good, reliable incubator is satisfied that it is the most satisfactory method of hatching, there are many who can't afford them or for some other reasons keep on hatching with the hen.

When hatching with hens, there are several things that should be taken into serious consideration if the greatest success is desired, and if there is a desire to save time and labor. In the outset, do not set a hen that is not of the "sitting" kind. Leghorns that will stand on the perch and cluck and growl when one passes the nest which they have a desire to keep warm, but which desire is not strong enough to cause them to stick to it long at a time, make poor incubators, and are almost sure to simply waste the eggs given to them. Hens of such nature should not be used for hatching. Those selected from the heavier breeds are natural sitters and are the ones that should be chosen to do the work.

Never set a hen in a place where other hens will attempt to get with her to lay. Broken and chilled eggs will be the natural consequence, and then, with many, if there were not a good hatch, the eggs would be blamed. The sitting hens should be in a place by themselves where nothing can disturb them.

Try to have several hens sitting at the same time and in the same room or building. There are several reasons why this is advantageous. In the first place, it saves a good deal of labor. When there are several hens sitting in one room, grain can be thrown on the floor and water put in some receptacle to supply them all in a very short time, while if one had to walk around to several different coops and pens to feed sitters individually, a good deal of time would be taken up unnecessarily.

There are two advantages from setting several hens at the same time. The first is gained from testing out the eggs from the fifth to eighth day, to find out which are not fertile. There is no use having hens sit on a lot of infertile eggs for three weeks. After a week of incubation, these eggs can all be detected by using the tester. If one had started a dozen hens, at the end of a week enough eggs that were not fertile might be taken out to allow the remaining good eggs to be covered by nine or ten hens. Then the other two or three hens could be set again on fresh eggs if so desired, or "broken up" and be again got into condition to help fill the egg-basket. The second advantage is gained when the chicks have hatched. In nice, warm weather a good-sized hen can take care of twenty-five chicks just as well as she can a dozen. Then the chicks hatched by a dozen hens could be put with five or six and the remainder could be shut up for a few days until they had forgotten they had hatched any chicks, and in a very short time they would again be laying. So we see that in this way the egg-yield of our flock would be considerably increased.

Sitting hens should be given plenty to eat while engaged at their duties. Whole, shelled corn is the best of grain foods and should be before them constantly. They should also have an abundance of fresh, clean water all the time, and plenty of "grit" to assist them in grinding up their food. They should have dust or sifted coal ashes to dust in to assist in keeping down vermin.

A great deal has been said and written about the kind of nest a sitting hen should have. Many contend that they should be set upon the ground, or, if that is not possible, that a thick piece of sod rounded-out should be placed in the bottom of the nest. I have seen this tried and have never yet seen anything gained by it. Many times we have known instances where hens stole away in some haymow and made their nests, probably right against the boards where the boiling sun beat down daily, and from this hot, dry place would bring off a 100-per-cent. hatch. This does not bear out the earth or sod theory very much. Last season we hatched between three and four hundred chicks, and in many instances the hen brought a chick from nearly every egg, and strong, healthy chicks at that. Every one of the eggs was set in dry hay or straw upon board bottoms. I do not believe it makes any difference what the nest is made of as long as it be clean, soft and dry.

Give a good hen half a chance with good fertile eggs and she will do the rest. Assist her in every way possible in the way of making her comfortable and contented and greater success will be the natural consequence.

Raising and Fattening Poultry for the English Market.

BY J. W. CLARK, BRANT CO., ONT.

In selecting and breeding any class of live stock for a definite purpose, the capacity of a breed and also of individuals in any breed to suit that purpose, must be considered if our efforts are to be followed with success. It would be folly on the part of a horse dealer if he were simply attracted by color. He must place more importance on the conformation of the animal, while keeping in view its ability to perform. From the standpoint of a utilitarian, the same principles are true when applied to any class of money-earning live stock. It is quite essential in the raising of poultry for the English market.

Our first point to consider in selecting stock to produce table poultry is, that they shall be hardy, that they shall carry a large quantity of flesh of good quality, that the bird shall present a symmetrical, compact appearance, with the flesh laid on in the proper places. Perhaps it is not of less importance that the breed used be a rapid grower, and one that will reach early maturity. For the English market it is highly important that we shall use a breed or strains of a breed which possesses a light-colored skin and flesh. When we are catering to the English market, we are catering to a class of people who are willing to pay fancy prices for such articles of food as suit their tastes, and we will be well repaid for bending to their desires.

In selecting birds from which to breed, I select blocky ones, having a good width across the shoulder, with short, high-colored legs and only a fair depth. I always try to avoid breeding from birds which are long in the neck and legs and which are exceedingly deep in the breast; birds of that type are quite as difficult to fatten as a long-legged, raw-boned steer. Other points which count in favor of the bird are: a small comb, a bright eye, and a short, heavy bill, showing considerable width where it is joined to the head; these points denote activity and strong constitution, which are quite essential when we come to forcing in the crates or with a cramming machine. I do not favor the heavy-feathered class of poultry. My experience has been that Brahmans, Cochins and Langshans are not as profitable as other breeds. I do not care to waste food in the production of feathers. They are also considerably more difficult to pluck, and I consider them to be coarser in flesh than some of the other breeds.

I am a firm believer in cross breeding for table poultry. As with other stock, I find that birds which have been inbred, or even line bred, for a number of years, become less hardy. A large percentage of the eggs are infertile, and when hatched the chicks are more delicate. By introducing new blood from time to time this difficulty can largely be overcome. I like an Indian Game and Barred Rock or Wyandotte cross. A Barred Rock and Wyandotte cross also give very good results. I have used an Indian Game cock with the heavy-feathered Asiatic hens with fairly good results. I have specially mentioned the Indian Game, because I believe them to be especially well suited to crossing with other breeds. They are a light-feathered, plump-breasted, vigorous bird, and have extra fine flesh.

Any person raising a large number of chicks cannot afford to be without an incubator. But in getting an incubator a person should be careful to select a thoroughly reliable machine. When producing eggs for incubating, I select suitable hens for mating. I use a cock or cockerel with not more than twenty hens. To get good strong chicks the flock should have abundant exercise, and grain ration, and a supply of green-bone meal, and a little chopped and very little soft food. After my chicks are out I do not feed them for twenty-four hours. Nature provides for this time. About the first thing they require is a little grit, such as a little coarse sand mixed with their food. Their first food usually consists of a few hard-boiled eggs chopped fine, with a little granulated oatmeal, which I feed dry. I always avoid sloppy feed during the first week, because it is apt to cause diarrhea—a very common trouble among little chicks. When a week or ten days old I induce them to exercise by scattering small wheat or a little millet seed among chaff, sawdust or such like material. A liberal supply of green-bone meal and cooked meat will force growth and hasten maturity. Too much care cannot be given in avoiding lice. By using an incubator this trouble is very much lessened.

At from four to five months old I crate for fattening. Before placing in crates I dust them with sulphur and insect powder and grease their legs to keep them smooth and bright. I arrange the crates so that each bird will have access to pure water and coal cinders made from soft coal. My experience has been that coal cinders from soft coal do very well for grit. If any charcoal remains it serves to aid digestion. I feed largely on meal which is a by-product in the manufacturing of rolled oats. This I mix with equal parts of buckwheat (chopped) and skim milk. Care must be taken for the first few days or the birds will go

off feed on account of the change of feed to which they have not been accustomed. During the first two weeks I feed three times a day, always being careful not to allow sour feed to remain in the trough. There will be little danger of them becoming "stalled" if care is taken to keep pure water and grit always before them and sour feed is not left in the trough.

I have been accustomed to using the crammer after the second or third week. I consider that by cramming I can put a finish on birds that cannot be reached in any other way. I use oatmeal-sifted oat chop will do—mixed with skimmed milk, and add about one pound of tallow to every sixty or seventy birds twice per week. They should be killed and dressed after being crammed ten days or two weeks. I always starve them for thirty-six hours before killing. I always break the neck close to the head and commence plucking at once. After plucking I place on a shaping board and put weights on them, thus forcing them into a compact appearance.

Don't Have Five Hens Do the Work of Three.

BY "FEATHERBONE."

Farmers generally are not yet into the poultry business extensively enough to warrant the purchase of incubators, although, with the convenient small sizes of those machines now on the market, the outlay for an incubator would repay good dividends. Failing the incubator, hens do the work, sometimes of their own inclination, and are covering from three to six eggs when they should be laying. To avoid this, eggs should be tested at certain intervals after being placed under the hen. Incubator operators and others generally test the eggs about the tenth day, and remove the infertile ones. If this method be followed with hens, the eggs passing the test can be given to other hens to make up their full quota, and the hens deprived of eggs be so handled as to get them to work again as layers. Addled eggs placed in tepid water will sink; the infertile egg held up between the examiner and the light will be found to be clear. The dealers in poultry supplies, incubators, etc., have for sale cheap egg-testers, which are more reliable and better in many cases than the water method.

Provide Drink for the Poultry.

As summertime and hot weather draws on, the poultry-keeper will doubtless be reminded of former losses in his flocks by death. Many diseases among fowl are caused by germs which have found in stale or stagnant water an ideal breeding place. Diarrhea, a symptom of digestive trouble, affecting stomach or intestines, is common in poultry yards in summertime, and in many cases may be traced to foul drinking water, which may have been allowed to stand for days in the hot sun. Animal life in the form of worms, grubs, etc., are much liked by poultry; vegetable life in the form of germs are decidedly harmful. Therefore, renew the supply of drinking water frequently, and be sure it is of good quality.

QUESTIONS AND ANSWERS.

1st.—Questions asked by bona-fide subscribers to the "Farmer's Advocate" are answered in this department free.

2nd.—Our purpose is to give help in real difficulties; therefore, we reserve the right to discard enquiries not of general interest, or which appear to be asked out of mere curiosity.

3rd.—Questions should be clearly stated and plainly written, on one side of the paper only, and must be accompanied by the full name and address of the writer, as a guarantee of good faith, though the name is not necessarily for publication.

4th.—In veterinary questions, the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.

Veterinary.

FOUL IN FEET.

Eight-year-old cow in good condition and milking well was let out when the weather became fine. She became lame on fore feet, and swelled hard from hoof to ankles; became unable to stand, and used to eat lying down. We applied hot poultices and a lotion of 2 ozs. laudanum, 4 drs. acetate of lead to 6 ozs. water. We also applied turpentine, and gave saltpetre internally. She passed bloody urine. She lived six weeks; became very thin and died. In cutting up the feet we found the bones rotten and matter present.

Nova Scotia.

M. L.

Ans.—Your cow had an aggravated case of foul in the feet, usually caused by walking through or standing in liquid manure or other irritating substances. The local treatment adopted was intelligent, except the application of the turpentine, but the poulticing did not commence soon enough; also, the partially detached portions of the hoof should have been removed by the knife to allow the escape of the pus. When the bones become diseased in this disease it will prove fatal unless the diseased member be amputated. It is not probable the urine contained blood, red water sometimes appears as a complication in this disease, and should have been treated with a change of food, a purgative and chlorate of potash.

J. H. REED, V. S.

STERILE COWS.

We have trouble with two or three of our cows that "come around again" a few days after calving. They were served by a young Shorthorn bull I had just purchased in January, but they come again every few days or some of them every day. After reading the advice of Dr. Peters, given in March 1st "Advocate," we have endeavored to try his plan, but it seems impossible to get an entrance into the uterus. We do not know whether it is natural or not, but is as if drawn by a drawing-string and cannot get the tube entered properly to allow it to flow. What we understand by the vagina or uterine canal is the passage leading into the uterus. Are we correct? We can easily enough disinfect that, but if the end of the tube is in the uterus and the other end disconnected, to allow it to "siphon out," how will that irrigate the entire vagina? Kindly let me know what is the cause of cows coming "around" so soon after calving? And what is the cause of abortion? Is it natural for the entrance of the uterus to be so small as hardly to admit the end of the little finger?

A. J. M.
Victoria Co., Ont.

Ans.—The fact that your cows show oestrus so soon after calving, and so often, indicates a diseased condition of the ovaries, for which practically nothing can be done. Your conception of the vagina is quite correct. The opening into the uterus should admit a couple of fingers with a little pressure. In some cases this opening becomes closed, and an entrance has to be forced with the fingers or a sound. It requires an expert to operate. There are many causes of abortion, as injuries, blows, foul odors, unhealthy surroundings, ergotized food, frights, etc., etc. There is also a form of contagious abortion, in which case cows abort without appreciable cause. The treatment for this has been given on different occasions in this journal, and you doubtless have seen it. If you suspect this, you had better put your herd into the hands of your veterinarian.

J. H. REED, V. S.

VOMITION IN COW.

I have a young cow, due to calve next month. She has been hearty until last week, when we found that she would vomit her food in the manger. This she would do at nearly every feed. The vomit was in the form of balls and makes quite a bulk of chewed food. She has been fed corn fodder all the winter, and we changed to threshed timothy and alsike. It was after this change of feed that we noticed her vomiting. We have since put her on a diet of red-clover hay, but the vomiting still continues. She chews her cud, and does not seem to be constipated, but, of course, the excrement is somewhat scant.

J. C.
Lincoln Co., Ont.

Ans.—The symptoms given indicate dilatation of the gullet, caused by food lodging in it for some time, the food that is vomited not reaching the stomach at all. This condition is sometimes caused by choking, either with roots or dry food, the portion of the gullet where the bolus lodges becomes stretched and (if the obstruction be there for considerable time) does not contract to the proper size. This may have occurred when you changed your cow's food, and she succeeded after awhile in coughing the food up, but the organ remained dilated at the point of obstruction. Now, when she eats soft or wet food all goes well, but when she swallows greedily or in large, somewhat dry boluses, the food lodges here and she apparently vomits. Watch her closely to see if this be the case, and if so, she must be fed entirely on soft, wet food for a long time. If this condition does not exist, give her a purgative of 2 pounds Epsom salts and follow up with 4 drs. bicarbonate of soda and 4 drs. ginger three times daily.

J. H. REED, V. S.

BARREN COW

Shorthorn cow, five years old, had one calf, now one and a half years old. The cow has come in heat regularly, and has been bred several times to different bulls, but has failed to conceive.

King's Co., N. S.

SUBSCRIBER.

Ans.—There are many conditions which cause sterility in cows, such as diseases of the generative organs, too high or too low condition, a closure of the neck of the womb, etc. If there be disease of the ovaries, treatment is of little avail. If the cow be too fat, careful feeding will remedy it. The most frequent cause is the last-mentioned, and an operation, which consists in introducing the hand into the vagina and examining the opening into the womb. If it be closed, an entrance must be forced with the finger. Sometimes it is necessary to use an instrument. You had better employ a veterinarian to perform this operation the next time she comes in heat, and about an hour afterwards breed her.

J. H. REED, V. S.

PROBANGS.

Please state where probangs for removing obstructions in larynx can be best obtained, with prices?

D. E. CLARK.

P. E. Island.

Ans.—W. H. Sparrow & Co., veterinary instrument makers, Toronto, Ont., or the Dennis Wire and Iron Co., London, Ont. The latter only make such instruments on order. Prices may be obtained by writing to either of above firms.

BURSAL ENLARGEMENT.

A five-year-old carriage mare, by Swallow, out of a mare by Goldleaf, 16 hands, 1,200 pounds. She has little puffs on both sides of her legs just above the fetlocks. They appeared about six months ago. What class of horse would you advise me to breed her to? A. C. Wellington Co.

Ans.—For the enlargements, blister in the ordinary way once every month, and give rest. If you cannot give rest, apply cold water often and long, and bandage while in the stable. As your mare is a trotting-bred carriage mare, the selection of a sire will depend upon the class of horse you wish to produce. If you want carriage horses, breed to a Coach horse of good quality and action. If you want a roadster, breed to a good Standard-bred; and if you want a saddle horse, breed to a good big Thoroughbred.

J. H. REED, V. S.

WANTS TO BREED MARE.

Clydesdale mare, six years old, will not stand for the horse. I have tried her regularly for two years. I have seen her in season the night before I tried her—but this is the only time. Middlesex Co., Ont. W. McT.

Ans.—No doubt your mare comes in season regularly, but does not show. Take particular notice, and when you think she is showing symptoms, hobble her, put a twitch on, and get two or three men to help and have her served. If she be in season, she will probably conceive, and if not, this will probably have the effect of causing her to show more definite symptoms. I once owned a mare that acted as yours does, and having a stallion of my own I teased her every day for three months, but she always was cross with the horse. At last, becoming weary, I forced service as described and she conceived to that service. I adopted this plan yearly after that, and she bred several times. J. H. REED, V. S.

INAPPETENCE IN COW.

My cow takes indigestion for stops eating for a week at a time, and I keep her alive by drenching her with food. She is not in calf, but passes long strings of slimy matter when sick. She is very thin. I gave her 1 pound salts and 1½ pints oil, which took 2½ days to operate. She purged for a week and then took sick again. She will not eat anything. G. H. A. Russell Co., Ont.

Ans.—I am of the opinion your cow has tubercular disease of the liver or intestines, or both, especially the mesenteric glands. If so, nothing can be done. I would advise you to get a veterinarian to test her with tuberculin. If she be not affected with this disease, give her 1 dram each powdered gentian, nux vomica and sulphate of iron three times daily. If she become constipated, give a little raw linseed oil. You will have to drench her with the powders. Boiled flaxseed makes a good vehicle in which to administer the medicine, and it is both nutritive and laxative.

CHRONIC COUGH.

My horse had pink eye two years ago, and ever since has coughed in the morning after being fed or watered. He does not thrive well. E. G. Waterloo Co., Ont.

Ans.—Chronic coughs are hard to cure, and it is possible your horse has heaves. Dampen all he eats with limewater, and be particular that everything he gets is of good quality, and give limited quantities of coarse food. Get the following prescription: Pulverized opium, 3 ozs.; pulverized digitalis, 1½ ozs.; arsenic, ½ oz.; pulv. iodide of potash, 2 ozs. Mix, and make into 24 powders. Give one every night. Repeat the prescription. J. H. REED, V. S.

CHRONIC DIARRHEA.

A 15-year-old mare has been sick for two months. I was feeding cut hay and flour. When she commenced to scour, I changed the food to long hay and dry oats, but she got worse, and is now very thin and weak. Her feces are soft and fetid. Her teeth are all right. I have treated her for diarrhea, and have consulted a veterinarian, but he could not tell what was the trouble. P. I. King's Co., N. S.

Ans.—You say you consulted a veterinarian, but do not state whether he saw the patient. If not, you had better have her examined by him. You say her teeth are all right. Of course, if her mouth has been examined by a competent man and pronounced all right, we must concede that point. But I am of the opinion her teeth require attention. It would be a remarkable fact if they did not in a mare of her age, unless they have been dressed within a year. The cut hay and flour certainly was not good food, and may have caused the trouble. There may be some foreign body in the stomach or intestines. If you are sure her teeth do not require attention, and she is strong enough, give her 1½ pint: raw linseed oil. Follow this up, if she continues to purge, with 2 drs. powdered opium, 4 drs. each catechu and prepared chalk in a pint of water every four hours until diarrhea ceases. Then give the following three times daily: Two drs. each of ginger and gentian, 1 dr. each nux vomica and sulphate of iron. Feed on good clean hay and oats. J. H. REED, V. S.

EDEMA IN MARE.

Mare due to foal on May 13th is swollen under the abdomen, the mammae is also swollen, as also are all four legs. Her urine is thick and whitish. I feed crushed wheat and barley—one part wheat, four barley—clover and timothy hay mixed. Prince Edward Co., Ont. F. S. A.

Ans.—The condition described is due to the food and want of exercise. Stop feeding either wheat or barley; give a little crushed oats with about three feeds of bran weekly. Give her a desertspoonful of saltpetre every night for three doses, and see that she gets regular exercise. J. H. REED, V. S.

LAME MARE AND MARE WITH CAPPED ELBOW.

A 13-year-old mare got hurt in the blacksmith shop two years ago. There is now an enlargement on the left side of the knee. She has been lame ever since the accident.

2. I also have a mare that has had a shoe boil for over a year and a half. R. D. N. Y.

Ans.—1. The probability is there is a union by bony material of some of the bones of the knee—a condition similar to spavin in the hock. The enlargement cannot be removed, but there is a reasonable probability of curing the lameness by firing and blistering the joint. This can be properly done only by an expert. You might try blistering once monthly for three months, and if this fails to effect a cure, get your veterinarian to fire.

2. If the lump contains pus or serum, open and treat as an ordinary abscess, by keeping clean and injecting a lotion of carbolic acid 1 part, water 40 parts, into it twice daily. If the growth be entirely fibrous, which I think is probable, the only way to effect a good cure is to carefully dissect it out, stitch up the wound, with the exception of an inch at the bottom, and treat with the above lotion. J. H. REED, V. S.

SPLINTS.

A 3-year-old colt has little lumps about half way between the knees and fetlocks on the inside of leg. Please describe a splint and cure? Dundas Co., Ont. I. L.

Ans.—Splints are formed by inflammation being set up, usually by concussion, between the large and small bones of the cannon. A deposit is thrown out which becomes converted into bone and unites the large and small bones. This is splint. There is usually a greater or less enlargement noticed, which gradually (in most cases) disappears without treatment, but the union between the bones continues. Therefore, while the visible enlargement may have disappeared, the splint remains all the same. A horse that once has a splint will have it all his life. In some cases lameness, especially in the early stages, is present. In such cases treatment is indicated. Treatment consists in showering with cold water frequently for a few days, and then blistering. In some cases repeated blistering is necessary. When no lameness is shown, it is not necessary to give any treatment. Blistering may hasten absorption, and that is the only excuse for treatment when no lameness is present. J. H. REED, V. S.

CHRONIC COUGH.

A five-year-old horse had distemper last fall. He got better, but has coughed more or less ever since. He has a rattling in his throat; it is not a heavy cough, but appears to be in his throat. Stormont Co., Ont. W. S. S.

Ans.—Blister the throat with the ordinary paste blister, as described frequently in these columns. Repeat the blister in a month. Feed 1½ drs. iodide of potassium night and morning in damp food for three weeks, then cease for a week and feed again for three weeks longer. If his appetite should become impaired, reduce the dose to 1 dram. J. H. REED, V. S.

Miscellaneous.**HANDLING COLT'S FEET.**

I bought a three-year-old colt this spring, and her feet have never been handled. Can you direct me how to go about handling her feet so that she will be kind when I want to have her shod? I have never had any experience with colts, and I do not wish to spoil her feet, as she is high-strung, and I do not wish to spoil her by so doing. Kindly reply through the columns of the "Advocate." W. H. M. Victoria Co.

Ans.—Gentleness will almost invariably win the confidence of the colt and lead it to permit the handling of its feet or any part. Commence by handling the face, head, and neck, then the back. That will do for the first lesson. At the next commence again at the head and work gradually back to the rump, and then down the front legs, and after a little handling gently lift one of these, and lastly work down on the hind legs to the feet. If the colt after such handling, patiently repeated, is obdurate or vicious, put a "twitch" on her upper lip and have an assistant to hold her while you handle her and lift her feet. This will draw her attention from you and cause her to consent to being handled. See article in "Advocate" for January 15th on the education of the horse.

BEEF CATTLE REARING.

1. Where one has lots of rough pasture, and has to hire all the help, would you advise keeping beef cattle and letting two calves run on each cow, also taking them in each night for a month or so before weaning, separating and feeding calves a little grain? 2. Would calves raised in this way do to keep for shippers, and at what age would they be fit to fatten for same? 3. Would you advise Herefords or Shorthorns for that purpose? 4. Would it be best to run cows loose or to tie them? THOS. E. BARTLETT.

Ans.—1. Where help is scarce, many prefer beef-cattle rearing (especially in case the animals are not finished upon the farm) to dairying, which involves much more continuous and detailed labor. A naturally good pasture farm plentifully watered will favor this system, but you must, of course, count on growing or buying fodders and coarse grains. The attempt to suckle two calves on one cow on pasture is not likely to succeed. The cow will not do well, and one of the calves will suffer. Better keep the calves in the stable and let them suckle the cow there. If a good milker, and well fed, she will rear two calves all right suckling them night and morning. At two months old they will begin to eat a little sweet hay and crushed oats and bran.

2. Good calves of a beef type raised that way will make first-rate shipping cattle, and can be finished at from 2½ to 3 years old.

3. Both the breeds mentioned are of the beef type. Shorthorns are most generally reared in Canada. Your present foundation stock, facility with which fresh breeding animals can be secured in your district, and your personal preferences, will guide you as to the particular breed to be kept.

4. If milking cows, they should be tied in stalls. Dry cows (dehorned) or young stock may be housed successfully loose in box stalls, and a good many feeders now fatten their steers in that way, running six or seven together in large stalls, but it is found desirable, for the protection of the weaker ones, to provide stanchions to tie them when grain feeding.

EQUSETUM AS A WEED.

We have to thank Mr. Wm. McNeill, of P. E. I., for the kind expression of his appreciation of the "Advocate." Answering his questions respecting the permanence, injuriousness and method of seed distribution of Equisetum (commonly called "horsetail"), we have to say that there are eight or ten kinds in Canada, and as he has not stated which one he has, our answer must be somewhat general.

The best-known species of this genus is the familiar scouring rush, but it seldom becomes a weed. All the species have a flinty cuticle. We are not aware of their possessing any poisonous property. They all have perennial underground rootstocks, and some of them, like the one named above, have perennial stems. They do not produce seeds, but multiply by their myriads of spores in much the same way as ferns. There is a true alternation of generations. The spore, a microscopic little object, germinates shortly after it leaves the parent plant, and produces a slime-like prothallium on damp ground. On this prothallium, which, except in mass, would escape the keenest eye, there arise the sexual organs corresponding to the flowers of the higher plant. The fertilized ovule develops into the large plant, which in turn produces spores again.

In Ontario, the weediest member of the group is Equisetum arvense. It has two kinds of annual stems; the earlier one is of a pale brown color, and produces spores in abundance. After the straight brown one dies down, the green branching one appears, so thickly in favorable situations as to almost wholly occupy the ground. Summer-fallowing would doubtless kill the perennial rootstocks. The spores are carried by the wind.

Has any reader observed injurious effects upon stock caused by the eating of these plants?

RAISING CELERY.

Kindly let me know, through your paper, how to raise celery and the keeping of it during winter? A SUBSCRIBER. Peterboro Co., Ont.

Ans.—Whole treatises have been written on the growing of celery, and for a proper understanding of the subject, should be consulted. Celery for winter use is set out about the latter part of June or beginning of July, in rows about four feet apart, from six to eight inches in the row, having first been sown in window-boxes or hotbeds, and later transplanted into beds where shelter can be given. The best gardeners do not now plant in trenches, as formerly, but on the level. The ground, which should be rich, is kept thoroughly clean and well cultivated until towards the end of September, when earthing-up begins. This is not done all at once, but by degrees, and should be finished before the middle of October. About the first week of November, it should be dug up, leaving on all the roots possible and some earth, and packed on end in a cool cellar. To have celery keep well in winter, the place in which it is stored should be moist, cool and airy. The celery continues to grow, and closeness, lack of ventilation, is very hurtful. The temperature aimed at should be 35 degrees.

HENS DIE OF APOPLEXY.

Could you kindly tell me what is the cause of lameness in my hens? They seem to take it all at once, then they get mopey and don't seem to care much for their feed; combs are a good red. To look at them, one would think the trouble was up in their body; there are no marks and no swelling. They live for three or four weeks after being attacked, then fall off their perch and are dead in a few minutes. I have lost three and one more is lame this week. I have one that the lameness has left, but she is dull and stupid-looking. Some of them are a little scoured and the voiding is a bright yellow and a dark green. They are all very fat. We feed buckwheat and rye, with pulped potatoes and turnips and wheat meal or clover leaves steamed, and meal and oats. They got the buckwheat and rye for one meal a day. They have plenty of fresh water and exercise. From forty I only get about 10 to 12 eggs a day. Are they too fat? The henhouse is in a shed under a bank barn. The hogpen joins it by a slat partition. We fattened ten hogs there this winter; would the steam from them injure the hens? They had the shed to come in through the day, facing the south. We have only taken your paper a little over a year, and are well pleased with it. W. G. York Co., Ont.

Ans.—In this case I think the trouble is due to the feed. Some of the food used is very fattening; for instance, potatoes and buckwheat. When it is said that the fowls are very fat, I think that is where the trouble lies. The birds are apparently dying of apoplexy. I know that where birds have been well fed during the winter, and have not had any too much exercise in the open air, in many instances they will go lame in the spring; and, in some others, will drop dead from the roosts. This is due to the birds being overfed, and thus becoming too fat and having too much blood. The remedy is to give less food and as much exercise as possible. I would suggest using on the pen floor at least a foot of straw, and make the fowls work in that straw for every particle of food they get. Omit the mash altogether, but continue feeding the roots. In this way, try to work off some of the surplus fat and get the birds into better condition. Birds that have some indication of dysentery should be isolated from the others, and should be given a moderate dose of salts, say one-half a teaspoonful to each chicken. We usually give this dry, opening the chicken's mouth and pouring as much as possible down the throat. You will find that the chicken will swallow the most of it. If the bird has intense thirst, it might be well to give it scalded milk to drink. You should, however, be careful in giving this, as it may be constipating. The only injury that the steam from the hogpen would have on your hens would be if they had taken cold or had developed some form of roup. If they were out of the draft, I think it would probably do them more good than harm. O. A. C., Guelph. W. R. GRAHAM.

RIGHT OF CATTLE ON HIGHWAYS.

A correspondent asks about people herding cattle along the highway, and especially along his side of the road, when he objects. Let him remove his fences along the public highway, and others will scarcely undertake to pasture his side of the road. There is no statute requiring farmers to maintain such fences, and any municipal by-law giving cows and other stock permission to run at large is at variance with the rights of farmers to leave their lands adjacent to highways unfenced. All that the stock-keeper is required to do is to prevent his stock from entering upon his neighbor's land. Those who wish to use the highway as a pasture ground or otherwise, must look after their stock and see that it does not trespass upon adjacent farms. Why should farmers be expected to fence against other people's stock that is allowed to run at large? It has cost us millions of money already, and it is time we began to assert our rights in this regard. If we build no fences along highways, we cannot be blamed for snow blockades, etc. E. J. Y.

SOWING RAPE WITH SPRING GRAIN.

Mr. Thos. I. Ellis asks, in last number of the "Advocate," regarding the sowing of rape with spring grain. In reply, I would say that while rape is objectionable as a food for milch cows, it is a splendid catch crop for other cattle, and especially so for sheep and pigs. It can be grown successfully with spring grain, but it ought not to be sown until the grain gets a good start. I sowed a plot with hullless and beardless barley, and as an experiment sowed the rape seed at once. The rape came forward, and was nearly as high as the grain when cut. But on a larger piece I sowed when the grain was perhaps six inches high. When cutting the grain I could scarcely find a spear of rape, and concluded it would be a failure, but before long the field was green, and finally it carried an immense crop. And my lambs never did better than on rape that fall. Since then I have continued the practice, and find that they delight to work upon it all winter. Lambton Co., Ont. E. J. YORKE.

GRASSES IN INDIA—SALT FOR STOCK—BOOKS ON AGRICULTURE—WIND POWER—TARIFFS.

Though at this distance, it is always a pleasure for me to go through the "Farmer's Advocate." It is always fresh, and is as good to us here as it is at Canada, except in some respects where climate and other natural conditions do not agree. Our countrymen are proverbially backward in agriculture, and I feel convinced that if the suggestions in the "Advocate" be only followed or adapted to local conditions, it will do them immense good. But I am afraid that in most cases the disagreement of natural conditions does not admit of so fair a result, and, therefore, seek your expert advice and suggestion in the following:

1. Is it possible to grow in this torrid climate (dry bulb, mean temperature 72 degrees, maximum 86 degrees) all or any of the ensilage or grass mentioned on page 54, "Farmer's Advocate" for 1902?

2. Why is salt given to horses, cattle, sheep and swine in Canada? Is it to promote perspiration or to purify the blood? Do you think it advisable to give the cattle and horses of India any quantity of salt? Does it not result in excessive perspiration, which is loss of phosphates?

3. Is it possible, and will not the cost be prohibitive to import machinery, breeding stock and seeds to India?

4. I read that all breeders use roots as part of food to stock animals. May I know what they generally consist of? To what species does turnip belong? Can that be grown in India?

5. On page 30 of the "Advocate" for 1902 it is said that alfalfa and some deep-rooted clovers are valuable in aiding deep tillage. Please let me know if the species thrive in India also?

6. Windmills I find are very popular with Canadian farmers, while in India they are practically unknown. What is the minimum velocity of wind required to keep the mill working? The minimum we have here is only 100 miles per day. Do you think that this would do to drive the mill continuously? I request you to tell me what it may cost for a mill and necessary pump and pipes for a well 150 feet deep?

7. What is the mean maximum and minimum temperature of Canada? What is its rainfall, lowest velocity of wind, elevation, etc.?

8. Will you kindly select for me a set of books on practical and chemical agriculture, and also on cattle rearing and agricultural implements and machinery so as to apply to India?

Our people in this part of the country, and for that matter in all India, are far behind in their knowledge of modern improvements effected in agriculture. I shall therefore endeavor to see that they benefit themselves like other farmers by subscribing to the "Advocate."

Madras, India. M. KRISHNIENGAR.

Ans.—1. It is possible to grow ensilage and grasses in India in the N. W. provinces, but not possible without irrigation in the Punjab or the great central and southern parts of India.

2. Salt is not given to horses and cattle near the sea, because they won't take it. This will apply to India. Salt will not induce perspiration so great as to weaken the animals in the tropics.

3. The cost of sending implements and stock to India is very moderate indeed. Once on the coast of India, railways carry freight and passengers at the cheapest rates in the world.

4. Roots can be grown in the N. W. provinces of India, or south where one can irrigate.

5. Clovers will thrive in India where the rainfall is in the north. Near the foothills of the Himalayas clovers do well, but south, in central and southern India, opium pays best of all crops. Next comes rice. That is to say, these are the crops for the poor man, but the gentleman's crop, with capital, is indigo. Now Germany threatens to usurp indigo dye by a residuum of coal tar, and throw away all indigo and ruin all indigo planters. Germany made an idle boast, and hasn't done it. But the threat caused uneasiness. The torrid climate of India I did not find hard to bear when prepared for the heat. Diet largely makes the difference. The use of ardent spirits is most especially to be avoided.

The natives are poor workers in their way; an able-bodied man will work for 5 cents a day. I saw fine grain in the N. W. provinces, but they do not compete with us, because, even cheap as their labor is, it is all hand labor and very slow. A little capital goes a long way in India. The white man is almost a god and a woman a goddess surely among the natives. THOS. CONANT.

[Note.—Mr. Conant is thoroughly conversant with India, having travelled there extensively and is a careful observer.—Editor.]

Regarding salt (query No. 2) for animals: So far as is known salt facilitates the passage of the albuminoids of food from the digestive canal into the blood. It increases the activity of the secretion of the juices of the body, and aids their circulation. It stimulates the appetite, and increases the energy of the vital processes generally. It also increases the excretion of urine.

Where salt is supplied regularly no ill effects are noted. When it is withheld for some time, the ani-

mal has a craving for it, and is likely to take an excessive quantity when an opportunity is given. An excessive consumption of salt under the circumstances mentioned would, no doubt, have a somewhat debilitating effect. If animals have access to salt at all times, they will not consume more than is good for them. G. E. DAY.

Ontario Agricultural College.

Regarding the Indian duties, the Department of Trade and Commerce, Ottawa, advise us that some machinery in India is dutiable at 5 per cent., but the greater part is free. "Grain, and pulse, including broken grain and pulse, but not including flour, free"; but there is a long list of seeds subject to a duty of 5 per cent. With reference to breeding stock, the present tariff reads: "Horses, cattle, sheep and all other living animals of all kinds free." There is practically no higher duty than 5 per cent. upon very few specified items.

On the subject of wind power the Ontario Wind Engine and Pump Co., of Toronto, write us: "We have had occasion recently to look into the question of the utilization of wind power in India; in fact, we are pleased to tell you that the large increase in the range of enquiries for the Airmotor has made it necessary for us to familiarize ourselves with the conditions under which they have to work in every country in the world."

"They have a curious way of measuring wind velocity in India, which sometimes makes it difficult to estimate what can be done with a windmill. They say, for instance, that they have 100 or 150 or 200 miles of wind in the 24 hours, as the case may be. This, however, does not help much, for an amount of wind totaling 100 miles in 24 hours, if blowing perfectly steady, would mean an average speed of four miles per hour, which is too little for effective work, if either the quantity of water required or the height to which it is to be raised are about the average. Two hundred miles of wind in 24 hours, if steady—that is, continuing approximately that rate during each hour of the 24—would be an ideal wind to operate Airmotors with, but if there is an absolute calm for 21 hours, and a hurricane of 60 or 70 miles an hour for the remaining three hours, these conditions would not be considered exactly the most favorable under which to operate a windmill successfully, and, on the other hand, the 100 miles per day may fulfil all requirements, if it were calm for a considerable portion of the time, with an eight or ten mile breeze blowing for ten or twelve hours of the 24.

"But it is not the wind, but the manner of measuring which makes the difference. Airmotors run in India just as successfully as in Ontario. We never assume, even in this country, that we ought to expect 24 hours' work to a day out of a mill. We figure on very much less, and though the total number of miles per day of wind might not seem to represent a satisfactory total, it will be found in practice in India as in Ontario that there will be a reasonable number of working hours, even with this small quantity of wind, during which Airmotors will run.

"But every such condition can be easily provided for. It is only a question of adequate storage and pumping capacity. Six months' calm can be provided for if necessary, and if due regard is given to these two features, which are of the utmost importance, there has never been an instance in which Airmotors have failed to fulfil, not only the estimates of the manufacturer, but also the expectations of the customer."

8. See list of books on agriculture, page 317, April 15th issue "Farmer's Advocate," from which our correspondent can select a few suited to his requirements, and order same through this office.

PARALYSIS IN LAMB.

I lost one of my best lambs the other day; tail was docked about two weeks ago; put stuff on them that I got from a vet. to stop bleeding; seemed all right for a week, then noticed it one night stiff on its fore legs; next morning it was unable to stand; its legs so stiff I could not bend them, nor could I move its jaws; it was two months old, and very fat. Was it lockjaw, and what should I have done for it? W. W. Middlesex Co., Ont.

Ans.—It is unlikely that the docking had anything to do with the trouble. Any ill effects following that operation are likely to show up within a few hours after. Bleeding after docking is usually easily stopped by tying a soft cord around the stump of tail, moderately tight. Only a post-mortem examination could determine the nature of the ailment, and the butcher's knife would have been the best remedy, as spring lamb at two months old makes very toothsome eating.

FISH COMPOST FOR CORN.

We have quite a quantity of fresh fish (squid) composted with sods last fall. To what kind of crop would it be most beneficial? How would it do on fodder corn? C. J. McF.

Cumberland Co., N. S.

Ans.—A liberal dressing of the compost applied to land on which corn is to be grown would probably give as good, if not better, results than for any other crop.

DISEASED SHEEP.

Had a sheep about five or six years of age; appetite failing when first noticed, and very much inclined to lie down; also bled a great deal. Head discharged very freely. Later on inclined to hold head down, with head pressed against wall or fence. Thinking it might be a grub in the head, we put coal tar on its nose, and later on a decoction of black tobacco juice poured into the nostrils, but without any apparent relief, and finally it died. What was the cause, the trouble, and the cure?

Lanark Co., Ont.

Ans.—A post-mortem examination of head would probably have decided the question whether grubs were present or not, as when present they are easily discernible. The smearing of the nostrils with tar is used as a preventive in summer when the gaddy torments the sheep by its attempts to deposit its eggs in the nostrils. The symptoms are akin to those in cases of grub in the head. The usual remedy is to inject a mixture of linseed oil and turpentine in equal parts by means of a suitable syringe. Another plan, borrowed from the Scotch shepherds, is to first apply tobacco smoke, blowing it up the nostrils, and then blowing Scotch snuff into the nostrils, causing a fit of sneezing, by which means the grubs are ejected. The grubs may be removed by an operation known as trepanning. This is to open the skull by removing a portion of the bone by means of an instrument, which operates in a circular way in the manner of a carpenter's bit, cuts a round piece of bone from the skull, the flap of skin having been first cut loose on three sides and laid back, to be replaced and bound till healed after the grubs have been picked out with forceps. This is, however, an operation for a professional veterinarian, and it is doubtful whether it is worth the risk, as recovery is uncertain. There is little satisfaction in doctoring sheep, and if they are in good condition when taken with such trouble the wisest course is to hand them over to the butcher.

CHARITABLE INSTITUTIONS.

Can you give me, through the columns of your paper, the names of and object of some of the most deserving charitable institutions in London, Chatham, or St. Thomas? READER.

Kent Co., Ont.

Ans.—Following is a list of the institutions in London, Ont., all of which are doing a good work and deserving of support: Children's Aid Society (under the Ontario Children's Protection Act); the Protestant Orphans' Home; the Mt. Hope (R. C.) Orphanage; Salvation Army Refuge; Women's Refuge and Infants' Home; Home for Incurables; Aged People's Home (men and women); United Charities Organization; Convalescent Home; and Mt. St. Joseph's Home (R. C.).

Chatham and St. Thomas, Ont., each have Children's Aid Societies, Dr. R. V. Bray being secretary of the former, and H. H. Way of the latter. A line to these gentlemen will give our correspondent a list of the other deserving institutions in those two places, a complete list of which we have not at hand. Mr. Joseph Saunders is secretary of the London (Ont.) Children's Aid. The objects of the foregoing list of nine organizations in London is fairly well indicated by their names. The United Charities Organization, of which Mr. Saunders is secretary and inspector, looks after cases of the destitute and ill who are not reached by the municipal relief department. For the most part, these institutions are supported by purely voluntary contributions.

SILO ON ROOT CELLAR.

Would like to ask your opinion regarding the practicability of building a silo on the top of a root house. My plan is to extend the roothouse out from the side of the barn and place the silo on the top, making provision to sustain the weight. What size post under the center of silo would be sufficient to support the weight? The top would not be out of the reach of the elevators. The advantages would be that silage, roots and cut stuff could be delivered into the feed-room almost together, and the mixing would be easily done. The bottom of root cellar would be solid rock. The barn is on a stone foundation, and I would build a silo about twelve feet in diameter by twenty-four or twenty-six high.

Victoria Co., Ont.

Ans.—Any sort of a wooden bottom for the silo would rot, and a permanent bottom of other material, capable of sustaining over 100 tons' pressure, is out of the question on account of cost, etc. Build your silo on the rock, and as convenient to the feed-room as possible.

CLEARING LAND OF STUMPS.

Some three years ago I cut all the timber off a 300-acre lot. What is the cheapest and best way to convert it into profitable land? The soil is good.

Rouville Co., Que.

Ans.—If hardwood, the stumps would rot out and could be burned in 7 or 8 years by simply leaving the land in pasture. If pine stumps, they would last for generations, and must be pulled out with stumping machine or dynamited.

TO DESTROY MARSH MALLOW.

Can you give me a sure recipe to kill the weed, marsh mallow? It is growing in my front yard, and as the barnyard is above it, the water in the spring runs through the garden from the barnyard. We have plowed it up and sowed grass seed, but it smothered the grass out, and it is a terrible weed to spread. Please tell me of the best lawn grass to sow?

Simcoe Co., Ont.

Ans.—Marsh mallow grows only from seed, and where land is well cultivated, gives no serious trouble, but in rich, moist places, such as our correspondent describes, which it is desired to keep in grass, is a real pest. Pulling by hand will kill it every time. If too hard to pull, we think spudding deeply with narrow spud or steel table-knife would be equally effective. No other method that we know of would answer among grass.

2. Kentucky blue grass and white clover form the basis of most lawn grass seed mixtures, and no other kinds are really needful.

MANURE CELLAR.

I would like to know, through the columns of the "Advocate," if a manure cellar under a cow stable is in any way injurious to the cattle or building; the cellar would be built of stone. I have no other way of protecting manure without incurring more expense than a cellar would cost.

Shefford Co., P. Q.

Ans.—A stone manure cellar under cattle would be costly and, we fear, unsatisfactory. Unless tramped and kept moist, the manure would be apt to fire-fang, and in fermenting, odors would arise objectionable in the cow stable, unless the manure were frequently removed. From correspondent's note, we gather that he wishes to store it there most of the winter. If conditions are such that it cannot be put upon the land in winter, a rough shed-roof covering could surely be provided outside the stable.

MILK FLOW IN OCTOBER.

Do you consider sugar beets a good thing to feed cows to keep up the flow of milk in October? Is there any other feed within the reach of the farmer which you would recommend as being equal to or better than the beet? Of course, you know I mean as an extra, not as a whole ration.

Prince Edward Co., Ont.

Ans.—Sugar beets are certainly an excellent food for dairy cows. I consider mangels equally as good, and a larger yield per acre may be got of mangels. Green corn or corn silage in October, along with 4 to 6 lbs. bran or oats (chopped) daily, per cow, would also maintain the milk flow, at reasonable cost, in most years.

Dairy Dept., O. A. C.

DOES THE BULL CARRY GERMS OF ABORTION?
Some cows in Mr. Smith's herd have lost their calves this spring. Mr. Jones wants to have the service of the same bull as Smith does. Would there be any danger of carrying the disease from Smith's herd to Jones' herd through the bull? If so, what precautions should be taken to prevent it?

Dundas Co., Ont.

Ans.—Yes. If used on aborting cows the bull should be disinfected. (See "Advocate," March 1st, 1902, page 167.) A cow should not be bred for three months after aborting, and in the meantime should be disinfected.

CONVEYING WATER TO HOUSE.

What in your opinion is the most satisfactory way of having water pumped into the house? Have windmill power; well is midway between house and barn; have steel galvanized tank in basement of barn. House stands on a little higher elevation than the barn.

Brant Co., Ont.

Ans.—"Subscriber" has failed to comply with two conditions required in this Department, in not giving his name nor stating full particulars, such as distance of house from barn, where his windmill is located, etc., in order to give a satisfactory answer. Since barn is lower than house (fall not stated), we would say, speaking generally, that the best plan would be to force the water from well through small galvanized tank in house, from which it would be conveyed by gravity to barn, using a one-inch pipe from well to house, and one and one-quarter inch from house to barn.

TROUBLESOME WILLOW STUMPS.

In reply to the enquiry of C. W., of Oxford Co., in your Feb. 15th issue, I have found that by cutting close to the ground in the last half of August is almost sure death to the stumps of willows, black alders and other bushes or shrubs that are bad for sprouting. The idea is to cut just after the growth for the season stops, and before the sap returns to the roots.

Muskoka District, Ont.

MILL FEED BY THE TON.

Would you please give me name of a house in Toronto, in London, in Montreal, or anywhere else not too far, where I can buy bran, corn meal, middlings and other feeds by the ton? It costs too much here, getting it by the cwt.

Quebec.

Ans.—W. W. Ogilvie Milling Co., Montreal; Hunt Bros., London, Ont.; H. Hamlyn, Lambeth, Ont., or Jacob Hawkins, Arva, Ont. You can purchase more advantageously by car lots.

EXPLODING INCUBATOR LAMPS.

Can you tell me the cause for lamps exploding? When I started one of my incubators the other day, I found the top of the lamp loose, so I used a glass bracket-lamp that has been used for ten years. It burned all day, and about four o'clock it went out, the oil being exhausted. I refilled but did not clean it. Half an hour after it exploded. It was not turned up as high as in ordinary use. Yesterday morning I found the burner on another machine dirty, so I took it off and put on a new one I had just bought. Ten minutes after I found it smoking badly, and the oil so hot it was milky in color and boiling up in the lamp. It would certainly have exploded in a few minutes. On replacing the old burner there was no more trouble. The new burner was the same pattern as the old, but another make, and the wick was loose in the tube: I could see down past it. The oil was American, and I am using it in four other brooder and incubator lamps.

Grenville Co., Ont.

C. W. BEAVEN.

Ans.—The reason for a lamp exploding or flaming up and smoking is because there is too much heat forced down below the burner, thus heating up the oil and causing it to give off gas too rapidly. This forces the flame up, and if it smokes it fouls the chimney, and the longer it is left the worse it becomes. The results are, if you use a glass fount, that the heat breaks the glass, thus spilling the oil, which catches on fire; but where a metal fount is used it does not break, but the lamp continues to smoke and flame up until the oil is consumed. Any pipes, flues or heater about an incubator should be kept perfectly clean, as when choked up with soot it forces the draft back on the lamp, and this heats up the lower part. The draft for lamp should be perfectly free. The wick should fit burner and not be too loose, as this causes the wick to be on fire too low down in the burner. Keep the wick well trimmed down to the white wick, as when wick is burned for a long time it becomes black and thin quite a way down the burner. I would suggest you writing the manufacturer of the incubator, who no doubt would be better able to explain what causes the trouble. Where incubators are properly attended to there is no trouble or danger.

A. J. MORGAN.

SWINGING STANCHION

Any information you might publish concerning swinging stanchions would be very acceptable.

Norfolk Co., Ont.

STOCKMAN.

Ans.—Will some reader furnish description of swinging stanchions and how to construct them?

MARKETS.

Every reader is invited to write something for this department that other farmers ought to know. Do it while you think of it. Put it on a post card if you haven't time to put it in a letter.

Stock Gossip.

At a sale of Jersey cattle, on April 15th, from the choice herd of Mrs. McIntosh, Havering Park, England, good prices were realized, two cows selling for 87 guineas (\$457) each and a dozen others averaging over \$200 each. The bull, Carnatic's Gem, sold for \$520.

Messrs. W. G. Pettit & Son, Freeman, Ont., make a special offering in their advertisement of imported and home-bred Shorthorn bulls fit for service, also of imported and home-bred females, which they will sell at reasonable prices. That they are bred right, a look through the catalogue, which will be sent on application, will satisfy the most exacting of buyers, and the Messrs. Pettit are careful breeders, good judges, and discriminating importers.

At a public sale of a selection from the Shorthorn herd of Capt. Duncombe, Waresley Park, Hants, England, on April 11th, some very good prices were realized, the 40 females sold bringing an average of \$214, and the whole 52 head an average of \$227. The Royal winning cow, Warrior Queen, by Liberator, made 180 guineas (\$945), the top price of the sale. Acomb Scottish Bride sold for 150 guineas and Ruby Rose for 100 guineas. The highest price for a bull was 110 guineas for Manor Victory.

The handsome carriage stallion, Performer, the king of actors (illustrated on another page in this issue), owned by Mr. W. N. Scott, Milton, Ont., was shown at the Canadian Horse Show at Toronto, last month, winning first prize in a strong class, a record which he also made here at the spring show last year, and also at the Industrial Exhibition last fall, winning on both these occasions the sweepstakes as the best stallion, any age, in the class. He is a beautiful bay, 16.1 hands, 5 years old, sired by Imp. Phenomenon, dam by Imp. Derby. He is a horse of splendid style, high knee action and conformation, and was greatly admired at the Horse Show. Since the Toronto Show he has won first at Brampton and first and diploma at the Milton Spring Show as best Carriage stallion. He will stand this season at Milton, Acton, Georgetown, Hornby, and Palermo, at the fee of \$12.

FARM GOSSIP.

Ottawa Notes.

A MODEL FAIR.

The directors of the Carleton Agricultural Society will make an attempt next fall to have the county fair at Richmond a model exhibition in every respect. The various departments will be made of as great educational value as possible. Prizes will be offered to teachers and school children all through the county making the best exhibits of cut flowers, grains, insects, etc. The horse races will be dispensed with this year, and instead prizes will be offered for the various types of horses most in demand.

DIPLOMAS FOR DAIRYMEN.

The Eastern Ontario Dairymen's Association has agreed this year to offer diplomas to cheese and butter makers who make exhibits of cheese and butter at county fairs which score above a certain percentage of points. These diplomas will only be offered at the fairs to be held in Eastern Ontario which have been arranged in a circuit and which it will be possible for one of the instructors to visit without very heavy expense. The diplomas will be given at the exhibitions held at the following points: Brockville, Cornwall, Newington, Alexandria, Vankleek Hill, Metcalfe, Richmond, Perth, Almonte, Renfrew, Beachburg, Chapeau, Shawville, and Aylmer. The instructor of the Dairymen's Association who will visit the fairs and judge the exhibits will also give a talk on the day of the exhibition to the dairymen present.

EDUCATION FOR DAIRYMEN.

The model dairy district which will be established this summer in Eastern Ontario by the Ontario Department of Agriculture will be located in the section between Perth and Brockville. The twenty factories in the district will be nearly all those which are owned by patrons. There will be monthly meetings of the patrons, at which the instructor and maker will be present to give all the help possible in reference to improvement in quality and increase in quantity of milk.

Arthur Harrington, D. V. S., of Guysborough, who recently graduated with honors in Montreal, has been appointed veterinary surgeon for the fourth contingent. He left Ottawa on the 19th inst. for Nova Scotia, where he will purchase horses for contingent.

CANADIAN EXHIBITS FOR BRITISH SHOWS.

The Dominion Department of Agriculture has plans fairly well matured for maintaining a creditable exhibit of Canadian fruit at the expositions to be held at Woolverhampton, Eng., and Cork, Ireland, from May 1st to November 1st, 1902. Some nine hundred three-peck cases of apples and pears have already been sent forward, as well as a good display of ripe fruit of all classes preserved in transparent fluid. As the coming season's fruit matures, cases of them will be sent forward to take the place of that which has done duty. When the fruit arrives it will be placed in cold storage, from where it will be removed to the tables at the respective expositions as required to keep up a fresh display. The superintending of the exhibits has been placed in the hands of Mr. Edward H. Wartman, one of the Dominion Fruit Inspectors, who has been stationed in Montreal since last autumn. Mr. Wartman sailed from Halifax on the Allan liner Corinthian, on April 14th, to assume his new charge. He will direct the placing of the fruits and see that the display is maintained in good condition during the entire six months of the expositions.

THE CONSOLIDATED CURING-HOUSES.

The Dominion Department of Agriculture has appointed the four men who will this summer have charge of the four consolidated curing-rooms which it has decided to establish. Mr. N. G. Somerville, of Lanark, will have charge of the curing-room at Brockville, and Mr. J. Burgess of the one at Woodstock. In Quebec, Mr. Thos. W. Dunn, of Ingersoll, will have control of the curing-room at Cowansville, and Mr. Hubert St. Martin will manage the one at St. Hyacinthe. They have left for their different stations to superintend the building operations.

CHEESE AND BUTTER REFEREE.

Mr. J. A. Ruddick, Chief of the Dairy Division, has issued the following circular in regard to the official referee of butter and cheese at Montreal:

1. Mr. A. W. Woodard will again act as official referee for the season of 1902.

2. His services will be available for the examination of shipments of butter and cheese when there is any dispute between buyer and seller as to quality, and he will act only when both parties to the dispute are agreeable.

3. If the request for examination is made by a salesman, the referee cannot act without the consent of the buyer in whose possession the cheese are. If the request comes from a buyer, the referee will not act until he is satisfied that the salesman desires he should do so.

4. The services of the referee may be secured by addressing A. W. Woodard, Official Referee Butter and Cheese, Custom House, Montreal; or Telephone Main 1454, giving the following particulars, viz.: The shipper's name and address, number of packages, marks, and to whom shipped.

PROF. ROBERTSON GONE TO ENGLAND.

Professor Robertson, Dominion Dairy Commissioner, left for England on the 15th inst. When over there he will reorganize the work of the Department of

Agriculture as carried on by officers appointed to observe the conditions in which Canadian products are discharged from steamers and ocean liners. The Minister of Agriculture has arranged with steamships of various lines to provide special accommodation, through which cold air will be circulated, for the safe carriage especially of cheese and apples. Professor Robertson will have an opportunity of conferring on these matters with owners of steamship lines and importers, particularly of cheese, butter, apples, eggs, and poultry. He expects to return to Canada about the 1st of June.

N. B. HORSE-BREEDING.

The Department of Agriculture has received word from St. John to the effect that the New Brunswick Legislature has appropriated \$15,000 for the purchase of pure-bred stallions, to be brought into the Province and disposed of to the farmers for breeding purposes, as the Canadian Live Stock Commissioner may deem most expedient. The Agricultural Committee of the House has recommended that the importation shall include Thoroughbreds, Hackneys, French Coachers, and Clydesdales. The report says that the animals will be purchased as quickly as possible so that the farmers will have the service of them this season.

PROF. GRIDDALE ON CORN-GROWING.

Speaking about the soil best adapted for growing corn for ensilage, Prof. Grisdale, Agriculturist of the Central Experimental Farm, recently said: "Any well-drained field is suitable for this crop. The too-common idea that only light soils are suitable is erroneous. Good drainage, however, is essential to success. The soil must be rich in humus—that is, it must have plenty of vegetable matter in it." As to previous crops and soil preparation, he recommends the following: "A clover sod is probably the best preparation for corn. Stubble land on which clover had been sown with the grain gives very good results. The sod should be plowed early in the summer, and its surface kept cultivated to kill the weeds during the rest of the season. The stubble land with clover growing should not be touched till late autumn or in the spring shortly before planting time. Barnyard manure, at the rate of fifteen tons per acre, will give the most profitable returns. It should be plowed in to a depth not to exceed three and one-half inches or four inches at the most. The common drill grain-seeder may be used to sow it, in which case the rows should be 42 inches apart. If planted by hand in hills, the hills should be 36 inches apart each way. Where sown in hills, the horse hoe may be used two ways. The seeding should not be done till the soil is well fined, quite warm and in a most friable and mellow condition. About a week after sowing, a good plan is to go over the field with a Breed weeder or some light harrow. This treatment helps to warm the soil, destroys any weeds that may have started, and wakes the young corn into a more vigorous life. After every shower, as soon as the soil will permit, a cultivator should be run between the rows, at first to a considerable depth, but later not so deep, to allow the extending roots to approach the surface. This should be kept up until the horses can hardly be seen in the corn. The best varieties for Eastern Canada are Selected Leaming, Cloud's Early, Angel of Midnight, Longfellow, Canada White Flint."

Mr. F. C. Hare, Director of the Dominion Poultry Fattening Stations, left Ottawa on the 23rd inst. to complete arrangements for the opening of the Ontario stations at Holmesville and Bowmanville. He is expected back about the first of May, when he will immediately leave again on the same mission for Bondville, Que., and Andover, N. B.

Mr. W. A. Mackinnon, Chief of the Fruit Division, Department of Agriculture, left for Liverpool, Eng., on the 24th inst., where he will be stationed for some time looking after the Canadian fruit arriving at that port. On the day previous to his departure he was married to Miss Bertha Sampson, of Toronto.

The Good Roads Association announces that a series of "Good Roads" picnics of local county conventions will be held this summer in connection with the work of the good roads train, which will again be operated in the different counties of the Ottawa Valley and district. The first one will be held at Plantagenet, in the County of Prescott, where the machinery has been stored all winter and where the first piece of model roads will be built this spring.

An experiment is being carried on at the Central Experimental Farm with a view of obtaining a better keeping apple for Manitoba and the Northwest Territories. Russian seedlings are being top-grafted with Spies, and the officials expect that this cross will give a good hardy apple for the moderately cold climate of the Northwest.

Mr. Alexander McNeill, who was recently appointed Senior Fruit Inspector, has taken charge of Mr. W. A. Mackinnon's duties in Department of Agriculture here.

It has been arranged that Mr. J. W. Hart, Superintendent of the Kingston Dairy School, will have general charge of the inspection of the creameries in Eastern Ontario, while Mr. Arch. Smith, Supt. of the Western Dairy School at Strathroy, will look after the creameries in Western Ontario.

Railway Cattle Guards.

There will be no legislation at Ottawa this session in regard to cattle guards upon railways, but during the recess careful inquiries will be made as to the most suitable guard to be adopted, and next year the Government will introduce a bill to give effect to the result of the investigation.

Improving the Fall Fairs.

Mr. G. C. Creelman, Superintendent of Farmers' Institutes in Ontario, has been appointed Superintendent of Agricultural Societies, in order to unite in some measure the work of the Institutes and the fairs, and to develop the latter along educational lines rather than in circus features, as has been the tendency of late years. Under the present law the Government gives annually some \$76,000 in grants to the agricultural societies. They were originally formed, the Act says, to hold meetings for the discussion of agricultural subjects, to offer prizes for essays on agricultural and horticultural subjects, to conduct experiments in the growing of crops, and to hold annual fairs. In practice the first two objects have been carried out by the Farmers' Institutes, the third by the Experimental Union at Guelph, and the last-named by the agricultural societies. Mr. Creelman's first duty will be the preparation of a model set of rules, regulations and prize lists for the guidance of fall fairs operating under the Agriculture and Arts Act. He will also endeavor to arrange the fairs in circuits, so that expert judges can go from one to another to judge the live stock, and, where possible, give their reasons. The recent short course for judges at Guelph will, it is thought, help to provide men for this work, and an appropriation of \$2,000 was passed by the Legislature to assist. The scope of the fairs will include many of the educational features so popular at the Provincial Winter Fair. There will be demonstrations in apple grading and packing; dressed poultry will probably be added to the prize lists; grains in the straw will be shown; experimental grain plots will be grown on the grounds; school children will be encouraged to exhibit wild flowers, fruits and grasses, while the Farmers' and Women's Institutes will cooperate and furnish lectures on agricultural topics and give demonstrations in domestic science and buttermaking.

Tuberculosis Contagion.

"We have learned that tuberculosis (consumption) is not hereditary, nor is it contagious in the true sense of that word. It is a communicable, not a contagious, disease. All the danger is confined to the sputum of patients, and if this be properly cared for there need be no fear. Long ago the Chinese visitor to the Occident thought the carrying of a handkerchief a disgusting proceeding. The modern sanitarian agrees with the Oriental, and adds the opinion that it may be a very dangerous habit. Some way of disposing of expectation otherwise than the linen excuse must be provided. If this is done and the sputum not allowed to become dry, to be ground up into dust for future inspiration, then the presence of tuberculous patients need occasion no dread unless the relations with them should go so far as the use of eating or drinking utensils, towels or napkins or the like in common with them. Common sense will restrain our generation from ultra-rational proceedings in this matter of the prophylaxis of tuberculosis, if only governmental authority can be kept from encouraging the ever-present tendency to extremes so characteristic of the popular attitude toward disease."—N. Y. Independent.

Settlers for New Ontario.

The spring rush of settlers to the Temiskaming region promises this year to surpass all previous records. Mr. Thomas Southworth, Director of Colonization, says he has received a very large number of applications for certificates, although navigation on Lake Temiskaming does not open until May 1. There are still seven or eight surveyed townships open for settlement at the head of the lake, and Mr. John Armstrong, Crown Lands Agent, reports that a recent tour of inspection showed that the land in those townships was as good as in those already taken up. When this group of about twenty-five townships in all is occupied, there will still be land in that region to be surveyed before expanding out into the great clay belt beyond the height of land.

Peat Fuel.

With the growing scarcity of wood in Canada and the increasing cost of coal, interest is reviving in the possibility of manufacturing fuel from the numerous peat bogs which abound in so many parts of the country. Several companies have undertaken this in the past with indifferent success, but another plan, called the "Economic Process," is now being tried, and sanguine of its practicability and success, a company has been organized at Brantford, Ont., for the manufacture of peat fuel, peat cake, by-products, and the utilization of peat for lighting and power. The project provides for the organization of local companies where peat bogs exist. The black-bog peat is cut by machinery into pieces about the size of an ordinary brick, and these are placed in ovens or batteries and subjected to heat, driving off the moisture and by-products, which are ultimately distilled, the dried bricks being used for fuel.

Movements of the Profs.

Prof. F. L. Washburn, of the Oregon Agricultural College, has been appointed to the Chair of Entomology in the Minnesota College of Agriculture, made vacant by the death of the late Otto Luggler.

Prof. Jas. Atkinson, at one time assistant to Experimentalist Zavitz, O. A. C., Guelph, and recently Agronomist at the Iowa Agricultural College, has gone into agricultural journalism in Des Moines, Ia.

Oxford Co., Ont.

We are getting along nicely with the seeding. The ground on which we had fall wheat last summer got rather dirty on account of the wheat being such a poor crop. We cultivated once each way and then sowed broadcast with the spring teeth on the drill, and, I think, got the ground in pretty good shape. Ours is a Massey-Harris spring-tooth cultivator, and we find it a good way to fill in the furrows on fall plowing to raise the trailers on the two center sections of the cultivator and then drive the horses straddle of the furrow; the center-section teeth then go in pretty deep and pull in the earth from each side. We go over all the dead furrows in the field first and then readjust the trailers again before commencing to do the regular cultivating. It seems that there is some balk in the flax business, for I hear that the mills in our county are not to run this year and there will be no flax sown. This will surely be some advantage in regard to help in the fall, for a great many get employment at the flax in the fall, when the mills are running.

Our salesman has sold the April make of cheese for 10¢ cents, and it is going away so green that it is little better than curd, so that the present prospects for the season are very good. Several farmers who sent to the skimming station last season are sending to the cheese factory this summer.

Beef keeps very high in price, and live hogs are again at 6 cents. Owing to the very large crop of hay last season, feed is generally plentiful, and cattle should go to the grass in pretty good shape. Potatoes are very uncertain. No one seems to know how soon there may be a drop in price. They are at present selling all the way from 50 to 75 cents per bag.

There is a great business done in eggs, quite a number of wagons being kept on the road all summer collecting the product of the diligent scratchers. Well might our local poet sing:

"The merits of the Ontario hen
Are worthy of the poet's pen."

D. L.

South Perth, Ont.

Spring is evidently here to stay, and seeding is almost completed. Although succeeding a rather mild winter, the soil works remarkably easy, which condition may be due to the frost since the snow went off, which took place very early. On the whole, seeding will be about two weeks earlier than last year, which will give a good chance to get at the corn and root ground, as well as a longer season of growth, from the lack of which much of the spring crop suffered last year. A few sowed during the mild spell in March, but the succeeding chilly weather will probably greatly retard the growth, if not kill the sprouts outright.

The fall wheat came through the winter in good condition, considering the poor growth which it got last fall, but the freezing and thawing since the snow left has left it looking rather poorly, especially on low undrained land.

Stock appears to have wintered well in spite of scarcity of feed. The good prices are drawing many immature and inferior cattle from the yards, and horses too are at a premium.

The township grading machine has during the last week been on its annual round, changing the main roads into boulevards. The traction engine is a highly satisfactory power for propelling the grader, and where the work is done every year an average three miles a day (both sides of the road) can be done, making an almost perfectly smooth surface from what before was a series of ruts and holes, at a cost of something like three dollars a mile. The permanent roads built under the supervision of the township council have so far given good satisfaction, although there has been some trouble and waste owing to the broken stone in some places working their way to the surface. But we think this might be prevented by a heavier coat of fine material on top.

J. H. B.

April 23rd.

Northumberland Co., Ont.

We are having an unusually early spring. Fall grain and clover never came through the winter better, and everything promises well. A good deal of plowing has been done and some seeding, though seeding is not yet general. We noticed a smut preventive in your valuable paper, and have just treated our seed oats, and will watch results. There promises early grass. Though grain was dear and was fed sparingly to dairy cows, yet, owing to abundance of good ensilage, roots and clover, stock has come through the winter in extra good condition. The cheese season opens very favorably, good prices, and cows milking well.

A. H.

April 9th, 1902.

Sugar Beet Trials.

The Ontario Department of Agriculture has arranged for sugar-beet experiments this season at St. Catharines, Brussels and Markham. Negotiations are in progress in regard to experiments at Renfrew, Orangeville and Guelph. The experiments this year, which are in some cases carried out at points from which the applications were received too late last year, will be under the supervision of Prof. Robert Harcourt, chemist at the Agricultural College. About thirty farmers will raise beets at each point. This is the third successive year of sugar-beet experiments in Ontario. The results heretofore have been very satisfactory, and an effort is being made to ascertain how generally the soil is adapted for this root.

Death of Mrs. Elford.

The "Farmer's Advocate" regrets to record the death of one who for many years contributed to its columns valued articles on the improvement of the farm home and kindred topics. We refer to the late Mrs. Herbert Elford, of Huron Co., Ont., who on March 9th passed away from the useful activities of earth. A woman of many natural and acquired gifts, she abounded in works of a benevolent and elevating character. Hosts of friends were ever made welcome at her hospitable fireside. She was for many years president of the W. M. S. of the Methodist Church, president of the County W. C. T. U., and also of the Huron County Women's Farmers' Institute. By writing, travelling and speaking, she did much to advance these interests, into which she threw enthusiastically her heart and mind. She leaves four children, viz.: Mrs. (Rev.) A. K. Birks, London; W. H. Elford, Goderich; F. C. and Miss Annie, of Holmesville. Rev. W. Thornley, Barrie, is a brother, and Mrs. (Hon.) L. A. Rose, of Fargo, N. D., is a sister.

Maritime Province Exhibitions.

A Prince Edward Island correspondent writes us, under date of April 21st: "Our Provincial Government have repented under strong pressure and have given a grant of \$4,000 for a provincial exhibition open to the Maritime Provinces this fall. The date is not fixed yet, but will likely be between the 20th and 26th of September. The exhibition property has in consequence been withdrawn from sale, and we trust that the battle of exhibitions has been fought out once for all in P. E. Island." An appropriation of \$5,000 has also been made by the New Brunswick Government for the holding of a provincial exhibition at St. John this year. The Nova Scotia Exhibition at Halifax has become a fixture, and the arrangement of dates only remains to be made so as to avoid clashing in order to secure a successful circuit of shows in those Provinces.

The Judging Course Appreciated.

To the Editor "Farmer's Advocate":

Sir,—I desire, through the columns of your valuable paper, at this late date to make some mention of the generous treatment which we, the members of the second special judging class, received at the hands of the Ontario Agricultural College staff, and, as president of that class, I desire on their behalf to express our sincere thanks for their genial kindness and most successful effort to make the course to us both pleasant and profitable, and I think that Professor Day, on whom the burden of the work seemed to fall, deserves a special share of our thanks. To do this work the staff went to a great deal of trouble to secure suitable specimens of the various animals and classes of animals which we were asked to judge and upon which to base our discussions, and it would seem almost impossible to make any arrangements by which more information could be got out of a two-weeks' course (a course within the reach of all) than by the system adopted, and we confidently assure President Mills that at the proper time next winter he will have a very long list of applications for admission to the short judging course. Wishing President Mills and his staff every success in their work, I am sincerely yours,

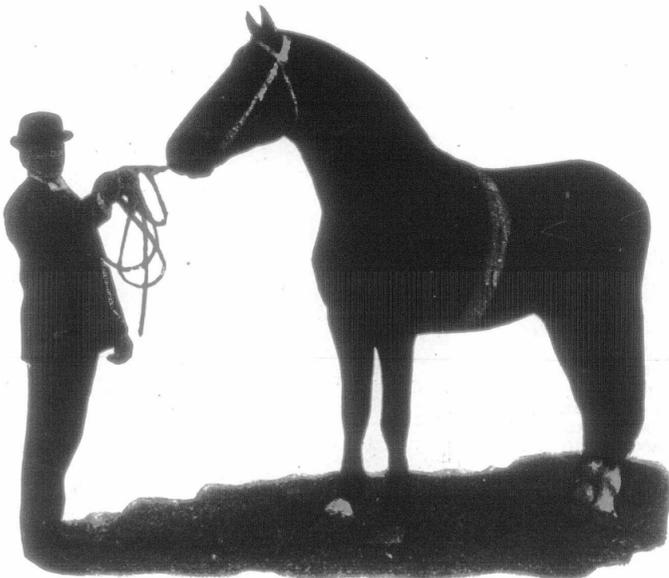
JOHN MACKENZIE,
President.
JAS. MACKENZIE,
Vice-President.
E. HALES,
Secretary.
F. T. ALLEN,
GEO. FINDLAYSON,
THOS. WEAVER,
MR. HAYWARD,
Committee.

Bruce Co., Ont.

Excess of Phosphoric Acid.

In your issue of April 15th, under the title, "Plant Food," there appears the following in the last paragraph: "An excess of phosphoric acid has the effect of stimulating maturity to an unusual degree, causing a ripening of the crops long before a full growth has been reached." This statement is calculated to mislead, no doubt unintentionally, but it has probably been read by many. Phosphoric acid is a food and not a stimulant, and produces no such dire effects as prognosticated. There is practically no such thing as an excess of phosphoric acid. Plants feed upon or assimilate only such quantities of this element as they require; and the amount so absorbed is regulated by the quantities of nitrogen and potash which they can obtain during their growth. Any superabundance of phosphoric acid remains in the soil for the use of future plant-growth. Moreover, according to the recently-published exhaustive researches of Dr. Bernard Dyer, on "Phosphoric acid and potash of the wheat soils at Rothamsted," Eng., he proves that potash salts "are far more 'migratory' than phosphoric acid"; that is to say, more easily lost by drainage. By all means let us help our farmers to get at the actual truth.

G. CAMPBELL ARNOTT,
York Co., Ont.



PERFORMER.

Carriage stallion, winner of first prize and sweepstakes gold medal, Canadian Horse Show, Toronto, 1901, at four years old, beating the Imp. Carriage stallion, Graf Brauner; first and sweepstakes diploma, Toronto Industrial Exhibition, 1901, at four years old; first, Canadian Horse Show, 1902, at five years old. Only three times shown.

OWNED BY W. N. SCOTT, MILTON, ONT. (SEE GOSSIP, PAGE 351.)

Welland Co., Ont.

Seeding is now under full swing, and every farmer is anxious to do as much as possible. Some seeding was done in March, but it was checked on account of cold and wet in fore part of April. Those who were lucky enough and had ground dry enough in March are just that far ahead, as by reports the grain sprouted in spite of cold and wet and will come along all right. If we have no more setbacks we are ahead of last year. Fall wheat in this district is not looking very promising and would like to see better days. This is on account of late sowing last fall to miss the Hessian fly, which, however, seemed to get in its deadly work. But those that are sowing wheat for market will find out to their hearts' content that they will have to leave wheat-growing to Provinces that are better adapted for that purpose, and start at something more profitable. I am glad to see that people in this county are beginning to open their eyes to dairying, which will, I hope, improve their farms as well as their pocketbooks. Beans will take up a larger acreage this year than usual on account of the failure of wheat; rye, also, was more largely sown to take place of wheat. Grass peas will hold a larger place than before on account of the pea bug being so destructive to the round pea. The markets are about as follows: Wheat, 73c.; oats, 45c. to 50c.; hay, \$9; beans, \$1.70 to \$1.80; hogs, dressed, \$7.50 to \$7.75. Have not got price of live hogs. Butter has taken a jump and is now 25c. to 28c.; eggs, 14c.; clover seed, red, \$6; alsike, \$9.

W. W. M.

April 21st.

Up Goes the Price of Meat.

A New York paper publishes the following table to show that the price of everything needed for the table has gone up from 15 to 25 per cent. in a year:

	1902.	1901.
Butter.....	32c.	25c.
Porterhouse steaks	30c.	24c.
Sirloin	22c.	16c.
Rib roasts	22c.	16c.
Round steaks	20c.	15c.
"Chuck" steaks	14c.	8c.
Leg of lamb.....	21c.	16c.
Lamb chops	28c.	20c.
Poultry	15c.	10c.
Potatoes (per barrel).....	\$2 25	\$1 50
Dried fruits	11c.	6c.

Book Table.

FUMIGATION METHODS.

We are in receipt of Prof. W. G. Johnson's new book on the above subject, a timely and practical work for farmers, gardeners and fruit-growers, millers, grain dealers, etc., published by the Orange Judd Co., New York. It is a handsome, well-bound and profusely-illustrated volume of 300 pages, dealing with the difficulties which beset the farmer, fruit-grower and others in these times of the prevalence of insect pests, vermin, etc. It tells how to destroy insects on trees in orchards, nurseries and greenhouses; how to exterminate them in stored grain, seeds, and in mills and elevators. The price of the book is \$1, and it may be ordered through this office.



"Let's go a-foraging! That's what the Spring's for. What birds have wits, and bumblebees have wings for!"

A Short Message from Mollie.

Grasse, S. France.—Again I must let another mail-bag close without sending any consecutive "Notes" for our Home Magazine. I have been for over four weeks in this lovely sunny south of France. The fact is, my thoughts are too full for utterance. The contrast is great between every other corner of the globe which I have visited, and this paradise of flowers, this veritable fairyland of sweet scents. The foreign sights and sounds which surround me call for a silent enjoyment, rather than for outward expression, at least just now. I shall feel in more matter-of-fact mood presently, and shall be able to record all that is happening to us without fear of being too ecstatic in my descriptions. Here, on the 9th of April, it is like June in Canada, and the climate and soft air most restorative to the invalid members of our party. Meanwhile, to show that others can write in glowing terms of another section of La Belle France, I quote from a friend's letter, written from Montreux. This, on 31st March, is what she says: "We shall be remaining here till about the end of May. It is still very cold, but the sun has great power, and there is quite a change come over the gardens and country since we arrived. We find lots of spring flowers, white crocuses, and violets, cowslips and primroses, in our excursions on the mountains. A few days ago we were to have gone to Glion to tea with some friends, but it was snowing nearly all the morning, and we had to postpone going till later. The views from this hotel are lovely, of the lake and mountain, and especially at sunset. The reflection of the golden lights on the water and the lovely pink glow on the tops of the snowy mountains make it appear as a fairy dream.

We went last week to see the old castle of Glion; it is only a walk from here, and is very picturesque-looking. The dukes of Savoy, who lived there in the old days, were often at war with the Genevans. We have been reading a very interesting book a friend lent us about them lately. It is a wonderfully strong fortress, as if partly hewn out of the rock, and much larger than it seems from the outside. We saw the old banqueting halls and the large fireplaces, and the view over the lake was most lovely. We were shown the dungeon where Bombard, the Genevan historian, was imprisoned for four years, and in which he was found by his friends chained to a pillar. They attacked the castle and carried him back to Geneva in triumph. Lord Byron, who used to live near the castle, and wrote about the prisoner of Chillon, had written his name upon one of the pillars."

Because I appear so entranced with my surroundings at Grasse, and speak so admiringly of its floral wealth, do not think for a moment that I forget how soon and how quickly will spring into life the wild flowers of my own dear Canada. By now, perhaps, you are already hearing the notes of the robin redbreast and watching his little impudence hopping about your lawns and gardens. The grass is springing up as if by magic, and the trees are being clothed with leaves almost as you watch them. Each country has its beauties, and whilst duly appreciating those of other lands, Canada can never lose its foremost place in the affections of its absent sons or daughters. It must always have the very warmest corner in the heart of—

MOLLIE.

"A Bridal Gift."

Our picture, as all good pictures should, speaks for itself. The happy bridegroom has brought his "gage d' amour," and his delighted bride-elect permits him the privilege of watching her adornment with the jewels he has bestowed. They are evidently of great value, and include ornaments for her neck and hair. There is a somewhat quizzical look on the countenance of the pleasant-faced Abigail whose deft fingers are busy arranging the spray which she may have to change again and again before the lady is pleased with its position, but the lover's eyes are content to rest upon the face of his beloved, satisfied that no jewels can add to the value or beauty of the prize he has won.

H. A. B.

The Power of a Smile.

There are some truths that have been told and re-told and told again, and yet they still need telling. It is so with this one. In going about one sees many faces—beautiful faces, clever faces, interesting faces, but how many pleasant ones? How many bright, cheery countenances do you come across in a day's journey? So few that to see one, even though it belong to a stranger, is like meeting a friend.

A genuine smile is a rarity, and yet what can it not accomplish? A woman said the other day that when she started on a shopping expedition she always said to herself: "Now I must remember to smile often." She added that when she did remember, the friction of the day was diminished one-half.

Try this plan. When you speak to a clerk in a store, whether to ask to see goods or to inquire the way to another counter, smile; not in a vague, aimless way, for a smile, like a weapon, should always be aimed at a mark, but smile into the eyes of the person to whom you are speaking, and note the result. You will not have to complain to the superintendent of that clerk's lack of courtesy.

Many people, I have no doubt, have noticed the dissatisfied way in which beggars, agents who sell their wares from door to door, and hand-organ men, take money that is given them, and we are inclined to set this ungraciousness down to because they did not receive more. It is not that. When these people take money from you they look

into your face, and if they do not see a smile there, they show their disappointment. So much ungraciousness and so many rebuffs fall to their lot that they value, more than most people, a pleasant word or look.

It is the smile with the eyes that counts; all other smiles are but hollow pretenses. This is why the highest type of smile is a matter between two persons: more cannot be included, because you cannot look into the eyes of more than one person at a time.

It is through these "windows" that souls see and greet each other; but life to most of us is such a hurried, breathless race, and so intent are we on keeping in sight the goal toward which ambition urges us, that our straining eyes have no time to smile, and we substitute a meaningless smirk of the lips.

The right kind of a smile is like music; it says what words are inadequate to express. One can smile help and encouragement when they cannot be given in more tangible form; one can smile sympathy where sympathy may not be spoken; one may smile "I love you" oftener than one can find opportunity to say these precious words.

So smile. Smile, not with the lips merely, but with the eyes and heart; yes, and soul as well. Put into your smile all the kindness and cheer that would go into a hearty "Hello," and it will reach the heart of your friend and make it joyous.

And not that alone. A smile, like mercy, "is twice blessed; it blesseth him that gives and him that takes."—Ina Brevoort Roberts.



Probat.

"A BRIDAL GIFT."

Something About Coronations.

In view of the coming ceremonial so soon to be enacted in the historic Abbey of Westminster, no reference to a similar event some sixty-four years ago, when England's girl queen was crowned therein, can be wholly without interest. The columns of the daily papers have always some reference to what has been and will be, in the providence of God, in June next. The steamship offices are unable to provide berths for all who desire to cross the Atlantic to be in London on the occasion, even though admittance to the Abbey can never be theirs. The very Peeresses of the Realm, who by right of birth and priority of claim can have places allotted to them for the great event, have learnt with dismay that, whatever their bulk (and even peeresses are not always endowed with sylph-like proportions), they and their gorgeous robes must each be squeezed into a seat but fifteen inches wide. Millions will have to take up what positions they can upon the line of route, and there will be the usual mixture of tragedy, as well as comedy, in what may befall them. Only the very rich can afford the fabulous prices asked for a peep through a window. So it goes without saying, that millions more must just content themselves with what their lively imaginations can make out of the stories told them by more fortunate eyewitnesses, and so it was in the long ago, when Victoria the Good was crowned Queen of England. Perhaps the report of what Barney Maguire saw, and which he gave to his fellow-servants in his own rich vernacular, can be recalled by those to whom the Ingoldsby Legends may still be familiar. Their author thus introduces Barney and his subject to his readers:

It was in the summer of 1838 that a party from Tappington reached the metropolis with a view of witnessing the coronation of their youthful Queen, whom God long preserve! This purpose they were fortunate enough to accomplish by the purchase of a peer's tickets from a stationer in the Strand, who was enabled so to dispose of some, greatly to the indignation of the hereditary Earl Marshal. How Mr. Barney managed to insinuate himself into the Abbey remains a mystery: his characteristic modesty and address doubtless assisted him, for there he unquestionably was. The result of his observations was thus communicated to his associates in the Servants' Hall upon his return, to the infinite delectation of Mademoiselle Pauline, over a "cruisken" of his own concocting:

MR. BARNEY MAGUIRE'S ACCOUNT OF THE CORONATION.

Air—"The Groves of Blarney."

Och! the Coronation! what celebration
For emulation can with it compare?
When to Westminster the Royal Spinster,
And the Duke of Leinster, all in order did repair!
'Twas there you'd see the New Polishemen
Making a skrimmage at half after four,
And the Lords and Ladies, and the Miss O'Gradys,
All standing 'round before the Abbey door.

Then the Guns' alarms, and the King of Arums,
All in his Garters and his Clarence shoes,
Opening the massy doors to the bould Ambassadors,
The Prince of Potboys, and great haythen Jews;
'Twould have made you crazy to see Esterhazy
All jools from his jasey to his di'mond boots,
With Alderman Harmer, and that swate charmer,
The female heiress, Miss Anja-ly Coutts.

And Wellington, walking with his sword drawn,
Talking
To Hill and Hardinge, heroes of great fame;
And Sir De Lacy, and the Duke Dalmassey,
(They call'd him Sowlt afore he changed his name)
Themselves presading Lord Melbourne, lading
The Queen, the darlint, to her royal chair,
And that fine ould fellow, the Duke of Pell-Mello,
The Queen of Portingal's Chargy-de-fair.

Then the Noble Prussians, likewise the Russians,
In fine laced jackets with their goulden cuffs,
And the Bavarians, and the proud Hungarians,
And Everythingarians all in furs and muffs.
Then Mithur Spaker, with Mithur Pays the Quaker,
All in the Gallery you might persave;
But Lord Brougham was missing, and gone a-fishing,
Ounly crass Lord Essex would not give him lave.

Then the Queen, Heaven bless her! Och! they did
Dress her
In her purple garments and her goulden Crown,
Like Venus or Hebe, or the Queen of Sheby,
With eight young ladies holding up her gown,
Sure 'twas grand to see her, also for to hear
The big drums bating, and the trumpets blow;
And Sir George Smart! Oh! he play'd a Consarto,
With his four-and-twenty fiddlers all on a row!

Then the Lord Archbishop held a goulden dish up,
For to resave her bounty and great wealth,
Saying, "Plase your Glory, great Queen Vic-tory!
Ye'll give the Clargy lave to dhrink your health!"
Then His Riverence, retrating, discourd the mating,
"Boys! Here's your Queen! deny it if you can!
And if any bould traitour, or infanior craythur,
Sneezes at that, I'd like to see the man!"

Then there was preaching, and good store of speeching,
With Dukes and Marquises on bended knee;
And they did splash her with rood Macasshur,
And the Queen said, "Ah! then thank ye all for me!"
Then the trumpets braying, and the organ playing,
And sweet trombones, with their silver tones;
But Lord Rolle was rolling: 'Twas mighty consoling
To think His Lordship did not break his bones!

Then the crames and oustard, and the beef and
Mustard,
All on the tombstones like a poultherer's shop,
With lobsters and white-bait, and other swate-meats,
And wines and nagus, and Imparial Pop!
There was cakes and apples in all the Chapels
With fine polonies and rich mellow pears;
Och! the Count Von Strogonoff, sure he got prog-
enough,
The sly ould divil, undernathe the stairs.

Then the cannons thunder'd and the people wonder'd,
Crying, "God save Victoria, our Royal Queen!"
Och! if myself should live to be a hundred,
Sure it's the proudest day that I'll have seen!
And now I've ended what I pretended,
This narration splendid in swate poe-thry,
Ye dear bewitcher, just hand the pitcher,
Faith, it's myself that's getting mighty dhry.

Barney does not pretend to understand any one of the symbols of the pageant, but to those who follow closely the details of the coronation ceremonies of June next, which will, we believe, copy with little deviation the usages of the past, their meaning, in spite of the comic aspect in which our Irish poet has clothed them, will be very apparent. In more serious vein, one of the young ladies who, dressed in white and silver, bore the train of her youthful Majesty, tells us that "the Queen graciously acknowledged her reception, as she walked with grace and dignity the whole length of the Abbey. I think her heart fluttered a little as we reached the throne, for the color mounted to cheek, brows and neck, and her breath came quickly. However, the slight emotion she showed was speedily conquered, and she stood motionless whilst the Archbishop, in an almost inaudible voice, proclaimed her our sovereign and liege lady; after which the old Abbey walls reverberated to the sound of Handel's magnificent anthem, "The Queen Shall Rejoice!" The last little touch, which was not without its bit of pathos, is the following: The newly-made Queen, after bearing "the heavy orb and sceptre across the Abbey, on reaching the robing-room disembarrassed herself of both, took off her crown from her aching head, and having got rid of all her royalty, sat down on the sofa and amused herself. We, too, sat down for the first time." Barney's story of the fall of Lord Rolle is ancient history, and is confirmed by the then Lady Stanhope, from whom we have quoted last. H. A. B.

Dainty Ways for Woman.

The other day I was making a morning call at a friend's house, and there met another caller, a woman who made an agreeable impression upon me. She was not elaborately dressed, but her black tailor-made gown fitted her well, and there was not a spot or speck of dust on it. I knew that it had been brushed carefully before she had left her room. Her linen collar and cuffs were snowy white, and did not twist or shift from their proper places. Her gloves did not wrinkle, and buttoned smoothly over her wrists; her shoes were like the rest of her attire—dainty, and her bonnet rested firmly and straight on her soft brown hair, that, while wavy and fluffy, was neatly dressed, and so securely pinned that I fancy a high wind would not have caused it to come down. In speaking of this woman afterwards to a man who knows her, I said:

"There is something about her appearance that charms me. What is the secret?"
"I will tell you," he said. "She is a well-groomed woman. There is never any rough or loose ends about her."
"You mean that she is tidy," I said to him.
"You call it 'tidy.' I say 'well groomed.' We both mean the same thing."

However one may express it—in sporting terms or with the old-fashioned word—is the condition not well worth striving for?—Harper's Bazar.

A Quick Reply.

That quick wit is not confined to cities, was proved the other day by a young woman who was rambling along one of our roads.

She was dressed smartly, and when she met a small, bare-legged urchin carrying a bird's nest with eggs in it, she did not hesitate to stop him.
"You are a wicked boy," she said. "How could you rob that nest? No doubt the poor mother is now grieving for the loss of her eggs."
"Oh, she don't care," said the boy, edging away; "she's on your hat!"

Vicar—"But, my good soul, how can you expect to find your daughter in a place like London, even if you did go up?" Old Lady—"La! bless 'e, sir, that ain't note; she'd allow got her head out o' the window when she was at home."

Ingle Nook Chats.

My dear Guests,—

The decision in the drawing contest, just closed, will, I feel certain, be awaited with eagerness by the various contestants, and I have made all possible haste in having the prizes awarded. The work, in the majority of cases, exceeded my expectations, and I only regret my inability to treble the number of prizes. Finding the decision extremely hard to arrive at, I obtained the assistance of a competent judge, with the following result:

The prize in Class No. I. goes to Miss Agnes D. C. Hisey, Cashtown, Ont., who sent a beautiful large drawing representing an angel guarding from danger two small children who, while flower-gathering, have strayed perilously near the edge of a precipice. She also sent one of "A Bust of Liszt," and a shell resting on a book, all of which are beautifully done. Very close in order of merit come two drawings entitled "Door-way in the Octagon, Washington," and "Come to Mudder," by Miss Cecilia Cromar, to whom I award an extra prize.

A pencil-drawing of His Majesty, by "Chrysolite," and a group of farm buildings and animals, by Miss Essie Branch, deserve special mention, while those of Ethel Jose ("Jersey Cattle"), Isabella Gibson ("Horses") and C. M. Fortner ("The Old Homestead") are very good.

In Class II. the prize is awarded to Miss Lillian H. Carswell, New Richmond, Que. The subject is two horses, which are skilfully executed. In this class very good drawings were received from Florence Stuart ("Residence"), Emma Edna Haight, Pearl Shepherd, Harper Shields, and Edwin Ward.

In Class III. the prize has been given to Miss Teresa McCrea (aged 13), Springtown, Ont., subject "The Water-Mill." "A Lion," by Lillie Gosnell; "The Emblem of Old England," by Willa R. Harding; "Bunch of Phlox," by Minnie P. Kellam; "A Farm," by Gordon Mayhew; "Rose," by Lottie Patterson; "Moss Rose," by Maud Jose; "Girl and Cow," by Jennie Taylor, and "A Lily," by Myrtle Morris, are all neatly executed. Other contributors were Florence Fields, Samuel R. Drew, Ethel Smith (an amusing representation of "John Gilpin"), Rose Morris, Finlay R. Entwistle, Clara B. Hartel, John Dunlop, Bella I. Blair, Stella Legate, and Floyd Sibley.

Many of our contributors are very young, some being but nine or ten years old, and their work was creditable indeed.

L. H. C. will notice that she is as valued as well as welcome visitor to the Nook. "Isabel," I will try to give the description you desire, at some future time. I hope you are pleased with the result of the contest. I almost envy your talent. Many thanks, little Stella, for your kind greetings. You and Rose Morris should become correspondents, you are so nearly the same age. Both of you did well for first attempts at the contests.

Florence S.—Your drawing is very nicely done. I am sorry I have not many more prizes at my disposal.

I extend to all my new Guests, collectively and individually, a cordial greeting and a request to come again and often; the old visitors know they are always welcome.

CONTEST XIX.

An original poem, not to exceed thirty lines in length, on the subject, "A Day in June," was announced in April 1st issue, which see for particulars. Knowing that many of our readers possess ability in this line, I am hoping for some very nice poems. The theme should be a fruitful one, but results will prove or disprove this statement.

Be sure to address all poems for this contest to—
THE HOSTESS,
Ingle Nook Chats, Pakenham, Ont.

The Real Secret of Tidiness.

The real secret of tidiness is to leave things where they can be found by the persons who require them, and not to hide them away in blot- ters and presses and drawers; not to go into a man's study and put all his papers indiscriminately into packages, or a receipted bill into an envelope which he is sure to destroy.

In a woman's eye every business paper is an unsightly object, which she considers it her duty to dispose of, and though she may hear the man who owns it scolding about the house, she never has the grace of the jackdaw of Rheims to come forward and say what she has done with it. Indeed, she will deny with indignant innocence and tears that she ever touched his papers, and when, if haply it is discovered, he looks reproachful or smiles, she simply says, "Oh, is that what you were looking for? My dear, you should not leave such things about." Just as if he had no right to the use of a table or the corner of a chimney-piece in his own house.—From "Domestic Blunders of Women," by a Mere Man.

A Lesson in Patience.

A few days ago, I was reading an article on "Patience," by an eminent divine, and it made me think how desirable, and yet how rare, a virtue it is. Once upon a time someone said:

"Patience is a virtue, possess it if you can;
Seldom found in woman, never found in man."

I confess I am unable to vouch for the truth of the latter part of the statement, but no doubt the author wrote from conviction. However, I believe there are some classes of men who can lay claim to the virtue in some degree—editors, ministers, and organ-grinders. But the idea of patience being "seldom found" in woman! We may not always exercise it when we should, but it is there, nevertheless. Was there ever a more patient woman than Thomas Carlyle's wife, or James Watts' aunt, or, for that matter, Johnny Smith's grandmother? It is the exercising of a quality that strengthens it, and is there any one quality that makes for peace and prosperity in the home, or outside of it, more than patience? What were the use of organizing a Shakespeare club if we haven't patience? What were the use of planting watermelon seeds, or of picking gooseberries, or of hunting a turkey's nest? And, by the bye, that is what I meant to tell you about, viz., this particular patience-inspiring turkey-hen. Doubtless, some of my "Advocate" sisters have had experience with such edifying creatures, and will be able to sympathize, or, should I say, "re-joice," with me.

To begin with, a friend of mine purchased a turkey-hen from a man who declared that she was only two years of age, was of a gentle, tractable disposition, had never been known to take sand-baths in the flower-beds, and never resorted to artifice to conceal her nest. She certainly looked meek enough, but it has been said, and truly, "There's a deal of solid kicking in the meekest-looking mule." Of course, turkey-hens don't kick, but this one soon adopted other mulish tendencies. Perversity was one of them, and another mulish trait she evinced was that of stretching out her neck, flattening her ears (metaphorically speaking), and giving chase to any and every other fowl in the yard. This soon became a favorite pastime with her, and we decided that her former owner had strange ideas concerning gentleness and tractability. Then she tackled the flower-beds. No "shooing," nor fence, nor dog, nor old broom, could make her alter her plans. Evidently, gardening was her avocation, and by this time we knew, without counting her teeth, that she was more than two years of age; we even speculated that she might have some connection with the dove that didn't return to the ark. Lastly, she hid her nest away. Of course, one doesn't object to that so much if the nest can be found, but "there's the rub." Various optimistic individuals made the attempt, only to return with decidedly pessimistic views—in regard to turkeys. My poor friend was utterly discouraged.

"Just to think," she said, "what deceiving wretches men are! Now, I gave a dollar and a half for that turkey to begin with, and she nearly picked to death the Pheasant Cochin I gave a dollar for, and maimed for life the Brown Leghorn I paid seventy-five cents for, and destroyed several dollars' worth of flowers, and spoilt the collie pup, for he'll never go to the cows' heels after her chasing him so, and was the ruination of my best broom and the new buggy whip. I'll venture to say that hen has cost me at least ten dollars!"

"Never mind," I said, "you have gained that much in patience. Some day you will bless that turkey for the lessons she has taught you. Why, I'll soon find the nest for you."

And so, the next morning, we set out—the turkey and I. She ran ahead, mincing daintily along like a modest little Quakeress, and I followed, by fits and starts, dodging behind trees, stumps, telephone poles, and such like. For a while all was plain sailing, or, rather, plain dodging, and I began to anticipate the strains of "When Johnny comes marching home again," when, all at once, she stopped. She stood up straight, very straight, and her neck stretched up like a smokestack, and the small round eye at the top was taking cognizance of me! There she stood, and every time I took a peep around the stump behind which I had huddled myself together, her neck looked an inch or two longer, and I began to wonder if turkeys' necks ever turned into boa constrictors, and to wish myself a little farther off. It really gave me "quite a turn," as Josiah Allen's wife would say. I tried to be patient, but she fairly starved me out. I hadn't taken my dinner-pail along, and I couldn't eat grass as she did, and she staid around in that vicinity till I was obliged to give it for that day and go home to dinner.

Next day the turkey and I put off again. I took a lunch basket with me that time, and a book called "Uncle Jeremiah and Family at the Great Fair." I expected quite a pleasant, picknick day. But alas for my expectations! My Quakeress took an entirely different route, and she sped along like an automobile. Her little gray body

darted through fences and around trees and across ditches, and I—I floundered after her, clinging to "Uncle Jeremiah" and the lunch basket. I fairly "humped myself" to keep her in sight. Finally, when she had led me through a regular mystic maze of twists and turns, she came to a standstill as she had done on the previous day. "Now," thought I, "is the time for Uncle Jeremiah." I began to read about the La Tabida convent, with its width of fresh earth around it, and the sign, "Keep off the grass," and Uncle's remark:

"That's what I don't like about this White City. So much of it is so, and so much of it ain't so, that I never can tell what is so." At this point I looked up. The turkey was gone! She saw that I was reading that book and she apparently concluded that it would console me for the loss of her company! I looked around everywhere, but, of course, she wasn't going to set herself up on a fencerail or a stonepile to be looked at. I was baffled again. Then I donned all my armor of patience and perseverance for the final struggle, thinking of King Bruce and the spider, and also of the frog in the milk-can, who kept on swimming till at length he "rested his weary limbs on beds of—no, not asphodel—butter."

The next time, madame turkey went along in a steady, leisurely way. We came to a hill on which was a wood-pile with a cavity beneath, and I, from behind a pine tree, beheld her enter that cavity and I didn't behold her come out. Eureka! I had found the nest! I raced to the spot, but when within a few feet of it, out she walked, and stretched up her neck and surveyed me in the most astonished and indignant way! Then those words of Longfellow's came to my mind, "Be patient. These severe afflictions not from the ground arise." Not so in the case of this particular affliction, for she spread out her wings, and she did indeed "arise from the ground," and soared away through the woods like a partridge till I lost sight of her among the gray-brown tree-trunks.

Nevertheless, I found the nest. It was on my way back that, on taking special note of brush heaps, I espied in the depths of one a little Quaker-gray bundle. I reached in and caught it by the head and it flopped its wings and clawed with its feet, but I knew that it was vain of its long neck, so I just stretched it a bit longer, and then carried home the irate thing and the few eggs that had not been stolen by the creatures of the woods.

Now, don't you think, home-sisters, that it's worth while being patient? So, after this, when troubles come into the home, as they always will, and "everything goes dead wrong," just think of me and the turkey, and "bide a wee and dinna fret."

CHRYSOLITE.

Amusing Answers to Examination Questions.

From a collection of amusing answers to examination questions given the London Saturday Review, we take the following: "The Gulf Stream is a big flow of water. It starts from the Magnetic Pole at the north end of the British Empire. It reverberates (sic) back and forward from there to the Strait of Gibraltar and the coast of Guinea twice and sometimes thrice a day. If you follow it close, you find plenty of herrings, haddock and cods sweeping along in it. This stream is a kind of gold mine to fishing vessels." But the next boy is a real wit: "A vacuum is nothing shut up in a box. They have a way of pumping out the air. When all the air and everything else is shut out, naturally they are able to shut in nothing, where the air was before." Then we have: "Chemistry tells you what's in things. For instance, we know that a loaf of bread has in it flower (sic), east (sic), water, and salt, but chemistry would tell you how much weight of each, and perhaps potatoes and something else as well. Chemistry is great on sausages and wine. Sometimes such strange things are put in that government (sic) puts the shopmen in jail." A practical youth that! The following answer is in the manner of Tom Hood, but quite serious: "The Diet of Worms is the grubs fed on by the blackbirds and thrushes, that will eat up the crops and fruits if they live longer. It is not very wise for a gardener, when he shoots the birds and smashes their nests and eggs." That boy has been well taught in some things, if not in history. He who produced the following might reasonably claim copyright in it: "A papal bull gave you the alternative (sic) of obedience or of being excommunicated from the privileges of the Church. It is a bull, with reference to the horns of a dilemma. So an Irish bull is a choice—you may believe it, or you may not believe it."

"Why will you persist in drinking tea and coffee?" asked the doctor. "A milk diet is the healthiest. It contains all the elements of the human blood."

"Very true," replied Boggs, swallowing a third cup of coffee; "but then, you know, I'm not blood-thirsty."

THE QUIET HOUR.

Failure?

In a garret dark and dreary,
All alone an old man lay;
At the silent hour of midnight,
Passing from earth's cares away;
Only angels heard the whisper
From his lips in dying pain;
"All my work has been a failure;
I have lived and died in vain."
For the old man was a poet,
Who had missed the crown of fame;
After years of hope and toiling,
Leaving but an unknown name.

Death claimed for his own a painter,
Standing on life's threshold fair,
Dreaming of the wondrous picture
Which his hand should paint with care;
But upon the snowy canvas
He had only time to place
A small bit of dark-blue background,
And against it one fair face.
As in death his sad eyes rested
On the picture just begun,
Low he murmured, "I am dying,
And I've nothing—nothing done."
Mighty throngs with wild acclaiming
Gather 'round a hero's feet;
Bringing him the crown of laurel
For the patriot-victor meet.
Pride and glory of his country,
Loving hearts inscribe his name,
As their champion and deliverer,
On the pinnacle of fame.
And the seed which bore such fruitage,
Waked to power his heart and brain,
Was a song writ by the poet
Who had "lived and died in vain."
"Amongst the heroes who have carried
Christ's dear cross to realms afar,
One name shines from out the number,
Like a glorious guiding star.
Millions hold in love and reverence
That long, brave, unselfish life,
With the diadem of martyr
Crowned the victor in the strife.
And the spark which waked the fire,
To such a widespread radiance grown,
Was the face the artist painted
Who had "nothing—nothing done."

Teaching We Do Without a Text-book.

Twenty years ago a discouraged young doctor in one of our large cities was visited by his old father, who came up from a rural district to look after his boy.

"Well, son," he said, "how are you getting along?"

"I'm not getting along at all!" was the disheartened reply. "I'm not doing a thing."

The old man's countenance fell, but he spoke of courage and patience and perseverance. Later in the day he went with his son to the "Free Dispensary," where the young doctor had an unsalaried position, and where he spent an hour or more every day.

The father sat by, a silent but intensely interested spectator, while twenty-five poor unfortunates received help. The doctor forgot his visitor while he bent his skilled energies to his task; but hardly had the door closed on the last patient, when the old man burst forth:

"I thought you told me you were not doing anything!" he thundered. "Not doing anything! Why, if I had helped twenty-five people in a month as much as you have in one morning, I would thank God that my life counted for something."

"There isn't any money in it, though," explained the son, somewhat abashed.

"Money!" the old man shouted, still scornfully. "Money! What is money in comparison with being of use to your fellow-men? Never mind about money; you go right along at this work every day. I'll go back to the farm and gladly earn money enough to support you as long as I live; yes, and sleep sound every night, with the thought that I have helped you to help your fellow-men."

"That speech," I said to a friend of mine, one who has spent many years as a conspicuously successful teacher, "went into the bones of the young doctor's life, and strengthened him for a life of unselfish usefulness."

"Ah!" said the professor, "that one speech was worth years of text-book teaching! And yet it was made without an instant's preparation."

"Far from it," I answered quickly. "It had taken sixty years of noble living, struggling against sin and self, pressing forward in paths of righteousness, bearing the cross, following hard after the perfect Man, to prepare that old Christian to make this speech. Then the moment came, and he was ready to teach the glorious lesson."

For this teaching without text-books, fellow teachers, life's normal school holds daily, hourly classes.

Indian Self-Control.

The following anecdote is one which the late Bishop Whipple told to illustrate the calmness and self-control that his Indian friends made it a point of honor to exhibit on all occasions. Some Indian chiefs were dining at a Washington hotel, and one of the number, seeing a white man using cayenne pepper, took the bottle and shook it generously over his plate. After the next mouthful, though he kept a composed countenance, the fiery pepper caused tears to flow down his cheeks. His neighbor, noticing this, said, "Why do you weep?" The answer was, "I was thinking of my dead grandmother." The next moment the second Indian took the pepper caster and used it, with a like lachrymose result. The first man looked keenly at him, and said, "What are you weeping for?" "I am weeping," was the answer, "because you didn't die when your grandmother did."

A Thoughtful Mother Says:

That if you want your children to be courteous, you must treat them with respect.
That they will invariably copy your manners, so you must take care that they are the best.
That you should be as careful of their feelings as you wish them to be of the feelings of others.
That when it is necessary to administer reproof, it should be given in private.
That most children are sensitive on this point; it injures their self-respect, and they feel it acutely, though they are not able to express it in words.
That to tell a child in public that it has been rude or lacking in good breeding is as unwarrantable as it would be to tell a guest so.
That it is no excuse to argue that you are doing it for the purpose of making the child better and more thoughtful.

Saying and Doing.

In the Cathedral of Lubeck, in Germany, there is an old slab with the following inscription:

Thus speaketh Christ our Lord to us:
Ye call me Master, and obey me not;
Ye call me Light, and see me not;
Ye call me Way, and walk me not;
Ye call me Life, and desire me not;
Ye call me Wise, and follow me not;
Ye call me Fair, and love me not;
Ye call me Rich, and ask me not;
Ye call me Eternal, and seek me not;
Ye call me Gracious, and trust me not;
Ye call me Noble, and serve me not;
Ye call me Mighty, and honor me not;
Ye call me Just, and fear me not;
If I condemn you, blame me not.

Wedding Superstitions.

June is not only the month of roses and graduates, but it is the favorite month of all the year for brides. There are many superstitions regarding marriage, and even the girl who most strongly professes skepticism is not exempt from them. The old rhyme of the months runs:

Marry when the year is new,
Always loving, kind and true;
When February birds do mate
You may wed, nor dread your fate.
If you wed when March winds blow,
Joy and sorrow both you'll know.
Marry in April when you can,
Joy for maiden and for man;
Marry you in the month of May,
You will surely rue the day;
Marry when June roses blow,
Over land and sea you'll go.
They who in July do wed,
Must labor always for their bread.
Whoever wed in August be,
Many a change are sure to see.
Marry in September's shine,
Your living will be rich and fine.
If in October you do marry,
Love will come, but riches tarry;
If you wed in bleak November,
Only joy will come, remember;
When December's snows fall fast
Marry, and true love will last.

Wednesday is popularly supposed to be the best day to choose, and Saturday the most unfortunate. This latter has been so persistently challenged of late years by fashionable brides that the theory is rather on the wane. Every one knows that a bride must never wear her complete bridal outfit until arrayed for the ceremony, and also that the gown itself must not be shown; she should put on her right shoe first, and never try on her wedding ring until at the altar; she should be sure to weep a little on her wedding day, no matter how happy she may be; she must be careful not to look at herself in the glass after her toilet is completed, until after she is married. Of course, she should observe the little rhyme advising her to wear:

"Something old, something new,
Something borrowed, something blue."

—Ladies' Journal

THE CHILDREN'S CORNER.



What to Do with Our Boys?

The problem, "What shall we do with our boys?" Is a hard one to solve sometimes;
Poor Judy looks worried and full of care,
For it has to be settled betimes.

There's Peter, the finest young puppy-dog
To be found in the whole Dominion;
I've asked a hundred and one of my friends,
And they're all of the same opinion.

Then Sam, with his jolly, impudent face,
Is almost as fine as his brother;
While Ted and Dan with their mischievous tricks
Torment their affectionate mother.

"I cannot manage my children at all!"
She declares, with a wag of her tail;
"Please tell me what I should do with my boys?"
Can you answer her pitiful wail?
COUSIN DOROTHY.

The Magic Mill:

FOR MAKING OLD WIVES YOUNG AGAIN.

At Apolda stands the Oldwives' Mill. In appearance it is much the same as a huge coffee mill, only that it is worked from beneath instead of from above. Two large beams form the handles by which the mill is turned, by two stout serving-men. The old women are thrown in at the top, wrinkled and bent, without hair and without teeth, and they reappear below quite young and trim, with cheeks as rosy as an apple: one turn does it—crick-crack it goes, exciting the very brain only to listen! Yet when those who have become young are asked if it is not a painful process, they answer, "Painful!—on the contrary, it is quite delightful! For all the world as when one wakes in the morning after a good night's rest, and the sun shines into the room, and the birds twitter, and the trees rustle."

A long way from Apolda, there lived, once upon a time, an old woman. She had often heard of the Mill, and as she had been very happy in her youth, she one fine day suddenly determined that to the Mill she would go. It was slow work, for often she had to rest on her way, and sometimes she was stopped by a fit of coughing. By degrees, however, she gradually got over the distance, and at last she stood before the Mill.

"I wish to be ground young again," she said, to one of the serving-men, who, with hands in his pockets, was quietly sitting on a bench puffing rings of smoke into the still blue air.

"What a journey it is to Apolda," she added.
"And pray what may your name be?" said the man, with a yawn.

"Old Mother Redcap."
"Sit down, then, on a bench, Mother Redcap;" and the man went into the Mill, and opening a thick book, returned with a long strip of paper.

"That's the bill, my boy, is it?" asked the old woman.

"Not a bit of it," replied the other; "grinding costs nothing at all; only you must sign this paper."

"Sign!" screamed the old woman. "What! sign my poor soul away, I suppose! No, no, never will I do that. I am a pious woman, and hope one day to reach heaven!"

"It's not quite so bad as that," said the man, with a grin. "This paper is only a list of all the follies you have committed during your life. You will find it quite complete—to the very day and hour. Before you can be ground young again you must pledge yourself to commit them all over again, just in the very same order as before—exactly as they stand here. To be sure," continued he, glancing down the paper, "there's a pretty good list, Mother Redcap! From sixteen to six and twenty, every day one, except Sunday, when there's two! Then it seems to have been a little better till the forties. Then it comes thick enough, I must say! Towards the end, however, it looks pretty much as usual."

The old woman sighed and said,—

"But, children! it would never repay one to be ground young again at such a cost?"

"No, I admit, it never would," replied the man; "very few indeed could it ever repay, and so we have an easy time of it. Seven red-letter days in the week! The Mill is always still, at least of late years. It was a trifle more lively long ago."

"Now, couldn't we just strike out a few things?" pleaded the old woman, with a tap on the man's shoulder. "Suppose we only say three things. I wouldn't mind doing all the rest over again, if it must really be so, only let just three be struck out?"

"No, no," replied the man; "that is quite impossible. All or none."

"Here, then, take back your list," said the old woman, after some thought; "I don't care a pin about your stupid old Mill," and she went her way.

When she reached home, the good folk came to look at her, and, in surprise, exclaimed: "Why, Mother Redcap, you come back older than you went! So there's no truth in the Mill after all?" She coughed a little dry cough and answered, "There is a great deal of truth in the Mill; but I was frightened; and after all—a little more or a little less of this life—what does it matter?"

"Talking in their Sleep."

"You think I'm dead,"
The apple tree said;
"Because I have never a leaf to show;
Because I stoop,
And my branches droop,
And the dull gray mosses over me grow!
But I'm all alive in trunk and shoot;
The buds of next May
I fold away—
But I pity the withered grass at my root."

"You think I'm dead,"
The quick grass said.
"Because I have parted with stem and blade!
But under the ground
I am safe and sound,
With the snow's thick blanket over me laid;
I'm all alive and ready to shoot
Should the spring of the year
Come dancing here—
But I pity the flowers without branch or root."

"You think I'm dead,"
A soft voice said;
"Because not a branch or root I own!
I never have died,
But close I hide
In a plummy seed that the wind has sown;
Patiently I wait through the long winter hours;
You will see me again—
I shall laugh at you then
Out of the eyes of a hundred flowers."
—Edith M. Thomas.

That Tiresome Shoestring.

"Stop a minute. My shoestring is untied."
"Oh, dear! What a nuisance! Your shoes are always untying, and there's our car coming." Result, fuss and bad temper. Though a shoestring is a very easy thing to tie, not one person in a hundred knows how to do it. We all know how to tie a bow and of what a bow consists, two loops and a knot in the middle. Now, suppose before you tighten your bow, and when you still have a loop in each hand, you take the loop in your right hand and pass it through the knot in the middle. Now go your usual way and give both loops a good hard tug, to tighten them, and there you are! No more untied shoestring. No more lost cars. When you want to unfasten it, take one of the tag ends in your hand, give a good pull, and the thing is done, or rather undone.

"Have I got 'the pleasing expression' you want?" asked Mr. Gubbins.

"Yes, sir," replied the photographer, "I think that will do very well."

"Then hurry up, please. It hurts my face."

Not long ago a prominent country lawyer, becoming nettled at the ruling of a judge, picked up his hat and started to walk out of the court room. He was halted by the court with the enquiry: "Are you trying to express your contempt for the court?" "No, Your Honor," was the reply; "I am trying to conceal it."

"England expects every man to do his duty," exclaimed the heroic Nelson at Trafalgar; and that the spirit of these words springs eternal in the human breast we have constantly recurring proofs. A boy who was holding the bridle of a doctor's horse the other day excited considerable attention by a series of most extraordinary bodily contortions, until at last one kindly-hearted lady approached and compassionately asked him what the trouble was.

"Oh, ma'am," he said, "I've got the awfulest pain in my stomach you ever see, but I'm going to hold on to this horse if it kills me."

Uncle Dan.

BY MRS. A. RODD, CHARLOTTETOWN, P. E. I.

Mr. Daniel Wilson, or "Uncle Dan," as he was familiarly known, was a wealthy man. He had a beautiful fertile farm of 150 acres, a good large dwelling house, and fine outbuildings. His house was sheltered from the north winds by large ornamental trees, with a thriving orchard in the rear. All the surroundings showed evidences of thrift, taste, and industry. He had also a fine stock, and plenty of money in the bank. His two nephews, Oliver and Willard, who had just returned from the States, were paying him a visit. They were on their way to the old homestead. They were surprised to find their uncle in such comfortable circumstances. They were warmly welcomed by Uncle Dan and his family. After tea, their uncle invited them into the tastefully-furnished parlor, when Oliver remarked:

"Uncle Dan, I cannot understand how you became so rich down here. Why, Willard and I used to think it was useless to try to save money on P. E. Island, so we started off to Yankeedom, to try what we could do there. Now, after being absent for ten years (working like niggers), we return to our native land with very little money, and find you surrounded by every comfort, happy as a king, and as rich as a Jew. Please tell us the secret of your success."

"Well, Oliver," said his uncle, "there is no secret about it. I have always been industrious and economical. I was started right. My parents were consistent church-members, and I was brought up in the fear and admonition of the Lord. Our home was a very happy one. My parents were always kind, considerate and loving. As I was an only son, the neighbors prophesied that I would be spoiled; but I wasn't. Harshness may spoil a child, but love never. I always loved the dear old farm. The calves, foals and lambs were my especial favorites. I was kind to them, and they were fond of me."

"But, uncle," said Oliver, "did you never grow tired of the monotony of farm life, after you grew up? Did you never long to travel?"

"No, Oliver, never; I was a home lover. Do you think I would have been so ungrateful and selfish as to go away and leave my beloved parents, when they needed me on the farm? No, I never dreamed of such a thing. After I left school, father dismissed the hired man, and I filled his place. How happy father used to look when we started off to the field to work. Father and I were great chums. He was always so cheerful, always looked on the bright side of life. I was always a saving chap, and when father used

to give me pocket money, what do you suppose I did with it, boys?"

"Oh," said Oliver, "I guess you bought some candy or beer then."

"Or," suggested Willard, "perhaps some cigars or tobacco."

"Both wrong, boys," said Uncle Dan. "I never bought candy, never used tobacco, cigars, and never tasted beer or intoxicating liquor. I have always been a total abstainer. But I will tell you what I did with my pocket money (as I suppose you would never guess). I saved up until I had a few dollars and then deposited it in the savings bank. It was safe there, and it was always growing a little. When I was sixteen years of age my father gave me a mare. I was a very happy boy then. I raised her foals, sold them (though I hated to part with the beautiful animals), and kept on adding to my bank account. By the time I was twenty I had a snug sum saved. Interest and compound interest runs up, boys."

"Well the firm of Father & Son worked on, improving the land, and everything prospered with us. We never forgot to thank the Lord daily for all His mercies."

"But, uncle," said Willard, "didn't you ever have some chums, or go away for a good time? You must have been a very steady chap, if you didn't."

"Chums! no," said Uncle Dan, "my parents and my beloved books and magazines were all the chums I wanted. After our day's work was over we sat down in our cozy parlor to read. Father subscribed for a number of agricultural magazines, and it is to the valuable information we received from them that we owe much of our success in farming. More knowledge is what farmers need."

"What a bookworm you must have been, Uncle," said Oliver. "Why, you were more like an old man than a young fellow, surely."

"Well, Oliver, that's just the name my cousin used to call me sometimes. She would say: 'Well, it isn't any use to ask Dan to visit us, for he is a regular old man; never goes anywhere!'"

"But I believe I was wise in staying at home. I kept clear of bad companions at any rate, and they prove the ruin of many. I have heard it said that boys must always sow their wild oats, but I never sowed any but tame ones. They give the best returns. We always rose early, kept our work well ahead; we never put off till to-morrow what we could do to-day. Our crop was always sown early and harvested early. The land was thoroughly cultivated and manured; that is why we had (and still have) such excellent crops."

"When I was 25 years old my father died. This was a severe trial, for a better father never lived. He left me the homestead, stock, and everything: on condition that I would support my mother."

"The next year I bought some pure-bred stock, which proved a good investment. I fitted up the house, and as my mother wasn't very strong, and was lonely, I brought home a daughter for her, whom she warmly welcomed. This was another good investment, for May has been an ideal wife. She was a farmer's daughter, and loved farming. My children are industrious, economical, and trustworthy. They are happy and contented. James and Goldwin are out spreading manure now. I am quite proud of my children. But, boys, what have you been doing with your earnings for the past ten years? Each of you should have enough saved at least to buy a good farm by this time."

"Well, Uncle," said Oliver, "I often thought about trying to save money, but in Boston there are so many temptations; there are car-fare, board, theatres, clothing, and so many ways of spending money, it is just here a little and there a little, and away it goes. One has to stand the treat sometimes, too, or the fellows will call us mean and stingy."

"Oh, Oliver, this is a spendthrift's confession. I am afraid you will always remain poor. You seem to have very little self-control. What use is it for you to earn money and throw it away? Don't be a coward; let the fellows laugh. Never mind them. Take your old uncle's advice and start a bank account at once. Better late than never, you know. What do you say, Willard, to this proposition?"

"Uncle Dan, thank you for your good advice. I am going to close right down on this spending or wasting. We have wasted hundreds of dollars. I have a little money, which I am going to deposit in the bank at once. I am determined to save. We have been two fools, Oliver. I am not going back to Boston. Father has plenty of work for us both on the farm. Let us make a bargain with him. He would rather have us than the hired men. We can save more here than we can in Boston, although wages are higher there. What do you say, Oliver; are you coming to the bank?"

"Come on then, Will. We will make our first deposit to-day; and take the train from the city to the old farm again. Good-bye to theatres, cigars, beer, and all the foolish expenditure we have indulged in. It will be a little hard, I confess, but we will have our bank books to look at for consolation. Thank you, Uncle, a thousand times, for your good advice."

Toronto Markets.

Receipts medium: 874 cattle, 261 sheep and lambs, 1,200 hogs, 200 calves.

Export Cattle.—Steady at the recent advance. Good loads heavy cattle sold at from \$5.20 to \$6.25 per cwt.; medium exporters, \$5.40 to \$5.75; export cows, \$4.40 to \$4.85. Messrs. Wilson, Mabce & Co. paid for 14 choice 1,300-lb. export cattle, \$6.35. Nine cattle fed by Mr. John Donaldson, of South Zorra, averaged 1,500 lbs. Mr. H. Maybee & Son paid for a single load, average 1,060 lbs. each, \$5.75. Mr. Wm. Pattison, of Agincourt, sold one load of cattle at \$6.40. One load of choice exporters, fed by Mr. John Cameron, of Fergus, Ont., average 1,510 lbs., aged two years and six months, sold to Mr. Joseph Gould; the price not stated, but report said \$6.50. One steer, aged two years and three months, weighed 1,820 lbs.; bred by Mr. A. Mohr, of Tavistock, and a credit to anyone and an object lesson in good feeding to raisers of beef cattle. Loads of cattle are purchased in the country at \$6.50, but the highest price paid on this market to date (April 26th) is \$6.40.

Butchers' Cattle.—Choice picked lots of butchers' cattle, equal in quality to exports, but not so heavy, 1,100 to 1,150 lbs., net ready sale, at from \$5.40 to \$5.75. Choice lots of heifers and steers, 925 to 1,025 lbs., \$5.15 to \$5.40. Medium butchers' and common cows, \$4.25 to \$5. Mr. James Murton bought nine choice butchers' cattle at from \$5.50 to \$5.75. Messrs. H. Maybee & Sons bought 52 butchers' cattle, 1,010 lbs., at \$5.25 to \$5.85.

Bulls.—Choice heavy export bulls sold at \$4.50 to \$5. Light, \$4.25 to \$5.

Feeders.—Well-bred steers for feeding purposes, 900 to 1,100 lbs., wanted, and at from \$4 to \$4.60.

Stockers.—Well-bred young steers in good demand, at from \$3 to \$3.60. Steers weighing from 700 lbs. to 900 lbs. sold at \$3.75 to \$4. Messrs. Murley Wilson & Co. bought 70 stockers, average 575 lbs., at \$2.75 to \$3.75. Four loads of stockers were shipped to Western Ontario, two loads for the Northwest. One load consigned to Capt. D. M. Robertson, at Williams-town, Glengarry Co.

Calves.—Two hundred calves sold at from \$2 to \$10 per head, or from \$4 to \$6 per cwt.

Sheep.—Prices, owing to the light run, were firmer, at from \$3.75 to \$4.50 for ewes, and bucks at \$3.50 to \$4 per cwt.

Lambs.—Yearling lambs sold at \$5.50 to \$6.50 per cwt. Spring lambs sold at from \$2.50 to \$5 each.

Milk Cows.—Better class on offer. Fifteen sold from \$30 to \$55 per head.

Hogs.—Advanced a quarter. The principal feature

of the hog trade was the demand for fat sows from the States. These are now wanted at \$5 per cwt.; stags, \$3. For choice singers, not below 160 lbs., not above 200 lbs., live weight, \$6.50; light and thick fat at \$6.25. Mr. W. G. Mullory sold one double deck of hogs at \$6.50 per cwt. Prospects good, prices steady.

	Extreme comparative prices to-day, April 25th.	Two weeks ago.	Same date last year.
Export cattle.....	\$ 6.50	\$ 6.30	\$ 5.25
Butchers' cattle.....	5.85	5.50	4.35
Export bulls.....	5.00	4.70	4.25
Feeders.....	4.60	4.60	4.35
Stockers.....	3.60	3.60	3.50
Sheep (per cwt.).....	4.00	3.75	4.00
Lambs (per cwt.).....	6.50	4.75	5.50
Hogs.....	6.50	6.15	6.75
Milch cows.....	55.00	55.00	45.00

ST. LAWRENCE MARKET.

Wheat.—Steady; 100 bushels sold at 70c. One load of goose wheat sold at 67½c. per bushel.

Oats.—Five hundred bushels sold at 47c. per bush.

Hay.—About thirty loads on offer each market day, and selling at from \$12 to \$14 per ton for timothy, and from \$8 to \$9 for clover.

Straw.—\$8 to \$9 per ton.

Barley.—From 53c. to 55c. per bushel.

Bran.—City mills sell bran at \$1.50 per ton.

Dressed Hogs.—Advanced from \$8.50 to \$8.75 and \$9 per cwt.

Dressed Meats.—Beef, fore quarters, per cwt., \$7; beef, hind quarters, per cwt., \$10; mutton, carcass, per lb., 8½c; veal, carcass, per lb., 9½c; lamb, lb., 11c.

The Horse Market.

Toronto, April 28.—Trade was well up to the mark last week, and the prices realized at the sales very firm. Draft horses have been in the best demand and are from \$5 to \$10 higher, selling now at \$125 to \$175 for animals weighing from 1,300 to 1,500 lbs. Other classes are all steady. All the offerings have been well cleaned up at the current prices. The purchasers of horses for South Africa have been getting along fairly well, but during the last week they have not obtained so many as formerly because the farmers have much need for their horses at this time of year. Carriage, 15.3 to 16 hands..... \$175 to \$250
Draft, 1,300 to 1,500 lbs..... 125 to 175
Drivers and roadsters..... 100 to 150
General purpose, 1,100 to 1,300 lbs..... 100 to 125
General, second-hand..... 25 to 75

British Cattle Markets.

London, April 25.—Prices steady; live cattle, 13½c. to 14½c. dressed weight; refrigerator beef, 11½c. per lb.

Montreal Markets.

Montreal, April 25.—There were about 500 head of butchers' cattle, 600 calves, and 75 sheep and lambs offered. Butchers were present in large numbers, and trade was fairly good, with a slight decline in the prices of all kinds of cattle, excepting the best heaves, and these were not very choice; prime heaves sold at from 5½c. to 6c. per lb.; pretty good animals at from 4½c. to near 5½c., and the common stock at from 3c. to 4½c. per lb. Old sheep sold at from 3½c. to 3¾c. per lb., and yearlings at from 4½c. to near 5c. per lb. Spring lambs were scarce and considerably higher in price, or from \$3 to \$5.50 each. Fat hogs sold at from 6½c. to 6¾c. per lb. for good straight lots, weighed off the cars.

Buffalo Markets.

East Buffalo, April 25.—Cattle—Steady for good grades, easier for others. Veals—\$6.50 to \$5.85.

Hogs—Slow, but 5c. to 10c. higher for good grades, Yorkers, \$7.15 to \$7.25; light Yorkers, \$6.90 to \$7.05; choice heavy, \$7.40 to \$7.50.

Sheep and Lambs—Active; lambs, 10c. to 20c. higher; sheep, full steady to stronger; choice lambs, \$7.50 to \$7.60; good to choice, \$7.25 to \$7.40; sheep, choice handy wethers, \$6.60 to \$6.75; common to extra mixed, \$5.75 to \$6.50; wool, yearlings, \$6.40 to \$6.90; clipped wether sheep, \$6 to \$6.25; culls to extra mixed, \$4.50 to \$6; clipped lambs, \$4.25 to \$6.90.

Chicago Markets.

Chicago, April 25.—Good to prime steers, \$6.80 to \$7.50; poor to medium, \$4.75 to \$6.50; stockers and feeders, \$2.75 to \$5.50; bulls, \$2.50 to \$5.60.

Hogs—Opened strong to 5c. higher; close, 10c. lower; mixed and butchers', \$6.80 to \$7.25; good to choice, heavy, \$7.20 to \$7.50; bulk of sales, \$6.90 to \$7.15.

Sheep—Steady; good to choice wethers, \$5.40 to \$6; western sheep, \$4.75 to \$6; native lambs, clipped, \$4.75 to \$6.65; western lambs, clipped, \$5.25 to \$6.60.

Dr. Rutherford's Brother Stabbed.

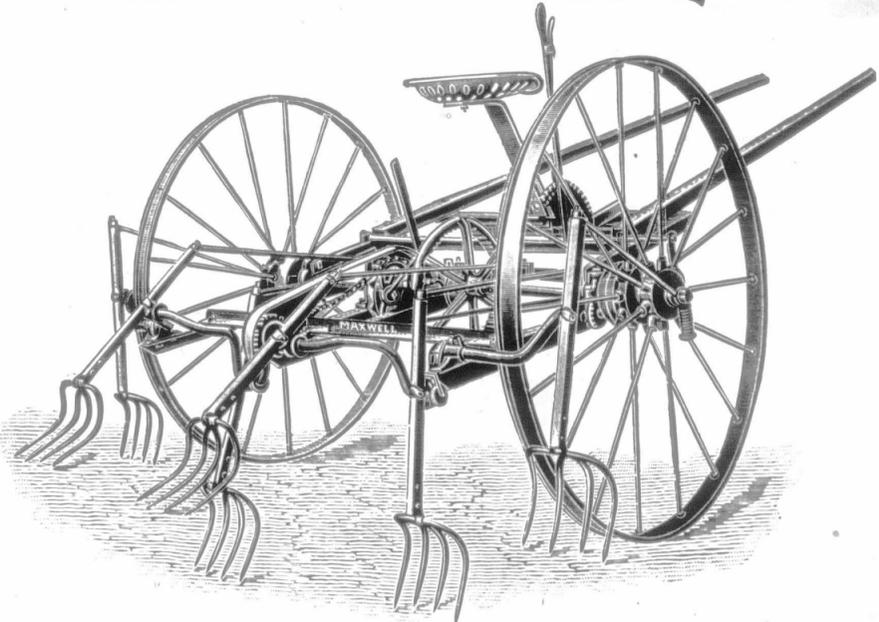
A despatch from Singapore reports the death of George Rutherford, managing director of a dry-dock company, who was twice stabbed by burglars in his own house. He was the son of a Scotch Presbyterian minister. He had two brothers, one, Dr. Rutherford, being until recently head master of Westminster College, and the other Dr. Rutherford, formerly member for Macdonald, Manitoba, in the Canadian Parliament, and now Dominion Veterinary Inspector.

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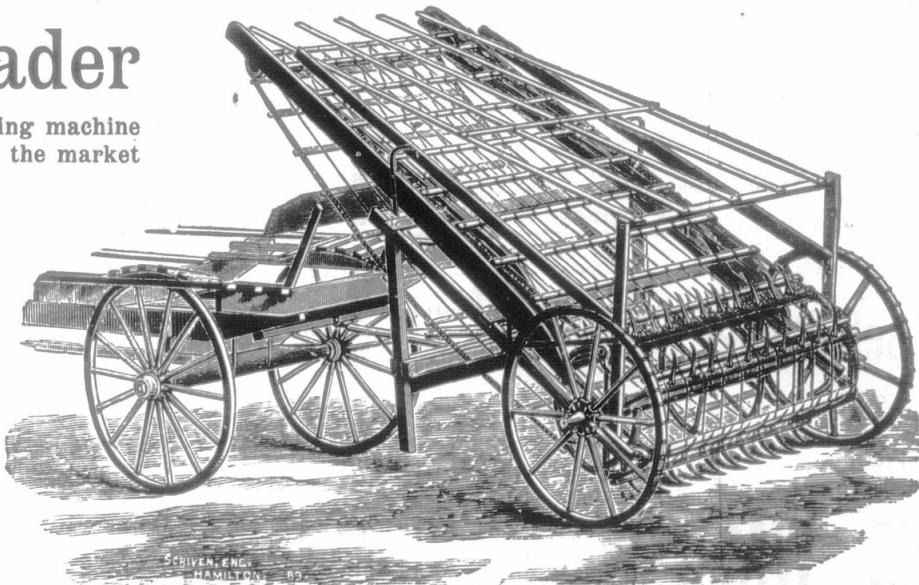
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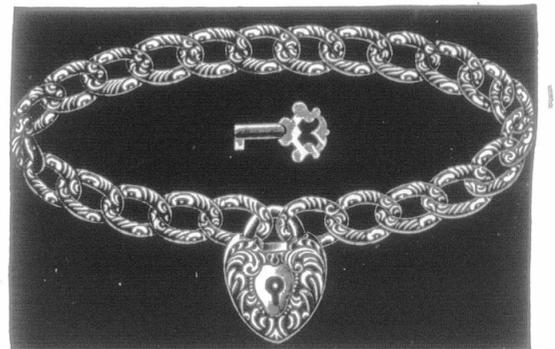
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GOSSIP.

Vol. 50 of the American Shorthorn Herdbook, a handsome and substantial volume of 1,133 pages, has been received at this office, for which our thanks are tendered to the secretary, Mr. John W. Groves, Springfield, Ill.

Dalgety Bros., London, Ont., have sold to W. W. Robson, Ilderton, and Ed. De Gex, Kerwood, the three-year-old imported Clydesdale stallion, Sir Aubrey, sired by Prince of Carruchan. Sir Aubrey is a typical Clydesdale of the best stamp, combining size with quality and the best of feet and legs, and should be well patronized in the district he has gone to, as he is the sort of horse required to sire the class that is always in demand and that bring the best prices.

In his advertisement of Shropshire sheep, on page 369, Mr. John Campbell, of Fairview Farm, Woodville, Ont., tells intending purchasers what he has for sale. The 20-years' show record of that flock should be sufficient guarantee to the most cautious buyer that Fairview Farm is a safe place to secure rams to place at the head of good flocks, and the 1902 crop of lambs is said to be the best ever produced there. Constant improvement, regardless of cost, has been the aim, and the top positions taken by its representatives at leading shows all over the continent indicates how very successful the breeding operations have been, and when it is noted that several rams and two choice selections of high-bred ewes from Mr. A. E. Mansell's great English flock have been used, combined with the produce of Newton Lord, the greatest known sire, great results could scarcely fail to be had.

Green Grove Stock Farm is situated in the County of Grey, Ont., about eight miles north of Markdale station, on the Owen Sound branch of the C. P. R., and is the property of Mr. W. G. Milson, breeder of Shorthorn cattle, whose post office is Goring, and whose herd at present numbers 25 head, made up of the following popular Scotch families: Floras, Uveys, Roses, Coras, Clarets, Villars, Girls, and Missies. Among this lot are some extra good specimens of up-to-date Shorthorns. The heifers offered for sale in his advertisement are a good lot, and bred right. The younger animals in the herd are sired by Aberdeen of Markham 23331, by Aberdeen 18949 (imp.), a Toronto first-prize winner. The present stock bull is Freebooter 39909, by Imp. Knuckle Duster 28868, dam Fragrance 22729, by Prince Albert 3669. He is a rich roan, of more than ordinary quality, and bred and built on prizewinning lines, and should prove a very successful sire. Mr. Milson is also offering for sale the yearling bull, Confusion 40547, by Aberdeen of Markham, dam Red Rose 32424. He is a solid red, and gives promise of developing into a big, massive, useful animal.

AN IMPORTANT TRANSFER OF SHORTHORNS.

Col. G. M. Casey, Shawnee Mound, Mo., has purchased from J. G. Robbins & Sons, Horace, Ind., the bull, Choice Goods, and the Pan-American champion cow, Cicely, both imported by Mr. W. D. Flatt, Hamilton, Ont.; also Cicely's heifer calf, bred by Mr. Flatt and sired by Consul; the International Show champion cow, Ruberta, by St. Valentine, and her heifer calf by Lovely Lad, by The Lad for Me; Clarissa, the two-year-old daughter of the last-named sire, junior champion of American shows except Chicago; the heifer calf, Lad's Goldie, by the same sire; also Russellia, the dam of Ruberta, and her bull calf by The Lad for Me. The terms are private, but the price paid for Choice Goods is said to exceed \$12,000, with relatively stiff prices for the others.

GOSSIP.

Superior White Wyandotte eggs are advertised in this paper by Mr. J. Chisholm, Dunkeld, Ont.; also the Natural Hen Incubator plans, for which he is agent. See the advertisement and send for circular.

Mr. Wm. Gardner, of the Co-operative Dairy Association, of Devonshire, England, is reported to have come to the States to purchase 400 milch cows in Massachusetts for the purpose of supplying milk in South Africa.

Mr. Alex. Galbraith, Janesville, Wis., writes: "My Manitoba trade in Clydesdales has been good throughout, and I must say that the farmers of that Province have shown a far higher appreciation of first-class horses than the Americans have. I predict for that great Northwest country a brilliant future in regard to the production of first-class horses."

The noted Scotch Clydesdale stallion, Prince of Kyle 7155, now in his 15th year, sired by Prince of Wales 673, dam Mysie by Darnley 222, has been hired by his owner, Mr. J. Kilpatrick, Craigie Mains, Kilmarnock, to Mr. Alex. M. Simpson, Whitecross, East Kilbride, for the season. He has won, among many other honors, the Cawdor challenge cup, and is full brother to the £3,000-horse, Prince of Albion, and his stock always improve with age, and have made a splendid record as prizewinners.

Mr. Wm. H. Gibson, Beaconsfield, Que., manager of the Huntleywood Stock Farm of Senator Drummond, writes: "The Southdowns here are in fine condition. We are having wonderfully good success with the lambing. We have at this writing 130 strong, healthy lambs, and more to come. We were unfortunate about a month ago to lose our champion ram, Sandringham. This is a great loss, as he was not only a grand show sheep, but also one of the best sires used in this flock. We have quite a large number of lambs by him again this season. The Shorthorns are doing nicely; the young bull, Cicely's Pride, is developing well, and promises to make an extra good one. We have a few heifers in calf to him."

Mr. Robert Miller, Stouffville, Ont., writes: "An event of unusual importance in the Shropshire world took place on February 26th, when A. E. Mansell sold the balance of his flock. Last autumn the greater part of the flock was sold, but, as in all flocks, some of the lambs were late and backward. These were kept until now, as in them Mr. Mansell thought many of his good lambs were to be found. Out of twenty-two rams one year old this spring sixteen have been bought for me. Out of twenty-six ewes same age fourteen have been bought for me. The only 2-year-old stock ram reserved from last year for use will also come to me. The sheep bought are in every case the best, so that the importation will be of great importance, for there will not be another chance to get sheep of Mr. Mansell's breeding. I have had a demand for sheep of Mr. Mansell's breeding that I could not supply; this lot will help me out a little. The loss of Mr. Mansell to the Shropshire breeders will not be secondary to the loss of Mr. Cruickshank from the Shorthorn world. He writes me of the safe arrival of his first consignment of Shropshires to Tasmania."

Messrs. H. Cargill & Son, Cargill, Ont., write: "We have the following sales to report for the 'Gossip' columns of the 'Farmer's Advocate': To Mr. Amos Smart, Trowbridge, Ont., Imp. Clara F. 5th, a roan yearling heifer, a good one, of nice quality, straight in her lines, plenty good enough for show if put in condition. The foundation of her pedigree is the same as that of the Uppermill Claras. She was sired by Waterloo (75861), a son of the Clipper bull, Prince of Sanquhar, and of Water Lily by Proud Duke (59713). Her dam is Clara F. 3rd (imp.), a right good cow, sired by Cock-a-Bendie (68381), a son of the Inverquherry Roswood bull, Best Mahomed (60626), out of Countess 11th, by the Lancaster bull, Donald (62379). To Mr. Richard Wilkin, Harriston, Ont., the roan bull, Provost, sired by Palermo (imp.), and out of Scottish Ringlet (imp.); she by the splendidly-bred bull, Scottish Victor (69557). This bull is one of the typical Scotch type, low down, thick, and level in his lines, top and bottom; with careful handling, a show bull sure. Along with him goes the fine large heifer, Castilla C. While quite large for her age, she is at the same time smooth and thick. She was sired by that good bull, Count Amaranth (imp.), whose produce have made a bright record for him at sales during the past year. Her dam, Castilla (imp.), was female champion at the Royal Northern in Aberdeen in 1898. Both of the above-named gentlemen have been breeding Shorthorns for some time, but, recognizing the fact that they were scarcely up-to-date, determined to secure something which would at once place them among the foremost breeders. After careful consideration, the above selections were made, and we think they have made no mistake, the animals being well bred and excellent individuals."

DE LAVAL DISCS

Deter Deterioration
Divide Distinctly
Discharge Dilutely
Deliver Density
Decide Delectability
Defy Detractors
Dispel Doubts
Determine Dividends

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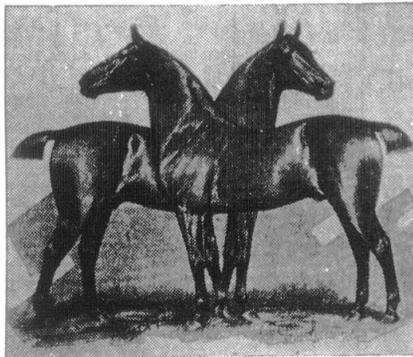
LEADING IMPORTERS OF HIGH-CLASS

HORSES

OF AMERICA.

One importation of German Coachers arrived January 9th, 1902; one of 49 head arrived March 9th, 1902, and our fourth importation so far this year, of Percherons and German Coachers, arrived March 30th. Our draft stallions, 3 to 5 years old, weigh 1,800 to 2,400 lbs. The great German Coach horse makes the best cross on small trotting-bred mares, producing horses that weigh from 1,100 to 1,400 pounds and stand 16 to 16 1/2 hands high, with finish and action. We give gilt-edge guarantee and terms to suit buyers.

**Oldenburg German Coachers,
Black Percherons,
Normans and Belgians.**



We import and sell more German Coach stallions than all others. We buy every horse ourselves direct from the breeder in Europe. Come to headquarters for high-class, serviceable stallions.

J. CROUCH & SON, LAFAYETTE, IND.

SPECIAL OFFER IN BARCLAY'S PATENT ATTACHMENT

FOR THE CONTROL AND CURE OF

BALKING AND KICKING HORSES.

We will send our "Attachment," charges paid one way, to any part of Canada C. O. D., and subject to examination and approval of method. When satisfied it will do all we claim for it, pay the express agent our price, \$3.00. If not, the return freight will cost only a few cents. Our article will control any vice known to a horse, and is giving splendid satisfaction wherever used. Full illustrations and directions are enclosed. A boy can adjust it, and it can be used with any harness, vehicle or implement. If you have a troublesome horse, or a colt you wish to break in, write at once to

THE BARCLAY MFG. CO., BROUGHAM, ONTARIO.



GOSSIP.

A high-class Shorthorn bull is advertised for sale in this issue by an English breeder. The bull was highly commended at the Royal Agricultural Society's Show at Cardiff last year, which speaks well for his excellence of individuality, while his breeding is exceptionally good, his sire, the Royal champion, Major 59419, being bred by Her late Majesty Queen Victoria, and sired by the matchless Cruickshank bull, Field Marshal 47870, and his dam Queen Bess, of the favorite Lecuba tribe, was by the Duthie-bred Lord Chancellor 57594, by Gloster Royal 52943, dam Emerald, by Cumberland. Major General is in the prime of life, a rich roan in color, and has everything to recommend him to breeders requiring fresh blood through sound lines of breeding and constitutional vigor.

At the dispersion sale of the herd of Jerseys belonging to Mr. Frank C. Ward, at Milburn, N. J., on April 12th, 16 cows sold for an average of \$141. The highest price, \$450, was realized for the seven-year-old cow, Kate of St. Francis.

The twenty-fourth annual meeting of the American Guernsey Cattle Club will be held on Wednesday, May 14th, 1902, at the Fifth Avenue Hotel, New York City, at 10.30 a. m.

At the McGavock combination sale of Aberdeen-Angus cattle, at Chicago, April 11th, the average price for the 87 animals sold was \$186.60. The highest price for cows, and of the sale, was \$600 for Jilt 10th 29971, and the highest for a bull was \$350 for Jupal 41588.

THE
JERSEY HEIFERS and BULLS

TO BE SOLD AT THE

Amherst Villa Sale,

OF

May 28, 1902,

Have been tuberculin tested, by Dr. C. J. Blank, V. S. A health certificate will be issued for each animal sold. For all animals bought by Canadian breeders, a health certificate will be furnished by the U. S. BUREAU OF ANIMAL INDUSTRY.

For catalogues, ready May 1st, 1902, and further particulars, write—

Estate of Charles Lautz,

704 D. S. Morgan Building,

BUFFALO, - - - NEW YORK.

FARM FOR SALE IN PILKINGTON

THREE hundred acres in the Township of Pilkington, Lots 3, 4 and 5, Concession 3. This is one of the best farms either for stock or grain in Ontario. There are two sets of buildings, and it is suitable to be farmed as one, two or three farms. For particulars apply to the undersigned on the premises, or by letter to

JAMES HUNTER, ALMA P. O., ONT.

FOR SALE :

The roan Shorthorn bull, Major General 74984; calved March, 1898; winner of 1st prizes at Lord Tredegar's and other shows; H. C. at the Carliff Royal, champion of United Counties Show. Sire the Royal champion Major 59419, by Field Marshal 47870, dam the prize Heuba cow, Queen's Bees, by Mr. Duthie's Lord Chancellor. Major General is very active and an excellent getter. For terms write

HERDSMAN,

Noyadd Wylm, Cardigan, South Wales.

BRITISH COLUMBIA FARMS.

IF you are thinking of going out to the Pacific Coast, try British Columbia. A delightful climate; no extremes of temperature; fertile land; ample rainfall; heavy crops, rapid growth, and splendid market for everything you raise, at good prices. The celebrated valley of the Lower Fraser River is the garden of the Province. Write for farm pamphlet telling you all about it, and containing a descriptive list of farms for sale.

THE SETTLERS' ASSOCIATION OF B. C.
BOX 540, VANCOUVER, B. C.

SPRING BROOK POULTRY YARD.

EGGS FOR HATCHING.

Barred Plymouth Rocks, from a pen of well-selected hens, mated with choice, typical cockerels of best strains, \$1 per setting, or 3 settings for \$2. Tanworths—Young pigs ready to wean. A few Holstein calves to spare.

A. C. HALLMAN, BRESLAU, ONT.

FORMERLY NEW DUNDRA, ONT.

BELGIAN HARES FOR SALE.

\$3.00 PER PAIR.

Address—
W. C. STEARNS, PORT ROWAN, ONT.

CLYDESDALE STALLION

Kinellar Stamp (3044).

One-year-old bay.

WM. BRASH, ASHBURN, ONTARIO.

WM. SMITH, COLUMBUS, ONT.,

IMPORTER AND BREEDER OF

Clydesdale Horses & Shorthorn Cattle

IMP. CLYDESDALES AND AYRSHIRES.

The three imp. stallions, Copyright, Baron Frederick and Baron Laing, and the Canadian-bred stallion, Laurentain. Ayrshires all ages; and poultry, utility breeds. Eggs for sale.

ROBT. NESS & SONS, Howick, Que., P.O. & Sta.

CLYDE AND SHIRE HORSES

SHORTHORN CATTLE, LEICESTER SHEEP.

One extra good Shorthorn bull, 16 months old, red, by Imp. Prime Minister, g. sire Imp. Warfare. My motto: "The best is none too good."

ROSEDALE STOCK FARM, HIGHFIELD P. O.

MALTON, G. T. R.; WESTON, C. P. R.
Rosedale is fifteen miles west of Toronto.

RIDER AGENTS WANTED
One in each town to ride and exhibit a sample 1902 Bicycle.

1902 Models, \$9 to \$15
'01 & '00 Models, high grade, \$7 to \$11
500 Second-hand Wheels
all makes and models, good as new,
\$3 to \$8. Great Factory Clearing
Sale at half factory cost. We ship to
anyone on approval and ten days trial
without a cent in advance.

EARN A BICYCLE distributing
1000 catalogues for us. Write at once
for bargain list and our wonderful
special offer to agents. Tires, equip-
ment, sundries, all kinds, half price.
MEAD CYCLE CO. Dept. 36 R,
CHICAGO, ILL.



GOSSIP.

At the sale of 49 head of Shorthorns, at Newton, Iowa, on April 3rd, from the herd of Geo. M. Woody, Collins, Iowa, an average of \$188.87 was realized. The highest price was \$1,750, for Imp. Lily of the Valley 17th, by Musgrave. This was the only animal that ran up to four figures, but 16 other females sold for prices ranging from \$500 to \$790 each. Bulls brought no high prices, \$200 being the top price.

Admirers of the late Duke of Westminster's famous racehorse, Ormonde, will be glad to hear that, although his success as a sire has not been proportionate to his great performances on the turf, his owner, Mr. W. O. B. MacDonough, has a son of Ormonde's which bids fair to recoup him a good portion of the £30,000 which he expended on the old horse. This is Ossary, which is described as being more like his sire than any of that horse's get, and but for an accident he would have made a great racehorse; as it is, he is a sure foal-getter, and his stock are described as most promising.

At the York (England) Shorthorn Show and collective sale, held last month, a cold challenge cup, valued at 100 guineas, was given by Messrs. John Thornton & Co. for the best three bulls calved in 1900 or 1901, bred by the exhibitor, or for a bull of any age, which need not be bred by the exhibitor, and two of his sons calved in 1900 or 1901. There were 17 entries in this competition, of which 15 were forward, and the coveted prize was given to the lot shown by Mr. Joseph Barnes, of Wigton, Cumberland. These were headed by Stonetown Pride 77972 (bred by Mr. J. McWilliam, Keith) and his two sons, Baron Bridekirk 31st and Jessamine's Pride. At the sale the highest price was 55 guineas, but Stonetown Pride was withdrawn at 100 guineas.

Mr. Jas. Gibb, Brookdale, Ont., breeder of Shorthorn cattle, writes: "Our stock has wintered very well. We have a good crop of calves, a number of them from Trout Creek Bampton, also some from Double Diamond, a son of Imp. Diamond Jubilee, dam Imp. Myrtle 3rd. We have several nice calves from our present stock bull, Imp. Spicy Marquis. We have made a number of sales lately: One bull and four females to Mr. Alex. Mitchell, Jasper, Minn., U. S. A.; one bull to Ross Bros., Nairn; one bull to Fred C. Smith, New Hamburg; one bull to David Thompson, Harrington; one bull to E. G. Kuntz, Midway; also the fine young bull, Royal Saxon, to John Hopkins, Cadiz, Ohio, U. S. A., to head his herd. He is a good bull, got by Trout Creek Bampton, dam by Chivalry =14339=, of the Uppermill Clara tribe, his sire, Prince Albert, being by Bampton Hero, the great stock bull, bred by Hon. John Dryden and owned by Messrs. J. & W. B. Watt. Chivalry's dam, Cyclus =8768=, was got by the Uppermill bull, Earl of Marr (imp.). We have a pair of good young red bulls yet for sale, fit for service."

OFFICIAL RECORDS OF HOLSTEIN-FRIESIAN COWS.

From March 15 to April 15, 1902.

During this period sixty-one records for seven days each, one for forty-two days, two for thirty days each, one for twenty-six days, one for twenty-five days, and one for sixteen days have been received and approved.

The records for seven days average as follows:

Twenty full-age cows: age, 8 years 2 months 21 days; days after calving, 24; milk, 426.6 lbs.; butter-fat, 14.871 lbs.; equivalent butter 80 per cent. fat 18 lbs. 9.4 ozs., or 17 lbs. 5.6 ozs. 85.7 per cent. fat; quality of milk, 3.49 per cent. fat.

Nine four-year-olds: age, 4 years 4 months 26 days; days after calving, 36; milk, 396.4 lbs.; butter-fat, 13.224 lbs.; equivalent butter 80 per cent. fat 16 lbs. 8.5 ozs., or 15 lbs. 6.8 ozs. 85.7 per cent. fat; quality of milk, 3.34 per cent. fat.

Eight three-year-olds: age, 3 years 8 months 2 days; days after calving, 31; milk, 403.5 lbs.; butter-fat, 13.807 lbs.; equivalent butter 80 per cent. fat 17 lbs. 4.1 ozs., or 16 lbs. 1.7 ozs. 85.7 per cent. fat; quality of milk, 3.42 per cent. fat.

Twenty-four two-year-olds: age, 2 years 3 months 16 days; days after calving, 26; milk, 293.4 lbs.; butter-fat, 9.793 lbs.; equivalent butter 80 per cent. fat 12 lbs. 3.8 ozs., or 11 lbs. 6.8 ozs. 85.7 per cent. fat; quality of milk, 3.31 per cent. fat.

The highest record in this list was made by the Canadian cow, Kaatie De Boer 2nd 54769; owner, James Rettie, Norwich, Ont.; age, 5 years 10 months 9 days; days after calving, 28; yielded milk, 445.4 lbs.; butter-fat, 19.338 lbs.; equivalent butter 80 per cent. fat 24 lbs. 2.8 ozs., or 22 lbs. 9 ozs. 85.7 per cent. fat.

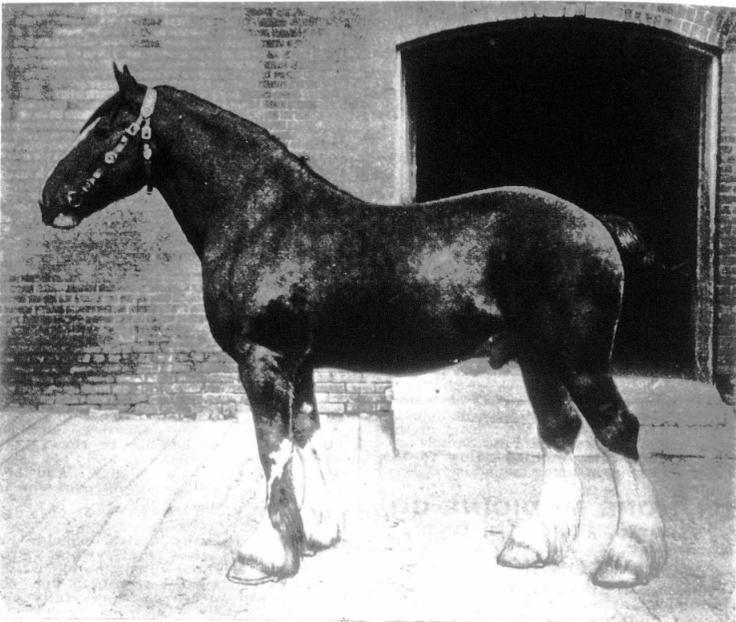
Aggie Grace 2nd's Pietertie 26731; owners, Henry Stevens & Sons, Lacona, N. Y.; age, 11 years 17 days; days after calving, 6; yielded milk, 382 lbs.; butter-fat, 16.396 lbs.; equivalent butter 80 per cent. fat 20 lbs. 7.9 ozs., or 19 lbs. 2.1 ozs. 85.7 per cent. fat.

Calamity Jane 2nd 49155; owner, Geo. Rice, Curran's Crossing, Ont.; age, 3 years 4 months 13 days; days after calving, 5; yielded milk, 269.9 lbs.; butter-fat, 14.366 lbs.; equivalent butter 80 per cent. fat 17 lbs. 15.3 ozs., or 16 lbs. 12.2 ozs. 85.7 per cent. fat.

DALGETY BROS.

LONDON, ONTARIO, AND DUNDEE, SCOTLAND.

The Largest Importers and Exporters of Horses in Canada.



STRATHCONA.

Winner of first prize as best three-year-old Clydesdale stallion and sweepstakes, Toronto, 1902. Imported by Dalgety Bros.

HAVING sold out our last consignment of stallions, we are again making preparations to bring out a large consignment in September, which will include many valuable horses, combining size, quality, breeding and action. Great care will be taken in the selection of this consignment. We have imported a great many winners at the principal shows, which goes to prove that we bring out the right kind of horses. We are in an excellent position to offer buyers the best quality at most reasonable prices, having our representative in the Old Country all the time, in the heart of the Clydesdale home. Intending purchasers desiring to place their orders with us for either stallions or mares, please write or call upon

JAMES DALGETY, LONDON, ONTARIO.

TEN

Choice Registered Fillies



That I am now breeding to that noted stock horse, Lord Lynedoch (Imp.) (4330), also 4 young stallions under 2 years, and The Royal Arch (3171), rising 4 years old, sired by Erskine's Pride (Imp.) (1332), and a grandson of that prizewinning mare, Daisy (Imp.) 977.

JOHN BRIGHT, MYRTLE, ONTARIO.

LESS LABOR AND MORE MONEY ON THE FARM.

BUY A LOW-DOWN, THICK-FLESHED

Hillhurst Shorthorn Bull,

Scotch-topped, from Cumberland, Gloucestershire, or Canadian dairy strain, and raise DEEP-MILKING, BIG-FRAMED COWS AND BABY BEEF in nature's way. Many cows that do not pay board at the stall will give a handsome return in growing beef. Four handsome young bulls, seven to nine months old, reds and roans, by the celebrated imported sires, "Joy of Morning" and "Scottish Hero," for sale at moderate prices. Low freights.

M. H. COCHRANE, COMPTON CO., P. Q.,

G. T. R., 117 MILES EAST OF MONTREAL.

HILLHURST STATION.

Scotch Shorthorns

BREEDING FEMALES ALL IMPORTED.

Imp. Golden Drop Victor our present stock bull, Eleven young bulls and some young cows for sale at reasonable prices.

H. CARGILL & SON,

Cargill Station, G. T. R.

CATALOGUE FREE.

Cargill, Ontario.

Shorthorn Bulls.

Good ones. Chiecy bred. Moderate prices. Send for bull catalogue.

Also Scotch-bred cows and heifers.

H. SMITH, HAY, ONTARIO.

Exeter station on London and Wingham branch of the G. T. R. adjoins the farm.

4 Imp. Clydesdale Stallions 4

Amphion, Vol. 24, 2 years old, bay; Bucepholus, Vol. 24, 2 years old, black; Voyageur, Vol. 24, 2 years old, brown; Lord Gartly, Vol. 23, 4 years old, brown. Representing the blood of Golden Sovereign, Sir Christopher, Montrave Matchless, and Royal Gartly.

GEO. G. STEWART, ROSEBANK FARM, P. O. and Station, Howick, Quebec.

Clydesdale Stallions FOR SALE.

One seven-year-old. One three year-old. Three two-year-olds. Also a few mares and fillies of good size and good quality. I. Devitt & Sons, Freeman P. O., Ont. Burlington Junction Station 1/2 mile from farm.

Shires, Shorthorns, and Leicesters. Young stock of both sexes for sale. Imported Prince Louis = 32082 = heads the herd. Write for prices or come and see them. John Gardhouse, Highfield P. O., Weston, G. T. R. and C. P. R.

DR. PAGE'S ENGLISH SPAVIN CURE

For the cure of Spavins, Ringbone, Curbs, Splints, Windgalls, Capped Hock, Strains or Bruises, Thick Neck from Distemper, Ripworm on Cattle, and to remove all unnatural enlargements. This preparation (unlike others) acts by absorbing rather than blistering. This is the only preparation in the world guaranteed to kill a Ringbone or any Spavin, or money refunded, and will not kill the hair. Manufactured by DR. FREDRICK A. PAGE & SON, 7 AND 9 YORKSHIRE ROAD, LONDON, E. C. Mailed to any address upon receipt of price, \$1.00. Canadian agents: J. A. JOHNSTON & CO., DRUGGISTS, 171 KING STREET, EAST, TORONTO, ONT.

HIGH PARK STOCK FARM.

GALLOWAYS of the choicest breeding and most fashionable strains. Inspection or correspondence invited. A. M. & ROBERT SHAW, P. O. Box 294, Brantford, Ont.

The Sunnyside Herefords.

Imp. Sunny Slope Tom 1st at head. The blood of Lord Wilton, Garfield, Grove 3rd, Beau Real and Diplomat represented. Special offering: 5 bulls, good ones, ranging in age from 9 mos. to 2 1/2 years; 6 young cows and heifers. Inspection and correspondence solicited. 2 choice registered Berkshire boars, price \$10.00 each. O'NEIL BROS., Southgate, Ont. Lucan station, G. T. R. Ilderton station, L. H. & B.

High-class Herefords

We have for sale the following choice young stock, which have been bred from imported and American sires. Intending buyers will do well to inspect the following: 18 young bulls, 2 aged bulls, 20 young heifers. Correspondence invited.

A. S. HUNTER, DURHAM, ONT.

INGLESIDE HEREFORDS.

A few choice heifers and young bulls by Mark Hanna, sweepstakes bull at Pan-American. Shropshire Sheep and Tamworth Swine.



H. D. SMITH, Compton, Quebec, Ont.

SHORTHORNS, SHROPSHIRE, COTSWOLDS.

We are now offering a number of heifers and heifer calves; a few bull calves; a number of cows; all bred in the purple and as good as the best. Also Shropshire and Cotswold sheep. JOSEPH BELL ESTATE, Bradford P. O. & Sta.

JOHN DRYDEN, BROOKLIN, ONTARIO.

BREEDER OF CRUICKSHANK SHORTHORNS AND CHOICE SHROPSHIRE SHEEP. Choice Young Bulls and Ram Lambs for sale. Write for prices.

SHORTHORNS.

Fashionably bred, of both sexes and all ages. Nothing reserved. H. PARKER, Durham P. O. and Station.

High-Class Shorthorns and YORKSHIRE PIGS.

2 GRAND show bulls, 16 months old, by Imp. Sirius; 8 bulls from 8 months old up; low-down, thick, fleshy fellows; all bulls of great substance. A few cows and heifers in calf. Yorkshires—A lot of young pigs 3 months old and down. JAS. McARTHUR, Goble's, Ontario.

LAKE VIEW STOCK FARM.

SCOTCH SHORTHORNS, both sexes, all ages. As good as the best. JAMES BOWES, Meaford Station, G. T. R. North, Strathalbyn P. O.

JAMES A. CRERAE, Shakespeare, Ont. BREEDER AND IMPORTER OF

HIGH-BRED SCOTCH SHORTHORNS

A FEW CHOICE SHORTHORNS

YOUNG COWS AND HEIFERS

In calf to Imp. Prince of the Forest and Prince Ramsden; also a few young bulls fit for service. G. A. Brodie, Bethesda, Ont.

Bonnie Burn Stock Farm.

40 rods north of Stouffville Station, Ont., offers Shorthorn bulls and heifers with calf, Shropshire ewes with lamb, and Berkshire pigs. All at farmers' prices. Inspection invited. D. H. RUSSELL, Stouffville, Ontario.

SHORTHORNS FOR SALE.

Two good young bulls fit for service. Also females all ages. Herd headed by (imp.) Spicy Marquis. JAMES GIBB, Brookdale, Ont.

ROSEVALE SHORTHORNS

Are of the up-to-date sort. We have for sale a number of young bulls and heifers of all ages. Marengo Heydon Duke (imp.) heads the herd. W. J. SHEAN & CO., Owen Sound, Ont.

Scotch Shorthorns

Of both sexes, of the following noted families: Golden Drops, Rosebuds, Claras, Matchless, Strathallans, Vain Duchesses, Marr Beautys, Mayflowers, Crimson Flowers, and others; 58 head to select from. Herd headed by the imported Bracelet bull, Red Duke = 36084 = (7785). DAVID MILNE & SON, ETHEL P. O., Huron Co., Ont. Ethel Station, G. T. R., half mile from farm.

Shorthorns for Sale.

6 heifers (all in calf), from Imp. British Statesman; also two young bulls, 18 months old. Write for prices. LOUIS ELLARD, Loreto P. O., Beeton Sta.

Maple Lodge Stock Farm.

ESTABLISHED 1854. SHORTHORNS.—First-prize milking strains, best Scotch breeding. Young bulls and heifers for sale. LEICESTERS.—A grand lot of ewes, bred to our imported rams, and a few choice rams, now for sale. A. W. SMITH, Maple Lodge P. O., G. T. R., 3 1/2 miles.

GREEN GROVE HERD OF SHORTHORNS.

This herd is headed by the famous show bull, Spicy Robin = 28259 = (bred by J. & W. B. Watt), grandson of Imp. Royal Sailor, and of the noted English family, and contains such noted tribes as Nonpareils, Crimsons, Fuchsias, Mysies, Butterflies, and Lavens, bred to our horns of both sexes. Also a choice litter of Yorkshires, about 4 mos. old, for sale. Address: George D. Fletcher, Binkham P. O., Ont. Erin Shipping Station, C. P. R.

SPRINGBANK FARM.

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

Shorthorns and Leicesters.

Herd Established 1855. A number of young bulls, cows and heifers for sale. Imported Christopher = 28859 = heads the herd of large cows of grand milking qualities. Also a number of Leicesters of both sexes, from imported foundation. JAMES DOUGLAS, CALEDONIA, ONT.

J. R. McCallum, Iona Station, Ont.

Offers young SHORTHORN BULLS and HEIFERS, of choice breeding, at reasonable prices. Iona Sta. on M.C.R., half a mile from farm.

BELLEVUE SHORTHORNS.

Both sexes. IMPORTED AND HOME BRED. All ages. Prizewinners at home and abroad. EDWIN BATTYE, GORE BAY P. O. AND PORT. MANITOULIN ISLAND.

"ORCHARD HILL" SHORTHORNS.

Herd comprises representatives of best Scotch-bred families, with Lord Lavender at head. Young animals of both sexes for sale. ARTHUR JOHNSTON, Vandeleur, Ont.

SHORTHORNS AND LINCOLNS.

A. D. MCGUGAN, RODNEY, ONT. Herd headed by the great sire and sweepstakes bull, Abbotsford. Grand crop of calves from imported and home-bred cows. Bulls one year and under for sale—reds and dark roans. Ram and ewe lambs for sale at reasonable prices.

TROUT CREEK HERD OF Shorthorns

Won first prize for herd and the championship for best bull and best female, any age, at Toronto Industrial and Pan-American Exhibitions, 1901. We keep constantly in our herd a choice lot of imported and Canadian-bred cattle of both sexes. Personal inspection invited. Parties desiring to see the herd will be met on arrival of trains if notice is given. Visitors always welcome. Address:

JAMES SMITH, Manager, MILLGROVE, ONT. W. D. FLATT, 378 HESS ST., SOUTH, Hamilton, Ontario.

Queenston Cement.

No better cement for durability and economy in building concrete houses, barn foundations and floors, silos, cisterns, etc. Estimates and all other information cheerfully given. Low prices. Write to this office, or see my agents before giving your order.

Isaac Usher, QUEENSTON, ONT.

ARTHUR JOHNSTON, GREENWOOD, ONTARIO.

BREEDER OF POST OFFICE AND TELEGRAPH OFFICE. IMPORTER OF

SHORTHORNS ONLY.

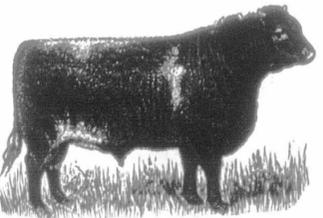
FOR SALE: 9 imported and bull calves. 11 home-bred bulls and bull calves, from imported cows and by imported bulls. 17 home-bred bull calves. A large and excellent lot of young cows and heifers of various ages.

RAILWAY STATIONS: PICKERING, G. T. R., 22 MILES EAST OF TORONTO. CLAREMONT, C. P. R., 28 MILES EAST OF TORONTO.

Spring Grove Stock Farm.

Shorthorn Cattle AND Lincoln Sheep.

HERD prize and sweepstakes at Toronto Industrial Exhibition, 1897 and 1898. Herd headed by the Marr Missie bull, Imp. Wanderer's Last, last of the Wanderer, of the Cruickshank Brawith Bud tribe. High-class Shorthorns of all ages for sale. Also prizewinning Lincolns. Apply om T. E. Robson, ILDERTON, ONT.



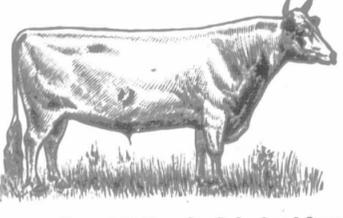
Rapids Farm Ayrshires.

REINFORCED BY RECENT IMPORTATIONS of 2 bulls and 20 cows, selected from noted Scotch herds, and including the male and female champions at leading Scottish shows last year. Imported Douglasdale of Dam of Aber, champion at the Pan-American, heads the herd. Representatives of this herd won the first herd prize at the exhibitions at—

Toronto, London and Ottawa in 1900, and at the Pan-American in 1901.

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

Robert Hunter, Manager for W. Watson Ogilvie, Lachine Rapids, Quebec.



HIGH-CLASS SCOTCH SHORTHORNS
of the following families, for sale at moderate prices: Village Girls, Broadhocks, Beaufort Roses, Missies, Clarets, Marr Floras, Nonpareils, Minas and other choice families. Write for catalogue. Shropshire rams and ewes for sale as usual. om

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SHORTHORNS (IMP.)



Cows and heifers, imp. and home-bred. Bulls, imp. and home-bred—all ages. Representing the fashionable blood of Scotland. om

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WYBRIDGE, ONT.,
IMPORTER AND BREEDER OF
SHORTHORNS,
OXFORD DOWNS
AND
BERKSHIRE PIGS.
Young stock always
on hand. om



10 SHORTHORN BULLS

From 6 to 18 months old. Nearly all from imp. dams, and sired by the imp. Golden Drop bull, Royal Prince. Catalogue upon application. om

John Miller & Sons, Brougham P.O. CLAREMONT STATION, C. P. R. ONT.

W. G. PETTIT & SON,

FREEMAN P. O., ONT.,
IMPORTERS AND BREEDERS OF

Scotch Shorthorns and Shropshire Sheep,

Are offering 10 imp. bulls from 10 months to 2 years old; 10 home-bred bulls from imp. stock, 10 to 15 months old; 40 imp. cows and heifers, all ages. Home-bred cows and heifers all ages. Also a grand lot of ram and ewe lambs and yearling ewes for sale. om

Burlington Jct. Stn. Tele. & Phone, G. T. R.

12 SHORTHORN BULLS,

ALL UNDER TWO YEARS OLD.

PRICE, FROM \$100 UPWARDS.

At the Toronto Industrial, 1900, the herd was awarded first for aged cows, three-year-old cows, two-year-old heifers, sweepstakes for female any age, first for herd (bull and four females), and first for breeder's herd.

Yonge Street trolley cars, from Union Station, Toronto, pass the farm several times a day.

J. & W. RUSSELL, RICHMOND HILL, ONT.

SHORTHORNS.

THORNHILL HERD. ESTABLISHED 27 YEARS.

Imp. Royal Member and Sailor Champion now at head of herd, which are all bred on straight Scotch lines, and are of the up-to-date kind. Present offering: some choice young bulls. om

REDMOND BROS., Millbrook Sta. and P. O.

SHORTHORN BULLS FOR SALE: A choice lot of Shorthorn bulls from 10 to 16 months old, sired by Imp. British Statesman (63729) = 20833 =; and cows of the Mara family. They must be sold at once. Prices away down to suit customers. FITZGERALD BROS., om Elmvale Station, G. T. R. Mount St. Louis P. O.

Mercer's Shorthorns

Are represented by Missies, Stamfords, Floras, Claret Princesses, Red Roses, Fashions, Crimon Flowers, and Matchless families. Headed by Village Squire 24903, a son of Abbotsford. Stock of both sexes and all ages for sale. om

T. MERCER, MARKDALE P. O. & STN.

J. & W. B. WATT,

SALEM, ONTARIO
(POST AND TELEGRAPH OFFICE),

BREEDERS OF—

Shorthorn Cattle, Clydesdale Horses, Leicester and Oxford Sheep, and Berkshire Pigs.

Our herd contains such families as Matchlesses, English Ladys, Mildreds, Village Buds, Missies, Stamfords, Mysias, Vanillas, Clarets, and Marthas. The imported bulls, Scottish Peer and Coming Star (a prizewinner at Chicago in 1901), now head the herd.

Farms 2 miles from Elora Stn., G. T. R., and C. P. R., 12 miles north of Guelph. om

SHORTHORNS: We are offering 3 extra choice yearling bulls, all from imported sires, straight Cruickshank, with Lavendal and Miss Ramsden dams. THOS. ALLEN & BROS., Oshawa, Ont.

GEO. RAIKES, BARRIE, ONT.,
BREEDER OF
SHORTHORNS & SHROPSHIRE.

YOUNG STOCK FOR SALE.

SHORTHORNS—

Scotch and Scotch-topped. War Eagle = 27809 = at head of herd. Young bulls, cows and heifers for sale. Railway station: Coldwater, Midland branch, G. T. R. Write for prices. S. Dunlap, Eady P. O., Ont. om



**Mark Your Stock
Dip Your Stock
Cure Your Stock
Shear Your Stock**

We make a specialty of Ear Labels and Buttons, Tattoo Markers, Milk Oil Sheep Dip, Cooper Sheep Dip (English), Worm Powders, Insect Powder, Rice's Lice Paint, Shears, Shearing Machines, Toxaline French Worm Cure, Crooks, Bells, Poultry Tonic, Poultry Bands, Shepherds' Cordial. All Best and Cheapest. Write for Illustrated Catalogue. F. S. BURCH & CO., 178 Michigan St., Chicago. Mention this paper



SHORTHORNS: We are offering for sale 8 bulls, from 8 months to 3 years old, by Mungo 2nd and Scottish Bard. Also a few cows bred to Baron's Heir. om

ROBT. GLEN, Owen Sound, Ontario.

HAWTHORN HERD

of deep-milking Shorthorns for sale. Six young bulls of first-class quality and breeding and from 11 dairy cows. WM. GRAINGER & SON, Londesboro, Ont.

For Sale: Very heavy, massive cows of Bates and Cruickshank breed. Two-year-old heifers in calf. Stock bull, Imperial 2nd, No. 28883. Bull calf, 11 months (Cancopper Bull 2nd = 39878 =), dam Flora = 32974 =; also dark red heifer calves. John McFarlane, Dutton, Ont. om

W. R. BOWMAN,

MOUNT FOREST, ONT.,

Is offering two richly-bred Shorthorn bulls, 12 and 15 months old, at \$80 each; one Angus bull, 18 months, at \$85. Choice Plymouth Rock eggs, 5 settings for \$2. A number of York sows, bacon type, bred to our Toronto winners, at \$15 each.

Shorthorns and Berkshires

Four young bulls, 6 to 12 months old. Pigs, 2 to 6 months old. Pairs supplied not akin. om

MAC CAMPBELL, NORTHWOOD, ONT.

Shorthorns, Berkshires, Leicesters

Am offering at present the grand stock boar, Crown Prince; also some young ones. om

ISRAEL GROFF, ALMA, ONTARIO.

SCOTCH SHORTHORNS.

We are now offering a few young bulls, from 6 to 11 months; also a few heifers, from 6 months to 2 years; all showing No. 1 quality. om

W. G. HOWDEN, om COLUMBUS P. O.

SHORTHORNS.

One bull, 1 year old; two bulls, 7 months old; a few heifers of choice breeding and superior quality. om

AMOS SMITH, Listowel station. Trowbridge P. O., Ont.



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

Shorthorns & Clydesdales

100 SHORTHORNS TO SELECT FROM. Herd bulls (imp.) Diamond Jubilee = 28861 = and Double Gold = 37852 =. April offering: Eight grand young bulls, and cows and heifers of all ages. Clydesdales: One 3-year-old stallion, and one 4-year-old mare in foal. Farm one mile north of town. om

FOR SALE: 5 Scotch Shorthorn Durhams (bulls), 5 to 16 months; 5 young cows and heifers. Berkshire pigs, both sexes. Prices reasonable. "Camden View Farm." A. J. C. SHAW & SON, Thamesville P. O. om

GOSSIP.

Mr. Jas. A. Russell, Precious Corners, Ont., writes: "The demand for good Yorkshires has been active, but we have yet some extra choice sows safe in pig for sale. The boars offered are good, and fit for service. The pigs advertised, eight weeks old, are an extra good lot. Have over 100 to choose from, sired by boar bred from imported sire and dam, which was a winner at the large shows. All the sows and boars advertised are lengthy, deep, and smooth."

The sale of Shorthorns from the herd of Mr. Geo. Bothwell, Nettleton, Mo., held at Chicago, April 4th, was very successful, and was notable for the prices realized for two young bulls, which averaged \$1,660. The 44 head disposed of brought an average of \$497.50. The highest price of the day was \$1,710, paid by Geo. Harding & Son, Waukesha, Wis., for the red-roan two-year-old bull, Nonpareil of Clover Blossom 153672, the first-prize yearling and junior champion bull at the International Exposition, Chicago, last December. Nonpareil Hero, the first-prize bull calf under a year at the same show, a 19-months' red-roan, was sold for \$1,610 to H. Hagenfeldt, Storm Lake, Iowa. Messrs. Harding secured the second highest female, Imp. Collynie Wimple, at \$1,105.

E. F. Park, of the firm of John Park & Son, Burgessville, Ont., breeders of Cotswold sheep, writes the firm will show separately this year. The Cotswolds have wintered well. The new crop of lambs by Imp. Swanwick show grand quality and covering. Will have some good shearing rams to head flocks. E. F. Park, who for a number of years has had the care of the Cotswold Hill flock, will have out a show string made up of the same stock as those that have won so many prizes in recent years in the hands of the old firm.

AYRSHIRES AT CASTLE-DOUGLAS.

At the annual show at Castle-Douglas, on April 3rd, the tops of the classes of Ayrshires were very good, and the quey stirks were extra good. In the cow class, the milk lot were led by Mr. Wm. Murray, Burrowness, with his black-and-white cow which formerly won. She has a beautiful vessel and teats: she was got by Black Prince of Knockdon, and her dam was first here two years running. Dr. C. M. Douglas, of Auchloch, Leshamagow, was second with Maid of Ardyne, the cow which Mr. Andrew Mitchell showed so successfully last year. Mr. Andrew MacKie, Aitchison's Bank, Annan, was third with Dandy, a very good useful animal like giving milk. Mr. John McDonald, Keltion Mains, was commended with a good sort of dairy cow. In the class of cows in calf, Dr. Douglas was a clear first with Mary of Burnhouses, the £100-heifer of last year looking extra well, and shown in the best of bloom. Messrs. A. & W. Kerr, Old Graitney, Gretna, were second and third with a couple of good cows. The second is the white cow which was first here last year as that was in milk, and the third is the quey that won second last year in Ayr Derby. The three-year-old queys in milk were led by Mr. Wm. Murray's heifer by Punch Bowl, and showing useful vessel and teats. Mr. Wm. Smith, Low Arkland, was second with a grand stamp of a dairy cow, and Mr. McDowall, Keltion, was third. In the same class in calf, the Messrs. Kerr were first and third. The first was got by Lord Bute out of the Juniper cow bought for 30 guineas at the Burnhead sale. The third is out of a daughter of Gay Lass, which stood second in Ayr Derby of the year of the Castlehill sale, and the sire of this quey is a son of Peter. Second prize in this class went to Sir Mark J. McT. Stewart, M. P., for a quey by Prince II. of Knockdon, out of the noted Dover-a-Blink of Burnhead. The two-year-old heifers were a very fine class. Messrs. Lindsay, Carsegown, and Mr. And. Slater, Partburn, had a tie for the first place. The Carsegown heifer was placed first. She is white and brown in color, and a nice, stylish animal. Mr. Slater's was second. Yearling heifers were a fine class, and Sir Mark J. McT. Stewart was first and second with a pair by General Hunter, a bull bred at Foulton, which seems to be breeding very well. The first is a marvellously sweet, well-finished animal, showing style in head and neck, and great promise below. Her dam was Stately Maid. Messrs. Lindsay were third with a right good sort of a thoroughly sound color. In a superior class of two-year-old bulls, Mr. Slater was first with the stylish bull, Nonpareil, which won at Dumfries, Kirkcudbright, and Dalbeattie, as a stirk. He is like breeding useful stock. Messrs. Lindsay were second with a dark-colored really good sort. Mr. Homer Young was third with a bull white in color. Sir Mark J. McT. Stewart was first and third with a pair of promising bull stirks got by Zerouma, the bull which took second at Kilmarnock, where he was purchased from Mr. Thomas Barr. Messrs. Lindsay, Carsegown, had the second, a typical Ayrshire, and a good sort.—Scottish Farmer.

"VIGILANT" NEST
SLIDING—ADJUSTABLE
(Patented Can. & U.S.)
The only nest in the World which positively prevents hens from eating their eggs.
Simple—Effective—Durable
No springs—Eggs cannot break. The inclined nest gathers them safely in lower section. Prevents fleas, or parasites, etc. Everlasting, never failing, comfortable. Thousands now in use. Ask your dealer for it or write to L. P. Morin, Inventor, Mfr., 12 Antoine St., St. Hyacinthe, Que.
Price 45c. each. AGENTS WANTED.

A FLOOD OF LIGHT.
equal to 100 candle lights and comparable only to the light of noon day sun, yet soft and restful to sew or read by, such is the light of the
AUER GAS LAMP
It makes and burns its own gas—is cheaper than oil and as easy to manage—though eight times as bright. Gives out very little heat. Our free catalogue gives full particulars. Write for it.
Auer Light Co., 1682 Notre Dame, Montreal.

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Half a million of these steel wheels have been sent out on our own wagons and to fit other wagons. It is the wheel that determines the life of any wagon, and this is the longest lived wheel made. Do you want a low down Handy Wagon to use about the place? We will fit out your old wagon with Electric Wheels of any size and any shape—tire, straight or staggered spokes. No cracked hubs, no loose spokes, no rotten felloes, no resetting. Write for the big new catalogue. It is free.
Electric Wheel Co., Box 253, Quincy, Ills.

"Here's Your Calf."
Got Your Tag On?
No need to slit the ear of your animals to mark them. Mark all your stock with the Alum-Ium "Stay There" Ear Marker. Contains your name, address, and consecutive numbers on each tag. No rusting or wearing off, inexpensive, and perfectly easy and simple to attach. We send free sample and prices upon application.
WILCOX & HARVEY MFG. CO. 194 Lake St., Chicago, Ills.

SHORTHORNS FOR SALE: Cows, bulls, from 4 months old up. Cows and heifers in calf to Sir James, deep milkers. om

H. E. HIND, Hagersville P. O. and Station, G. T. R. and M. C. R.

GEO. ISAAC, BOMANTON, ONT.,

BREEDER AND IMPORTER OF

Scotch Shorthorn & Clydesdale

CATTLE HORSES.

Forty-one head of Shorthorns arrived from quarantine 20th March. One Clydesdale stallion for sale. om

COBURG STATION, G. T. R.

GREEN GROVE SHORTHORNS:

I am now offering a few heifers, Clarets, Floras, and one Missie; also a choice year-old bull, by Aberdeen of Markham. om

W. G. MILSON, GORING P. O. and MARKDALE STATION.

SHORTHORNS FOR SALE.

Two bulls ten months old, two heifers one year old, one three years old in calf. Write for prices. om

JAS. RIDDEL, BEETON P. O. and STN.

MAPLE GROVE SHORTHORNS.

I am now offering 5 bulls from 10 months to 2 years old; imp. and home-bred; of the low, fleshy sort. Write for prices. W. B. CAMPBELL, om Campbellcroft P. O. Garden Hill Station.

SHORTHORNS FOR SALE.

Three dark red bulls, 12 mos. old, got by Diamond Jubilee (imp.). One rich roan, 10 months old, got by Favorite 24690. For prices write— om

E. & C. PARKINSON, Thornbury P. O. and station: G. T. R.

10 SHORTHORNS FOR SALE

Sired by Scottish Chief and (imp.) Chief of Stars, and from prizewinning dams. Also cows, heifers, and Berkshire pigs. om

ALEX. LOVE, om EAGLE P. O. BISMARCK STATION ON M. C. R.

HOLWELL MANOR FARM

SHORTHORNS, SHROPSHIRE, YORKSHIRE, om SCOTCH COLLIES.

D. G. GANTON, ELMVALE, ONT.

PLEASE MENTION FARMER'S ADVOCATE

H. Mitchell & Son, Nelson, Ontario.
Scotch Shorthorns.
 Twenty-five (imp.) bulls and heifers of following families: Jilt, Roan Lady, Augusta, Rosebud, Mayflower, Rosemary, Beauty, Victoria, Orange Blossom and Princess Royal. Also home-bred heifers in calf to imp. bulls and choice bull calves.
 Burlington Jet, Station and Tele. Office.

QUEENSTON HEIGHTS SHORTHORNS
 SCOTCH AND SCOTCH TOPPED

In service: Derby (imp.) = 32057 = ; Lord Montalls, by Collynie Archer (imp.) = 28890 = . Some choice heifers and young cows with calf at foot or in calf to imp. bulls and choice bull calves.

HUDSON USHER,
 QUEENSTON, ONT.
 FARM 3 MILES NORTH NIAGARA FALLS

SHORTHORNS. For sale: 2 choice bulls—one 20 months old and the other 11 months. Also Barred Rock eggs, \$1 per setting. Millar strain. Write: C. & J. CARRUTHERS, Cobourg, Ont.

Shorthorn Cattle, Lincoln Sheep
 Imp. Prime Minister at head of herd. Imp. Clippers, Miss Ramsdens, and other Scotch families. Lincolns won more than half the money and first for flock at the Pan-American; International, Chicago, 1901 and 1902.
J. T. GIBSON, om DENFIELD, ONT.

Hillside Shorthorns and Shropshires.
 Bulls, from 8 to 18 months old; heifers, various ages, of true type and fashionable breeding; also 25 ram lambs and 15 ewe lambs, from imp. sire. Will quote prices right for quick sales.
L. Burnett, Greenbank P. O., Ont.; Uzbridge Sta., G. T. R.

SHORTHORNS.
 We are offering three choicely-bred young bulls, 1 yr. old, two 8 months old—heavy-milking strain.
JAMES BROWN, NORVAL STN. and P.O.

W. J. WALKER, EADY P. O., ONTARIO,
 BREEDER OF
 Scotch and Scotch-topped Shorthorns, Barred Plymouth Rock fowls, and Bronze turkeys.
 R. R. station: Coldwater. G.T.R. Write for prices.

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

CHOICE SHORTHORNS.
 4 bulls, from 5 to 17 months old, sired by Ashburn Duke; also a few heifers, sired by Indian Duke; for sale.
J. R. HARVIE, Orillia P. O. and Station.

SHORTHORNS (imported)
 Two choice young imported bulls—one roan and one red. Write:
THOS. RUSSELL, EXETER, ONT.

25 HOLSTEIN CALVES
 For March, April and May delivery, from such noted strains as Homestead De Kol, Abbecker Chief, and Corella Ykema, imported, and others. We have spared no expense in getting the best pedigrees furnished. Express prepaid. Safe arrival guaranteed.
H. GEORGE & SONS,
 CRAMPTON, ONT.

HOLSTEIN BULLS.
 Two excellent bulls, 15 and 18 months old, of De Kol breeding, for sale at a bargain if taken at once. For particulars address:
H. BOLLEKT, Cassel, Ont.

Brookbank Holsteins
 16 to 25 lbs. of butter in 7 days' official test are the records of this herd of Holstein cows. Heifers of equivalent records. Bulls for sale whose sires and dams are in the Advanced Registry, with large official butter records.
GEO. RICE, Currie's Crossing, Ontario.
 OXFORD COUNTY.

Riverside Holsteins
 Five bulls, 9 to 11 months old, for sale. Victor De Kol, Pieterje and Johanna Rue 4th's Lad head the herd.
MATT. RICHARDSON & SON,
 HALDIMAND CO. CALEDONIA, ONT.

4 HOLSTEIN BULLS 4
 FOR SALE: From 4 to 7 months old, having sires in their pedigrees from such strains as Inks, Netherlands, Royal Aggie, and Tritonia Prince, and out of imported females that have proven their worth at the fair.
THOS. B. CARLAW & SON,
 Warkworth.

RIDGELING CASTRATION.
 om- Dr. J. WILSON, V. S., WINGHAM, ONT., Specialist in the castration of ridgeling horses and colts. Terms and testimonials on application.

Ridgedale Farm Holstein-Friesians for Sale.
 2 yearling bulls; also bull and heifer calves; all of choice breeding. Prices always reasonable. Write, or come and see them.
R. W. WALKER, Utica E. O. Shipping stations: Port Perry, G. T. R.; Myrtle, C.P.R. om

CHOICE JERSEYS.
 A offering 1 cow 5 years old, due to calve Feb. 6, very choice; bull calf 11 months old, registered, and cheap.
WM. N. HASKETT,
 Avon Manor, Markdale, Ont.

We have now on hand young females sired by **Nero of Glen Rouge 50241,** and cows and heifers bred to him.
E. B. HINMAN & SON, GRAFTON, ONT.

BRAMPTON JERSEY HERD OFFERS: 3 St. Lambert bulls from 6 to 14 months old, out of high-testing cows; 1 yearling and 5 bull calves, sired by Brampton's Monarch (imp.). Four young bulls sired by him won 1st, 2nd and 3rd prizes under one year, and 1st prize under six months, also 1st, 2nd and 3rd at London and Ottawa, in 1901. The best is none too good. These young bulls have never been beaten. Get one to head your herd.
G. H. BULL & SON, BRAMPTON, ONT.
 G. T. R. and C. P. R. Stations.

LAWNRIIDGE STOCK FARM.
JERSEYS FOR SALE: Yearling bull, and bull 8 mos. old. Several fine registered and grade cows coming in every week. A few choice young heifers. Five Berkshire sows in pig. Finest strains.
J. L. CLARK,
 Norval station: G. T. R. Norval P. O.

FOR SALE: A SPLENDID LOT OF Jersey Cattle.

41 HEAD TO CHOOSE FROM.
 Close descendants of my most noted prizewinners, and closely related to many animals I have sold that have won easily in the Northwest and all over Canada. My shipments last summer ranged from Manitoba to State of Delaware, U. S.

MRS. E. M. JONES,
 BOX 324, BROCKVILLE, ONT., OAN.

F. L. GREEN,
 BREEDER OF
 Jersey Cattle and Yorkshire Pigs.
 Choice stock of each sex for sale.
 PICKERING STATION, G. T. R. GREENWOOD P. O. CLAREMONT STATION, C. P. R.

JERSEYS FOR SALE
 A few choice Jersey bulls and bull calves for sale at very low prices. Choice breeding; good colors. Write for prices.
W. W. EVERITT
 CHATHAM, ONT.,
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Wm. Willis, Newmarket, Ont.
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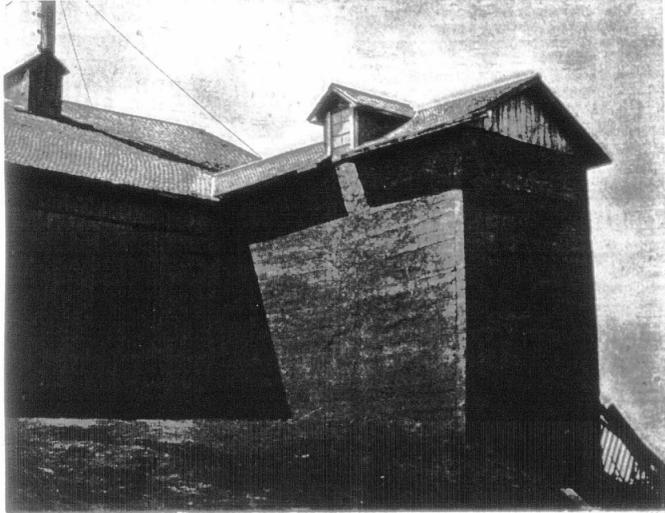
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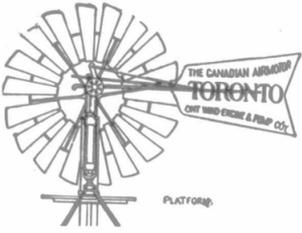
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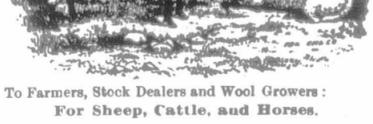
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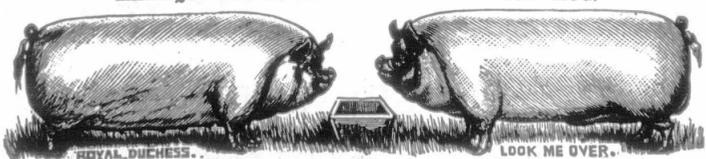
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My herd consists of sows imported from England; three of them (including a show sow) were selected from the herd of Geo. Green and were bred to his show boars. Young stock for sale (not akin). JNO. LAHMER, VINE, ONT.

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HIGH-CLASS SHROPSHIRE.

A flock of 75, of good type. Two-shear rams, shearing rams, ram lambs, ewe lambs, fine lusty fellows. Flock headed by a fine imported ram. Write for prices. Abram Rudell, Hespeler P.O., Ont. C. P. R. and G. T. R.

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Shropshire Sheep.

Ram and ewe lambs for sale. Well covered. Station One-half Mile from Farm, Wabash and G. T. R.

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YOUNG boars and sows carrying the blood of Baron Lee 4th, Bright Star (Imp.), Enterprise and Highclere, on Bow Park, Teasdale and Snell females, with Allandale Boy 5875 and Royal Lad 3rd 4307 heading the herd. S. DYMENT, BARRIE, ONT.

Imported and Canadian-bred YORKSHIRES.

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Choice young pigs, bred from prizewinning, imported stock—ideal bacon type. Eggs that will hatch prizewinners in B. P. Rocks, W. Wyandottes, White and Brown Leghorns, \$1.50 per setting. Buff Orpingtons, \$2.50 per setting. M. B. turkey and Pekin duck eggs. Also pedigree collies. A. B. ARMSTRONG, CODRINGTON, ONT.

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Best type and quality. Young stock constantly on hand. Prices right. R. HONEY, Brickley P. O., instead of Warkworth.

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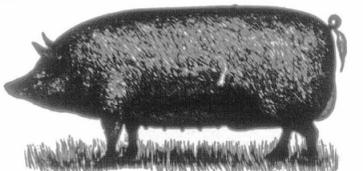
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Young pigs for sale, from medal-winning sow, O. A. C. 110, and other good ones, sired by Imp. Starlight, Pan-American First, and Bold Boy, Toronto winner. JOHN HORD & SON, Parkhill P. O. and Station.

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A choice litter of young Tamworths, farrowed March 1st, \$6 each, registered. Berkshire sows four months old. Mammoth Bronze turkey eggs in season, \$3 per setting, large stock; order now. Safe arrival guaranteed. D. J. GIBSON, BOX 38, BOWMANVILLE, ONT. HAZEL DELL STOCK FARM.



One hundred Tamworth and Improved Chester White Spring Pigs of a true bacon type, our herd having won the best prizes offered at the leading exhibitions throughout Ontario and Quebec of the past ten years. Stock for exhibition purposes a specialty. We pay express charges between stations, and guarantee safe arrival of all stock shipped. Pairs furnished not akin. Write for prices. H. GEORGE & SONS, Crampton P.O., Ont.

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Barred Rocks exclusively. Canada's business hens. Eggs for hatching, \$1 per setting, 3 settings \$2. W. J. Campbell, Snelgrove P.O., Ont.

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Bronze turkeys sired by imp. tom that won 2nd at Pan-American. Narragansett turkeys and Pekin ducks. Also Oxford sheep, Tamworth swine and Collie dogs. A. ELLIOT, POND MILLS, ONTARIO.

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Pens headed with first-class male birds—"Hartford" and the Royal strains. Royal strain, \$1.00 for 13 eggs; "Hartford" or exhibition strain, \$1.50 for 13 eggs. J. E. HUSSEY, Melbourne, Ont.

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We have for sale boars and sows 2 to 4 months old, and sows large enough to be bred. Now is the time to send orders for young pigs to be farrowed in March and April. Sired by the prize-winning boars: Colonel Brant - 5850-, Crown Prince - 5888-, and Norval Hero - 5852-. Prices reasonable. SNELL & LYONS, Snelgrove, Ont.

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Two boars 11 mos. old; 4 boars 6 mos. old; 3 boars 5 mos. old; 4 boars 3 mos. old; also a number of sows from 3 to 5 mos. old. Now is the time to order spring pigs, which are arriving daily, sired by Longfellow 10th of H. F. No. 8633, Willow Lodge Prince (9789) and Milton Lad (9660). Pairs supplied not akin. WM. WILSON, Snelgrove, Ontario.

English Berkshires.

Orders booked for young pigs from April litters, from well-bred sows of the Highclere family. Farrowed Rock eggs for hatching. Prices reasonable. JOHN RACEY, JR., LENNOXVILLE, QUEBEC.

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We are offering something extra choice, of both sexes, any age (pairs not akin), from imported stock, and of the true type. Easy feeders, rapid growers. ROBT. L. SMYTH & SONS, Fargo P. O. and Station, M. C. R.

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Our present offering is both sexes, not akin, as good as the country produces. Also eggs from B. P. Rocks, B. B. and C. I. Games, S. G. Dorkings, G. Sebright Bants, Mammoth Pekin ducks—all prizewinners—\$1.50 per 13. Six extra B. B. Game cockerels or pairs for sale. GEO. BENNETT, CHARING CROSS P. O. AND STATION.

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TWO good 7-months-old, pure-bred Yorkshire sows, bred to a pure-bred Chester hog. For sale reasonable. R. H. HARDING, Thorndale, Ontario.

YORKSHIRES

Headed by Oak Lodge Prince 5071. Litters 15 weeks, either sex; 2 sows to farrow. WM. TEASDALE, Dollar, Ont. Northern branch G. T. R., 15 miles from Toronto. Ont.

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Sows due to farrow in May and June, boars fit for service, sows ready to breed, boars and sows 8 weeks old. Over 100 to choose from. All lengthy, deep, smooth type. Prices reasonable. Write: Jas. A. Russell, Precious Corners, Ont.

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Choice White Wyandotte Eggs for Hatching:

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From all the leading varieties of Dorkings, Houdans, Minorcas, Leghorns, Hamburgs, Poland; Ducks and M. B. Turkeys. Our fowls win at all the best shows in Canada, also Boston and New York. For particulars write W. STEWART & SON, Menie, Ont.

EGGS: from heavy-laying, prizewinning strains of S. O. Brown

Leghorns, S. C. Black Minorcas, and Barred Plymouth Rocks. See "Gossip" column, ADVOCATE, April 1st. Write for circular before purchasing elsewhere. o JOHN B. PETTIT, Fruitland, Ontario.

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Large dark-egg strain, \$1.25 per setting. A. M. MINTHORN, QUEENSTON, ONTARIO.

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Only rose-combed flock known in Canada. \$2.50 per setting. One trio for sale, \$10.00. Also Rhode Island Reds, \$1.50 per setting. CHAS. R. B. BRYAN, DURHAM, Nova Scotia.

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Over 25 years' practical experience in the scientific measuring of soils and crops for profit, in Great Britain, Europe, and United States of America.

BINDER TWINE



Farmers' Co-operative Binder Twine Co.
(LIMITED).

BRANTFORD, - ONTARIO.
Have their prices on Twine for the harvest of 1902.

This co-operative movement, consisting of it does of nearly eight thousand farmer stockholders, has for ten years been a marvel of success, for the reason that the farmers, with determined loyalty and patronage, have said it shall be so. The Canadian agriculturist who buys a single ball of binder twine until he is positively sure that this Company's output is entirely exhausted acts suicidal to the interests of himself and his home, while by such acts he encourages the possibility of combine and monopoly, that the country is rampant with at the moment, and is little better than the animal represented in the picture of this advertisement.

A PROUD RECORD.

For ten years we have not sold a single pound of twine representing to ourselves a greater profit than three-quarters of a cent a pound on its actual cost of production; while in 1898 we delivered to our patrons 1,500 tons—the mill's entire output—at 7½c., while for the same grade our opponents secured 14c. We divided all earnings and profits with our myriads of shareholders instead of passing it into the pockets of American millionaires. If we have not got a farmer agent representing us in your locality, write us at once.

JOSEPH STRATFORD, General Manager.

Cash Buyers for Farms
or other real estate may be found through me, no matter where located. Send description and price and learn my successful method for finding buyers. **W. H. OSTRANDER,** North American Building, Philadelphia, Pa.

GOSSIP.

Mr. W. S. Marr, Uppermill, Aberdeenshire, has recently sold at 1,000 gs. to Mr. D. R. Hanna, Ravenna, Ohio, his two-year-old Shorthorn bull, Bapton Diamond, bred by Mr. Deane Willis, Bapton Manor; and Mr. Marr has also sold to Messrs. Nelson & Son, Liverpool, the four-year-old bull, Bapton Glory, which has been hired to Lord Calthorpe, Hants, for the season. These sires would not have been allowed to go out of Mr. Marr's possession had not the owner of the Uppermill herd recently secured three sires—two from Bapton Manor and one from Beaufort—to take their places.

Messrs. Alex. Hume & Co., Menie, Ont., breeders of Ayrshires and Yorkshires, in ordering change of advertisement, write: "Our herd never wintered better, if so well, and are now milking extra well. A usual comment from visitors is, 'Such bags!' We have a very promising and uniform crop of calves. We feel a little proud of them, and when visitors are shown them, the usual remark is, 'They are the nicest lot I have seen you have yet. How do you tell them apart?' We think we can offer intending purchasers good calves, full of dairy breeding, type, and quality, of fashionable colors, at moderate prices. We have a few January pigs, of either sex, equal to any we have had, and would be pleased to place them in good hands."

Pine Ridge Stock Farm is situated four miles from the town of Newmarket, Ont., which is the post office and shipping station of the owners, Messrs. Wm. Willis & Sons, breeders of St. Lambert Jerseys, Cotswold sheep, and Yorkshire swine. The Jersey herd numbers 35 head, of straight-bred St. Lambert strain, that for size, dairy conformation, condition, perfect udders, and sleek, glossy skins, have few equals. Mr. Willis has never had any of his cows officially tested, but there are at least two of them that have repeatedly made 15 pounds of butter in one week. Last year, during the milking season, the whole lot then milking, including a number of heifers, averaged 300 pounds of butter each, and several of them gave 40 pounds of milk a day when fresh, and when it is remembered that all this is done on ordinary feeding and pasture, it is certainly a remarkable showing. These cattle are all in splendid condition, having come through the winter with skins like silk. All being well, representatives of this herd will compete for honors at Toronto next fall, when somebody will have to hustle. A number of females, of all ages, are for sale, also three yearling bulls. Lately, the firm has purchased from the Wm. Rolph estate, a young bull out of the great cow, Oxford's Ida, who has a butter record of 20 pounds 4 ounces in 7 days. This youngster will be used as the stock bull. The Cotswolds, like the Jerseys, are in the pink of condition, and are a grand lot, perfectly covered. The Yorkshires are from the well-known Brethour pens, which is a guarantee of their quality.

A number of high-class Shorthorn bulls have recently been purchased in Ireland for exportation to the Argentine Republic. Among these were three from the herd of Mr. W. R. Crawford, of Tullyhogue, County Tyrone, namely, Champion, Excelsior, and Star of Tullyhogue—all of them well known to visitors to the Dublin and Belfast Shows during the past few years. Besides these, mention may be made of Klondyke, purchased from Sir John Leslie, Glaslough; Caledon Chief, from the Countess of Caledon; Statesman, from Mr. Wilson, of Moy, County Tyrone; Lavender Royal, from Mr. Budgett, Armagh; Bright Baron, from Mr. Webster, of Grey; and Stephen FitzLavelender, from the Mote Park herd. Some idea of the prices obtainable for bulls suitable for the Argentine trade may be gathered from the fact that the three sold by Mr. Crawford are reported to have averaged close on £200 each.

Mr. Geo. Isaac Bonanton, Ont., importer and breeder of Scotch Shorthorns and Clydesdales, writes: "I have made the following recent sales: Twenty imported heifers to Hector Cowan, Paulina, Iowa, and five to Robt. Miller, Stouffville, Ont. These were all selected and imported from the best herds in Scotland. My last importation of 41 head arrived in good condition, March 20th, including three young bulls, which I am offering for sale. All are red and of extra quality and breeding. One bred by W. S. Marr, Uppermill, sired by Bapton Chief 76076, dam by Wanderer, grandam by William of Orange. This is a very promising animal, and will be an acquisition to any herd. The second, bred by Mr. George Campbell, Hart Hill, Aberdeen, is of the favorite Jilt family, sired by Scottish Prince 73593. The third, also bred by Mr. Campbell, sired by Golden Fame 76786, dam by Lovat's Chief 72915. I have also a number of heifers from one to three years old, of such noted families as Mary of Lancaster, Jessamine, Queen, Lady Dorothy, Elvira, Rose, Jilt, and Margaret, all imported, and in first-class condition. The imported stallion, Gay Gordon, which I am offering for sale, is a beautiful dark bay, with very little white in four years old, has plenty of bone and splendid feet. Although a very heavy horse, he has great action. He was not by Prince Robert 7135, dam by Gilderoy 2nd 5038."

Write a Postal TO GET WELL.

Send No Money. Simply Tell Me Some One Who Needs Help.

If you are sick let me know it. If you have a friend who needs help, tell me his address. Let me send the book he needs. Let me offer the sick one a way to get well.

Do that much, and I will do this: I will send with the book an order on your druggist for six bottles Dr. Shoop's Restorative. I will tell your druggist to let you test it for a month. If satisfied then, the cost is \$5.50. If not, I will pay your druggist myself. It shall not cost you a penny.

Please note what that means. I furnish the treatment, give you my best advice, answer all of your letters. If I succeed, the cost is only \$5.50 and the result is health. If I fail, my effort and my medicine is free. Can't you see that I must know how to cure?

The reason is this: I have spent a lifetime in learning how to strengthen the inside nerves. That nerve power is the force that operates every vital organ. It is to your body what steam is to an engine. When any vital organ is weak and fails in its duty, I bring it the power it needs. The results are certain, and most chronic diseases cannot be cured in any other way.

My book will tell you why. I don't mean that I never fail. I can always bring back this vital nerve power; but sometimes an organic disease, like cancer, makes a cure impossible. But such conditions are rare. In any case, no matter how difficult, I will take the entire risk. My records show that 39 in each 40 who get these six bottles pay for them—pay because they are cured. It is this remarkable record that makes such an offer possible.

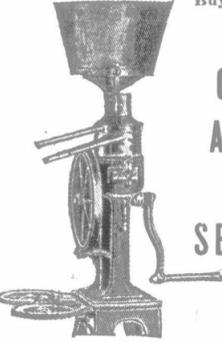
There are 39 chances in 40 that I can cure you or your friend. It is absolutely certain that in most chronic diseases my treatment represents the utmost that medicine can do. It is certain, too, that no other physician will assume the risk, for no common treatment could stand a test like that. No matter what your prejudice or doubts, remember that I take the risk. I alone am the loser if I fail. And if I succeed, you are well. Be fair with yourself. At least get my book. I am sorry for the sick one who can say "no" to my offer.

Book No. 1 on Dyspepsia.
Book No. 2 on the Heart.
Book No. 3 on the Kidneys.
Book No. 4 for Women.
Book No. 5 for Men (Sealed).
Book No. 6 on Rheumatism.

Simply state which book you want, and address Dr. Shoop, Box 52, Racine, Wis.

Mild cases, not chronic, are often cured by one or two bottles. At all druggists.

Buy the
NEW CENTURY AMERICAN CREAM SEPARATOR



And have the best.
Nothing as good.
Simple, durable, easy to turn and clean. Five different dairy sizes.
WRITE FOR CIRCULARS AND INFORMATION.
AGENTS WANTED.
C. RICHARDSON & CO.,
P. O. Box 1048, - - St. Mary's, Ont.

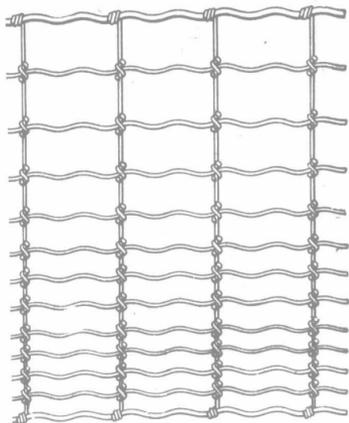
At the Shire horse sale of Mr. Andrew Smith at Derby, England, last month, the second-prize mare in her class, Scarsdale Rock, brought 110 guineas.

THE
ANCHOR WIRE FENCE



Is made throughout of No. 9 wire, all cross wires securely fastened with Anchor Clamps.
All kinds of fence wire in stock. Write for prices.
Agents Wanted.
ESPLEN, FRAME & CO.,
MANUFACTURERS, - STRATFORD.
Latest and best device for wire-fence building, including
GEM and McCLOSKEY
weaving machines, also Coiled Spring and other fence wire at lowest prices. Write on McGregor, Banwell Fence Co., Limited, Box 23, Windsor, Ont.
ADVERTISE IN THE
FARMER'S ADVOCATE.

LAMB FENCE



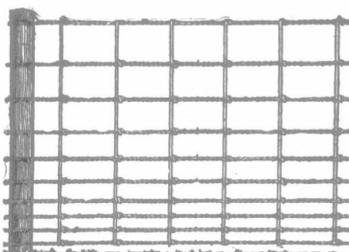
What is the difference between "LAMB FENCE" and a Bass Drum? You can beat the Drum, but you cannot beat "Lamb Fence." Heavy, hard wire cross-bar. High carbon laterals.

H. R. LAMB,
LONDON, ONT.



FRED SMITH, BRANDON, MAN., Gen. Agent.

FENCING and GATES



Buy your fencing and gates direct from the manufacturer. The Oshawa Wire Fence Co., Limited, are the largest manufacturers of different styles of fencing and gates in Canada. Send for catalogue and prices.

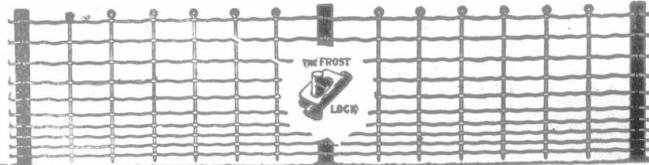
OSHAWA WIRE FENCE CO., Ltd.,
OSHAWA, ONT.

GOSSIP.

At the Kelso bull sale, last month, the 18 pedigreed Shorthorn bulls offered brought an average of £16 10s., as against an average last year of £19 10s. The first-prize bull, Bashful Boy, by Principal of Dalmeny, sold for 36 guineas.

The noted Shorthorn bull, Caledon Chief, the sire of which is the Collynie bull, Laureate, a son of the famous Scottish Archer, has just been shipped to South America. His dam is the first-prize cow, Rowena III., the sire of which was the great show bull, Sign of Riches, bred at Uppermill. For the last ten months Caledon Chief has been in use in Mr. Duttie's herd at Collynie.

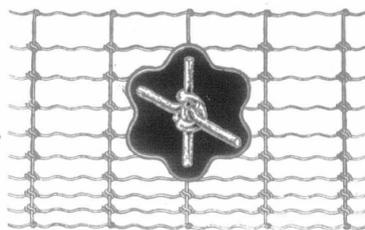
The Brampton Jersey herd has made an enviable name for itself. Messrs. B. H. Bull & Son of Brampton, Ont., the enterprising owners of the herd, are enthusiastic admirers of this favorite dairy breed and devote their whole attention to the breeding of typical specimens of the breed. Their phenomenal success in the show-ring and the demand for their stock attest the superiority of their herd. At the present time there are something over 60 head in the herd, which includes such noted cows as Ithoda, whose butter record is 19 lbs. in 7 days, and who won first and sweepstakes at London, first at Montreal and Brantford, and second at Toronto; Minette of Brampton, a sister of the great Adelaide of St. Lambert, a cow that gives promise of rivaling her illustrious sister; Sunbeam of Brampton, who won first at Ottawa, Toronto, London, and Brantford, and first and sweepstakes at Montreal; Bettina of Brampton, winner of first in Provincial dairy test at Brantford, first at London and Ottawa, and second at Toronto, and who, at her first calving, milked 35 lbs. of milk a day; Elena of Oakdale, recently purchased, with butter record of over 19 lbs. in 7 days, a cow of more than ordinary quality, who won first in dairy test at Guelph, and silver medal as best dairy cow, any breed, at Woodbridge last fall; Jolly's Pet of Brampton, that made such a marvelous ring record as a two-year-old, and who will be fresh this year for the fall shows. These are samples of the herd. All told, there are 43 registered females, that are either in milk or in calf. At the head of the herd is that grand old stock bull, Brampton Monarch (imp.), a bull that has probably sired more prize-winners than any other bull of the breed in Canada. He is still in fine fettle and good for years of service yet. Second to him in service is the champion St. Lambert bred bull, Bim of Dentonia. Both these bulls have been sweepstakes winners at Toronto, and the many excellent young animals in the herd sired by them testify to their superiority as sires and to the rare good judgment of the Messrs. Bull in their selection. There are just now in the stables a number of heifers that are sold, some going to Manitoba, others to different parts of Ontario. The whole herd is in the pink of condition, due to a very great extent, no doubt, to the splendid stables in which they are housed, with good high ceilings, abundance of light, cement floors, perfect ventilation, with disinfectants freely used. For ease, facility and rapidity in feeding, these stables are second to none we have seen; the water being carried throughout the stables in pipes, a drinking-pan being full at all times, each stall, controlled by an ingenious device which prevents overflowing, the water being pumped from a living spring to a tank in the loft, which ensures an abundant supply of pure water. The contents of the three huge silos are emptied into one common chute, which empties into the stable. This is a model of the up-to-date sanitary stable. This is the firm that were gracious enough to invite the Jersey Breeders' Association to an afternoon of sociability at "Hawthorne Villa," their home, in June next.



The Frost 10 Wire and 6 Stay Fence

is the strongest and heaviest wire fence made—good openings for good agents; write us at once for terms. Ask for catalog.

THE FROST WIRE FENCE CO., WELAND, ONT.



Ideal Woven Wire Fencing

Complete in the roll. A heavy, one-piece stay that will not buckle up and cannot slip. Note the lock. No. 9 hard spring wire throughout. A fence that WILL LAST.

McGregor, Banwell Fence Co., Ltd.
WINDSOR, ONT.

Coiled spring and other fence wires.



Page Woven Wire Fence

Owing to the variations of the Canadian climate, considerable allowance must be made in all fences for contraction and expansion, which makes an ordinary wire fence unserviceable, as when it expands it becomes so loose as to prove of little value. Note this makes it elastic and self-regulating. The Page Wire Fence is made of "Page" wire, which is twice as strong as ordinary wire. Prices are particularly low this season. 50,000 miles of Page fences now in use. We also make Gates, Ornamental Fences and Poultry Netting. The Page Wire Fence Co., Limited, Walkerville, Ont.

DENTONIA PARK FARM

EGGS	S. C. Leghorns—White, Buff and Brown	\$1.50 per 13.
	Andalusians, White Langshans,	1.50 per 13.
	White Wyandottes,	1.50 per 13.
	Pekin ducks (special matings),	1.50 per 11.
		5.00 per 100.

S. C. White Leghorn breeding pens mated with cocks direct from Wychoff's stock, of Groton, N. Y. Stock for sale. Correspondence solicited.

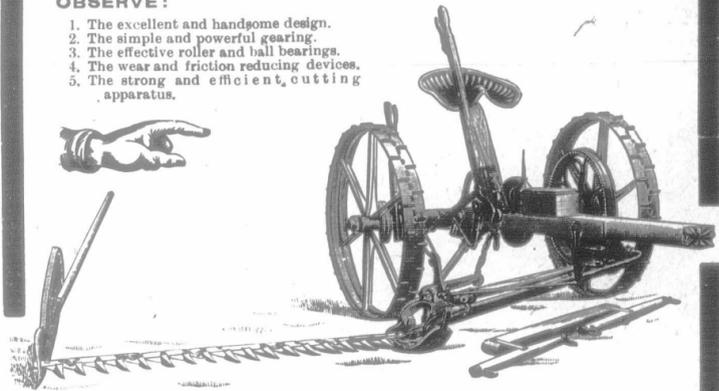
O. REYNOLDS, Coleman, Ontario.

NOTICE:

On and after May 1st, 1902,
We will continue as before to supply farmers with a full line of excellent **FARM IMPLEMENTS.**
Do you want a Mower?
Then try the **FROST & WOOD NEW No. 8.**
We believe it is the best hay-cutting machine in Canada.
Call on our agent and examine the mower yourself.

OBSERVE:

1. The excellent and handsome design.
2. The simple and powerful gearing.
3. The effective roller and ball bearings.
4. The wear and friction reducing devices.
5. The strong and efficient cutting apparatus.



You will want one when you see it.
All who have the No. 8 are satisfied with it.
Made to cut 4 1/2 ft., 5 ft., 6 ft.
And let us again remind you that we make a full line of **BINDERS, RAKES, CULTIVATORS, and SEEDERS.** First-class in every respect.

Head Office and Works: **Smith's Falls, Ontario.**
Branch Offices and Warehouses: **Toronto, Ont., London, Ont., Winnipeg, Man., Montreal, Que., Quebec, Que., St. John, N. B., Truro, N. S.**

A BARGAIN! A LARGE CONSIGNMENT OF Basic Slag

FROM SCOTLAND, TO BE SOLD AT HALF PRICE.
\$17.00 per ton, Toronto.

The best fertilizer for grasses, clover, roots, corn, etc. Used more in Great Britain than any other manure. Write for pamphlets.
GEORGE KEITH, Seed Merchant, TORONTO.
Send for Seed Catalogue and for samples of pure clover and timothy seed.

Broadcast Seeders.



THE LATEST AND BEST ON THE MARKET.
ANYONE CAN USE THEM.

Price, \$1.40 each

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WHOLESALE AND RETAIL HARDWARE.

A \$3000.00 STOCK BOOK FREE

FOR YOU AND EVERY READER OF THIS PAPER, POSTAGE PREPAID.
This Stock Book Contains 183 Large Colored Engravings of Horses, Cattle, Sheep, Hogs, Poultry, etc. It costs \$3000 to have our Artists and Engravers make the fine live stock Engravings. It also contains a finely illustrated Veterinary Department that will save you Hundreds of Dollars. It gives a description and history of the different Breeds of Horses, Cattle, Sheep, Hogs and Poultry. The Editor of this Paper will tell you that you ought to have a copy of our finely illustrated Book for reference. WE WILL SHIP YOU \$14.00 WORTH OF "INTERNATIONAL STOCK FOOD," ABSOLUTELY FREE, IF BOOK IS NOT EXACTLY AS REPRESENTED.
THIS BOOK WILL BE MAILED FREE (Postage Prepaid) if You Write Us (Letter or Postal) and Answer 3 Questions:
1st—Name this Paper. 2nd—How much Stock have you? 3rd—Did you ever use "INTERNATIONAL STOCK FOOD" for Horses, Cattle, Sheep, Hogs, Colts, Calves, Lambs or Pigs? Answer the 3 Questions and Write Us At Once For Book.
Largest Stock Food Factory in the World.
Capital Paid in, \$1,000,000.00.
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DEALERS: SELL THESE ON A "SPOT CASH" GUARANTEE.
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SILVER PINE HEALING OIL, ETC.

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To avoid disappointment and loss, all who are interested in growing potatoes should take this advertisement to the nearest store, hardware dealer or druggist, and INSIST upon the CANADA PAINT COMPANY'S name being upon every package of Paris Green. IT IS THE BEST.

FACTORY PRICES.

OUR prices on all kinds of carriages and harness are actual factory prices. The dealers and jobbers have been eliminated in our system of selling direct from factory to customer. We are saving money for thousands of carriage buyers all over the country—we can save money for you.

Write for our catalogue, descriptive of buggies, phaetons, surreys, etc. It gives full particulars of our system, and shows the carriages. It also gives wonderfully low prices on harness, etc. The largest assortment to select from—and the broadest guarantee goes with each purchase. Catalogue Free.



No. 10, Price \$52.50.

International Carriage Co., BRIGHTON, ONT.

HARDY PERENNIALS,

Or, as they are often called, HERBACEOUS PERENNIALS, are the best of all plants for borders and flower beds. Unlike annuals or the ordinary bedding plants, they live from year to year, and increase in size and beauty. We will send the following collection:

- 1 ANEMONE (Whirlwind),
- 2 GERMAN IRIS (named),
- 1 DAISY (double red),
- 1 ANTHEMIS (T. Kelwayi),
- 1 CAMPANULA (Persicifolia),

Postpaid to any Canadian address, for only 50 cents. We will send our descriptive catalogue, "Canadian Plants for Canadian People," with each order. Address:

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LEADING CANADIAN FLORISTS.

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"Hinge" Stay Fence

It will not sag, and is cheap, strong and durable. Write for circular and prices.

Good Agents Wanted in every locality, to whom we guarantee good returns.

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SHOWING HINGE MOVEMENT OF STAYS UNDER PRESSURE STAYS CANNOT BEND & WILL SPRING BACK TO PLACE WHEN PRESSURE IS REMOVED.



PLEASE MENTION THE FARMER'S ADVOCATE.

THE IMPROVED U.S. CREAM SEPARATOR

Holds World's Record
For MOST EXHAUSTIVE SKIMMING
Average test of skim milk from **50 CONSECUTIVE RUNS** - **.0138**
At the Pan-American Model Dairy, 1901
No other separator has ever been able to approach this record
Which proves conclusively that there **Is Nothing Equal to the U. S. Separator**
For extracting the cream from the milk
Dealers who desire to sell the best should handle **"THE KIND THAT GETS ALL THE CREAM"**
Write for free descriptive pamphlets containing full particulars and much useful information.

VERMONT FARM MACHINE CO., BELLOWS FALLS, VT.

Why are London Fences better than others? It's because they are built and woven to fit the ground. London Fence cannot be beat, and London Fence Machines cannot be equalled. Write for catalogue and prices. See our ad. in April 15th issue of the ADVOCATE.
London Fence Machine Company, Limited, London, Canada.