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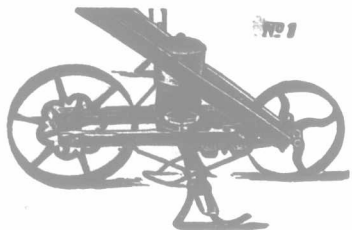
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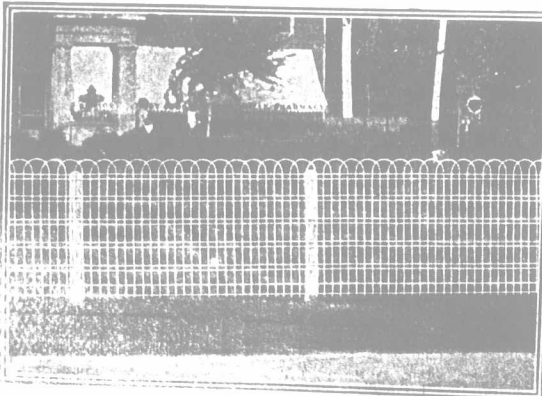
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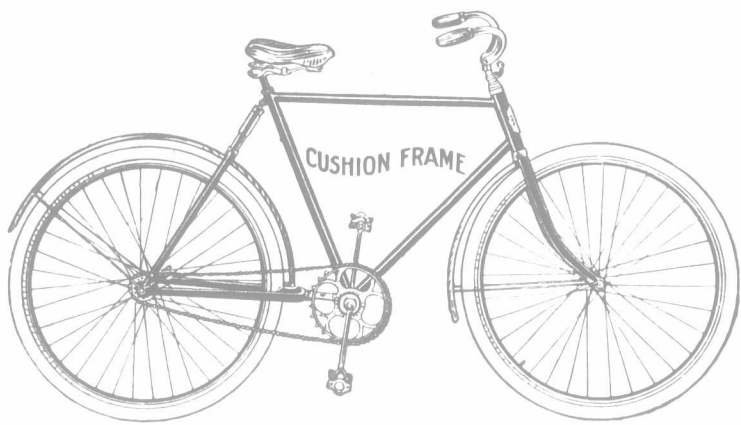
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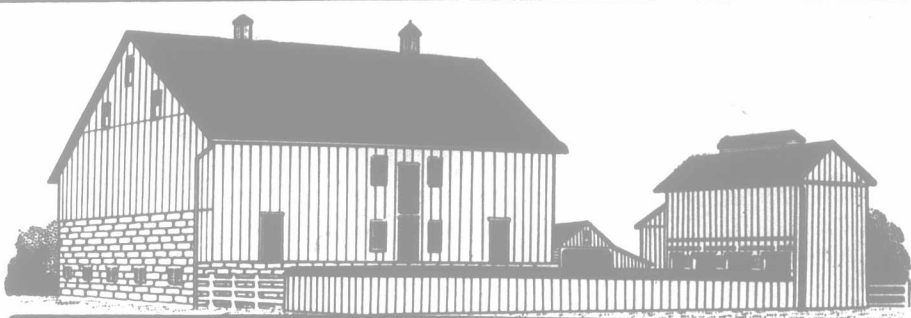
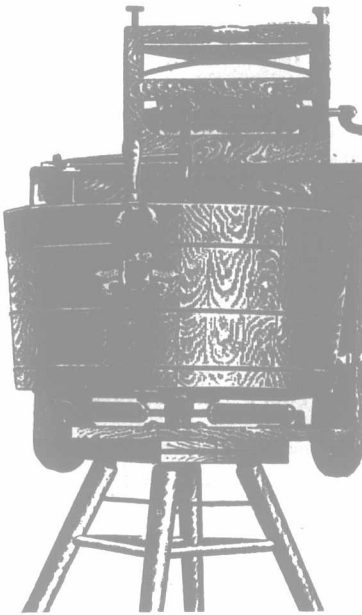
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Vol. XLII.

LONDON, ONTARIO, MAY 23, 1907.

No. 765.

EDITORIAL.

ROAD DRAINAGE.

Drainage is the fundamental principle of road-making. Without it good roads are impossible. The term drainage implies provision, either natural or artificial, for the rapid and thorough removal of both surface and subsoil moisture. Surface moisture must be removed in order to prevent it softening the surface, thus causing mud and afterwards ruts. Surface moisture must be removed, also, because, if allowed to lie on the road, a portion of it will soak down into the subsoil, thus softening it, unfitting it to bear the weight of traffic and causing it to yield in places, thereby disrupting the surface bond, whether this be earth or metal. The results are particularly disastrous to a metalled surface, and by far the greatest injury is done in spring when the frost is coming out.

To secure surface drainage, the roads should be graded to a reasonable crown, ditches provided with steady fall and free outlets, culverts made large enough to take care of the maximum flow of water, and no holes or blind furrows permitted anywhere, for these collect volumes of water that afterwards keeps the adjoining roadbed soft by seepage till the hole is dried. Having graded the road and opened all ditches, the next step is to keep the surface as smooth as possible at all times by means of the leveller or split-log drag. This operation is very important, but has been sadly neglected in many cases. Experience to date seems to favor the split-log drag as the best implement for this purpose, but the old-fashioned leveller is also good. Such an implement as the drag or leveller is especially needed on clay roads, but will do good work on any earth road, and even on gravel, tending to preserve a smooth surface that will shed water readily. Incidentally, it will tend to preserve the crown and obviate the necessity of such frequent grading or graveling as has been required in the past.

We come now to the subsoil. The subsoil of the roadbed bears the load, and no road can be good without a firm bottom. To be firm, it must be moderately dry—not powdery dry, but as dry as good tile drainage can make it. A sloppy or a miry roadbed can never support a good surface. It is true that a hard, compact earth or metal crown, by distributing the weight of a passing horse or vehicle over several square yards of the subsoil, enables it to support a weight that it could not bear up if confined to a narrow wheel track or hoof print. Nevertheless, the necessity for a firm road bottom cannot be overestimated. Why? Because it is impracticable on country roads to construct a metal or any other kind of surface that will carry a heavy traffic, unless itself supported by a firm foundation. Otherwise, it yields a little under each load, the bond is broken, and the work of disintegration begun. But the end is not yet. Fall rains come, and the earth is soaked to a depth of two or three feet. Some water percolates downward through the disrupted surface, and more soaks in from the brimming ditches and from adjoining roadsides and fields by lateral seepage, which occurs more or less wherever a waterlogged soil lies near a drier one. In some cases the roadbed actually contains springy places, which may or may not force water to the surface.

Winter frost finally seals up the outlets, and, working downward, congeals the pent-up moisture, with the consequent expansion that always occurs when water is converted into ice or frost. Spring comes and thaws out the frost, not uniformly, but sooner in some spots than in others. The sur-

face thaws first, and dries, perhaps, into a sort of crust. Underneath is a soupy, spongy bog that yields as you walk over it and allows horse hoofs and wagon wheels to press down, cutting deep ruts, completely destroying the once compact, bonded surface, in the case of macadamized roads, and playing havoc equally with the earth-surfaced highway, the difference in degree of injury being due to the fact that the former has cost more to construct. Before this road has dried out, it will, if the crown is clay, have been cut up into horrible ruts and hoof marks. If gravelled or macadamized, the ruts will not be quite so deep, but the bottom and sides of them will be rough with pebbles and pieces of stone, and travel and rain will combine to jar other stones loose, and to form mudholes. In one or two winters the gravel or crushed stone, no matter how well it was originally laid, is but a heap of loose metal mired into a mudhole. Then more metal is applied, and the thing goes on indefinitely. Conditions similar to the above obtain on every road where the subsoil is not well drained, either naturally or artificially. Artificial subsoil drainage is not always necessary, although in nearly all cases beneficial. There are some soils and some locations where good natural drainage obtains, and in such cases it is sufficient to grade, drag, ditch, and then promptly repair the little holes that are always liable to occur.

But there are other roads—thousands and thousands of miles of them—that will never be good till they are underdrained, and the sooner it is done the better. Underdrainage will do two things: It will greatly improve the road for immediate use, and prepare a foundation on which gravel or crushed stone can be applied at some future time with prospects of permanent results. On the method of underdraining roads, we have suggestions to offer at an early date. Meantime, correspondence is invited from readers who have had experience in the work.

FRESH AIR BETTER THAN TUBERCULIN.

The efforts which are being made in Wisconsin to legislate bovine tuberculosis out of the State by reliance mainly upon the tuberculin test, raises the question again of the ultimate or even temporary utility of this plan of campaign. Whether the identity of the human and bovine types of the disease be assumed or not, their analogy is sufficiently close to indicate the wisdom of giving cattle the benefit of the open-air treatment, now universally advised by the most successful physicians, both as a remedial and a preventive treatment. The success of fresh air, coupled with ample nutrition, in case of the human subject, is beyond any question, and Mr. H. F. Brown, the veteran Shorthorn breeder, of Minnesota, after an experience of over thirty years, is now able to bear emphatic testimony to the great advantage in promoting general vigor of health of keeping cattle in the open air both during summer and winter as much as possible. The climate of Minnesota is more rigorous than that of Ontario, and yet he is preparing to use open sheds in winter for the use of his stock, in preference to close barns. This policy is entirely in accord with the position on this subject taken by "The Farmer's Advocate," in calling attention to the degenerating tendencies involved in what was designated "The June Conditions Fad," whereby farmers have been ill-advised to house their cattle in an environment of summer throughout the long winter season, with its attendant evils of non-exercise and a vitiated atmosphere.

CORN - FIELD CULTIVATION.

In the May 2nd issue of "The Farmer's Advocate," the importance of early disking or cultivating of the land intended for corn was urged as a means of keeping the surface soil friable, preventing the escape of soil moisture by evaporation, and rendering the proper preparation of the seed-bed much less difficult. Now that in most cases this preparation and the planting has been completed, the importance of early and frequent stirring of the surface soil by means of the harrow, weeder or cultivator can hardly be too strongly advocated for the purposes of prevention of weed growth, the admission of air to the roots of the plants and the continued conservation of moisture in the land. Heat, moisture and air are cardinal requisites for rapid growth of most plants, but these agencies stimulate germination and growth of weeds as well as of useful crops, and as in this, as in most other matters, prevention is preferable to cure, the early stirring of the soil after planting prevents the weeds from securing a foothold and strangles them in their birth, thus saving much labor at a later stage, were they given a chance to take firm root and grow strong, robbing the crop of needed moisture and hindering its growth and development. An old-time doggerel says:

"A wife, a dog, and a walnut tree,
The more you beat 'em, the better they be.

While we should hesitate to endorse this doctrine in the case of "the party of the first part," experience has taught that in the treatment of the corn crop there is more than a modicum of sense in it. The mistake generally made, of sowing too much seed, is not observable till the crop is well advanced, when an excess of slim stalks, lacking in substance and feeding value, and yielding no ears, is then clearly noticeable. For the reasons above indicated, harrowing the ground or scratching it with the weeder after planting, both before and after the plants are up, while it may to some extent thin out the stand, will generally more than compensate for this by the prevention of weed growth, by conserving moisture in the land and promoting a rapid and vigorous growth of the crop.

Too many farmers have yet a wrong idea regarding cultivation. They wait till the weeds have started to grow before starting to kill them, beginning to cultivate at the wrong end of the week, and a week sometimes makes a great difference in the cost in time and labor of subduing a setting of weeds, while if a wet spell comes when the cultivator cannot be put to work, they make alarming headway, and seriously handicap the crop for the entire season. One cultivation at the right time is often better than two or three later on; and any time, when the ground is not too wet, is a right time to cultivate corn, no matter how dry or hot the weather may be. The blanket or mulch of fine loose soil on top, created by frequent cultivation, has the double effect of preventing evaporation, while aerating the underlying strata of soil.

The doctrine of frequent cultivation of the corn crop is undoubtedly sound, and the cultivation in the early stages of its growth may be fairly deep, but should be shallower at the later stage when the rootlets spread over the spaces between the rows, and should not be cut off by deep cultivation. Within reasonable limits, in regard to corn and root culture, it is therefore safe to repeat the admonition. Cultivate, Cultivate, Cultivate, especially soon after a rain, to prevent a crust forming, and to retain moisture for a possible dry time.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN THE
DOMINION.

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PRICE OF FARM MACHINERY.

An article published in the Canadian Thresherman foreshows an early increase in the price of farm machinery, varying from 5 to possibly 15 per cent., because of the increase of raw material and labor. Detailed statements are given, showing the rise in various classes of iron and wood, ranging all the way from 20 to 100 per cent., during, say, the last ten years. It is also pointed out that the manufacturer is unable to buy his raw materials now on as favorable terms as formerly, but when he comes to sell the finished products, there are long credits and low rates of interest. Compared with what they were twenty years ago, implements have greatly decreased in cost by reason of competition, but now there is a general upward trend in the prices of nearly all commodities. The article also argues that, as a producer, the capacity of the farmer has increased, but let it be remembered that if, by reason of better knowledge and facilities, he can increase his output, his expenses are also increasing both in the home and on the farm. In order to overcome the labor shortage, he resorts to the use of labor-saving machinery in almost every department of farm work. With regard to the prospective increase in the cost of implements, it will not be inappropriate to advise again greater care in the use and housing of the plant in which so much of the farmer's capital is annually locked up, in order to prolong its period of effective service, and also the extension of the idea of co-operation among neighbors in the purchase and use of many of the more costly implements used in modern farming. By such practicable measures as these he will be enabled to keep down to reasonable limits his machinery bills, whether the proposed advance takes effect or otherwise. Just now good prices are being realized for most farm products and live stock, but how soon there may be a turn in the tide no one can safely conjecture, and it is therefore prudent to exercise caution in the spending department before the evil day comes, and so delay its advent.

A SUCCESSFUL IMPERIAL CONFERENCE.

The Imperial Conference in London, Eng., has been a great success, not so much for what it accomplished as for what it left undone. This is no disparagement at all of its utility. A periodical conference of Colonial Premiers with representatives of the Home Government makes for mutual understanding, and if, in the present instance, there were few misapprehensions to clear up or difficulties to remove, it is quite probable that the Conference will have proved useful in averting impending trouble from some unexpected quarter or other. Not knowing when or whence difficulty will arise, it behooves the Empire to keep in close touch each part with the others. This is precisely what has been accomplished.

The besetting danger of a Conference such as the one just held is the mischievous tendency on the part of some of the assembled representatives, and of their friends at home, of thinking they must do something to make a big spread to flap their wings and crow over. That such an eventuality was avoided, was due in large measure to the sagacious statesmanship of Canada's Premier, Sir Wilfrid Laurier. Upon the question of an Imperial Council his mind was definitely made up, his reasoning farsighted and clear. He realizes that formal representation on a permanent Imperial Council might, through indiscreet representatives, or more probably through the decision of the majority, drag Canada and other Colonies into entanglements which they would instinctively avoid if left free, as at present, to choose their own course; and, anyway, the Colonies are too busy minding their own business to interfere unnecessarily in world politics. Great Britain can count on our moral support and on our active help in time of need, whenever her cause commends itself to our judgment. That is enough at present. It is as close a union as is feasible. Britain keeps us with her by the very freedom she allows us. Attempt to forge links of formal union will destroy the harmony that now exists, cause friction, and create a sense of thralldom. True Imperialism is a spirit—not a form.

In line with this view is Canada's position on the question of preferential trade. The Dominion gave a preference to Great Britain primarily as a needed measure of tariff reform. Our tariff was too high. It imposed a needless burden upon our consumers. We concluded to lower it somewhat, and, instead of simply making a sweeping general reduction in our schedules, we cut the larger slice off imports from Britain—a move which, in many lines of goods, had the effect of compelling foreigners to meet British prices in our markets, and hence relieved our consumers and taxpayers to almost as great an extent in such cases as an all-round reduction would have done. Incidentally, the preference proved a special advantage to Great Britain, as it was desired it should do.

In Britain the case is different. It is doubtful whether she stands to gain by any change in fiscal policy. Any considerable tax on food imported to feed her people would be a handicap upon the whole British people, and must tend to increase the cost of living, hence the cost of manufacture and commerce. Such a tax would irrevocably raise the price of foodstuffs for a time at least, and Britain is not to be blamed for hesitating about laying the beginnings of what might eventually become a fantastic fiscal fabric. It may be argued that a slight tax on foreign foodstuffs would encourage food production in the Colonies to a greater degree than it would handicap manufacture in Britain, and that such encouragement of production in the Colonies is justifiable as a precaution in the event of war shutting off supplies from other countries. That is a question for Great Britain to decide, and while we would welcome such a conclusion, it is not for us to interfere or dogmatize concerning her affairs. The British preference has paid us directly by relieving our consumers and filling our national coffers, and also indirectly by advertising Canada in the Old Country, and creating there a favorable prejudice for our goods. It would ill become us, therefore, to insist on Britain upsetting her whole fiscal system in order to grant us a quid pro quo. Whatever course Britain may see fit to take in this matter, she may rest assured we are making no demands or threats.

What the Conference did of a positive character

was to decide in favor of meeting every four years, and ask that a special department of the Colonial Office, called a Secretariat, be appointed to prepare material for its consideration. A resolution was passed providing for the development, for the service of the Empire, of a general staff, drawn from the forces of the Empire, whose duty it will be to advise on defence and other military matters. Universal penny postage, cheaper cable rates, and Imperial naturalization, were discussed, to more or less definite purpose. Best of all, it looks as though a result of the Conference will be the inauguration of the long-looked-for fast Atlantic steamship service between Canada and Great Britain, also an improved Pacific service. In fact, the Conference did everything it could do that was necessary or wise, and refrained from doing that which would have entailed complications, embarrassment and friction, leading, quite conceivably, to rebellion, secession or disintegration. Our Imperial statesmen showed their wisdom by letting well enough alone.

TIMBER VALUES SOARING.

The man who fences off and cares for his woodlot may look forward to a far better revenue than would be obtained merely from firewood. Prices for timber of all kinds are soaring in a way that is really alarming to manufacturers. A table recently compiled, showing the average values of various kinds of raw material entering into the manufacture of agricultural implements, shows an increase in the price of pole stock of nearly 82 per cent. from 1896 to 1907. The figures by years are: 1896, \$22 per M.; 1897, \$23; 1898, \$23; 1904, \$31.50; 1905, \$35; 1906, \$37.50; 1907, \$40.

The National Hardwood Timber Association of the United States, at their recent session in Memphis, Tenn., adopted a report on the best available data, that "there are now standing in the United States approximately 1,475,000,000,000 feet of lumber, but 45,000,000,000 feet are being cut every year, at which rate the forests would last about 33 years." Including the consumption of wood for all purposes, and that destroyed by forest fires, it was estimated that over 75,000,000,000 feet of timber are consumed yearly, and that, in reality, there are but supplies standing of commercial timber for about 20 years. Forestry is the remedy.

HORSES.

CARE OF THE COLT'S FEET.

The condition of the colt's feet has much to do with his disposition. It is generally the case after being driven a few minutes on the hard road that the colts act sluggish and indifferent, or irritable and cranky, though generally the former. The trouble will usually be found in the feet. If he has not been shod, take the soreness out of his feet by turning him in the pasture on the cool moist ground (nature's remedy), or by standing him on moist earth in the stable. After a few days, shoe him with a set of nicely-fitted shoes, the weight to correspond with the strength of horn and size of foot. Drive the nails well in the toe of the fore feet, but farther back in the hind ones. Don't draw the nail down too tight the first time shoeing, for the feet are not used to it, and mind there is much in being used to anything. If the shoes cause fever, which can be told by feeling, soak the feet in tepid water, and stuff frequently with clay. Should this fail to reduce the fever, pull the shoes off and try again in a few days. Most bad feet are caused by the first set of shoes.

RE PROPOSED CANADIAN PERCHERON RECORD.

Mr. Geo. H. Greig, of Winnipeg, Western Representative of the Live-stock Branch, Dominion Department of Agriculture, at the request of a number of men interested in Percheron horses, has been corresponding with all known breeders and importers in Canada, with a view to the incorporation of a Record Society for this breed under the Act respecting the incorporation of live-stock record associations. Correspondence is invited by Mr. Greig relative to the advisability of such action, also the time and place to hold an organization meeting. Regina, Sask., at the time of the Summer Fair, July 31st, Aug. 1st and Aug. 2nd, has been mentioned as a suitable place.

CLYDESDALE MEMORIES.

In a series of reminiscences of the history of early and less early individual Clydesdale breeders and horses, written by Mr. Thomas Dykes, of Edinburgh, and published in the recently-issued volume of transactions of the Highland & Agricultural Society of Scotland, we find the following notes, which will doubtless be of interest to draft-horse breeders and admirers generally:

MERRYTON—PRINCE OF WALES AND MARY.

Previous to the first auction sale, in 1875, we visited Merryton by appointment with Mr. Lawrence Drew. This was shortly after we had gone over the Knockdon stud of Mr. James Nicol Fleming, where was still to be found, though getting worn out, and not fully equal to the full round of farm work, Darling, the dam of Prince of Wales. Acting on a suggestion we threw out at the time, Mr. Craig, some time after, with the consent of Mr. Fleming, sent her through to Merryton, where she might prove a breeder's object lesson when seen in company with her distinguished son. At Merryton she ended her days pulling about meat-coolers, her legs remaining fresh to the last. As is well known, Prince of Wales got his straightness of hocks, about which there was so much cavil, from his dam, who inherited it from some ancestor on the dam's side, as General, his sire, like Sir Walter Scott, the grandsire, and Samson, her sire, had nice, well-set, well-set hind legs.

The big, full-sized, gold-and-brown effigy of Prince of Wales, painted on wood, had not yet surmounted the archway which led into the courtyard behind the dwelling-house, and there was nothing particularly remarkable about the place save the large, substantially-built and commodious stable, generally alluded to as "the Long Stable." Here were generally stalled all the best mares, the numerous prize tickets above their heads readily enough betokening the champions. On the occasion of our visit, the stud comprised thirty-five mares and fillies, three years old and upwards, with a number of younger colts and fillies in the adjoining outhouses. Mr. Drew had not at that time gone very extensively into the system of crossing Shires with Prince of Wales, and there were many mares like Hawkie, Old Loudon Maggie, and Young Loudon Maggie, her daughter, subsequently knocked down to our own bid of 335 guineas at the sale for Mr. J. Stewart Hodgson, Haslemere, Surrey. She was in foal to her own sire, Prince of Wales, at the time, and there was a buzz of comment at the ringside when this little fact was mentioned. Mr. Drew, always afterwards down on the Clydesdales for being "far too sib," was certainly not against inbreeding at that time. His first brood mare then was the big chestnut, Mary, the dam of Lord Harry, by Prince of Wales, which had the previous week won the first prize for yearling colts at the Glasgow Show. This mare had undoubted Shire characteristics, but of her breeding nothing was known. It was the statement that the first-prize two-year-old colt at Aberdeen (King of the Princes) was out of a full sister, which led to the fierce correspondence that ultimately culminated in the formation of the Clydesdale Horse Society, already alluded to, and the publication of the Clydesdale Studbook. As some little extra interest attaches to Mary on that account, we shall give our remarks as made in our article written at the time from notes taken in the presence of Mr. Drew and the mare herself.

The first on the list is Mary, the big chestnut mare, which took first prizes this year at Ayr and Glasgow in the brood-mare classes. She is undoubtedly an exceedingly well and proportionately-made animal, of great substance and strength of bone, points which she combines with well-sloped pasterns and uncommonly good feet. When recently exhibited, she was in very high show condition, and many were suspicious of her fine appearance; but her strong supports are only seen to advantage under a heavy top. If she lacks anything that an animal of her kind wants, it is a little more fulness of hip above the hock, for, though not so bad as Mr. Hardie's filly is in that way, her quarters perceptibly round in a little too much. Some people are of opinion that she is not a true Clydesdale, and certainly her fore shapes are not quite those of the home-bred, but if her strain is not clear, it is an improvement, and will be worth working upon. She was originally purchased as a yearling in Dumfries market, but unfortunately her pedigree was unknown. Mr. Drew, however, did not get her until a three-year-old, when she was with foal.

Except to say that, though her pasterns were well set, they were short, and to explain that Mr. Hardie's filly was Rancee, the property of the late Mr. Hardie, of Bo'ness, Linlithgow, a very popular showyard winner, there is nothing to add to the above thirty years afterwards. The colt foal was sold to go to America, and nothing is known of its subsequent history. It most likely was sired by a Shire horse. Drew did not concern himself much about it, his great idea being to get a foal from Mary to the Prince of Wales. This, however, did not prove so easy as it would look on paper, for the famous son of General resented

with much temper all efforts toward an alliance, and it was only after a desperate stratagem that the horse and mare were actually mated. The famous colt, Lord Harry, the Glasgow winner alluded to, was the result. Though subsequently a disappointment at stud, he was one of the most noted colts ever seen in an agricultural show-yard, though always run hard by another Prince of Wales colt, Prince George Frederick, of the Auchendennan stud of Mr. John M. Martin (who bred him), and latterly the property of old Sandy Weir, of Newhouse Mill.

In discussing the breeding of draft horses generally in the well-known old back-parlor so familiar to the many from all parts of the world who visited Merryton, conversation turned on what the horse could give to the progeny, also the relative contribution of the dam. The suggestion being made to see the champion family group, Mr. Drew immediately gave his orders accordingly, and we adjourned to that portion of the stackyard which afterwards became the sale-ring or avenue (the first sale was in the old farm-yard). Of what took place, we may here quote from the article alluded to as follows:

"I had an opportunity of looking at the horse (Prince of Wales) the other day when he was drawn up alongside of the big chestnut mare, and their produce, the big chestnut colt which was placed first at Glasgow. A more valuable trio I never saw before. The Prince was looking as well as ever, his grand contour round and sound, well-tapered feet and pasterns, and characteristic head, at once captivating the eye. His hocks are certainly straight, but his thighs are unusually powerful. The fullness above the hock joints on the inside was visible, but a well-skilled veterinary

man, and the bargain was very nearly struck. Mr. Drew's elder brother, Robert Drew, new home from Australia, after a short conversation with the tenant of Merryton as regards the horse's merits, chimed in, and the result was that, at £1,500 (there would, of course, be a luck penny), the horse remained in the Old Country, to the great benefit of the breed.

Lawrence Drew died in March, 1884, never having been seen at any agricultural gathering after the Glasgow Clydesdale Show, a fortnight previous to his decease. His funeral was largely attended, for though many did not fall in with his opinions, all recognized his worth and his pioneer enterprise in a good cause. The dispersal sale, so different from the initial one of nine years previously, drew breeders from all parts of Scotland and England. Again was his old stud horse, Prince of Wales, put into the market, and at £900 (a long price for a horse of 22 years old, which had descendants in nearly every Scottish parish and every corner of our Colonies), he found his way back into the hands of his owner when a colt, Mr. Riddell, of Blackhall. So long reserved for Shire mares, he proved a great and most welcome boon to all those who had mares and fillies by Darnley, and in his later years achieved as much success as he did in the younger days of his career, when standing at the almost prohibitive price of £40 per mare. The old horse dropped down dead in his stall on 31st December, 1888, literally going out with the expiring year.

ROYAL VISIT TO MERRYTON.

A historic event in Clydesdale, and indeed in draft-horse breeding generally, was the visit of his present Majesty (when Prince of Wales) to Merryton, in January, 1878. His Majesty, with the late Crown Prince of Austria (who was not at Merryton, however), and the unfortunate Prince Imperial, and a number of distinguished parties, were shooting-guests of the Duke of Hamilton, at Hamilton Palace. Though there was no stage rehearsal, Mr. Drew got through his parade in a fashion which would have done credit to an Astley or a Hengler, and some continental circus-like character was lent to the display by the appearance of the young "lassie grooms" in short gowns and petticoats, leading the various colts and fillies. It had been Mr. Drew's idea for some time previous to this, that in washing feet and pasterns, and preparing somewhat refractory colts for shows, the feminine hand and touch was found to be more tender than the masculine, and that, being also less harshly spoken to, the young stock were less nervous. With a large amount of young stock to handle, and not too many young male servants about the place,

there may have been something in this, and it was marvellous how tractable were the colts and fillies so groomed and handled. A dramatic incident was given to the parade through the Prince Imperial jumping on the back of Lord Harry and riding him round the yard. "Anybody ever been on his back, Mr. Drew?" was the Prince's query as the horse frisked and gambolled about, showing a good deal of spirit. "No one to my knowledge, your Royal Highness." This question to a draft-horse breeder was naturally quite unexpected. The next minute the Prince was on the horse's back, considerably to the astonishment of the company and the owner, who, speaking afterwards of the incident, said, "I was really glad to see him off, and to think what a guid thing it was Lord Harry and not the auld Prince himself." His Majesty, in congratulating Mr. Drew upon the appearance of his stud, said: "They are a grand lot of mares, Mr. Drew, but mostly Shires." "All the better of that, your Royal Highness," was the quick response. He afterwards presented to the Prince a filly by Prince of Wales, which was good enough to win the Clydesdale Horse Society's cup at the Royal, at Kilburn, in 1879. In the autumn of 1878 he sent seven of the best mares of his stud to Paris, in reciprocation of the honor conferred by the visit. To get them across the Channel and home occasioned him much anxiety. The Merryton trophies and Paris gold medals were all scattered by auction during the Glasgow Highland & Agricultural Show week of 1897.



Sir Everard (5353).

Clydesdale stallion; foaled 1885. Sire of Baron's Pride (9122). Sire Top Gallant (1850), by Darnley (222), dam Rose of Killellan (7437), by London Prince, by Prince of Wales (673).

surgeon, who has a great knowledge of the breed, at once declared it to be muscle, and, as such, a point to be reckoned in the horse's favor. Nor is his action a whit less free than it used to be, for he steps out before like a trotting stallion, and, standing from behind, you can see the soles of his feet clearly every time he lifts."

Prince of Wales was but nine years old at the time we wrote the above, and could make a really grand show of himself; indeed, no draft horse we have ever looked at, before or since, ever carried himself better—such grand spring and gaiety at the trot, and such steady, well-paced, extensive, regular and even action at the walk. He was a bit tempery, and it was risky for a stranger to go into his box, more particularly when feeding. Though he lived to a good old age, as Clydesdale horses go, he gave more than his share of concern in ill turns from the outset. He was Darling's first foal, and when it was seen at Drumburle that she was going to have a difficulty, Willie Greenlees, of Campbelltown, then a page-boy to Mr. Fleming, at Kilkerran House, was quickly flung on a horse's back and despatched to Maybole for Charles Tennant, the local veterinary surgeon. Mare and foal in the end did well, and the latter's career after weaning was, if the Rantin' Robin defeat at the Dumfries Highland & Agricultural Society's meeting be left out, one of continued success. One market afternoon, in His Lordship's Larder, Glasgow, when he was four years old, he was on sale to an Australian gentle-

DEFECTS IN ACTION.

(Continued.)

Stumbling.—The tendency to stumble is a very serious defect, and it may truly be said that a stumbling horse has practically no value, except for slow work, as it is not only disagreeable but unsafe to either drive or ride him. My experience has taught me that a pure-bred horse very seldom stumbles. A stumbling Thoroughbred is almost unknown; so, also, is the defect rare in Hackneys, or other breeds of carriage or coach horses, or in the Standard-bred of good quality. The fault is more often noticed in horses of mixed breeding. I am, of course, referring principally to the lighter class of horses, as in the heavier classes, even where the fault exists, it is not of such importance, as the animals are not driven fast, and, being hitched to heavy vehicles, there is little danger to the driver, even though the horse may injure his own knees. Violent crosses in horse-breeding is likely to produce stumblers; for instance, the produce of a heavy, rough mare by a Thoroughbred. To some, this saying that a Thoroughbred can produce a stumbler may sound like "rank heresy," but observation tells us that it is a fact. The Thoroughbred is congenitally a low actor, and if bred to a mare of such cold blood that even his prepotency is unable to overcome, there is a great probability of producing an offspring that inherits neither a fair degree of the size and strength of the dam, nor the quality and activity of the sire; is fitted only for light work, and having to a large degree the sluggishness of the dam and the low action of probably both parents, is a stumbler, not valuable for other purposes. Crossing cold-blooded mares with sires of other light breeds frequently produces animals of the same characteristics.

Stumbling may be said to be due to three causes, viz., weak knees, low action, or sluggishness. Horses with weak knees, either from congenital conformation or hard work, are, unless of exceptionally active disposition, prone to stumble. Horses of quite low fore action are prone to trip or stumble over slight obstacles, hence are unsafe except on level ground. Horses that are lazy, sluggish, and inclined to loaf, are also usually inclined to stumble. From whatever cause, the fault is very hard to correct, and, we may say, cannot be corrected; but may be avoided by constant care on the part of the driver, by keeping the horse well in hand and overcoming sluggishness, where it exists, by compelling the animal to "drive to attention" at all times. This, to the average horseman, makes driving or riding a labor rather than a pleasure. The use of a tight check-rein removes to some extent the tendency to stumble, but many stumblers will stumble even under those conditions. Stumbling usually occurs when the horse is moving at an ordinary road gait, and if he is taken well in hand and driven smartly, he will go safe; but no horse can stand constant driving at such a gait. In some cases, shoeing heavily, with rolling-toe action, will prevent stumbling, but in most cases shoeing of this kind, while it causes high action while going fast, does not when going slow, but may even have a tendency to make the action more sluggish. On this principle, light shoes should correct the fault, and in some cases do. As in most defect in action, what will have a tendency to prevent stumbling in one horse may increase the fault in others, hence each animal must be treated according to his individuality.

Interfering.—By interfering we generally understand the striking of one hind fetlock with the shoe of the opposite foot. This fault is probably more often met with than any other defect in horses with good conformation. Horses which stand wide at the hocks and plant the feet closely together usually interfere, striking with the forward part of the shoe; while those that stand with the toes well turned outwards and the feet close together will strike with the back part of the shoe. Interfering is often noticed in young horses when first shod, and disappears when they become accustomed to the shoes and road work. Shoeing with light shoes that conform well to the shape of the foot will often check the fault, but the practice too often adopted of shoeing with a shoe thicker on the inside than on the outside, in order to change the position of the fetlock-joint outwards when the foot is planted, cannot be too strongly condemned. It places the foot and limb in an unnatural position, and predisposes to lameness from sprain of ligaments or tendons. Shoeing with the outside of the shoe a little longer than the hoof, with a low calk on it (but not raised higher than the outside), has a tendency to check that peculiar twisting outwards of the foot and hock so often noticed, and which favors interfering, and is unsightly. When a young horse interferes, he should be carefully shod, and an interfering boot worn until he has become well accustomed to the shoes; and if he continues to interfere, notwithstanding careful shoeing, the wearing of boots should be continued, as, if he continues to strike, even though he does not cut, the constant striking causes a chronic enlargement of the joint, which makes striking still more con-

stant, and will probably materially interfere with his usefulness.

Forging.—By forging is understood the striking of the shoe of the fore foot with that of the hind one. This fault, while possibly not interfering to any marked extent with the horse's usefulness, is very irritating to the driver or rider, and very objectionable. While it is occasionally noticed in horses of all conformations, it is more commonly seen in those with very short backs. It is usually noticed at the ordinary road gait, and seldom heard when the horse is either walking or trotting at a smart pace. In most cases it can be corrected by shoeing rather heavily, and with rolling-motion shoes in front to make him pick more quickly and go a little higher; and shoeing the hind feet with shoes slightly shorter than the hoof, and without toe-clips. In other cases, a very light shoe in front gives better satisfaction. As with most defects, each horse must be treated according to his peculiarities of action.

"WHIP."

When a horse becomes frightened, it is a mistake to use the whip on him, or employ harsh language. If a horse is frightened of any object, and is whipped because he shows fright, he will always afterwards associate that object with whipping, and will, for that reason, fear it still more than he would otherwise do.

LIVE STOCK.

AN IMPLACABLE FOE OF THE DOG.

Editor "The Farmer's Advocate":

Will you allow me a short space in which to reply in a general way to the arguments of those who differ from me on the dog question. First, let me thank Sandy Fraser, and several others whose names have slipped my mind, for the hearty way in which they seconded my endeavor to draw public attention to what I consider the greatest drawback that the sheepman has to contend against, and the greatest nuisance to the public at large.

Now, I do not contend that a man has no right to keep a dog when he has paid the legal tax for it, but that he has no right to allow it to annoy other people or endanger their persons or property. Some people have queer ideas about things they keep for pets. A prominent society lady in New York has a tame python, 18 feet long, and capable of crushing a man to death in a moment's time. Sara Bernhardt, the great French actress, has a pet tigress. But they do not run about on the public streets, or the police would soon end their careers.

What right, then, has anyone to keep a dog (because he happens to fancy that kind of wild beast), and allow the same to run at his own sweet will, and harass and annoy everyone who does not and can not see any use for the miserable brute?

I think every reader of your paper will have noticed that in all the replies to my first letter (and opposed to my opinions contained therein), there runs this idea: "My dog is all right; the other fellow is the one that is wrong."

A word now with regard to the much-vaunted Collie dog. If there is a worst in an entirely bad lot, the Collie will take the cake; strong, savage, aggressive and bloodthirsty, he stands at the head. I can take anyone an hour's drive from where I live, in which time they will have been chased and yapped at by twenty different dogs, and every one of them pure-bred Collies, many of them having cost their owners a lot of money—good dogs, of course.

As some of my opponents have gone into the Scriptures for their arguments, may I take the liberty to follow them? It has been argued that in the destruction of Sodom, it was promised that if ten good men were found the city should be spared; but the ten were not forthcoming, and the cities were destroyed. I do not wish to be on the committee that goes out to find the ten good dogs; I should be gone too long. So let them all meet desserts (as one of my supporters puts it) in lead.

The dog had, I believe still has, a duty to perform in some parts of the world as public scavenger, particularly in Palestine and the other parts of the East where the people are careless and dirty. We have sanitary conditions in this land, and do not need them. The Scriptures use them to designate anything that is vile and worthless, and admonish to "Beware of dogs." Who will say they are wrong? R. L. HOLDSWORTH, Wentworth Co., Ont.

DOLLARS' WORTH OF BENEFIT EVERY YEAR.

Enchanted you will find my subscription for another year. We have been taking "The Farmer's Advocate" now for five years, and find it a very valuable paper. I consider I get dollars' worth of benefit out of it every year.

JAS. A. ROWAN.

WHEN THE COW DOES NOT CLEAN.

Experience both as a farmer and as a veterinarian demonstrates that far too many farmers neglect the cows after calving, especially when they have failed to clean or get rid of the afterbirth in the natural way. In some stables visited a strong, nasty-smelling odor has been noticed, which on examination has been found to be produced by the decomposing mass of afterbirth partially or wholly retained by the cow. In many cases the cow shows signs of general ill health as a result of the retention of the putrescent material, such ill health being nothing more or less than a slow form of blood poisoning, during which time the milk is unfit for use by man or beast. This by-product of parturition should be removed within a few days after the birth of the calf, at least before decomposition is in evidence. Removal is not a serious matter if common sense and caution are observed, and in the majority of cases, where possible, it were better to purchase this by the employment of a properly-qualified veterinarian. If the help of a man so skilled is not available, the farmer should undertake the removal of the membranes himself, remembering the method by which the attachment is made to the internal surface of the womb. An examination of that surface by the hand reveals the presence, here and there, of little buttons (cotyledons) from which (it can be described no better way) the afterbirth must be gently unbuttoned, each cotyledon as it is come to being gently stripped of its abnormal (at that late date) covering. With one hand stripping the buttons carefully, and the other hand gently exercising traction, it is only a comparatively short time before the cow will be rid of this foreign irritant membrane, for such it has become. The hand of the person engaged in the removal should be free of cuts and wounds, and should be well smeared with carbolized oil or clean unsalted lard, and on the job being finished, a thorough washing should be given in some antiseptic solution. If the membranes have been retained a day or so, it will be found of benefit to irrigate the genital passages of the cow with some solution made up from one of the coal-tar products, and by so doing remove any small pieces or disintegrated portions that may be left to poison the system and induce a feverish condition. We have known some careless and inhuman persons leave cows unattended for a week or more, causing suffering to the animal, as well as tending to induce a very dangerous state of things for the person, professional or otherwise, called in to remove the decaying mass. The annals of veterinary medicine are unfortunately not free from records of veterinarians losing a member (hand or arm) or their lives from blood poisoning, through what can only be termed criminal negligence on the part of clients—owners of cows. Delays in such matters are dangerous, both to the animal and the person seeking to relieve it. A. G. H.

SHEEP SHEARING.

While experienced sheep breeders and those who make it a practice to prepare sheep for show purposes have probably shorn most of their sheep unwashed before this date, there are doubtless many who still wait for weather warm enough for creek washing before shearing, and will be glad with the rest of us that at "long last" spring-time temperature has come, for occasional days at least. While we prefer and advise shearing without washing as being safer for the health and lives of the sheep, and while we believe that the difference in price paid by dealers in this country for washed over unwashed wool, or rather that the low price paid for unwashed is unwarranted by the difference in weight, we would rather accept a third less per pound than take the risk of injury to the health and life of the animals, and of the men who do the work in cold water. Besides, if time is of value on the farm, as it certainly is in these days of scarcity and cost of help, a reasonable allowance should be made for value of the time used in the process of washing. Presuming, however, that some will continue to wash before shearing, we plead for a merciful treatment of the animals while being driven to and handled in the water. They should be driven slowly and carefully to avoid overheating, should be confined in a pen by the river side where they can be conveniently caught, quietly led into the water, gently handled while being washed, and carefully led out and held for a minute or two to drip before being let go. The common practice of forcing the timid animals, which dread the water, to jump from the bank of the river, plunging head first under the water, is unpardonable cruelty, and should not be allowed, however amusing to thoughtless and indifferent boys or men. The writer can recall more than one case of sheep dying in the hands of the washer from the shock of being thus plunged into the water. The head of the animal need never, and should never be allowed to go below the surface of the water, and when washing is done, it might better be as well done as can be with cold water, by squeezing the wool between the hands to get the dirt out, instead of merely swimming the sheep through the water and out again, as is often done.

A week should intervene between washing and shearing, to allow the grease exuding from the skin to bring the fleece to its normal condition, which also adds considerably to its weight and keeping quality. A barn floor is generally the favorite

place for shearing, the sheep being penned in one end of the floor for convenient catching, but a temporary floor of boards, or a barn door laid down in the sheep pen, answers the purpose fairly well. The common practice of shearing is to gently set the sheep on its rump and commence shearing at the throat, shearing down the neck, then the breast, belly and buttocks, or twist; returning to the neck, shearing first down the left side, following the ribs to the backbone till the tail is reached and stripped, then turning to the other side, beginning again at the head and shearing from the spine to the belly, until the rear end is again reached, and the whole body is stripped of its covering. Experienced shepherds, from much practice, make neat work, the shear marks showing regularly like ribs meeting in the center of the back. This is done by running the shears almost closed, after the manner of a woman cutting cloth, pressing but lightly on the springs, instead of the chopping motion practiced by the novice, which leaves an uneven and unworkmanlike finish, and too often cuts into the skin. One of the best shearers we know commences by putting the sheep down on its broadside, and, with his left foot on the wool of the neck, commences to shear on the inside of the hind legs and twist, then along the belly and brisket, before setting the animal on its rump, to proceed as above described. Some English shepherds shear lengthwise of the carcass, from the shoulder back, leaving regular shear marks running from shoulder to stern instead of around the body.

Tying up the fleece neatly requires a little skill and is well worth attention, as it is not only more convenient to handle when well done, but makes a much better appearance. First of all, any tag locks of dung should be carefully clipped off and thrown into a heap, to be later washed in hot water and sold separately for what it will bring, then, spreading the fleece on the floor, with the sheared side down, gather in from both sides to the center and roll up from the tail end to the neck, twisting a strand of the neck wool into a stout string long enough to reach around the bundle and tuck safely under itself, holding the fleece well together.

THE FARM.

A FEW OF OUR WORST PERENNIAL WEEDS.

We purpose discussing with our readers a few of our worst common weeds and how to deal with them, and begin with the Canada thistle (*Carduus arvensis*), a weed so widely distributed and so well known as to need no description. Fifteen or twenty years ago it was believed to be the worst weed in existence, and we have heard men gravely say that to exterminate it was impossible. Now its terrors are largely gone; whether because weeds worse to subdue have come in, or that better methods have been employed, or, as some think, because it has run itself out; certain it is that it is not now dreaded as formerly. It is still a very bad weed, however, and should be well looked after. Happily, it does not thrive in close sod, and in permanent pasture cutting it twice a year with the scythe to keep it from seeding will suffice to hold it in check. All roadsides and fencesides should be gone over in this way. In June grain fields should be gone over and thistles spudded, but if they are looked after as they ought to be in other crops there should not be many to spud. Thistles can be checked by clover and completely killed by summer-fallowing, but the method recommended as all-round the best is careful cultivation of a hoed crop. In the case of thistles, as of all other perennial weeds with creeping rootstocks, much can be done to lower their vitality and make their subjugation easier by early and repeated fall cultivation. Where they are plentiful this should precede the attack in the hoed crop. Frequent cultivation and free use

of hand hoe during the growing season of corn or roots, with one or two turns with the hoe after cultivation ceases, to pick out stray specimens, will kill Canada thistles—kill them dead. Drill-sown rape is in some respects better than corn or roots. It need not be sown until July, and thus allows time for repeated cultivations in spring, which are very effective.

Corn sow thistle, or perennial sow thistle (*Sonchus arvensis*).—This is a worse weed to subdue than the Canada thistle, and on its first appearance should be taken in hand seriously. It resembles somewhat the annual sow or milk thistle, which is a harmless weed. It is a perennial, one to three feet high, with large and vigorous rootstocks, full of a milky white juice. The stems are rough and rather bare of leaves, but the growth of the lower part of the plant is rank. The leaves are deeply cut and furnished with small spines, which at their base clasp the stem. The flowers resemble those of the dandelion, both in color and size. The seed is downy, and can be carried some little distance by the wind. Seed grain or grass seed is usually responsible for the introduction of the plant, but once established it seeds abundantly, and also spreads rapidly from the root, any small piece of which will grow if carried by the plow or harrow to another part of the field. It thrives best in moist loam, and is least troublesome in clay.

The same treatment as for Canada thistle is recommended, though we have never known one year's treatment in root or corn crop sufficient to kill it. Probably two successive hoed crops would be effective.

Bindweed or wild morning glory (*Convolvulus arvensis*).—This is the most pernicious weed, the hardest to eradicate of any of which we have a knowledge. It is a perennial, whose rootstocks not only fill the surface soil but go deeply down into the subsoil. Where well established it twines itself about the stalks of grain or grass in which it may be growing, partially or completely choking the crop. The leaves are rather small and arrow-head in shape, the flowers white or pinkish white, about an inch across, the exact shape of a morning glory, but smaller; blooming, however, in the bright sunlight. It is brought to the farm in grain or mangel seed, but once started spreads chiefly by the root. We know of no farm entirely overrun by this weed, but there are very few in the vicinity of London without one or more patches of it. Catch it young if possible. In hand-hoeing corn or roots there is a valuable opportunity of discovering new intruders. If you find a few plants of bindweed dig them out deeply with a spade. Mark the place, and as soon as plants reappear dig out again. The process may need to be repeated three or four times, but each time the plants struggle to the surface they are exhausting the root, and one season's perseverance will finish them. If the patch is so large that spading is impracticable, a pile of manure, not straw, two or three feet deep, left for one season will smother it. Some say a double layer of tar paper answers as well. If anyone is so unfortunate as to have a patch of too large dimensions to be treated by either of the methods mentioned, then bare surface cultivation should be tried. Sow no crop on the place and do not plow the ground. Plowing is not the proper method of dealing with weeds that have deep creeping rootstocks. It transplants but does not kill them. Use a cultivator that cuts all the surface and cultivate throughout the season as often as the plants appear above ground. That will be about once every five days in the growing season. If the patch is of long standing it may need the work of another season to finish it, but it can thus be finished. Early plowing after harvest, if the weather is dry, is said to check this weed, but we have never known it to be exterminated by any cultivating or hoeing process that can be applied while one crop is growing, though careful work in two or three successive hoe crops has, in some cases, proven sufficient to finish it. However, summer-fallowing is usually advisable.

Quack grass, couch grass or twitch grass (*Agropyrum repens*) is another deep-rooted perennial which is too well known on many farms. Its rootstocks are so

vigorous that they have been known to pierce through a potato. It is a true grass, and not so readily noticed as some other weeds. The first intimation some have of its presence is the difficulty the team has in drawing a plow through a patch of it. The leaves or blades much resemble wheat when growing. The plant produces spikes from three to eight inches long. The small spikelets alternate at each notch of the flower stalk, with the side of the spikelet turned towards the stalk. In the head of perennial rye grass, which it might be taken for, the edge of the spikelet is towards the stalk. Quack grass is not utterly useless, being eaten by animals, but on neglected farms becomes a pernicious weed.

It can be eradicated by the treatment recommended for thistles. During the fall cultivation it is well, by the use of the harrow and spring-tooth cultivator, to loosen and dry the roots which should then be raked up and burned.

Canadian blue grass in clay soils often becomes a weed very difficult to kill, and has to be treated like quack grass.

Ox-eye daisy (*Chrysanthemum Leucanthemum*).—The girls admire the flowers very much, and call them "Marguerites." To the careful farmer they are an eyesore, and alarmingly on the increase. The seed possesses great vitality, and is produced in abundance. It is frequently found in clover and timothy seed. The rootstocks of this perennial weed are short and thick, and the plant forms a close spreading mat which crowds out grass. It is not usually troublesome in cultivated crops, but there is no known means of eradicating it out of pasture land and by-places. It is usually discovered in first-crop hay, and hand-pulling at that stage will kill it. This ought not to be neglected.

If a little clump has got a start on the road or fence-side, dig out the sod to a depth of two or three inches and hang on the fence to dry. This will usually be effective. In the case of ox-eye daisy, as in that of many other weeds, a stitch in time saves more than nine.

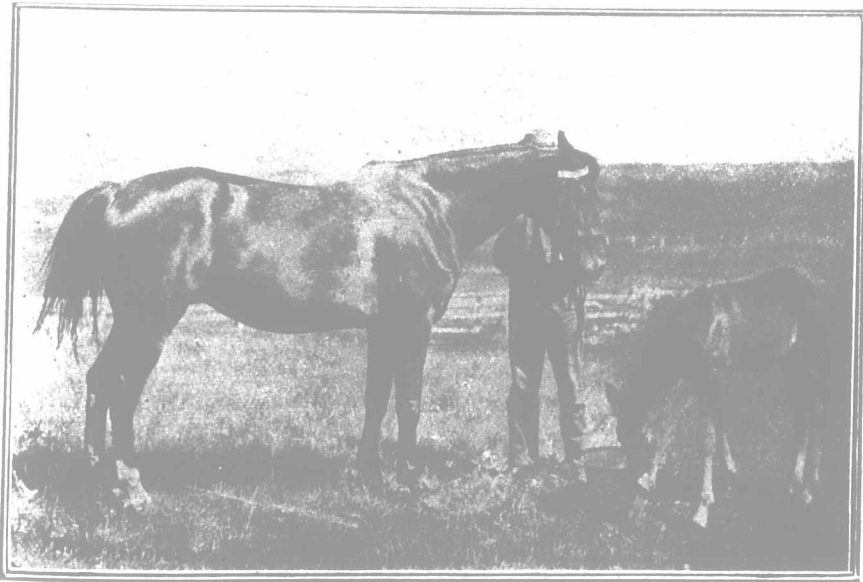
CORNER POSTS PLAN.

Editor "The Farmer's Advocate":

I notice in "The Farmer's Advocate" of May 2nd a contributed item on corner posts for wire fence. I do not think much of the plan described. Having put in corner or end posts for a number of fences, I will give you my plan: Dig a hole 2 x 5 feet and 5 feet deep. Now dig in the center of this a round hole, say 6 inches deep, to admit the end of post; always put your hole sideways of the draw or across the line of fence. Now select a post 8 inches in diameter and 10 feet long; cut gains in the two sides to fit 2 x 5 scantling, 5 inches from the end, so as to let the bottom side of the scantling rest on the ground; spike firmly to post. Now place post in the hole; place small stone all around till the top of scantling is reached. Now cut some boards or plank the width of hole, and put crossways of scantling; spike these also. Now fill in the balance of hole with stone, well packed; as you near the top of the surface on fence line side, place a large flat stone—say 3 ft. x 1 ft., and at least 6 inches thick—against the post and side of hole firmly, for a side draft support. Now dig a brace post hole, 8 feet away, 2 feet in diameter, and 4 feet deep; place an 8-ft. 6-in. post and 6-in. diameter here, and pack small stone, well hammered down, all around this; put in a brace at least 4 inches thick—say 15 inches from the ground—on the brace post, and 2 feet 9 inches on corner post, having a notch cut in to let the end of brace fit in firmly at both ends. Place 2 strands of No. 9 soft wire around, well down on corner post, and at least 3½ feet high on brace post. Now cable up with an iron bar or pincers handle on each side of the brace crossing. This will stand frost, horse tackle, tightener of any sort, and with no danger of pulling out, and it will last as long as the maker of post will.

SOLID POST MAN.

Muskoka, Ont.



Alberta-bred Hackneys

In Rawlinson Bros.' stud, advertised in July. For catalogue, write Jardison Bros., auctioneers, Box 1172, Calgary.



Ranch-bred Hackneys

In the stud of Rawlinson Bros., Southern Alberta, to be sold by auction, near Calgary, in July next.

PRACTICAL FARM DRAINAGE.

WHAT SIZE OF TILE TO USE.

In every drainage problem we are confronted with the question, "What size of tile shall we use?" a question that cannot be answered offhand. The amount of water that will flow through a pipe depends upon three factors—the size, the roughness and the slope—so when we are asked what size of tile to use in a given case, we must determine first the area to be drained; and, secondly, the slope—the roughness is a constant factor and already known. The acreage that various sizes of tiles are capable of draining on various slopes has been carefully marked out by McConnell, and his table is subjoined:

TABLE OF SIZE OF TILE PIPE OF MAIN DRAIN. (McConnell.)

FALL.	1 ft. in	Acres Drained.					
		3-inch Tile.	4-inch Tile.	6-inch Tile.	8-inch Tile.	10-inch Tile.	12-inch Tile.
20	18.6	26.8	74.4	150.0	270.0	426.0	
30	15.1	21.8	60.4	128.0	220.8	346.0	
40	12.9	18.6	51.6	108.8	189.6	298.4	
50	11.9	17.0	47.7	98.0	170.4	269.0	
60	10.9	15.6	43.4	90.0	156.0	246.0	
70	10.0	14.5	39.9	83.0	144.4	228.1	
80	9.3	13.4	37.2	77.0	135.0	213.0	
90	8.1	12.6	35.0	72.5	127.0	200.5	
100	7.3	11.9	33.1	69.2	120.6	190.5	
150	6.7	9.5	26.6	56.0	97.3	154.4	
200	5.7	8.2	22.8	48.0	83.9	132.5	
250	8.1	7.5	20.4	42.4	74.4	117.0	
300	4.6	6.9	18.4	38.2	65.5	107.0	
400	4.1	5.9	16.5	32.6	60.3	90.7	
500	3.7	5.2	14.8	30.1	54.0	81.6	
600	3.3	4.7	13.3	28.0	48.6	74.0	
800	2.9	4.1	11.4	24.0	41.9	65.0	
1,000	2.6	3.7	10.2	21.2	37.2	56.0	
1,500	2.1	3.0	8.5	16.8	30.8	47.0	
2,000	1.9	2.8	7.4	15.0	25.0	40.8	

Suppose a man has 12 acres to drain and the slope of his main is 1 foot in 600, then we look down the list of falls till we find 1 foot in 600, and follow this line to the right. A 3-inch tile would not do; it drains only 3.3 acres. A 4-inch tile drains only 4.7 acres; a 5-inch tile, not given, but probably drains about 7 to 9 acres; a 6-inch tile fills the bill, as it is capable of draining 13.3 acres. The size to use for any other slope is determined in the same way. This rule applies to submains and the laterals as well as to the mains. Owing to the great amount of friction in small tile compared with the volume of water they carry, they are much more likely to clog with sediment than are the larger ones; so much so, indeed, that a 2-inch tile should never be used except on a steep grade. They are almost sure to clog in time on a slow grade.

DEPTH AND DISTANCES APART.

A mistake that beginners often make is that of putting their drains too shallow. This arises from not understanding fully the action and function of the drain. To begin with, why is it necessary to drain? Because the roots of plants cannot live and thrive in soil containing excessive water. This being so, we must next ask how deep do the roots naturally go in the soil where the conditions as to drainage are perfect? If they go six inches only, then it is sufficient to drain our soil on the surface alone. If they go three feet deep, then for best results we must drain three feet deep. But, again, how deep do they go? This varies somewhat with the crop, but the roots of corn, winter wheat, oats, barley and clover, some of our staple crops, penetrate at least from three to four feet in average field conditions. Then how deep should we drain? From three to four feet, in order that the roots of these crops may have full opportunity to penetrate the soil. It may be suggested that two feet would be sufficient for the early needs of the crop, and that as the season advanced the water would naturally recede farther below, thus giving the roots plenty of space. This argument would have some weight but for one fact: The "water table" in drained land is not level, but curved. If, in a field that is underdrained, one were to dig a series of holes four feet deep every ten feet between two drains; and if after a heavy rain he were to observe the water in the holes for a day or two, he would find that in a very short time no water remained in the hole at either drain, but the one situated midway between the drains would stand full for a long time, and the others would have less and less in them as he approached the drains, thus showing that the water-table is a curved surface, beginning at either drain and rising between. How fast does it rise? That varies with the soil and with the time since rain. In a clay loam in fairly good condition, when flow in drains begins to lessen it will be found that the water-table rises 1 foot in about 25; in loam, 1 foot in 33; in lighter soils the rise will be slower still. The closer the drains are together the less the height of the crest of the water-table above the drains, the farther apart the higher the crest; hence the closer the drains are together the shallower they may be, the farther they are apart the deeper they must be. The depth and distance apart must be so chosen that midway between the tiles the soil will be drained a foot and a half or two feet within about forty-eight hours after rain, for if the roots are submerged longer than this they begin to suffer. Applying the gradients of 1 foot in 24 for clay loam, and 1 foot in 33 for loam,

we arrive at the general conclusion that if drains are from 3 to 3½ feet deep, they should be placed from 50 to 66 feet apart in clay or clay loam, and from 75 to 100 feet apart in lighter soils. But this is only a general conclusion, and judgment must be used in each individual case. WM. H. DAY, Ontario Agricultural College.

A DOG WHEEL POWER.

Editor "The Farmer's Advocate":

I will try to explain to you the construction of the dog wheel and the attachment to the pump. The wheel consists of, first, the hub (a), which is of hard wood, oak preferred, twelve inches in diameter, two inches thick. To this hub is fast-

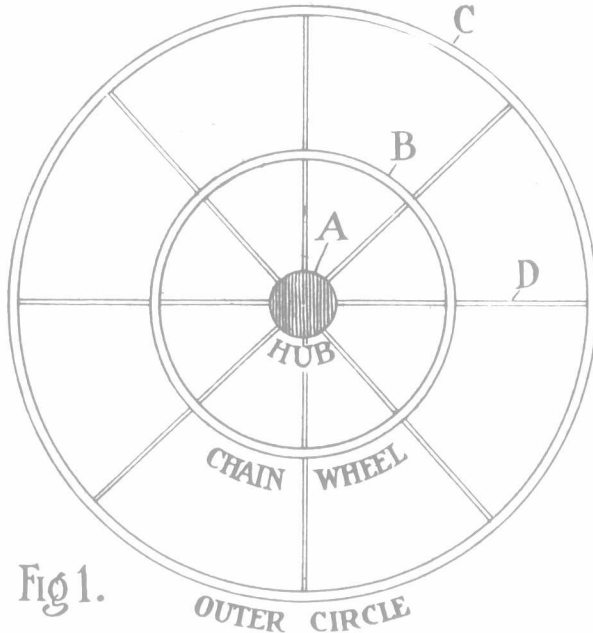


Fig. 1.

tened the spokes (d); the first pair cross at right angles, thus making four spokes; the others are fitted into the angles; fasten securely with screw nails to the hub. The spokes are 1 x 4-inch pine or basswood. The outer circle (c), also 1 x 4 inch, is fastened to the spokes. Having done this, you have a wheel. Two of these wheels are required. Now bore the holes in the hub of each and put a shaft through them, and set up in the position you wish to have it to run. Place those wheels 26 inches apart on the shaft. Now, with narrow boards 20 inches long, cover them all the way around. The dog runs on this sheeting and

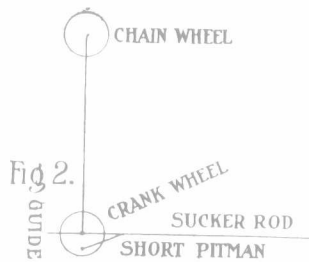


Fig. 2.

between the spokes on either side, working, you will see, right in the wheel now complete. The wheel can be made 8, 9 or 10 feet high, according to the height of the ceiling where it is set up.

The chain wheel (b) consists of two circles, 1 x 3 inches, nailed together, with a groove in the center for the chain. This circle is four or five feet in diameter, and is bolted to the spokes. The wheel is supported by an upright on either side, 2 x 8 or 3 x 8, which you choose, through which the shaft runs. Some have the shaft tight in the uprights, and the wheel turning on the shaft. I have the shaft tight in the wheel, and slip box-

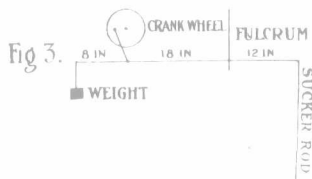


Fig. 3.

bearings in the uprights to run on, which makes it run easier, I think. One advantage of having the shaft stationary is a stick can be fastened to it to tie the dog to while learning. Care must be taken in starting the dog. Some will take to it at once, others will take considerable coaxing, but nearly all enjoy it when they get used to it.

The material for these wheels can be bought for \$5.00 at the planing mill, all ready to put together, so you see the cost is very small.

Having completed the wheel, you can attach it to the pulper by means of a pulley on the pulper shaft. For pumping water, a line shaft, long or short, is required, according to the distance to the pump. On one end of the shaft is a pulley, 12 inches in diameter, to connect with the wheel by a chain; at the other end is a crank to connect

with the sucker rod in the pump. This connection is made by having a short pitman, say 12 inches long, one end fastened to the crank, the other to the sucker rod. This takes the swing, and allows the sucker rod to move straight up and down. The rod should extend above the crank, if possible, and a guide placed on it to steady it. A six-inch stroke is quite sufficient.

If the pump is not too hard, this will generally work satisfactorily. I had to resort to another plan on account of having too large a bucket in the pump and the water low in the well. For an ordinary wood pump, a 3½ or 4-inch bore is large enough. I have the line shaft fastened to the joist overhead. Instead of connecting the crank immediately to the sucker rod, I have what we call a jig-stick, as shown in Fig. 3. This stick is fastened to the crank wheel by means of a short pitman, 12 inches long. The other end is fastened to the sucker rod. A fulcrum is fastened to the joist overhead; to this is attached the jig-stick, not in the center, but 12 inches from the sucker rod and 18 inches from the crank wheel, thus giving more power to lift the water. The stick extends past the crank-wheel connection about 8 inches, and to this end is a weight, to steady the jerk of the sucker, and also helps to lift the water.

This plan is working quite satisfactorily with me. The power is inexpensive, compared with a windmill or gasoline engine, and does light work, such as described, equally as well. I have an extra chain wheel on mine, also two chains. The pulper is run from one side, and the pump the other, and in all (the shafts, pulleys, etc., included), the cost was less than \$10. Huron Co., Ont. SAM. J. PYM.

GROWING CORN ON HEAVY CLAY.

Editor "The Farmer's Advocate":

Growing hoe crops on clay land is discouraging work to most farmers, hence many do not attempt it, the soil is liable to bake after sowing, it is often hard to get the plants started, it cannot be worked in showery weather, and if the fall should be wet it is unpleasant harvesting the crop.

We have been farming such a farm for upwards of 30 years, and have farmed light lands previously. We have been able to grow much heavier crops, with no more labor on our heavy farm than on the light one.

In growing corn on heavy land, it is all-important that the land be fall plowed, as spring plowing, usually, cannot be brought into a sufficiently friable condition to produce good germination, but if fall plowed fairly deep, in lands 15 feet wide, and all water courses well opened out, so that water cannot stand upon it, it will be in fine condition about the 20th of May to prepare for the crop.

A sod, while good for light land, is not the best on clay, for the reason that the decay of the sod is too slow in clay. It is much better to sow peas or oats on the sod the season previous to growing the corn or root crop. By that time the sod is thoroughly decayed, and mixes readily, under cultivation, through the soil, and is immediately available for plant food.

A good coat of manure is necessary to add humus to the soil. It is better applied in the fall, but may be applied in the spring (after the land has been well worked with cultivator, or disk, so as to form a good seed-bed as for a grain crop).

We prefer horse manure, as it is generally shorter and mixes more readily with the soil than any other, besides being more heating and decaying more rapidly. We put it on at the rate of about 15 loads per acre, spreading it evenly, then plow it in with gang plow (no deeper than it has been cultivated). This is important, as we do not want the subsoil mixing with the soil pulverized by the frost. Level down with roller, to leave a smooth surface for drilling the seed. This leaves the four inches of surface soil well filled with manure, and in a fine friable condition if the work has been done under dry conditions.

We do this preparation work the first favorable time after spring seeding; if the weather be unfavorable, we simply wait until it is, as we have found by experience that the 1st of June is early enough to plant corn on clay; one of the best crops we ever grew was planted on the 17th June. By deferring planting till then the soil becomes properly warmed, germination and growth is rapid, danger from frost is reduced to a minimum; also the soil is less liable to be packed by heavy rains.

Before or immediately after sowing, we sow a small bag of land plaster per acre. This acts very favorably on clay soils, promoting a rapid decay of vegetable matter, stimulates growth, and hastens the maturity of the crop. These are all important considerations in growing a corn crop.

We have tried almost every variety of corn on the market, and have decided in favor of the flint varieties as most suitable and certain for us to grow. They are hardier, sow better with the drill, mature earlier, are more easily handled, and cure better for fodder (we have no silo). We find the Compton's Early and North Dakota best suited to our land.

We sow with the grain drill (setting the feed to sow 1½ bushels of wheat per acre), shutting off all the feed runs but the third from each end, then drive as for grain sowing. This puts the rows 35 inches apart, with a 10-hoe drill. Most beginners sow too thickly; a plant every foot is sufficient to produce a good crop;

if it comes up too thickly we strike out any bunches when hoeing, as when the stalks grow too thickly they produce but few cobs. We never use the harrow on the crop, as we find it pulls up the manure and breaks too much corn. We work it with scruffler every week (weather permitting) up to grain harvest; after that time the soil is fully occupied with roots, and any more scruffling would only work injury. Nor is it necessary to destroy weeds, as most are destroyed by them. We go through the crop once or twice afterward with a hoe, and cut out any weeds still growing.

This article is written for the benefit of beginners in corn culture. Be the season what it may, we always need corn. It is a profitable crop grown for the grain alone; the stalks, green or dry, make better feed than timothy hay. We grow from four to five acres each year, and find no trouble in saving or feeding it. We feed liberally from the middle of August till the whole is fed off (feeding no hay or grain), with the result that all our stock are in prime condition and in the best of health to begin the winter feeding.

We advise beginners to sow an acre this season. Buy guaranteed seed of a flint variety (about 1½ pecks will be sufficient); make up your mind to have a splendid crop; find out by personal experience its worth, and you will agree with many readers of "The Farmer's Advocate," that there is nothing like corn. Simcoe Co., Ont. FRED FOYSTON.

RENEWING THE FERTILITY OF MARSH LANDS.

Our readers in the Maritime Provinces whose holdings include marsh land, will be deeply interested in a little booklet just published, entitled, "The Principles of Soil Fertility Applied to the Worn-out Diked Lands." It is from the pen of Prof. W. W. Andrews, Professor of Chemistry in the McClellan School of Applied Science, Mt. Allison University, Sackville, N. B., and is published and distributed gratis by the Dominion Agricultural Offices of the Potash Syndicate, 1102-1105 Temple Building, Toronto, Ont.

"One of the most pressing problems in agriculture in the Maritime Provinces," says Prof. Andrews, "is that of restoring the lessening fertility of the wonderful diked lands of the Bay of Fundy. One remedy is certainly effective, viz., opening the dikes and covering the lands with a new tidal deposit. But in hundreds of cases this is practically impossible, on account of its cost. It means the loss of salable crops for six, seven or eight years, and this, with all the incidental expenses, brings the cost up to \$75 or \$100 an acre. One such treatment, however, is probably good for 100 years. Or, we may haul tidal mud from the river banks, and at a cost of from \$30 to \$60 an acre we can cover the land with a coating which will last for eight or ten years; or we may add chemical fertilizers—potash and phosphate—at a cost of from \$10 to \$18 per acre, and, without any loss of crop, we can produce a highly fertile marsh, which will bear luxurious crops of hay for six years at least after one application. Just here let us remark, for the information of Western readers, that it is not the practice to apply barnyard manure to these marsh areas, which are in many cases quite extensive, and a man's parcel of marsh may be several miles from his house and stables, which are necessarily erected on the upland. Besides the drawback of distance, it is always felt that the manure is needed on the upland without sparing any for the marsh.

"Experiments on the marsh at the Nappan Experimental Farm and on some sections of the Wolfville diked lands seem to indicate that artificial nitrates are of doubtful value on the tidal lands. Good results have been obtained by the use of lime, soluble potash salts, basic-slag phosphate and bone meal. These fertilizers stimulate the growth of clovers, and, therefore, by their use, we may indirectly procure for the soil all the nitrogen required without buying nitrogenous fertilizers. These mineral fertilizers are cheap, as compared with the nitrates, and this at once makes easier the profitable solution of the problem."

PRACTICAL TESTIMONY.

In the replies which came to the several hundred lists of questions which Prof. Andrews sent out to the owners of diked hay lands, there was practical unanimity as to the beneficial effect of the above-named fertilizers (lime, potash salts, basic slag, and bone meal) wherever they had been used. In one case, where a few ridges had been treated with lime twenty-five years ago, Mr. Geo. Thompson, of King's Co., N. S., reports that the good effects are yet visible. Rupert Black, of Cumberland Co., N. S., reports that his father treated a piece of diked land with lime fifty years ago, and the effect is still noticeable. P. McNutt Patterson, of Acacia Village School, reports a case in which the effects of a slight dressing of lime were observable after forty years. The use of lime on the tidal mud is summed up thus: "It will tend to cure acidity, with the accompanying mossiness and corkiness; it changes the poisonous iron salts into gypsum and iron oxide; sets free the potash from the silicates of the soil; makes more available the locked-up phosphates, and, with the potash, stimulates the

growth of clovers." The use of gypsum is rather advised against on a soil where lime has been applied, as the gypsum is liable to be useless in such a case, if not actually injurious.

As to the amount of lime, Mr. Geo. Thompson, whose experiments have been made on the largest scale, and carefully conducted, claims three "casks" of lime per acre are generally sufficient, and six casks was the limit of beneficial treatment. A "cask," we infer, amounts to forty-five bushels or thereabouts.

As to the use of other fertilizers, Mr. Thompson's testimony is as follows: "In 1894 I dressed a four-acre dike-lot with five casks of lime per acre, and sowed it down to grass with oats, and late in the fall sowed one-half a ton

he laid and covered in the old ditches, covering the joints with strips of zinc. This leaves a level dike, unbroken by ditches, and therefore easier to work. The general testimony has been, as to the advantages of underdraining, as follows: It has resulted in an increase of crop-bearing surface of ten per cent., in an increase of crop from twenty to thirty per cent., in less trouble with surface water, in finer texture of soil, and greater power to withstand drouth.

LET EACH MAN EXPERIMENT.

The pamphlet concludes by recommending a simple plan of experiment, and urging each marsh owner to test the matter upon his own land. If several hundreds of marsh owners would make such experiments, the mass of testimony would prove of immense value. We trust all our marsh-holding subscribers will write to Toronto for the pamphlet.

One warning is given. On old, sour, diked lands, and on the blue dike, the use of lime alone is apt to give results so encouraging that some may be tempted to depend on it alone. While it has great value as a corrective to acid conditions in the soil, and to the poisonous oxalic acid which is produced in the sap of plants, still we must remember that lime is a plant food in a limited sense only, and its continued use as a stimulant would ultimately result in a more thoroughly impoverished soil. Lime is good in moderation, but the main reliance should be placed on the true plant foods, such as potash and phosphoric acid. These, with lime and clovers, will restore fertility in an economical way.

TRIED IT ON THE QUIET.

Editor "The Farmer's Advocate":

You will be pleased to learn that your campaign in promoting the use of the split-log drag has not been without considerable fruit already. In Prince Edward County there have been several in use, I believe. I saw an account in a local paper, from one of the local correspondents, where the operators, somewhat doubtful of its work, kept hid until the road was clear and then sallied forth to see what it would do. It wasn't long before they were ready to work in the open anywhere, with great satisfaction to the people of the locality. I was pleased to note that on my own road division there had been one at work. However, in that case there is too much gravel on the roads to see much of an effect. It did useful work, though, in many places, levelling the ridges and filling in the ruts. Of late I have noted with much pleasure that the road grader is when it can do the work so easily. I saw the most of this kind of work done in the Bay of Quinte counties. Recent trips over leading roads in the County of Hastings has confirmed past observations, that the system of roadmaking so long in use there by the County Council has won out admirably.

It seems almost incredible, that in so many localities, where for long stretches the roads are really good, and time can be made on them even with heavy traffic, you come to short pieces here and there where even with a light rig one is not certain he will make the passage in safety. There are very many places of this kind which should be looked after right away. It is usually the result of lack of drainage. Then, too, a great many hills wash badly, as little or no drainage is provided at the sides of the road on the hill slopes. Many of the clay hillsides are particularly bad in the spring. They are, if anything, more spongy and rutty than level sections in the same vicinity. It is evidently the lack of tile drainage, and it shows that



Fig. 2.—Mr. Thompson's Experiments on the Wolfville Marsh.

The unfertilized piece.

(1,120 pounds) of basic-slag phosphate per acre. Previous to plowing the lot, it was nearly covered with oxeye daisy, and light at that. The oat crop was good, and last year the grass cut three tons to the acre, the clover a grand growth. I measured some of the timothy stalks, and they stood five feet two inches above the ground. On an adjoining lot last year I spread 500 pounds bone dust per acre, and 200 pounds of muriate of potash in the spring, sowed down to grass with oats, had a fair crop of oats and a good catch of clover and timothy. Late in the autumn I sowed half a ton of basic slag per acre, and now await results." Personal examination the following year, and written reports of the grass sales on these areas from parties in the neighborhood, and



Fig. 1.—Mr. Geo. Thompson's Experiments on the Wolfville Marsh.

Fertilized with 1,120 pounds basic slag, 500 pounds bone dust and 200 pounds muriate of potash per acre.

accompanying photographs, show how well Mr. Thompson's faith has been justified. It has been proven that three tons of hay per acre is an ideal which can be reached. "My conclusions are that a dressing of lime and basic slag are the best for the blue dike, and for red dike, bone meal, muriate of potash (KCl) and basic slag. This has lasted for six years."

As the blue dike is a poorly-aerated soil, which by proper drainage and cultivation will become red, in the end the same treatment is required by both soils. Certainly, after the lime and cultivation have corrected the acidity, and set free some potash for the first crop, the addition of soluble potash and available phosphate immediately after the cutting of the crop will show beneficial results in the following year's growth.

Mr. Thompson is an enthusiastic advocate of underdraining by means of crock tiles at a minimum depth of two feet, and laid with a slope of not less than one inch in one hundred feet. These

drainage on the hillsides is just as important as on the levels. I may say, Mr. Editor, that I believe the people generally are waking up more than ever to the importance of better roads. They are coming. Keep up your campaign.

T. G. RAYNOR.

EXPERIENCE WITH CEMENT FENCE POSTS WANTED.

Most of our readers will remember the article published on page 361, in "The Farmer's Advocate" of March 8th, 1906, describing the making of reinforced cement-concrete fence posts. We believe these have been tried by a number of Canadian farmers, and wish to publish a number of short letters from those who have used them, covering such points as methods of construction and setting, serviceability and cost, compared with wooden posts.

THE DAIRY.

TWO METHODS OF SKIMMING.

There are two forces known to man that can be used for the profitable skimming of milk. One is gravity—the old-time crock, pan or can setting system in use ever since man learned how to milk. Gravity is the force that pulls every object downward—the force that gives all things weight. When milk is set in pans, crocks or cans, the force of gravity pulls down on every particle of skim milk or cream the crock, pan or can contains. But this force of gravity pulls harder on the skim-milk particles than on the butter-fat particles, so that we say skim milk is heavier than cream, bulk for bulk. In consequence of this difference in weight, or pull of gravity, the skim milk settles down and the cream is squeezed up. But not all the cream is squeezed to the top. Some of it fails to rise. There is a reason for this.

When milk is set away in pans, crocks or cans it begins at once to grow stale. One of the constituent parts of milk is the casein or cheese part. The instant milk begins to grow stale, this casein or cheese part begins to coagulate or thicken. It first forms a sort of invisible net or web all through the milk, and this web grows gradually thicker and thicker until it forms the solid curd or clabber of sour milk. This web cannot easily be detected until it has become very thick, but it is there, even though we do not see it. As this web forms it entangles and holds fast many of the butter-fat globules. The force that skims the milk must be strong enough to pull the entangled fat globules out of this cheesy net, or a considerable portion of the butter-fat will be left in the skimmed milk and be lost. Because it is weak and slow, gravity must be allowed, say, twenty-four hours, to skim a batch of milk. And all that time the milk and cream are standing round taking up odors from the air, growing stale or sour, and the fat-entangling casein web is getting in its work to your loss. The result is bad in every way. The loss of cream sometimes amounts to from one-quarter to one-third, and possibly more in very warm weather; the other portion is left in the skimmed milk and goes to make six-cent pork or veal, instead of twenty-five to thirty-five cent butter. The cream that is secured will be off flavor, the butter will show the effect, and stale or sour skimmed milk is not the best sort for your young stock, even though such milk be warmed before feeding. In this way gravity causes the dairyman a great falling off in quantity and quality of butter, and in the value of the skimmed milk. This figures up a heavy cash loss in a year.

Gravity entails needless work upon dairymen. There are all the pans, crocks or cans to be filled and set away twice daily; later, they must all be brought out, skimmed, emptied and washed; also, the cold skimmed milk must be warmed before feeding if the farmer desires to avoid bad results in his calves. All this takes time and strength—both of which should count as part of the expense of operating the dairy.

But how about the other and newer skimming force—centrifugal force? How does it work? How strong is it? What does it accomplish that gravity fails to do? You have often watched mud flying off a running wheel; you have doubtless frequently whirled a pail of milk or water about your head without spilling a drop; you have probably tied a stone to a string, whirled it about a few times, and sent it sailing much higher and farther than you could throw it with your arm. Centrifugal force did the work. It is the power that makes whirling bodies pull away from the center about which they are whirled. When a vessel containing milk is rapidly spun around, top like, centrifugal force is generated and pulls outward on the particles of skim milk and cream. But centrifugal force, like the force of gravity, pulls harder on the skim-milk particles than on the cream particles, so that the skim milk is drawn outward against the sides of the vessel, and the cream is squeezed inward toward the center. Add to this spinning receptacle proper driving mechanism and proper tubes for drawing off the skimmed milk and cream into separate vessels, and you have a centrifugal cream separator—a machine that separates cream and skim milk by the use of centrifugal force.

The most interesting and valuable characteristic of centrifugal force is this: its strength or power can be increased as greatly as necessary requires. That is the great advantage centrifugal force has over gravity.

changeable weak force of gravity. Centrifugal force can be made strong enough to do perfectly and almost instantly what the force of gravity does incompletely and slowly. Centrifugal force is so great that it can wring practically the last drop of cream from the milk so quickly that the skimming of the entire milk from an ordinary herd may be finished, the single can of cream set away to cool and the skimmed milk fed to the calves before the skimmed milk can grow cold.

The gradual growth of the casein web which so seriously interferes with gravity systems does not interfere with centrifugal force. This great force easily breaks up this web in stale, cold milk and rescues the imprisoned butter-fat particles.

So what will you gain in dairy profits by using centrifugal force, as applied in the centrifugal cream separator, instead of some gravity system in the form of pans, crocks or cans?

(1) A skimming force which may be made ten thousand times as strong as gravity.

(2) A possible gain of one-quarter to one-third—sometimes even more—in the quantity of butter you get from the same amount of milk under the same conditions, depending upon the separator and how used.

(3) A gain in butter quality that will run from one to five cents per pound, according to local conditions.

(4) You will have fresh, sweet skimmed milk, still warm with the heat of the cow, which will be much better for your young stock than the stale, sour or diluted skimmed milk from pans, crocks, cans or creamery.

(5) You will have a single can of cream to set away or haul to the creamery, instead of several crocks, pans or cans of whole milk to care for, and your trips to the creamery will be decreased by at least one-half.

(6) You will require less storage room, less ice and practically no pans, crocks or cans, thereby greatly reducing the cost and labor of handling milk and cleaning milk utensils.

The man who hauls his whole milk to a creamery and carries the skimmed milk back gives his own time and the time of his team and wagon in making his daily trip. Every addition to the load he hauls sinks his wheels so much the deeper into the mud, or wrings the sweat so much the more freely from his horses. He must haul one load each way every day, and then the man who takes skimmed milk home from the creamery gets a stale article, diluted with washings, which may be the means of introducing into his stock tuberculosis or some other disease which afflicts some neighbor's herd.

MILKING - MACHINE PROSPECTS.

H. H. Lyon, writing to Hoard's Dairyman last month from New York, thus summed up the question of milking-machine prospects:

"Milking-machine gossip is about as usual. There is much of a tendency to discredit the small machines. The foot-power machine has been tested by quite a number about, and has in every case, I think, been discarded. The hand-power machine does not inspire any confidence. The Globe machine is now admitted by its manufacturers to be an infringement upon the Burrell, and is controlled by the Burrells. In two cases of which I heard, the Globe has been taken out. The Lawrence-Kennedy-Burrell machine seems to be the one now which must sustain the reputation of milking machines, if they are to be sustained.

"It is true that one or more of the others may yet come to the front with a claim of efficiency, but the public in this vicinity is not looking for it to be done. The next few months are likely to tell considerable of a story regarding the real claims of the machine that people are still looking to for success. Fortunately, many of the tests are in the hands of men who will be able to make them very thorough."

AFTER COLD FACTS.

Editor "The Farmer's Advocate":

I have been keeping cow records since 1906. It takes only a few minutes each day. I have a spring scale and blank forms tacked on a board and hung on a nail. I started because each year, in my business as a smith, I take stock and balance the year's accounts. I wished to know what my cows were doing for the year—not as I hear my neighbors saying, this cow gives two-thirds or three-quarters of a pail of milk. I cannot get any solid true facts about that, but scales and Babcock test tell the tale correct. You are interested in your cows, and detect a shrinkage at once, and enquire the cause, and in most of cases learn the cause.

King's Co., N.B.

A. D. MURRAY.

SWINGING STANCHIONS WITHOUT STALL PARTITIONS.

Editor "The Farmer's Advocate":

With two years' experience stabling dairy cows with swinging stanchions, I am quite well satisfied without stall partitions, but want separate mangers, so I may know what each cow eats. I am overhauling more stables, and fitting them with stanchions, without partitions in stalls, but with separate mangers for cows. For feeding would be required.

Washington, D. C.

ANSON GROH.

VALUE OF A GOOD DAIRY SIRE.

Everyone is familiar with the saying that the sire is half the herd. This is literally true, writes Professor Wilber J. Fraser, Chief in Dairy Husbandry in the University of Illinois. That is, of the qualities bequeathed to the calves the male parent furnishes half. The cow influences the character of but one calf a year; the bull passes on his personality to many calves, to all the calves of a herd of ordinary size. When he is chosen, half the character of all the calves is determined. In a herd of forty cows his influence is as much as that of the whole number of cows taken together.

If he is of stronger prepotency than most of the cows—that is, able to transmit his qualities more surely and strongly to the progeny, which is usually the case with a well-bred sire—then the bull represents more than half the herd. In that case more than half the characteristics of the calf, or the stronger and predominating half, come from the sire.

Now if the sire, as an individual and in his pedigree, is superior to the cows—and this will be true where a pure-bred sire is used on a grade herd—the characteristics he transmits to the calf will be of more value (of higher quality or greater quantity) than those that come from the mother, and in this sense also the bull will be more than half the herd.

If the sire is kept with the same cows several years, each year he starts out a generation of calves more than half of whose qualities and strength were transmitted by the sire. This single step is a great improvement. But his successor, of similar type and breeding, mated to those improved heifers, carries the improvement forward another step, fixing the qualities and the power to transmit them more surely and strongly, carrying them to a higher degree and eliminating defects that have come from the mother's side. From generation to generation the succession of well-selected sires goes on increasing and intensifying the improvement of the herd. In this way the sire becomes three-fourths, seven-eighths, fifteen-sixteenths, etc., of the herd. In fact, in a few years the sire is practically "the whole thing."

So the sire may be much more than half the herd whether judged by the strength, quality or accumulated effect of the characteristics he transmits. It is literally true that the sire may thus, within a few years, at slight expense, completely transform a dairy herd and more than double its profit.

A GOOD BUSINESS PROPOSITION.

One can obtain a fine dairy sire for \$150, and forty grade cows for \$45 each, or \$1,800. Then a good bull costs only one-thirteenth of the investment; or, in other words, one-thirteenth of the investment is so placed as to exert more influence in the improvement of the future herd than the other twelve-thirteenths of the investment. Isn't that a good business proposition?

Won't the extra \$100 put into a good sire be better spent than any other \$100 invested in the herd? Forty-one animals are purchased. The purchase of one animal will influence the succeeding herd more than the purchase of the other forty animals. Isn't it worth while then to give some extra time and study to the selection of that one, the sire?

THE SIRE AND THE MILK RECORD.

In breeding for improvement, the milk record of the sire's female ancestry is of just as much importance as that of the ancestry of the cow with which he is mated—is of more importance if the sire's ancestry has a better milk record.

And the good dairy sire, pure-bred, is almost certain to have a line of dams with a superior milk record; they have been bred for that very thing. Whether or not these dams have been tested, so the actual figures can be given, they are far more likely to have been high-producing cows than are the dams of the grade cow. One of the very greatest things to secure for the heifer calf is the inheritance of a large capacity for milk production, and this comes from the mothers in both lines of ancestry.

The calf will be much more certain of getting a high degree of this quality through an improved sire than from a grade mother. A high milk record in the sire's ancestry affects all his female progeny—all the next generation in a common-sized herd. But such a record in the cow's ancestry can affect but one calf a year (and not that many unless they are all heifers).

ABSOLUTELY PROVEN.

And in general as to all the good qualities that it is desired to transmit, it should be clearly recognized that these may be secured far more surely from the pure-bred sire than from the general run of grade cows. Nothing is more certain than this. But all that is here urged for the great value of proper breeding is no excuse for a poor or weak animal, simply because he is pure-bred. No pure-bred bull is fit to head a dairy herd unless he is also a thoroughly good and strong individual, exhibiting in himself the typical characteristics and high qualities of the breed.

Every man who has had any extended experience or observation in the use of a good pure-bred sire from high-producing dams at the head of a dairy herd, will agree that this sire was of peculiar value and great economy in building up the herd. The records of dairy breeding have proven it conclusively a thousand times over. No man who studies the facts can doubt it. The evidence is to be seen in the heifers of every such sire, and in their contrast with heifers lacking such percentage.

A RUDDER TO THE SHIP.

Editor "The Farmer's Advocate":

I have been keeping individual records for a period of three years, and am thoroughly convinced as to the importance of this work. I was first interested in it while attending the O. A. C., and started it as soon as I arrived home, and have never missed recording a milking since that time. The time that it takes to weigh the milk and set down the figures does not exceed one-half minute per day per cow, so you see the time does not amount to much. One can get so expert at it that with the glance of the eye he can readily tell the weight. We use the spring balance for weighing, and the record sheets that are supplied by the Department of Agriculture free.

There are several benefits to be derived from keeping such records. One is that it readily shows the loss that is incurred by irregularity of milking. It also enables you to use better judgment in feeding, when you have an eye to the records, which show very quickly when a cow is off feed or not feeling just right. It also shows that when a cow is frightened or excited there is a great loss in milk. Perhaps the most important point is that it enables us to weed out the poor cows, and thus build up the herd.

Of course—I would say, in answering your last question—if a man is really sure that his cows are all above the minimum of production, there is really no great need of his keeping records; but at the same time there is a great deal of satisfaction to be derived from other sources, if he does not begrudge the time.

I am very enthusiastic over this part of dairying, and would say that too much emphasis cannot be placed on it. I believe that it will do more for the upbuilding of the dairy industry in Canada than any other one factor. I think that, for a man to go into dairying without keeping milk records, would be just as foolish as for a captain to go to sea without a rudder to his ship. It is one of the factors that tend largely to bring success to the dairyman.

King's Co., N. S.

P. L. MORSE.

MAKE USE OF GOOD PURE-BRED MALE CALVES.

Illinois, with its million dairy cows, has need of 40,000 pure-bred sires, writes Wilbur J. Fraser, Chief in Dairy Husbandry, University of Illinois. Surely not one-fourth of that number of good sires are now in use; then, 30,000 more are imperatively required. At the same time, hundreds of good dairy sires are a drug on the market, at ridiculously low prices, and many pure-bred bull calves are sold for veal. Some way ought to be found to make one side of this problem solve the other. At a meeting of representatives of dairy-breed associations, held at the State Experiment Station on April 10th, a permanent organization, called the Illinois Dairy Cattle Improvement Association, was formed, with Hon. John Stewart, of Elkhorn, as President, and A. O. Anten, of Jerseyville, Secretary. In opening the meeting, Director Davenport, of the Experiment Station, told a story that struck the keynote of the meeting and of the new organization:

"Desiring to cover a house with slate, he wrote to a slate man asking about the different qualities of that material. This dealer told him of several kinds of slate, all of which were good. Professor Davenport expressed surprise that this dealer had said nothing against the kinds of slate that he did not handle, when his correspondent replied that finding fault with other men's slate was just what was ruining the slate business."

Applying the moral, he urged that the attempt to promote one breed of cattle by running down all other breeds has worked great injury to the business of both the breeder and dairyman. The new movement is for concerted action to make known throughout the State the actual facts concerning the keeping of a good pure-bred sire at the head of a grade herd. In the discussion that took place, the practice of buying cows came in for strong condemnation. It has come to a point where the Illinois dairyman must raise his own calves, if he would improve on or even sustain the quality of his herd. By breeding to a good pure-bred bull of performing ancestry, and selecting his cows and heifers by means of the milk scales and Babcock test, a vast improvement could be effected in the herds, not only of Illinois, but of all parts of Canada as well.

EFFECT OF AGE IN TESTING CREAM.

Will fresh cream directly from the separator or a day old test more than cream which is taken and put into acid and thus kept for a week or even two weeks and then tested?

To the above question, Prof. E. H. Farrington replies, in Hoard's Dairyman, as follows:

If cream is measured into a test bottle, the acid added at once and well mixed with the cream, the test bottle may be allowed to stand a week or more in this condition without injury to the butter-fat. If, after standing, the test bottle is warmed and placed in the centrifuge, the same results should be obtained as when the cream and

acid are mixed in the test bottle and the test completed at once. I know no reason why cream fresh from the separator should test higher than when mixed with acid and allowed to stand for some time, if it is weighed into the test bottle, so that one may know the exact quantity that is being tested.

APIARY.

HIVING SWARMS ON STARTERS.

Editor "The Farmer's Advocate":

Some enterprising apiarists discovered, quite a number of years ago, that in order to secure all, or nearly all, of the white-clover and basswood honey in the sections, swarms had to be hived in a contracted brood-chamber. If swarms are hived on the full set of light frames, the bees will build comb faster below than the queen can keep filled with eggs, and store some of the white, most-salable honey in the brood-chamber.

Swarms must be hived on a full set of frames. Then, in about twenty-four hours, or as soon as the bees have made a start at comb-building, two or three—four or five, if the frame hives are used—frames having as yet little or no comb built in them should be removed, and the space made

frames below, a prolific queen may be cramped for room to deposit her eggs, and go above to lay a few in the sections. It does, perhaps, not pay to use queen-excluders to overcome this difficulty.

As I have already said, the queen keeping all available cell room below filled with eggs, the bees are compelled to store all of the white honey above. That is just as the beekeeper desires. When, however, the white-honey flow is past—it ends with basswood here—the dummies must be removed and frames filled with comb given. If one has not already built comb, frames filled with full sheets of foundation must be given.

It would not do to give frames having foundation starters only. This for two reasons. In many localities the frames would not be filled with comb on account of the nectar flow being too light after the white-honey flow. Then, too, if frames with starters only are given, the bees will build a large amount of drone comb. That results in a lot of useless consumers being reared the ensuing season, which, in turn, results in a loss of honey.

Metz, Wisconsin.

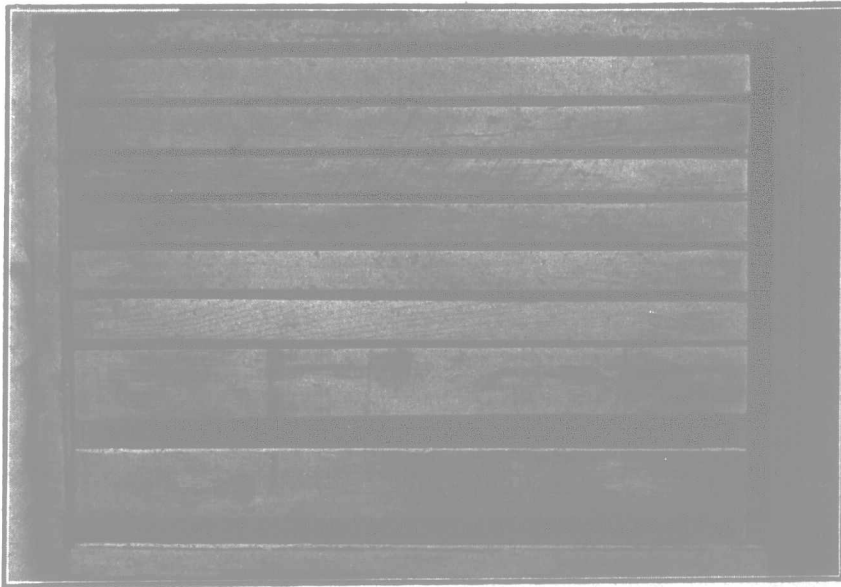
F. A. STROHSCHNEIN.

EASY TO CONTROL THE BEES.

One of the reasons most frequently given by

farmers for giving up keeping bees after having had them for a few seasons, is that they swarm just at the wrong time, usually when a farmer is hustling to get a field of hay drawn in before rain comes on it. At such a time it is very annoying to have to spend perhaps an hour or more following a swarm around the premises until it clusters (generally in the top of a tall tree, especially if the farmer is in a particular rush), and getting it down and hiving it in the way that is usually practiced by those who keep a few bees on the side. If these people would only have all arrangements made for the swarming before it commences, have the bees in good modern, movable frame hives, and the wings of the queen bees clipped, they would find the handling of bees and swarms transformed from little short of

slavery into pleasure and profit. Swarming, when a person has no control over the bees, is a mighty unprofitable business, and the time spent in watching for and hiving swarms is enough to make an ordinary person wish the bees were in Halifax, or some other distant town. With everything in readiness beforehand, and with queens clipped so that they cannot follow the swarms in the air, the hiving of swarms is just fun, and takes very little time. When a swarm issues from a hive, the queen tries to follow them, and, having a wing clipped, is unable to fly, but will be found crawling or hopping along on the ground. A small, wire-cloth cage, made by rolling a small piece of wire cloth, four or five inches square, in a roll perhaps an inch or more in diameter, and closing the ends with two pieces of wood, one of which is fastened tightly in and the other left so it can be taken out, should be kept handy. Take the loose piece of wood out of the cage, thereby leaving one end open. Set the open end over the queen on the ground, and she will immediately run up into it. The plug is then replaced, and the cage, with the queen inside, is laid in a safe place (not in the hot sun). Now, while the swarm is still in the air, lift away the hive from which it came, and place a hive made ready beforehand in its place. Set the old hive on a new stand some distance away from the one from which it was taken, so that the returning swarm will not find it. The swarm in the

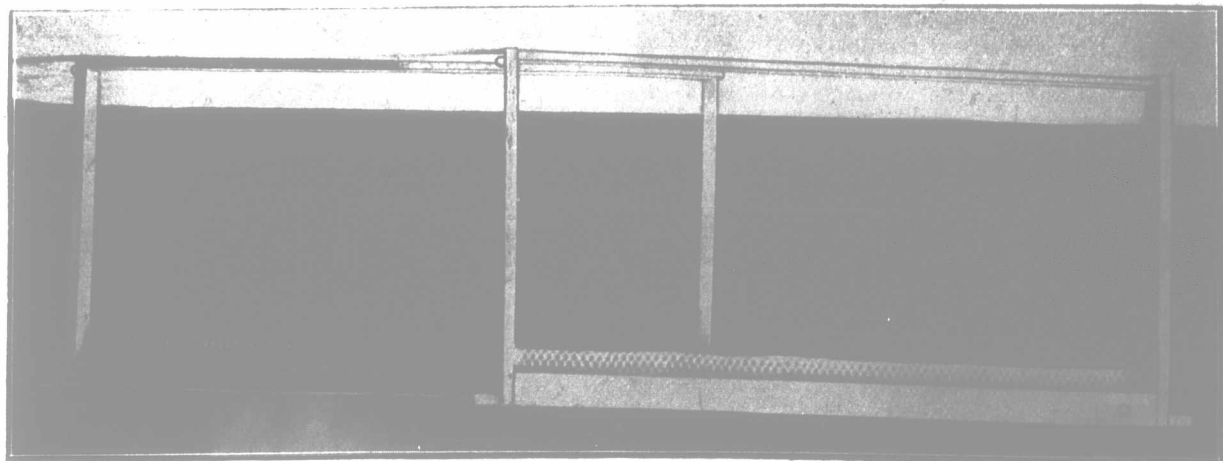


Frames with Inch "Starters" of Foundation.

in the hive by their removal filled with dummies. When the frames are removed and dummies inserted, the super on the hive from which the swarm issued should be given. Of course, a different super can be given, but the one on the parent hive will not be filled by those bees for some time, and had better be given to the swarm.

Some will ask, why not give the swarm at once in a contracted brood-chamber, and why not give the super at once? If a swarm is hived in a contracted brood-chamber at once, the bees will quite often desert the hive. They regard the space as too small for their future home. When, however, they have once made a start at comb-building, they are not likely to abscond.

When a super is given a swarm as soon as hived, the space, it is true, would be increased, but in this case, there already being built comb in the sections, the queen would also go above to deposit eggs in the sections. That is a little more than undesirable. Using a queen-excluder between the super and brood-chamber would, so it appears, remove all objections, for then the space would be increased, and the queen would also be barred from going above. This way of hiving swarms is, however, undesirable, from the fact that when there is already built comb above, the bees are loath to make a start for the queen below. When the bees have once made a start in the brood-chamber, a queen-excluder is hardly necessary. It is true, when there are only five



Hive Stood on End with "Dummies" and Six Frames in Position.

air, finding itself without a queen, will in a few minutes commence to return to where they came from, and will run into the hive placed to receive them. When they are nicely running in, release the queen close to the entrance of the hive, and she will go in with them—and there you are. No climbing trees, sawing off branches, wasting time, getting bees down your neck, or anything. Of course, this method requires that the bees be watched for swarming, but even the watching can be eliminated if the owner of the bees will take a few minutes once a week in the evening, or any time, during the swarming season, and examine his bees for signs of swarming; and when the signs are found, either make an artificial swarm by the "shaking" process, or by taking away most of the combs of brood and substituting empty ones. This latter way, however, will not prove successful except in the early stages of the "swarming fever."

So, instead of letting your bees run you this summer, and perhaps make you sick of the whole business, take a hand in the running operation yourself. You will find the bees just as easy to manage as the pigs or the fowls, when you get to know them as well, and they will pay you quite as much, or more, for the time bestowed on them.

F. G. H.

FOUL - BROOD INSPECTORS.

The Ontario Department of Agriculture announced last week the appointment of the following inspectors of apiaries under the Foul Brood Act:

Division 1.—Lennox and Addington, Frontenac East; Matthew B. Holmes, Athens.

Division 2.—Victoria, Peterboro, Northumberland, Durham, Prince Edward and Hastings; (none).

Division 3.—York, Peel, Simcoe, Dufferin, Ontario and Halton; H. G. Sibbald, Claude.

Division 4.—Wellington, Waterloo, Perth, Huron, Bruce, Grey; J. Alpaugh, Dobbinton.

Division 5.—Norfolk, Brant, Oxford, Elgin, Kent, Essex, Lambton; J. Armstrong, Cheap-side.

Division 6.—Wentworth, Lincoln, Welland, Haldimand, Middlesex; Wm. McEvoy, Woodburn. It will be noticed that the position for Division No. 2 has not yet been filled, but it is hoped the appointment will be announced at an early date. The inspectors will be on the same footing, and will have wide powers under the Act. The Department hopes, however, to make their work as much as possible educative rather than coercive. It was found that under the old system of one inspector that the Province could not be properly covered during the season of the year when the foul brood should be properly treated. We hope that under the new system practically all the diseased apiaries can be visited during the one season, and if this can be done, there is reason to expect that the disease may be virtually stamped out of the Province.

BEEKEEPERS' CONVENTION AND HONEY SHOW.

In reply to a letter from "The Farmer's Advocate," inquiring the date and programme of the next Ontario Beekeepers' Association, Secretary P. W. Hodgetts informs us that, while at a recent executive meeting a preliminary programme was mapped out, it is not yet in shape for publication. He tells us, however, that it is the intention of the Association to procure, if possible, the services of a number of eminent beekeepers from the United States, as well as the best local talent obtainable.

Arrangements were also made in reference to the honey section at the Horticultural Exhibition, which is to be held this year, Nov. 12-16, in the St. Lawrence market arena, Toronto. Last year, instead of offering a prize-list, a combined exhibition of honey was made by the Association. This, however, was hardly satisfactory, and we purpose this year to revert to the prize system. It is proposed to offer about \$250 in the various sections, and a number of changes and additions have been made in the list of two years ago. With a favorable season for the apiarists this year, a very successful exhibit should be the result.

THE FUTILITY OF REVENGE.

What a childish thing is spite. It is an attribute of the narrow-minded. No one ever really succeeds in villifying anybody but himself, although he may sometimes cast a temporary shadow over the reputation of a neighbor. Meanness, anger, petulance, revenge are boomerangs that always rebound and punish the person who casts them forth. We are, in the final analysis, our own enemies or our own friends, according as we manifest enmity or friendship towards others. There has never been a better aphorism coined than this: "The world is a looking-glass, in which we see ourselves reflected."

POULTRY.

HOPPER FEEDING.

No one will doubt that the hopper method of dry feeding fowls saves a great deal of time, and consequently enables a person to care for a much larger number with the same amount of time and attention.

Within the last two years so much advancement has been made in the methods of dry feeding that it has become almost the only method used on large poultry farms. When one feeds only once a day, or once a week, one can handle so many more fowls than by the old method that the profits are much greater.

A person who has always fed certain quantities, carefully measured according to the number of fowls, naturally looks doubtfully at a method of feeding which allows the fowls to help themselves when they like. He fears overeating and indigestion, etc. But one method of feeding cannot be judged by what one observes under the other method. For example, when a flock of hens have been fed, say a quart of grain, three times a day, and you set a dish of grain down in front of them, they at once proceed to gobble down all they can hold. It is natural to suppose that if the dish were left there and always kept full that they would continue to gorge themselves, but anyone who has tried it knows that this is not the case. Fowls that have access to a hopper eat a little now and then all through the day, but never much at a time, and will run about digging for bugs and worms quite as industriously as hens fed twice or three times a day. Growing chicks which are fed all the mash they will eat three times a day, will consume more grain than if they have dry grain always before them, and fed no mash.

There is much dispute as to whether hens will lay more fed on mashes or on dry grain. When a poultry-raiser has fed mashes, and suddenly changes to dry grain, he gets fewer eggs. If another suddenly changes from dry grain to mashes, he also may get a smaller number of eggs. Each is sure that the new method is not so good as the old. Any sudden change lessens egg production.

There is absolutely no question but that a larger number of chicks live and thrive when fed dry feed in hoppers than when fed mash at intervals; hundreds of chicks owe their early deaths to wet corn meal. After chicks are old enough to eat whole grain, if given the run of a hopper full of grain and free range, they will do better than by any other method of feeding.

If one wishes a hopper which the fowls cannot get into for the henhouse, one can make it by taking an eight-inch board, from four to eight feet long, according to the number of hens. This board makes the bottom of the trough or hopper. Nail two eight-inch pieces, sixteen inches long, on for ends of the trough. Let them project below the trough-bottom four inches, to keep it above the floor. Let the end pieces project upward from the bottom twelve inches; then saw the upper ends of these end pieces like the gable ends of a house, to carry the roof of the trough; then nail a three-inch strip along the bottom and a one-inch strip at the eaves, and nail lath strips up and down between, wide enough apart for the hens to put their heads in. Nail two boards together V-shaped at the right angle to fit your gables, and you have a cover which can be lifted off to put the grain in. It will keep the rain out if you wish to use it out of doors, and will keep the fowls from getting into the grain when used indoors.

Most of the objections which come to one's mind before trying hopper-feeding disappear when it is used. There is absolutely no danger that growing chicks will eat too much dry feed, nor that laying hens will overeat when out on free range. When confined to the henhouse in cold weather, hens should be fed oats in a hopper and a moderate amount of wheat in the litter. Those that lay will not fatten. Those that do not lay and get fat can be sold to the butcher.

Crossfield, Alta.

W. I. THOMAS.

GUINEA FOWL.

Editor "The Farmer's Advocate":

Now that the season of the guinea fowl's usefulness is at hand, a few remarks about them may be appreciated by your readers. It is now when the hawks are hungry, the chickens young and unable to run, and the grass not long enough for them to hide in it, that guinea fowl are a great protection in the poultry yard, for by their shrill cries they keep the hawk from attack. About six years ago we were terribly bothered with hawks; they took 24 ducklings in one week, in spite of scarecrows, etc. The next spring I secured a pair of guineas, and have kept a pair every year since then, and have not lost a chick by the hawks; and, besides preventing the attack of the hawk, they also rid the yard of reptiles, even attacking and killing a large garter snake. Guinea fowl should be kept in pairs and allowed free range, as they cannot bear confinement. They lay from 50 to 75 eggs in a season, which are somewhat smaller than common hens eggs,

with a fine flavor and a very hard shell. The eggs can be hatched and the chicks raised by a common hen. The period of incubation is 28 days.

A FARMER'S SON.

GARDEN & ORCHARD.

HORTICULTURAL PROGRESS.

Prepared for "The Farmer's Advocate" by W. T. Macoun, Horticulturist, Central Experimental Farm, Ottawa.

Six recent bulletins may be reviewed but briefly, as they contain little new matter, but they are all very useful in furnishing the most recent information on the subjects of which they treat. Spraying calendars are published by the Iowa Agricultural Experiment Station, of Ames. Another spraying calendar in bulletin form, is Bulletin 245 of the Cornell University Experiment Station, Ithaca, N. Y., and Lafayette, Indiana. Another bulletin is "Insects of the Garden," by Albert F. Conradi, being Bulletin 89 of the Texas Agricultural Experiment Station, College Station, Texas. This is a well-illustrated bulletin, in which are described many insects which injure truck crops, with remedies for same. Bulletin No. 71, by A. Nelson, of the Wyoming Experiment Station, Lorraine, Wyoming, is entitled, "Some Potato Diseases."

NEW ONTARIO BULLETIN ON THE SAN JOSE SCALE.

The San Jose scale is receiving much attention nowadays by bulletin writers. One of the most recent bulletins on this subject is entitled, "Remedies for the San Jose Scale," and is issued as Bulletin 157 of the Department of Agriculture, Toronto. This contains the latest information in regard to the scale, and the best methods of controlling it. There is also published with it a copy of the San Jose Scale Act.

SOME MAINE EXPERIMENTS IN ORCHARDING.

Orchard Notes, 1906, Bulletin 139, Maine Agricultural Experiment Station, Orono, Maine, by W. M. Munson. In this bulletin is published a report of the progress of some orchard experiments which are being conducted by the Maine Experiment Station in culture and fertilization, in orchard renovation, top-grafting, and cover crops. There are also notes upon pruning orchards.

For some years an experiment has been in progress to determine the effect of fertilizers on the apple crop, and to compare the results from trees grown in cultivated and mulched soil. Forty trees are kept in cultivation, and forty are mulched. Part of each receive fertilizers. The difference in yield between trees grown in cultivated ground and where the soil is mulched is not yet regular enough for the results to be very reliable. Sometimes more fruit is obtained from one, and sometimes from another. Unfertilized trees showed a decided falling off, and the trees during the growing season have a half-starved look, with yellowish foliage. Barnyard manure has given better results so far than concentrated fertilizers. It is believed that this is partly due to the humus which is added to the soil by the use of manure. An orchard of one hundred trees, planted from thirty-five to forty years ago, is under an experiment to determine the effect of different methods of renovation. When the experiment was begun, in 1902, the trees were in a neglected condition. No pruning had been done for ten years. In 1902 a portion of the orchard was thoroughly cultivated, and different chemical fertilizers applied to several parts of it annually from 1902 to 1906. "The effect of the treatment given this orchard is visible as far as the orchard can be seen, and from a hillside one-half mile distant the different plots can readily be distinguished by reason of difference in color and vigor of foliage. On these plots, from which nitrogen has been withheld, there is now a decided lack of color and a weak growth, indicative of neglect, while on plots receiving nitrogen, whether alone or in combination, a vigorous growth and rich, deep-green foliage are evident." The soil is a light sandy loam, with gravelly subsoil, and is naturally lacking in nitrogen. No improvement was noticed where potash and phosphoric acid were used, either separately or together, but the best results were obtained from a complete fertilizer, applied at the rate of 133 pounds nitrate of soda, 200 pounds muriate of potash, and 200 pounds acid phosphate per acre. These amounts are two-thirds of the quantities applied for the first three years. The individuality of different trees has been marked at the Maine Station, some trees of the same age and the same variety yielding much better than others. This fact has been marked at Ottawa, where records have been kept of the yields of individual trees since 1898. Trees grown from scions of these trees have been set out in the orchards at Ottawa to learn if this individuality is perpetuated. The value of rye as a cover crop for steep hillsides, to prevent washing, is emphasized in this bulletin. Several pages are devoted to the principles and practice of pruning, much useful information being given.

ORIGIN OF SAN JOSE SCALE.

The San Jose scale is believed by entomologists to be a native of China, where it seems to be held in check more or less by a tiny ladybird or ladybug which feeds upon it. How it reached America is not known, but it was discovered in the San Jose Valley, in California, about 1879. A few years later it was found in two New Jersey nurseries which had been sending out large quantities of stock, and on this stock it is supposed to have been distributed to all parts of the United States. At first it seemed probable that it would not live, or at least would not become a serious pest, in the more northern States, on account of the coldness of the climate, but it appears to have adapted itself in a most accommodating way, becoming gradually more hardy. It was found in Ontario in June, 1897, in an orchard near Niagara, since when it has spread quite generally throughout the fruit-growing sections of Southern Ontario. Entomologists now confine its Canadian field to a zone south of a line running from the neighborhood of Hamilton to Sarnia, but whether they are correct or not in this remains to be proven. Fortunately, our fruit-growers have become pretty thoroughly aroused, and are fighting it heroically in infested districts with the boiled lime-sulphur wash, applied in the dormant season, both spring and fall. Directions for preparing this have been repeatedly published in these columns, but for fear some careless reader will write asking when, we refer those interested to our Calendar Guide to Spraying, issue March 28th, 1907.

THE FARM BULLETIN.

A RARA AVIS.

A Northwestern lumberman, referring to the car shortage, inquired pertinently, "What is a freight car?" the inference being that he had not recently seen one. The office repeated the inquiry, and received the following contributed information:

"The freight car belongs to the fowl family. During the spring and early summer it can be found in nearly every part of the country, its favorite haunt being near railroad tracks, and it is easy prey to capture. In autumn, however, like certain other fowl, it goes into hibernation, or flies away to other climes. Scattered incidents are known where specimens are captured during the autumn months. A lasso or a well-greased switch crew is sometimes used in snaring a freight car, but main strength is the best weapon. In any case, the hunter must be very wary, as any noise, like the fluttering of a way-bill, will make the quarry disappear.

"Some railways own large flocks of domesticated freight cars, but they are carefully guarded during the closed season. The wild freight car, when caught and fairly loaded up, becomes perfectly stationary."

STATIONARY ENGINEERS' CERTIFICATES.

The Legislature of Ontario at its recent session passed an act respecting stationary engineers, in which engineers and employers are alike interested. Briefly stated, its provisions are that, after the 1st day of July, 1908, no engineer will be allowed to operate or have charge of a stationary steam plant of 50 horsepower or upwards who does not hold a Government certificate. There are three classes of engineers to whom certificates will be granted without the applicant having to undergo an examination: first, those who on the 20th of April, 1907 (the date on which the Act was passed), held certificates from an association of stationary engineers in Ontario, or a marine or locomotive engineer's certificate; second, engineers who on the above date were in charge of a plant of 25 horsepower or over in Ontario; third, engineers who had at any time previous to the passing of this act, not less than two years' experience in the operation of such a plant in the Province. Those who cannot qualify as above will have to pass the examinations which will hereafter be prescribed by the board of examiners.

Those interested may obtain a copy of the act and application forms for certificates by addressing "The Secretary," Department of Agriculture, Toronto.

COMING SHOWS.

- June 5-10—Bath and West of England, Newport, Mon.
- June 6-8—Galt Horse Show, Galt, Ont.
- June 7-13—International Horse Show, Olympia, London, England.
- June 13-15—Winnipeg Horse Show.
- June 25-29—Royal Agricultural Society's Show at Lincoln.
- July 9-12—Highland and Agricultural Society's Show at Edinburgh.
- July 13-20—Winnipeg Industrial Exhibition.
- Oct. 10-19—United States National Dairy Show, Chicago.

The Bureau of Animal Industry of the United States Department of Agriculture at Washington will have the official veterinarian of the Department make an investigation with a view to discovering the causes which lead to the prevalence of foal-slipping among mares.

QUEBEC NOTES.

The sunny skies and balmy breezes peculiar to this season are longed for by the agriculturist who is desirous of getting the seed in the soil and the stock to the pasture, and so divert the labor hitherto required in the stables to the land, while his genial helpmate is busy with those trying ordeals, house-cleaning and garden-making, which do not seem to be seasonably done unless we have a shining sun and a genial warmth in the air. At last, on this middle day of May, we have this ideal weather, and we see some sign of bursting buds, and appearance of verdure again. Meteorologists will be telling us that there is some connection between the late spring and the volcanic eruptions, the earthquakes and sunspots that have characterized the past few months; and there are those who even tell us that the great stretches of steel railroads girding our continent are having a very marked effect on the electric currents of our atmosphere, affecting our climate, giving us late spring seasons, and accordingly late autumns. Suffice it to say, we have experienced the latest spring since 1897. Not over half of the seeding is done yet, and that on the best-drained land; on the low-lying lands little seeding has been done. Young cattle have been sent to pasture, which, although not good, will enable them to exist; farmers desiring to keep the extra feed for the milch cows, which cannot be turned out for another week yet. Barns will be well cleaned out this spring, as few farmers have any feed to carry over.

At the first meeting of our dairy board, butter sold for 21¢, and cheese for 12¢; about 3 cents more for butter and 1½ cents more for cheese than at this time last year.

Porkers are scarce; for choice lots of bacon hogs,



Masterpiece (imp.) (11822).

Clydesdale stallion; bay; foaled May, 1899. Sire Johnnie's Style (6867), by Darnley (222), dam by Ethiopia (5750), granddam by Prince of Wales (673). Imported fall of 1905, by T. J. Berry. Owned by Crapp Bros., Queen's Hotel, London, Ont.

7c. is offered. There has been a great mortality among young pigs. Owing to the cold winter the brood sows did not get the required exercise; also, the root crop being a failure last season, more grain was fed to the brood sows; this, with lack of exercise, caused the young pigs to come weak and lacking vitality.

Horses were "soaring" in this vicinity the last few days. Almost any price could be realized if one had a good beast. Quite a few pure-bred Clydesdales and some drafters have been bought up for the Northwest.

Beef is very scarce, and high in price. There will not be sufficient beef here to supply the local demand until the grass beef comes in.

The factories are all under way, but are not getting in the quantity of milk usually received this time of the year. The condensery is paying \$1 per cwt., and cannot get sufficient milk to make up to fill their orders.

W. F. S.
Huntingdon Co., Que.

INDEPENDENT TELEPHONE ORGANIZATION.

One thousand managers and presidents of independent telephone companies in the United States and Canada are to meet in convention, June 4th, 5th and 6th, at Chicago, as the International Independent Telephone Association. One hundred and fifty delegates from Canada are expected.

RAILWAY CARELESSNESS PUNISHED.

Conductor Joseph H. Thompson, whose special fruit train collided with a G.T.R. passenger train at Gourock, Ont., and killed three persons last September, was convicted of violation of the company's rules, and sentenced to three years in the penitentiary by Mr. Justice Riddell, who commended the jury for their righteous verdict. He had been working 19 or 20 hours per day, and fell asleep in the caboose, thus failing to warn the engineer of approaching danger. Under the rules he had a rest of eight hours per day, with two days off, but he ran longer hours to make more money. His Lordship also proposed to report the proceedings to the Crown authorities, with a recommendation that all persons responsible for permitting Thompson to work such hours be also proceeded against as far as the criminal law would permit. Both employer and employee should be punished, and something done to protect the public in Canada, when through sheer negligence and preventable causes the slaughter and maiming of people was going on day after day upon the railways.

P. E. ISLAND.

At this writing, May 13th, there is almost nothing done on the farms. Two days ago we had a fall of about six inches of snow, and it is not nearly all gone yet. This is the latest season here since 1882, when there was very little planting done till after the 20th of May. Things will have to be rushed when the land dries up, or the crop will be too late to do its best. The lateness of spring is causing a shortness of fodder, and we fear many cattle will go to grass too soon, and in very poor condition.

Clover has not stood the winter well, and in many of the new meadows it is killed out entirely. This is a very serious drawback to stockmen, and the great question is how to supply other feed in its place. Oats and peas cut green and cured for hay, and a good big patch of corn to cure for the cattle in the fall will be a great help to make up for the loss of clover, and will enable us to carry the usual amount of stock through the next winter. Plenty of peas and oats to cut green for the dairy cows in August will put dollars in the dairyman's pocket next fall.

Navigation has only just opened up here. There is yet much ice in the straits and in the gulf. There is no shipping from the north side of the Island yet. A good many fat cattle are going forward to Nova Scotia markets. The best steers are worth five cents per hundred pounds. Oats for export are worth 38c. to 34c.; potatoes, 45c. per bushel.

The country is being hunted over by horse buyers as it never was before. Prices for any kind are good, but heavy-draft horses bring big figures—from \$175 to \$225. This kind are scarce here. There are still too many of the smaller kinds raised. Some good sires have come

into the stud since last year. David Reid, of King's County, has imported a French Coach horse, and a Clydesdale. This is the first French Coach here. James B. Roper has imported a Hackney and also a heavy Clydesdale, and the veteran horseman, Thomas Robbins, brought here last fall a Percheron and a Clydesdale. These excellent sires will be a great addition to our breeding stock, and will be largely patronized by farmers. The dairy companies are preparing for a big season's make, which will likely be realized if the season is favorable for grass. The prospect of good prices will be quite a stimulus to milk production.

Mr. A. McNeill, Chief of the Fruit Division, Ottawa, is arranging for a series of horticultural meetings which he will attend here in the early summer. Fruit trees have got through winter without much damage from snow or mice. Strawberries have wintered well. Quite a few farmers are arranging to experiment with nitro-culture in growing alfalfa and red clovers.

W. S.

It is announced that the new regulations raising the postage on second-class mail matter from the United States from one to four cents per pound will increase the prices of American magazines to Canadian subscribers from 33 1-3 to 50 per cent.

CANADIAN APPLE TRADE IN ENGLAND.

J. B. Jackson, Canadian Commercial Agent in Leeds and Hull, England, writes the Department of Trade and Commerce, Ottawa, an excellent article on the prospects of Canadian apple trade in the north-east of England and in Glasgow. From the tenor of his remarks, Canadian orchardists have every inducement to care for their apple trees, as our home fruit is growing in favor as compared with the United States product. What he has to say about the results of shipments direct from the producer to the Old-Country dealer affords ground for substantial encouragement to our co-operative fruit-shipping associations. We quote Mr. Jackson practically in full:

THE NORTH OF ENGLAND AS A CANADIAN APPLE MARKET.

In the counties of Yorkshire, Durham and Northumberland, which form the north-east part of England, there is a population nearly equalling that of the whole of Canada, almost entirely dependent upon foreign sources for its supply of fruit. The United States has been catering to this market for years, and with the newly-established service of liners between Hull and Australia, the latter country has now entered the field. Cape Colony has also recognized the importance of this market, and is making efforts to cultivate a trade in South African grown fruit, especially in pears.

The most remarkable development, however, which has occurred in recent years is the great expansion in the imports of Canadian apples. According to the most reliable estimates, three-fifths of the apples which have been offered for sale in the three north-eastern counties during the past season were shipped here by Canadian growers. Ontario contributed the most to this supply, the shipments from Woodstock, Bowmanville, Dundas, Palermo and Colborne being especially plentiful.

PROSPECTS FOR NEXT SEASON'S TRADE.

Judging by the preparations which fruit salesmen are making for the coming season, there is every indication that the imports of Canadian apples will even surpass those of last season. Under the system of importing fruit direct from the actual Canadian grower to the merchant house on this side, which originated from the number of inquiries that have appeared in the Trade and Commerce Weekly Report, and which met with so much success last season, the trade even then was considered remarkable. Now that the season has finally drawn to a close, an estimate can be formed of the trade done under this system. It is computed that no less than 53,000 barrels of Canadian apples came direct to Leeds, one firm alone accounting for 35,000 of this number. This does not, of course, include the shipments sent to Hull, Bradford, Sheffield, Newcastle-on-Tyne, and other large centers in the north of England; neither does it account for the thousands of barrels which have been purchased by auction at the Liverpool and Glasgow auction rooms.

With a reliable Canadian packer and a reputable English merchant house, local salesmen have begun to realize that this direct trade can be conducted with perfect harmony. There is not the least doubt that many firms who refrained from importing direct last season, in order to see what success their more go-ahead competitors would meet with, will, themselves, be working under this system during the coming season, as the strict Government inspection of Canadian apples before shipment (which is coming to be a well-known fact on this side), gives them a greater confidence in buying Canadian-packed apples over any other fruit.

ARRANGEMENTS FOR SHIPMENT.

Canadian growers should be able to secure direct through-freights to any local center, either by the Manchester Liners, Limited, or any of the Liverpool-Canadian lines, or the Thomson Line, which has direct sailings from Montreal to Newcastle-on-Tyne during the season. In addition to these, although there is no direct service from Montreal to Hull, it is quite possible that steamers belonging to some other line will make direct sailing to that port from Montreal. This was the case last season, when the ss. Oxonian and the ss. Virginian, of the Leyland Line, made several voyages direct to Hull, with cargoes of Canadian apples and other products.

THE QUESTION OF REPRESENTATIVES.

During the past twelve months a deeper interest has been taken in the possibilities of developing this market by Canadian apple shippers. Several Canadians have visited this office in connection with the fruit traffic, and have been introduced to "would-be" importers, which has led to business relations being established. It would undoubtedly be a good thing for all the larger exporters to either personally visit or send a representative to this country, as this would enable them to make arrangements for shipments with firms of the best standing, a matter which is one of the utmost importance when the financial arrangements are considered. There need be no doubt as to the reception they would receive, as these firms are almost as anxious to get in touch with good Canadian packers as the latter are to become connected with reliable houses on this side. This is shown by the number of representatives of local firms who visited Canada last season for the sole purpose of making arrangements with Canadian growers for shipments of apples to this district.

CANADIAN VS. UNITED STATES FRUIT.

Some of the representatives who also visited the chief apple-growing districts in the United States re-

ported that fruit-growers in that country were concerned at the headway which Canadian apples had made on the British market, and the preference shown for them whenever they could be obtained. This they attributed to the strict Government inspection of Canadian apples before shipment, and some exporters are said to be asking that the United States Government should adopt a similar inspection to protect the reputation of United States fruit being further injured by unscrupulous packers in that country. There is also a unanimous opinion among local fruit men that the United States packers reduced both weight and the size of their barrels last season.

SELLING APPLES BY WEIGHT.

A suggestion is made by a Hull fruit importer that Canadian apples should be sold by weight. The well-known superiority in the weight of Canadian apples over those of the United States has long been recognized in Scotland, and for this reason the imports of Canadian apples into Glasgow last season are said to have equalled those into Liverpool. The practice of selling apples by weight has also been adopted to a certain extent in Wales. This importer suggests that each barrel have stencilled upon it the exact gross weight of the barrel and the net weight of the apples alone. "Take, for instance," he says, "a barrel of Canadian No. 1s and a barrel of United States fruit of similar quality: the Canadian barrel, on an average, weighs about thirteen stones, whereas the United States barrel will only weigh about twelve." Under the present system of auctioning fruit in England, the buyer chooses the most attractive looking of the two, ignoring the fact that if he decided on the United States barrel he is paying the same price for twelve stones which would enable him to purchase thirteen stones of Canadian apples. "The Scotch buyer," he states, "approaches this difference and insists on buying by weight alone—the appearance of the apple is not the only consideration to him."

SYSTEM OF PACKING.

On the all-important question of packing, it may be said that barrels are mostly employed, 90 per cent. of the Canadian apples which arrive in this district being packed in this manner. Boxes should only be used in packing the highest class fruit, which are bought by the salesmen on this side for supplying a special trade. Canadian packers are also strongly recommended to place a sheet of cardboard at the top and bottom of each barrel before nailing down the lid, as this acts as a preventive to dirt and grit making an impression upon the fruit which forces its way into the barrel during transit.

FINANCIAL ARRANGEMENTS.

The financial arrangements which may be made between the Canadian grower and English buyer, is, of course, a question to be decided between themselves, and the majority of the firms prefer to pay cash against bills of lading, providing they know the packer or shipper, the kind of apples, and style of packing which he uses. Still, I can see no reason why a large commission trade should not be done with the merchants in the interior cities, just as safely from a financial point of view as with brokers at the ports; and when a shipper's apples are once in demand by sales on commission, he can turn his business into a cash one at any time.

THE LABOR PROBLEM IN GERMANY.

Judging from a press despatch of last week, prospects for German immigration to Canada are slim. It is said that Germany has ceased to export men, but is rather importing Russian, Polish, Hungarian, Italian, and even English labor. The scarcity of help is particularly acute on the farms, which are drained by the military conscription system. Count Von Posodowsky-Wehner, German Secretary of the Interior, is reported as having thus explained the situation in an interview: "A youth taken from the plow and given a two years' taste of town life becomes hopelessly alienated from rural pursuits. He prefers to be an attendant at a Berlin hotel, a doorkeeper in a Hamburg office, a footman in Cologne, a waiter in Munich, anything to preserve him from his newly-acquired ennui of existence amid the hayfields."

The influence of these men on their sisters and sweethearts operates to draw women and girls from the country to the towns. The result is that agriculture is suffering severely, and labor has become more essential than the maintenance of the standard of prices.

A TEST OF SADDLE HORSES.

American horsemen are much interested in a proposed continental ride to be made by Lieut. McCabe, of the regular army, on the famous imported Arabian stallion, Nedran, belonging to Mr. Homer Davenport, of New York. Gen. Castleman, of Kentucky, President of the American Saddle-horse Breeders' Association, says the Louisville Courier, has offered to furnish the Government an American saddle horse, which will start with the horse of any breed to make the test. The Secretary of War has it is said, accepted the offer, with the approval of the President. Gen. Castleman will furnish either his own famous mare, Carolina, or Clifton, a saddle horse owned by Maj. David Castleman, of Kentucky. The Arabian stallion is a chestnut, twelve years old, stands 14 hands high; Carolina, a black six-year-old mare, stands 15.2 hands, and Clifton, 15.2.

\$1.23 PER EIGHT-GALLON CAN.

The arbitrators in the Toronto milk-supply difficulty handed out their decision last week, according to which the price for the six months, beginning May 1st, is \$1.23 per can of eight gallons delivered at the dairies in Toronto. It appears to be understood that milk delivered at the trains will be 5 cents per can less. The producers had been holding out for \$1.30 per can, and the retail dealers had declared that \$1.20 was all they could afford to pay. During the arbitration the retailers offered to compromise at \$1.22. Both sides are bound by their agreement to accept the decision, viz., \$1.23, and it is stated that there will be no increase in rates to the consumer. The cost of the arbitration was \$110.

OLEOMARGARINE VENDORS TO BE PROSECUTED

Inspectors of the Inland Revenue Department last week found six dealers in the City of Quebec and two in Montreal who sold them oleomargarine instead of butter. This is a violation of two acts, one of which forbids adulteration or substitution in food, and the other forbids the manufacture or sale of oleomargarine in Canada. Proceedings are to be taken against the eight dealers on both provisions of the law. This is the first oleomargarine which has been found on the Canadian market for some time. It is believed that it was brought in from either the United States or Newfoundland, in both of which places its manufacture is tolerated. It is forbidden in Canada, for the protection of the butter industry.—[Globe, of May 16.]

THE FLOOD OF IMMIGRATION.

Immigration returns for the first four months of the present year show a total immigration to Canada from all sources of a little over 80,000, as compared with 56,369 for the first four months of 1906. That is an increase of about 43 per cent. If the same rate of increase is kept up for the rest of the year, as seems probable, the total immigration for the twelve months will be close to the estimate of 300,000 made some time ago by the Immigration Department.

STOPPING GREEN-CHEESE SHIPMENTS.

After hearing the letter read from Mr. J. A. Riddick, Dairy and Cold-storage Commissioner, on the shipping of green cheese, the members of the Eastern Townships Dairymen's Exchange, at Cowansville, unanimously agreed, by resolution, not to ship any cheese from their factories under ten days' old. The action of the Cowansville Board shows they are alive to the importance of this question.

ANGORA GOATS.

In a recent issue of "The Farmer's Advocate" I notice G. R. inquiring about Angora goats. If he has some stony land, well fenced, he would, I think, make more money out of goats than sheep. Would advise him writing to Division of Publications, Department of Agriculture, Washington, U.S.A., asking for a copy of their bulletin on the Angora goat. It is the best thing on this question of goats I know of. Frontenac Co., Ont. C. H. OTTO.

Whatever may be the price and harvest of the wheat crop this summer, the bulls in the stock markets have found ample excuse in the present situation to work up a big scare and a long advance in price. Advances from Europe, save only France, are reported unfavorable, while the condition of the United States fields falls short of the promise of last year, and in our own Northwest, which is coming to be regarded as an important factor in the calculations of speculators, the late spring gave rise to ominous forebodings. However, there may yet be a good crop in the Canadian Northwest, while there is no telling how prospects abroad may improve with favorable weather from now on. There are few eventualities more uncertain than the price of wheat, and while prospects for prices look decidedly encouraging to producers, we shall do well not to lose our heads, or bank too much on the outcome.

A news item in last Saturday's daily stated that four school sections in Guelph Township, Wellington Co., Ont., voted against the continuance of the Macdonald Consolidated School at Guelph. This looks as though it will be necessary to revert to the old system. The extra expense to the section of carrying the school on would have entailed an additional assessment of but two mills on the dollar, but it would seem as though some other motive than parsimony must be responsible for the reactionary movement. Evidently there were those who had set their faces against the innovation whom nothing could have satisfied. Possibly an experience with the old system may change their minds.

At the annual meeting of the Guelph Fat-stock Club, held on May 18th, a very satisfactory report of the year's work was presented. Among other things, the report represented the competition in the list for amateur exhibitors at the Winter Fair last year as very creditable and satisfactory, and trusted that the board this year would extend them. The following officers were elected: President, A. W. Tyson; 1st Vice-President, W. R. Elliot; Secretary, J. M. Duff.

For a consideration of \$150,000, the Ontario Jockey Club has purchased the Woodbine race track at Toronto.

MARKETS.

TORONTO.
LIVE STOCK.

Receipts of live stock last week at both the City and Junction markets were large, 333 loads, all told, consisting of 5,965 cattle, 3,287 hogs, 644 sheep and lambs, with 521 calves, and 5 horses. The quality of fat cattle, considering the season of the year, was not as good as might be expected, that is, the percentage of good to prime quality was small, although there were a few well-finished loads, and these were readily bought up at prices 15c. to 25c. per cwt. higher than the week before. Receipts of cattle on Monday at the Junction were 100 cars, of 2,300 head; trade slow; bulk, \$5.25 to \$5.35; sheep, \$6 to \$6.75 per cwt.; calves, \$4 to \$6.

Exporters.—Prices ranged from \$5.12 to \$5.50, and one prime load brought \$5.60, the bulk selling at \$5.20 to \$5.30. Bulls sold at \$4 to \$4.50 per cwt.

Butchers'.—Prime picked lots, \$5.00 to \$5.50, and a few lots of four and five together sold up to \$5.60; loads of good to choice, \$4.80 to \$5.25, and one extra choice load of heifers and steers, \$5.30; medium, \$4.50 to \$4.90; common and light, \$4.20 to \$4.50; cows, \$3.50 to \$4.75; canners, \$2.50 to \$3; butchers' bulls, \$3.50 to \$4.

Stockers and Feeders.—Trade in stockers and feeders has been light. A few lots of short-keep feeders, 1,200 to 1,250 lbs., have been picked up at \$4.75 to \$5. Jno. Smith, M. L. A. for Peel, bought a selected load, 1,250 to 1,300 lbs., at \$5.25 per cwt. Mr. Smith buys annually at this time of the year, and sells always in the early summer, and says that he has always made it pay. The cattle bought by him last week had been brought on the market to sell as shippers.

Milk Cows.—There was a good outlet all last week for good milkers and forward springers, the bulk of which were taken by Eastern buyers from Montreal, Ottawa and Quebec. A good many went to Montreal. Buyers, as usual, were after the high-class cows, giving or likely to give a large flow of milk. The best sold up to \$60 and \$65, and the bulk of good ones went at \$45 to \$55, with the medium at \$35 to \$40. Medium cows have been slow sale, and a little lower in price. Common light cows were not wanted, and were hard to cash, or close out at \$25 to \$30.

Veal Calves.—Receipts were large, but all offerings were taken at about steady prices. Some of the best sold around \$6, and most of the good ones went at \$5.50 to \$5.75. The bulk of the medium calves sold at \$4.75 to \$5.50, and the common at \$3 to \$4 per cwt.

Sheep and Lambs.—Sheep and lambs were never scarcer, nor never higher in price for many years. Choice butchers' sheep, unshorn, sold at \$7.75 per cwt.; export ewes, \$6 to \$6.50; rams, \$5 to \$6 per cwt.; yearling lambs, \$8 to \$8.50 per cwt. Spring lambs of good quality are scarce. Lambs, dressing from 40 to 50 lbs. each, sell readily at \$8 to \$10 each. Joshua Ingham, a St. Lawrence Market butcher, bought 75 spring lambs at \$6 to \$9 each.

Hogs.—Prices were quoted as being 25c. per cwt. higher. Selects, \$6.75 per cwt., and lights at \$6.50 per cwt., fed and watered. The outlook, just at present, is that higher prices than now quoted will be paid in the near future.

Horses.—There was a good inquiry for first-class horses in nearly every class, but Burns & Sheppard reported a tendency to lower prices at the end of the week. Good work horses and harness horses have been in request. Good-sized road horses sold as high as \$250 each. A few imported heavy-draft horses, weighing from 1,650 to 1,800 lbs., sold at \$300 to \$350 each; draft horses, 1,500 to 1,700 lbs., \$200 to \$250; expressers, \$160 to \$200; general-purpose, \$150 to \$175; good drivers, \$175 to \$250; chunks, \$75 to \$125. About 200 horses were sold during the week.

BREADSTUFFS.

The market is unsettled on account of the late advance, and little business is being transacted, unless on the stock market. Buyers and sellers are wide

The Sovereign Bank of Canada

NOTICE is hereby given that a dividend of one and one half per cent. (1½%) for the current quarter, being at the rate of six per cent. (6%) per annum on the capital stock of this bank, has been declared, and that the same will be payable at the head office and at the branches on and after Thursday, the 16th day of May next. The transfer books will be closed from the 1st to the 15th May, both days inclusive. By order of the Board.

78 Branches Throughout Canada.

D. M. STEWART, General Manager.

apart in many instances, and trade is unsettled.

Wheat.—No. 2 white, 81c.; No. 2 red, 81c.; No. 2, mixed, 80½c.; Manitoba No. 1 Hard, 99c., at lake ports; No. 1 Northern, 96½c., at lake ports, 96c. on track at Goderich asked.

Buckwheat.—62c.

Rye.—Dull, at 65c. to 66c.

Peas.—76½c. bid.

Corn.—No. 3 yellow, 54c., at Toronto. Oats.—No. 2 white, 40c., outside; No. 2, mixed, 40c.

Barley.—No. 2, 53½c.; No. 3 extra, 52½c.; No. 3, 51½c. to 52c.

Bran.—\$23, at Toronto, bid.

Shorts.—\$23.50 to \$24, at Toronto.

Flour.—Manitoba patent, \$4.05, track, Toronto; Ontario, 90 per cent. patents, \$3 bid for export; Manitoba patents, special brands, \$4.50; 2nd patent, \$4; strong bakers', \$3.90.

COUNTRY PRODUCE.

Butter.—Receipts heavy; prices 1c. to 2c. per lb. lower. Creamery, pound rolls, 25c. to 27c.; creamery boxes, 24c. to 25c.; dairy lb. rolls, 24c. to 25c.; tub, 21c. to 22c.; bakers' tub, 18c. to 19c.

Eggs.—Market firmer at 18c. to 18½c.

Cheese.—New, 12½c. for large; 13c. for twins; old, large, 14c.; twins, 14½c.

Honey.—Market steady at 12c. for strained; combs, \$2.60 to \$2.75 per doz.

Evaporated Apples.—8c. to 9c. per lb.

Potatoes.—New Brunswick Delawares, firmer, at \$1.05 to \$1.10 per bag by the car, on track, at Toronto.

Poultry.—Scarce. Turkeys, 16c. to 20c. per lb.; yearling chickens, 18c. to 21c.; spring chickens, 45c. to 50c. per lb.

Hay.—Baled, No. 1, timothy, \$13 to \$14 per ton, by the car lot, on track, at Toronto; No. 2, \$11 to \$12 per ton.

Straw.—\$6.75 to \$7 per ton, baled, on track, at Toronto.

Beans.—Car lots, on track at Toronto, in bags, \$1.25 to \$1.30 for hand-picked; primes, \$1.15 to \$1.20. Broken lots, \$1.45 to \$1.55 for hand-picked; primes, \$1.30 to \$1.35, in bags.

SEEDS.

Toronto seedsmen report the market as being nearly over, with little doing in seeds. Prices are nominal as follows: Red clover, \$14.50 to \$16.50 per cwt.; alsike, \$10.50 to \$13 per cwt.; timothy seed, \$5 to \$7 per cwt.

HIDES AND TALLOW.

Prices are quoted as follows by E. T. Carter & Co., 85 East Front St., Toronto: Inspected hides, No. 1 cows and steers, 9½c.; inspected hides, No. 2 cows and steers, 8½c.; country hides, 8c.; calf skins, No. 1, city, 13c.; calf skins, No. 1, country, 11c. to 12c.; sheep skins, each, \$1.70 to \$1.80; horse hides, No. 1, each, \$3.25 to \$3.75; horse hair, 30c.; tallow, 5½c. to 6c.

CHICAGO.

Cattle.—Medium to best steers, \$4.40 to \$6.50; heifers, \$3.25 to \$5.50; cows, \$3.40 to \$5.25; bulls, \$3.70 to \$4.75; calves, \$3 to \$5.75; stockers and feeders, \$3 to \$5.25.

Hogs.—Choice, heavy, shipping, \$6.30 to \$6.35; packing, \$5.85 to \$6.40; light butchers', \$6.45 to \$6.50; light mixed, \$6.40 to \$6.50; choice light, \$6.50 to \$6.57½; pigs, \$5.75 to \$6.45.

Sheep and Lambs.—Sheep, \$4 to \$6.25; yearlings, \$5.40 to \$6.75; lambs, \$6.25 to \$7.60.

CHEESE BOARD PRICES.

Victoriaville, Que.—Cheese, 11½c. and 11c. Kingston, 12 3-16c. Madoc, 12 1-16c. Ottawa, 12c. bid. Napanee, 12½c. Perth, sold subject to Brockville prices. Simcoe, 11½c. Kemptville, 12½c. bid.

MONTREAL.

Live Stock.—The local market showed considerable strength, and an advance of from ½c. to ¾c. was noted, the higher price being probably, to some extent, due to better quality. A few choice animals brought from 5½c. to 6c. per lb. Only a few brought these figures, the bulk of the choice bringing 5½c. to 5¾c.; good, 5c. to 5½c.; fair, 4½c. to 5c., and lower grades at 3c. to 4c. The supply of sheep and lambs continues light, but prices hold steady, at 5½c. to 6c. per lb. for sheep, and 6½c. to 7c. for lambs, while spring lambs sold at \$4 to \$7 each. Demand for these is good. Calves are coming forward in considerable numbers, but the quality is quite poor, some of them not being fit for food. The poor stuff may be had at \$1 to \$2 each, fairly good stock bringing \$4 to \$6 each. The market for live hogs still shows a firm undertone locally, and advices from the other side are also strong. Supplies were none too plentiful, and demand was good, prices being steady at 7c. to 7½c. per pound for selects, off cars.

Horses.—Supplies of horses continue very scarce, and the course of prices is ever upwards. There have been further advances during the past week, more especially in heavy-draft horses, which have advanced as much as \$50 each. Demand is from local firms, mostly, but also from railways. Prices are: Heavy-draft, weighing 1,500 to 1,700 lbs. each, are now selling at \$275 to \$350; light-draft, 1,400 to 1,500 lbs., \$250 to \$300; express horses, \$175 to \$250; common plugs, \$75 to \$150, and choice saddle and driving animals, \$300 to \$500.

Live Hogs and Provisions.—Demand for dressed hogs was good, and prices were firm in sympathy with live. Sales of fresh, abattoir-killed stock were made at 9½c. to 9¾c. per lb. Smoked meats continue steady, at 13c. to 13½c. per lb. for hams of 25 lbs. and upwards, 14c. to 14½c. for hams of 19 to 25 lbs., 14½c. to 15c. for hams of 12 to 18 lbs., and 15½c. for lighter. Bacon is in fair demand and steady, at 10½c. to 12c. for green, and 14c. to 16c. for smoked, according to quality. Barreled pork is \$20.50 to \$24.50 per bbl., while lard ranges from 12½c. to 13½c. for pure, and 9½c. to 10½c. for compound.

Maple Syrup.—The market is steady. In the northern woods, the snow still lies, and syrup is still being made. The supply is liberal. Prices are 5c. to 5½c., in wood, per lb., and 6c. in tins, sugar being from 7c. to 9c. per lb., according to quality and quantity.

Potatoes.—The market for potatoes is very strong, and prices have advanced sharply, owing to the fact that stock is not arriving. Some dealers are now quoting \$1 to \$1.10 per bag, on track, here, but others declare that 95c. is the very highest they would pay, per 90 lbs., on track, and that they are selling in a jobbing way, delivered into store, at \$1.10 to \$1.15. These figures ought to bring the stock in more freely during the coming week.

Eggs.—This market continues as strong as ever, and prices show a slight advance, in fact. Dealers are paying 16½c. to 17c., in the country, for straight-gathered stock, and selling it at 18c. to 19c., the selects from these selling at 20c. per dozen, and the small stock going to grocers at about 18c. It is certain that the quantity of pickling done here this season will be very small, several of the largest packers not being engaged in the business this year. On the other hand, the quantity of cold-store eggs will be very large, owing to the nice manner in which eggs may be kept in modern cold stores.

Butter.—Although there is no pasturage as yet, the market is coming down a little, week by week, prices this week being 21½c., here, for choicest Townships. From this, prices range down to

21c. for fair stock. Dealers look for a further decline shortly, but the course of the market depends upon the volume of the make, and, also, now somewhat upon the progress of the strike of the longshoremen and carters. The export market, to which the local must fall, is still away below present prices. Demand from outside points is not as active as a week ago. At the boat, 21½c. was paid, and at Cowansville, 21½c. to 21½c.

Cheese.—This market has been extraordinarily strong, and prices were for a time fully ½c. above those of a week ago. Stock is very scarce, and there has developed a fair demand from England during the past few days. For the week ending 11th, shipments from Montreal were 41,656 boxes, which is starting the season well. Prices here are, at present, lower, at 12c. to 12½c. per lb., owing to the tie-up of transportation by the longshoremen and carters going on strike. The cold, late spring is against a large make, though favorable to quality, and shipments are being made close up.

Flour and Feed.—The market for flour has advanced 25c. per bbl., and is very firm at the advance. Demand is very active, as is always the case when prices are going up. The advance is due to the boom in wheat. Manitoba strong bakers' flour is \$4.25 per bbl., in bags, and patents are \$4.85. Demand for millfeed has fallen off considerably, and more is offering, so that prices show a good decline, at \$21 to \$22 per ton for either Manitoba bran or shorts, bagged.

Grain.—The market for grain is booming all round. There has been some wild plunging, and prices of wheat have advanced about 20c. per bush. As for oats, they are very hard to quote, but sales are being made here, at lower than a basis of prices in the West. No. 2 Manitoba oats are 27c. to 48c., store, for local account, No. 2 Ontario being 46c. to 47c.; No. 3, 45c. to 46c., and No. 4, 44c. to 45c. American corn, also, is being sold below a basis of cost in the West, at 62c. for No. 2, store, and 59c. to 60c. for No. 3.

Hay and Seeds.—The market for hay has also advanced, partly on account of the embargo on some of the railways. Prices here are away above an export value. Clover hay is steady at recent quotations, owing to the weakness of the English market. No. 1 timothy is quoted at \$15 to \$15.50 per ton, track, No. 2 being \$13 to \$14, and clover at \$11 to \$11.50. Stocks of hayseed are growing small, and demand continues good, resulting, in the case of red clover, in an advance of 50c. per 100 lbs. Prices here are \$5.50 to \$7.50 per 100 lbs. for timothy; \$17 to \$18 for red clover; \$14 to \$20 for white clover, and \$18 to \$16 for alsike.

Hides.—The market continues firm and steady, as to price, but quality shows much improvement. Trade is fair.

BUFFALO.

Cattle.—Prime steers, \$5.70 to \$6. Veals.—\$5 to \$7.25.

Hogs.—Heavy, \$6.60 to \$6.75; mixed and Yorkers, \$6.75 to \$6.80; pigs, \$6.80; roughs, \$5.75 to \$6; stags, \$4.50 to \$5; dairies, \$6.50 to \$6.75.

Sheep and Lambs.—Lambs, \$5.50 to \$6.15; yearlings, \$7.25 to \$7.50; wethers, \$6.25 to \$6.50; ewes, \$5.25 to \$5.75; sheep, mixed, \$3 to \$6.

BRITISH CATTLE MARKET.

London.—Liverpool and London cables are 11½c. to 12½c. per lb., dressed weight; refrigerator beef is quoted at 9c. to 9½c. per lb.

There is a German dairyman and farmer, whose place is not far from Philadelphia, who greatly plumes himself upon the absolute superiority of his products above all others in the vicinity. On one occasion, says Harper's Weekly, he personally applied to a Germantown house-keeper for a transfer of her custom to himself: "I hears you do haf a lot of drouble mit dot dairyman of yours," he said. "Yust you gif me your gustom und dere vill be no drouble!" "Are your eggs always fresh?" asked the woman. "Fresh!" repeated the German, in an indignant tone. "Let me dell you, madam, dot my hens nefer, nefer lay anything but fresh eggs!"



Life, Literature and Education.

[Contributions on all subjects of popular interest are always welcome in this Department.]

THE IRRIGATION OF SOUTHERN ALBERTA.

Whether the reason be mere inexplicable negligence, or that she is more than her neighbors susceptible to the principle which lies at the back of the truism, "A prophet is not without honor but in his own country," the fact remains that Canada is not and has never been over-ready to shout of her own charms and advantages from the house-tops. As a consequence, comparatively few, even of her own people, really know to any great extent of the beauties of her scenery, the enormity of her territory, or even of the magnitude of the works which are being pushed forward here or there to the advancement of her commerce.

Among the most prominent of the latter is the great irrigation project of the C. P. R., which is now well under way in Southern Alberta, and which when completed will be the largest irrigation system in the world.

If the real benefactor of the human race is the man who "makes two ears of corn grow where one grew before," then, in a very literal sense, the C. P. R. may take its full toll of credit. Southern Alberta has always produced its one ear of corn. It has never been a dry, arid desert, such as is usually connected with the idea of irrigation. The semi-arid tracts, extending down and down in enormous slopes—3,000,000 acres of land running eastward from the Rockies—have always been found admirable for grazing. Even during the winter hosts of cattle have roamed over them, finding, except during a very exceptional season, abundance of food; while in such districts as have been given up to wheat-raising, the returns have, as a rule, justified the claims of "Sunny" Alberta. The great trouble has been that the crop could not be depended upon as uniform. Owing to drouth, it has often been found impossible to have the fall crop sown one year matured in time to permit of extensive fall cropping operations the next, while, for the same reason, the cultivation of oats, corn and alfalfa has been, perforce, somewhat limited. To bring about the very reverse of these conditions,

and, in addition, to greatly increase the annual yield, became the dream of the C. P. R.

It was observed that the gentle slope eastward, with the Bow River—fed not only by the direct waters from the snows and glaciers of the Rockies, but also by the overflow from Devil's and other mountain lakes—at its head, afforded an almost ideal opportunity for irrigation at an exceptionally low cost, and a survey of the area showed an acreage of 3,000,000, of which 1,500,000 acres could be advantageously irrigated, the remainder being still valuable, as before, for grazing. This area, it may be explained, lies between Calgary and Medicine Hat, is 150 miles long and 40 broad, and is bounded by the Red Deer River on the north, and on the south by the Bow River.

Since, in Canada, all rivers belong to the Crown, the first step was to obtain an absolute title to such amount of water as might be necessary. This was secured to the extent of 2,000 cubic feet of water per second from the Bow River, hence the C. P. R. was enabled to guarantee to the purchasers of farms within the district a supply of water for all time; and the work, under the super-

intendence of Mr. J. S. Dennis, an engineer of high repute in the Dominion, began.

For convenience, the area was divided into three sections, and as yet only the Western division has been extensively operated upon; but even the amount that has been done is an earnest of the enormity of the completed work, while its success has removed all doubt that may have existed regarding the practicability and advisability of the venture.

The water for this section is diverted from the Bow River at a point about two miles from Calgary, and is carried through a main canal 37 miles in length, 30 feet wide at the bottom, and 75 feet wide at the top, and 12 feet deep, carrying 10

feet in depth of water. This canal terminates in a natural reservoir 3 miles long, $\frac{1}{2}$ mile wide, and 40 feet deep, from which run three secondary canals, which in turn deal out the water to the distributing ditches. In all, the total length of water channels for the Western division alone will be 967 miles, exclusive of the laterals which each farmer will have opened to suit himself, and the amount of land irrigated will total 350,000 acres.

When this section has been fully developed and colonized, the work will extend to the other sections, and if constructed in the same proportion, the completed work will show about 2,900 miles of water channel, involving the excavation of 24,750,000 cubic yards of material.

In making the excavations, which have been carried on by means of the steam shovel and locomotive, the greatest care has been taken to render the work permanent, and to prevent loss through seepage or accident. In every part the softer surface soil has been discarded, and the embankments made of the harder sub-soil, wet, and packed by heavy rollers. In some parts the use of heavy timbers has been necessary,

a rapid colonization and a revenue of richness as yet scarcely to be estimated from this Holland of the Canadian Northwest.

REMINISCENCES OF THE OLD MODEL.

(By a Teacher.)

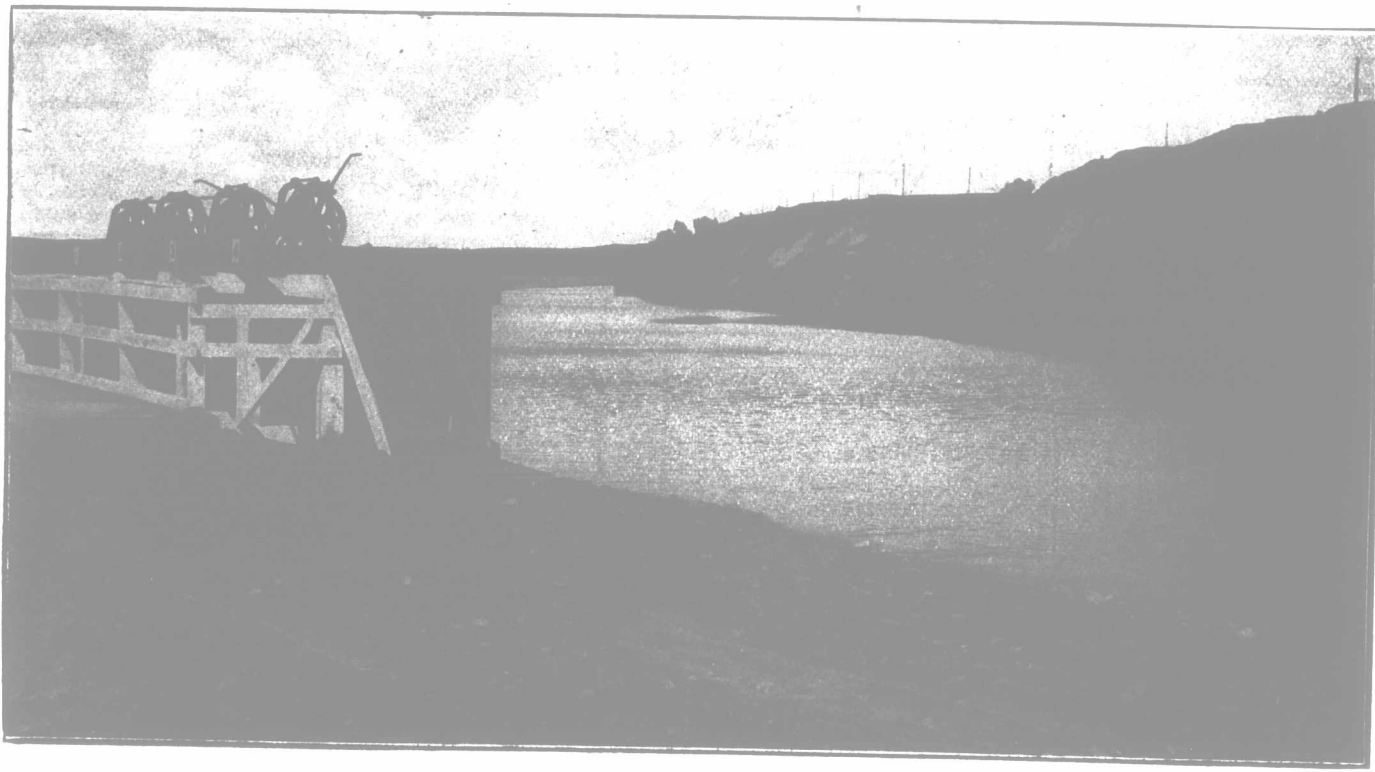
Another time-honored institution is about to become of the things that have been. To the sound of the hammer-taps that will rear the new Normal Schools of Ontario high in air, the Model Schools of the Province will ere long shiver out their last fluttering gasp. Even the tales told of them—for they were rich in the woof of which tales are woven—will, ere the half-century has long passed, die out with the passing of the generations of gray-haired teachers and ex-teachers, who must, in the days to come, totter over the "unknown bourne," making way for the educationists of a later regime, with their stories, in which the magic term "Model" does not figure; and, except one arise here or there to crystallize the records of the old schools into permanent book literature, and so hand them down with

those of "Dothe-boy's Hall," "The Charterhouse," and "Lo-wood," their name must be as that of the wave that crossed the water yester-even, unnoticed and unremembered.

Yet they served their day—these old Model Schools—and turned out a grist of men and women who have not failed to leave their mark on the fortunes of Canada; and so, perhaps, those who have in them crossed a Rubicon, may not be loath to turn back for a time to reminiscences of the good (?) old days that cannot return.

Do you remember that morning when, still a girl in "pig-tails," but tremendously armed with Baldwin's Psychology and Tilley's "Methods," you turned in at the gateway of the gruesome old building? What a sense of being out alone on the broad, broad sea you had! Yet how verily it seemed that, in spite of your pig-tails, you had crossed the border to womanhood! How timid you were! How you felt that the dames grown old in the profession "knew it all," while you were as the merest infant in your inexperience! And so you cowered before the powers that were, and who held for the time your destiny in their hands.

Was there a cross-eyed one with whom you got into frequent trouble because you never-knew to answer when she addressed you? And was there one of terrific voice and mien,



Spillway, Main Canal, Southern Alberta.

before whom (then not knowing her) you trembled as she shouted to the rows of hapless little automatons hobbling about like so many figures in Mrs. Jarley's wax-works, at the command: "Hands before! Behind!" "Stand!" "To-gether!—Sit—Down!" Can't you see them at it yet—poor little mites—at it, by way of variety! However, these children were obedient, and, under a fire of snapping questions, reasonably alert; better upon the whole, perhaps, than those of Mme. C— across the hall, who just kept nagging, with about as much effect as the pattering of hail on the outside on a tin bucket. Do you remember the fiendishly mischievous leer with which the small urchins of this latter room would look up at you as you sat in the back seat being taught "methods," while they, small imps, went in file past you, on hands and knees, or sometimes on hands and tiptoes, in a sort of loping motion which they had acquired—"skipping out" of the room without permission, sometimes as many as eight or ten of them in procession, reminding you of nothing more than the advance of the Black Douglas' men when they simulated cattle in their attack on the border castle. Black Douglases they doubtless were, one and all, to poor Mme. C—.

All the while you were getting your bit of disillusionment, finding out that, after all, even Model teachers were but human, and children sometimes ultra-human. And yet you found your ideals, too. Do you remember Miss D?—how sweet she was, how her children loved her, and how

perfectly exquisite her gowns were when she went out of a Sunday? True, her very superiority awed you so that you were abashed in her presence, and so when the teaching days came you were trembling still.

You were only a bit of a girl in pig-tails—but yet, but yet, didn't the "boys" tremble too? Do you remember that day upon which young X, now one of the foremost physicians in the country, got up to teach, his face as white as the chalk whose name he wrote on the blackboard as "chack"? And when he wrote "plate" "plait," wasn't the whole room gasping, and didn't the beads of perspiration stand out on his face in the realization that in his stage-fright he couldn't even spell?

One thing surprised you. You found that you must not give the children credit for having any brains at all—at least any brains sufficient unto taking hold of a matter and threshing it out for themselves. You couldn't assign a lesson and say, as an old schoolmaster (who, nevertheless, turned out some fairly creditable specimens from his workshop) used to say: "Here, get down and learn this, or by the great guns I'll know the reason why," and then rest sure that in the process of "slugging," the young fry were more than nine-tenths likely to extract the gist of the meaning, besides getting a bit of drill in concentration and discipline at the same time. You couldn't even announce that you were going to teach so-and-so, or that they must learn so-and-so. You must start miles and miles away from that and

work in by degrees. You couldn't tell them, for instance, that woollen cloth was made from the wool of sheep, take it for granted that they knew all about sheep, and that they would go through a woollen mill some day before they died and find out all that it was necessary for them to know about that, and require them to put in the extra time on the multiplication table. No, you had to start the young ideas sprouting somewhat in this fashion: You took a bit of cloth and passed it around for a while. Then you wanted to know what it was, and what it looked like, and, by-and-by, you got around to the sheep and chatted affably about the little woolly lambies. Sometimes you asked rather silly questions, but so long as you kept the hands going up and down like piston rods you were encouraged. Sometimes, it occurred to you that you were making as many circumlocutions as Mark Twain's ant in the Black Forest, but you were, of course, leading the children to higher things, and teaching them in the art of expression. By-and-by you began to wonder how on earth you ever got on as far as you did with your own education, when, to your best remembrance, you had never had a lesson on woollen cloth at all; and you wondered how many people had had their education so shamefully neglected. . . . So you bandied an hour in by advanced methods, but the fact that woollen cloth is made from the wool of sheep had been thoroughly taught.

After a while you went to your own school—don't your teeth chatter yet

when you think of it?—the bleak school, and the deep snow, and the big boy just putting on the fire when you got there, and afterward all the children huddled about the stove while you froze stiff at the blackboard; and, of course, you tried to keep bravely on with the advanced methods. Your ideals were high.

Noon came. Three lessons had been taught, and there were twenty necessary subjects for each of them still to go over—five grades, and all

You went to your boarding-house and cried, and wished you were teaching in a graded school. Then perhaps a bit of the humor of the situation dawned upon you. You wondered if X was still teaching chalk "chack," and felt sure he must be doing much worse things now. Every night that week you cried: On Friday an old man of the section called to ask you to put up your pig-tails. That night you got them up as an experiment, and thought things over. Away went your ideals; but a new set was coming to fill their place. Away went, to a great extent, your "methods." Henceforth you must make methods of your own.

Next Monday morning you went down with your hair up, and a new sense of determination in your heart. Perhaps you didn't know it, but you had become a woman in the consciousness of being able to meet your difficulties in your own way. You had much to learn yet, and maybe you had a few wild ideas of one day agitating for a Model system for ungraded rural schools. But the years passed—and now the Model Schools are no more.

The Quiet Hour.

I NEED BE NO FAILURE.

We glory in tribulations also: knowing that tribulation worketh patience; and patience, experience; and experience, hope.—Rom., v. 3, 4.

"Speak, History, who are life's victors? unroll thy long annals and say—

Are they those whom the world called the victors, who won the success of a day?

The martyrs, or Nero? the Spartans who fell at Thermopylae's trust,

Or the Persians and Xerxes? his judges, or Socrates? Pilate or Christ?"

God holds out a crown of glory to the victor in life's struggle; not a wreath of earthly fame which can never satisfy the heart and which will fade in a few years, but a triumphant gladness which is well worth fighting for.

In spite of the apparent inequalities of life, it is a wonderful fact that as regards the greatest things we all stand on one level to start with. An emperor has to answer before the bar of his own conscience as humbly as the poorest laborer, and all the wealth in the world can never give him peace of mind if he is condemned by that stern judge. Neither can any poor man hope to pass unnoticed in the crowd, because he is in an obscure position. Each human being is small and yet great. We are so small that we should have no room for pride or conceit or looking down on other people, and yet we are so great that each thought of our secret hearts, each word that slips so carelessly from our lips, is a matter of deepest consequence to the Eternal and Infinite God. This being so, we should take ourselves and our lives very seriously. The common saying: "It will be all the same a hundred years hence!" is absolutely untrue, for the results of every action are eternal, and that fact makes the most commonplace lives inspiring and awful.

There are breaks in the quiet monotony of most lives, times of visible success, and other times of heart-breaking failure. Take our Lord's life for an example. There were the quiet years in the worship of Nazareth, which must have been very trying in their monotony to the eager, boyish heart, longing to do some great thing for the good of the world. Then there were the days of outward success, when the young

Messiah went from place to place with His enthusiastic followers, carrying a blessing everywhere to sick souls and bodies, feeling that He was laying out His manhood to good purpose. Then came the dark days of apparent failure, when friends deserted or turned against Him, when all His teaching seemed to have been thrown away, and His work on earth seemed wasted in total wreck and failure. What can we think of that defeating of hopes and plans? Would that young life that was lived so intensely have been a failure if it had not been for the great victory of the Resurrection? No! a thousand times No! The hopes and plans might suffer defeat, and the loving heart be broken by the crushing weight of sorrow, but the Man Himself was a Victor long before the dawn of Easter Day.

And real success or failure is in our own hands always. We cannot control circumstances, but there is no need for discouragement, even though we may have struggled and prayed our hardest, and yet failed to secure what we were fighting for. As Christ was a Conqueror in the midst of shame and disgrace, so we also can be conquerors, no matter what our circumstances may be.

A nurse who strains all her powers in the attempt to save the life of a patient is no failure, even though the patient may die. But a nurse who is selfish and careless is a failure, even though her patient may recover. A farmer who has to contend with bad weather and poor soil may work hard, and yet have scanty crops; while another man may succeed far better and yet have put much less time and thought and conscience into his work. In such a case the latter is the real failure. This is only the beginning of our life, and the only lasting wealth is character. If character is strengthened and purified by the brave and patient acceptance of defeat, then the apparent loss is real gain. The seed that sinks into the ground and decays, that a new and stronger life may spring from its heart, is no failure; any more than a mother who gives her life in bringing a child into the world is a failure. The young man who works faithfully, and yet fails in his examination may make a far greater success of his life just because of the experience gained then. That is, if he refuses to be discouraged, but struggles patiently on. The author whose MSS. are "returned with thanks," may learn lessons through this discouraging failure, which will make his later writings a real success. While, if he had succeeded easily at first, he might have continued to write in an easy, shallow fashion and never have

made the most of his powers. A man may work hard all his life in the eager pursuit of riches, and succeed in becoming a multi-millionaire. Is he, therefore, a success? Surely not! To devote the glorious gift of life to the heaping up of wealth that must be left behind at death, is a terrible waste of rich material and means utter failure. It means to enter the new life a bankrupt, for all that has been so carefully heaped up must be left behind. Those who have laid up no treasure in heaven must go forward naked and beggared when they pass the gate of death.

Let us look at ourselves and our lives through God's eyes, then we may understand that one who is admired and praised by his world, one who wins easy success in everything he undertakes, may really be a saddening failure. He need not be, but he may be. If he should rest on his oars, thinking he has no need to struggle and work and pray, because unearned and undeserved rewards are showered upon him, then he is certainly a failure, because he is not doing the best possible with the talents committed to him. No one can be a success in God's eyes if he is allowing himself to drift easily along with the tide.

God wants us to do the best work of which we are capable, not so much for the sake of the world as for our own sake. The soul of each son of God is infinitely precious in the eyes of the Father, and He is polishing it and making it beautiful with wonderful patience and infinite wisdom. If you fail to carry out your plans, the plans for which you have earnestly worked and prayed, do not think that you are a failure. God can accomplish His good purposes for the improving of the circumstances of the human race without really needing any help from your weak arm; but even He cannot carry out His loving desire to make your soul strong and beautiful, unless you co-operate with Him. If you are forced to encounter disappointment and failure, do not be satisfied with a merely stoical endurance, but lift up your head and thank God that you can stand beside Him unharmed by any outward circumstances, and can reach out a daring hand to draw priceless treasures out of the fire of sorrow. And it is not only in God's sight that men may stand out plainly as victors in the midst of defeat. How we honor those who can go on with undaunted courage when everything seems to be going against them. The light of hope shines most brightly when it is held up bravely against a dark background; the glory of manhood is most plainly seen when it stands in its unadorned beauty, stripped

of all the pomps and vanities of the world.

We are so apt to fancy that God's purpose concerning us must surely be fulfilled if we succeed in doing some grand and beneficent work for the good of mankind. But surely God is far more pleased if we are steadily growing more grand and noble and beautiful ourselves—and the two things do not necessarily go together at the beginning. When I say "at the beginning," I mean on this side of death, for death marks off a very short space of our life. It is certainly true that every man shall reap the harvest of good or evil that he has sowed; but, the better the harvest is, the longer he may have to wait for it. And we can well afford to wait. Yes, if need be, to wait until we see things as they really are in the clearer light beyond the veil of death—for we have all eternity to enjoy the harvest. All good work is put into God's hands, and He will never let it fail in the long run, though it may appear to fail at first. And all bad work is playing into the hands of Satan and will certainly bear its bitter fruit. "God is not mocked: for whatsoever a man soweth, that shall he also reap." To do wrong is to be sure of failure, while to do right is to place one's self in the army of the Divine Conqueror, and to be sure of lasting victory in the end. God's great "Well Done!" will not necessarily be given to those who have successfully carried out great and world-wide schemes for good, but belongs to those, and to those alone, who have been good and faithful servants. No matter what your position may be, nor how cramped your circumstances, you have as good a chance of winning that glorious commendation as anyone in this boundless universe. No one can make you a failure—no one but yourself—for faithfulness is always success, and you can be faithful if you will. To you has this inspiring promise been spoken:

"Be thou faithful unto death, and I will give thee a crown of life." HOPE.

DIVINE DYNAMICS.

Not understood, pen cannot thee portray—
To touch elusive, we may not essay:
To tell, what works in matter us around:
Visible, real, on nature to rebound.
In the thunder's deep roll you hear its crash,
Seen in ocean's wave, livid lightning's flash:
Give light and heat from noon-day blazing sun,
Varied, diverse its forms—in cause but one.

Nature's silent forces, inspiring, grand.
In space to strive, shape, take on every
hand:

We gravitation's force in matter find,
And love its place doth take in world
of mind.

But evil's floods the counter-force let
loose.

'Gainst which to stem the tide in vain
we choose,

Or turn to use the faculty divine
Obscured, where earth's dull tapers only
shine.

O Light Divine, sweet force of love that
burst

Sin's bonds, death from its rayless tomb
to thrust,

In force supreme thou didst earth's win-
ter close;

When grace did bud spring's new crea-
tion rose.

O Kingly Love destroying sin and
death—
Life's ills we heir, sin gave birth to on
earth;

When soul asleep to consciousness
awakes,
And from sin's charnal care to life it
breaks.

O Saviour Divine, perfect and complete:
Strength and weakness combined in one
person meet,

Thy power alone doth nature's laws defy,
And souls through holiness the ether fly.

Thine was the force each ambulance did
start,

Kindled electric ray to play its part,

Did hospitals light up, soft pillows
spread,

And means supply to get the hungry fed.

That power, O Lord, which souls to
Thee unite,

Others impel, their lives to good incite—
In influence reflex the world around,
All-pervading in circles widening round.

The gospel time nor circumstance can
change;

It moulds, adapts itself to every age:
So elastic entering every place,
From palace to cottage, to mankind the
race.

Thy cause to help and make the most of
life,

To us is given a power amid the strife;
By lives devoted other lives to reach,

And how to trade for gain the secret
teach.

'Tis not the dark, dense gloom that
hearts enfold,
Or evil's wheel that o'er them crash so
cold;

For our's Thy might to check, to hold
the spokes,
Till love's wheel revolve its renewing
strokes.

Ours the forces of truth and kindness be,
The lost to trace in them Thine image
see;

Which from the crude evolved in form
divine,

In setting rare for evermore may shine.

—J. Middleton, Cockley, Maryculter,
Scotland, an appreciator of the
"Quiet Hour."

The Ingle Nook.

SOMETHING ABOUT CHILDREN.

It is a standing joke, and one for which there is, perhaps, some foundation, that no one knows as well how to train children as those who never had any to train. Yet one does not need to be over-observant to notice mistakes made by some parents—mistakes so palpable, and betraying such a lack of ordinary common sense in this matter, that the only wonder is that such people were trusted with children at all.

First of all there is the "threatening" parent, the one who continually holds some dire calamity over the little ones, never dreaming of the abject terror with which such representations may invest themselves to the active child-imagination, nor of the really disastrous results which may follow.

"Take this medicine, or we'll have to send for the doctor," this parent says, in direful tones, and straightway the child thinks of the doctor as a sort of human ogre. He hasn't the slightest idea what this ogre will do, but it certainly must be something dreadful, else why should it be such an awesome thing to "send for" him? . . . And by-and-by, when the day of serious illness comes, and the doctor must really appear, the cowering little one, too weak to bear any excitement, is compelled to go through, not only the bodily pain, but an added mental terror, which must do much to retard his recovery.

The parent who threatens with the doctor is also likely to threaten with the school. "Never mind, just wait till you go to school, and the teacher will fix you!" is the astounding revelation opened up before the little lad who must soon start off with his primer and lunch basket into the unknown world; hence the ordeal, when it comes, is really a terrible one—to the child. There is usually a fight to get him to go—a part of the performance which is scarcely to be regretted in one respect, since it serves to pay the parents back in their own coin somewhat, being just what they have prepared for themselves. They, however, usually feel aggrieved and lose their temper, not recognizing properly the laws of cause and effect. Then the child starts off, probably with both fists in his eyes. It seems a dreadful distance to school. He is to be separated from everyone he knows,—and there are to be bad boys, and hard lessons, and a stiff seat on which one must sit all day,—and a terrible teacher who "fixes" one. Possibly, also, he has heard rumors of an awful black strap, somewhere. All the horrors of the inquisition! . . . As a result, when he gets to the actual scene of combat, he is shy, and timid, and provoking, and the teacher is forced to use some show of compulsion to get him to do anything. When the boys come around, staring, as boys will, at the newcomer, he looks upon them as his natural enemies, scowls at them, possibly hits at them, or, worse still, cries. In either case, he has aroused the teasing element in the small rabble,—and so all his fears are in fair way to be confirmed. Needless to say, this lad finds the road to learning much more beset with thorns than does his little neighbor who has gone with a smiling face and an open book, and a friendly teacher, and a friendly school.

lots of fun on the play-ground. Children must go to school, then why send them at a disadvantage?

(To be continued.)

Potato Dish—Meat Pie.

Dear Dame Durden,—As I have seen so many others going to the Ingle Nook for help, I thought I would come too. I always look forward to the coming of "The Farmer's Advocate," and read Ingle Nook the first thing. I would like some good recipes for warming-up cold potatoes, and for meat that has been left over, also a good meat pie. I am sending some "tried and true" recipes for cookies and a lovely cake. I tried that wrinkle of yours, Dame Durden, about growing onions, and report great success.

Ginger Cakes.—Two eggs, $\frac{1}{2}$ cup brown sugar, $1\frac{1}{2}$ cups blackstrap, 1 teaspoon ginger, salt, $\frac{1}{2}$ teaspoon cream tartar, 1 teaspoon soda, flour to mix up soft. Let rise half an hour, and then roll out.

Ribbon Cake.—Four eggs, 2 cups sugar, 1 cup butter, 1 cup sour milk, 1 teaspoon cream tartar, $\frac{1}{2}$ teaspoon soda, 4 cups flour. To 1-3 add molasses, currants and spice, and bake in three layers. These recipes are very good.

A LOVER OF POTATOES.

Creamed Potatoes.—Put $1\frac{1}{2}$ cups milk in a kettle, and let heat. Blend 2 teaspoons cornstarch in a little milk and add to the heated milk, and when cooked add four potatoes (chopped fine). Season with butter and salt, and when thoroughly heated, serve, dusting lightly with pepper just before the potatoes are brought to the table.

Potato Croquettes.—Mix 4 cups hot mashed potatoes and 2 tablespoons sweet cream together, whipping until light; then, when slightly cool, season with salt and white pepper, and beat in the beaten yolks of 2 eggs. Shape into cakes, dip in beaten egg, then in fine breadcrumbs, and fry. Garnish with parsley.

Potato Salad.—Slice 1 qt. potatoes while hot, and mix with them 2 tablespoons grated onion and 2 tablespoons chopped parsley. Mince boiled beets, celery, nuts, or hard-boiled egg may be added, if preferred. Moisten with dressing, and set in a cool place for 2 hours, then serve.

Meat Pie.—Put a dessertspoon of dripping in a pan, and, when smoking hot, add an onion sliced. Cut $\frac{1}{2}$ lb. beef-steak (the round will do) into bits, and brown also. Shake in 1 tablespoon flour, and brown; then add 2 pints water, and stir slowly; season; then cover, and simmer gently for 2 hours. Bits of potato and carrot may be added, if liked. Have a pan of hot biscuits, made as follows: Take 3 cups flour and sift with it 2 teaspoons baking powder, and $\frac{1}{2}$ teaspoon salt. Rub in 1 tablespoon of butter, and make into a dough with sweet milk. Divide the dough in two, and pat out a little (do not knead nor roll), then cut as you would pie and bake. Break open on a platter, pour the meat mixture over, and serve. If you wish, you may place the dough over the stew, and bake in the oven, but the other way is the more wholesome.

Left-over meat recipes will be given soon in "About the House."

New Wrinkles from "Wrinkles."

Dear Dame Durden,—As I have been deep in house-keeping lately, I would like to make a few suggestions. First, I would advise all members of the Ingle

Nook to put away carefully all disabled furniture, for there is no knowing when it will come in useful. Just two weeks ago we had a family of English immigrants landed at our door, late on a Saturday night, father, mother and five children. You can imagine it was a problem to stow them away comfortably for a couple of days until their luggage arrived. Fortunately for us, they were a sunny little bunch, no squalling, no squabbling, but just good, biddable little children. First thing was to give them their tea, which was soon disposed of by the hungry little travellers. Then it was marvellous to see that mother pack her five children, all under ten years of age, into one bed, two at the head and three at the foot. It was a revelation to my young people, who were accustomed to a bed each. We were fortunate in having a cottage across the yard with a stove in it ready for action, so, on Monday morning, we began to plan and consider what could be done in the way of furnishing, as they told us their small means had been greatly reduced by their having had to pay their own fare from Halifax. They were glad and willing to do with anything, no matter how old, as long as it would answer the purpose, until they could get a little headway. Just three weeks from their home in Norwich, England, they were settled in their home in York Co., Ont. Even with five little tots, those parents were able to give this bare cottage a look of home comfort for a few days, with just the cast-off furniture from an old farmhouse. A kind neighbor was good enough to give them two discarded bedsteads, which were a great help.

There have been three different nationalities in this same house within a year, and I must say the couple with the largest family take the palm for best results at the smallest expense. First were a couple from the American side with four children. They came in with a load of furniture fresh from the cabinet-shop, but they were like a June frost, and were gone again inside of a month, and, I believe, are moving still. Next came a cannie Scotch couple with one child. Their main object was to do without all household comforts. They evidently thought the money was more easily carried away than furniture. A house without furniture is certainly not a cheerful abiding place in a Canadian winter, and for people with a holy horror of "snow." They could not have had much love for Canada, after putting in ten months in such a way, would not even let a friend or neighbor inside their door. They will not have much good to say about Canada when they get back to Scotland. The last, the Englishman, is evidently determined to make the best of his new home, and is trying to learn Canadian ways as soon as possible, and four of the children, although so young, are willing little workers, and will be a source of wealth to their parents in a very few years.

THREE NEW WRINKLES.

To Wash Flannel or All-wool Dress Goods.—To about three pails of soft warm water, add three tablespoonfuls of household ammonia and two tablespoonfuls of glycerine (the sure the water is warm, not hot); then, with a little good soap, wash your flannels, in the above mixture, and rinse in more soft water, just warm; shake, and dry in the wind. Fine for white flannel suits.

To Clean a Velvet Collar and Cuffs.—Rub butter all over the velvet, then brush well with a stiff brush, and con-

tinue brushing until the butter is all brushed off, and your velvet collar will be like new.

A Small Lamp to Burn All Night.—Take a tin blacking box; make two small holes in the lower edge of it, and a hole in the center of the cover, about large enough to pass a pea through; then fill the blacking box with cotton batting, as full as you can, and pull the cotton just through the hole in the lid. Now, stand your box in a small tin with about a cup of coal oil. In a short time, the coal oil will be all absorbed by the cotton in the blacking box; then your lamp is ready for use. Wipe the oil from the outside of the box, and stand it in a saucer. This lamp will burn for thirty-six hours or more, without adding more oil. It surprised me that there was no smoke from this little lamp. York Co., Ont. WRINKLES.

THE WILD BIRD'S SONG.

By M. E. Audubon.

(Miss Audubon is a granddaughter of the famous ornithologist.—Editor.)

He sang as though his little throat
Was overflowing with the song;
As only those can sing who know
Naught of this human world of wrong!
As none but those to whom proud man
Has given the name of "dumb things"
can.

He sang as I would fain, to God—
The plaudits of the listening crowd,
Their flatteries, their beck and nod,
They called not forth this anthem loud,
So bright, so glad, so wild and free—
Yet only Heaven heard—and me.

He perched on a wild rose-bush, so near,
I could have touched the other side,
He plumed his wings, and once again
Poured forth his praises far and wide.
Oh, very near he brought me then
To the dear Lord of birds and men!

A moment more, and he had soared
Far up into the ether blue.
As though he sought the home of God,
Higher and higher still, he flew.
While to my heart the evening breeze
Whispered: "If God so cares for these
How careth He for you?"

—N. Y. Independent.

THE STAGES OF THE DANDELION.

The violet is fragrant,
And beautiful the rose;
But close to human nature
The dandelion grows.

In youth its clustered ringlets
With golden brilliance burn,
And then, despite all hair dye,
To scanty silver turn.

The three-score ten of flowers
Comes with relentless fate,
Then sadly it exhibits
A bald and shining pate.

—McLaurburgh Wilson, in New York Sun.

Children of yesterday, heirs of to-mor-
row,
Look at your fabric of labor and sorrow,
Seamy and dark with despair and
disaster,
Turn it, and lo! The design of the
Master.

—Selected.

Children's Corner.

[All letters for Children's Corner must be addressed "Cousin Dorothy," 52 Victor Ave., Toronto. Otherwise they will not be published.]

A CANADIAN HEROINE.
(Concluded.)

Along the dark passage she hurried, her heart beating, and her lips moving in the most fervent prayers she had ever breathed. The door of the blockhouse was open. It consisted of one room, with bulletproof walls, in which gun-holes were cut, but no windows. At one side of the room were some casks of gunpowder and a heap of bullets. To Madeleine's surprise a man with a lighted match in his hand was standing near the gunpowder. He started as she came in, and turned a white, terrified face towards her. It was one of the missing soldiers. For a moment she looked at him, in a silence through which the women's shrieks sounded far away.

"Jacques," she said, in a still, cold voice, "what are you doing?"

"I am going to light the gunpowder, Mademoiselle, and blow us all up," the man answered, sullenly. "There is no hope."

The hot blood flamed in Madeleine's cheeks, and she seemed suddenly grown taller.

"You are not, you miserable coward!" she cried. "Leave this place at once."

Her eyes flashed, and scorn was in her ringing voice. Jacques quailed as if he stood before the Seigneur, and, without a word, obeyed. As he went out, his comrade rose out of a dark corner, and followed him, avoiding Mademoiselle's fierce eyes. She came out into the courtyard almost immediately, carrying a gun, and ammunition for her small garrison. Before the Seigneur's house paced her two little brothers, their guns across their strong young shoulders. They were only 12 and 10 years, but their sturdy bearing warmed Madeleine's heart. She and they together would be a match for the foe!

"Louis and Alexander," she said, as she threw down the ammunition, "let us fight to the death! Is not every gentleman born to shed his blood for God and the King? French gentlemen will never surrender to the cowardly Iroquois!"

"No, Mademoiselle, no," cried Louis, his eyes shining with excitement. "We will never give in. The French flag shall always wave over Vercheres!"

Madeleine thought of her mother far away in Montreal, and her eyes were misty for a moment; but she gave her brothers their posts in a steady voice, and ordered the soldiers to fire off the cannon. The screaming of the women rose above the sounds of war, and Madeleine severely commanded them to be silent.

"Let those who have no care for their lives, or for the honor of France, leave the fort. These sounds of despair will give courage to the cowardly Iroquois. It is mad to let them know our weakness."

"Mademoiselle," cried Louis, excitedly, from his loophole, "some people in a canoe are at the landing-place. They are making signals to us!"

"It is the Sieur Fontaine and his family," said LaViolette. "They are afraid to approach."

"We must send out a guard to bring them up to the fort," Madeleine said, resolutely. "Jacques and Gachet, will you go?"

"Mademoiselle," said Gachet, his eyes on the gun he was loading, "it is a wild-goose chase with death for its end. We will stay and defend the fort."

"I will go myself," the young commander said, indignantly. "I cannot let our neighbors be shot down in sight of safety, without stirring a finger to help them. LaViolette, you are in command, till I return."

With her small head held high, and the gun over her shoulder, the girl walked coolly down to the landing-place, while her friends watched her breathlessly, and her foes hung back dumbfounded. The wily Indians concluded that this was a ruse to draw them within range of the fort, which they were now convinced was pretty strongly defended. For once, their cleverness overreached itself, and the little party, with the Sieur in the van and Madeleine in the rear, safely arrived at its city of refuge.

Then Madeleine held a council of war. Courage is infectious, and though the cold wind was bringing snow and hail to make the gathering night more terrible,

the little garrison of six was ready for what might come.

"God has saved us through the day," said the wise, young captain, "but it is in the darkness that the savages generally make their attacks. I am not afraid to keep watch to-night, with my brothers and old Jean Labouche. Let the rest retire to the blockhouse with the women and children. Even if the savages break into the fort, they cannot get into the blockhouse, as long as you have bullets to fire. Never surrender, even if I should be cut to pieces before your eyes."

Who could play the coward in the presence of this young heroine, with her brave voice and flashing eyes? The wind howled, the snow beat in, the savage foe lurked behind the palisade, but, all night long, the strong young voices called, "All's well," from bastion to bastion, and the rattling of arms rose above the whistling of the storm. The savages crouching outside gave up their hope of surprising the fort that night, and retired as silently as they had come.

After midnight some of the Seigneur's cattle wandered near the gate, and Madeleine cautiously admitted them, while the boys stood ready with guns cocked, for fear this should be a snare of the wily enemy.

At last the weary night was over, and the rising day showed the lilies of France still flying over Vercheres. The

occupants of the blockhouse, poured out into the courtyard, and Madeleine, having set a new guard, turned towards her father's house.

"Wait, Mademoiselle," cried a woman, rushing towards her. "I have spent a terrible night. It is too dreadful to be borne any longer. At any moment the savages may break in, and massacre us all. What is there to hinder them? Let us leave the fort, and try to reach Montreal."

Madeleine de Vercheres looked at Marguerite de Fontaine with a certain contempt, as she stood wringing her hands before her. Sieur de Fontaine's wife was one of those Parisian ladies, who have no courage, and are to be pitied rather than despised. The Sieur came between them before Madeleine could answer.

"Marguerite," he said, somewhat sternly, "do not trouble Mademoiselle. She is tired."

"Well, then, Pierre, take me and the children away from this awful place," wailed his wife, clinging to his arm; "that is all I want, as you know."

"I will not abandon the fort while Mademoiselle Madeleine remains here."

"And I," said Madeleine, firmly, "will never abandon it, while I live. If the Iroquois get possession of a French fort, their assurance will be unbounded, and the whole country will be at their mercy. It is only by boldness that we can keep them off. But, dear lady," and her voice softened, "do not fear. Help will soon arrive, and it is safer here than wandering in the woods."

She kissed the Sieur Fontaine's wife lightly on the cheek, and vanished.

There was little sleep for Madeleine that day, nor for many days and nights after. Only her presence could keep up the flagging courage of the garrison, and constant watchfulness was the price of safety. From bastion to blockhouse she went, with her bright smile and hopeful words. If an Indian so much as showed himself beyond the woods, he was greeted by a volley of musketry, and often by a cannon-shot. Even the women could use a gun by way of making a noise, and the Indians fell back upon the safe plan of starving out the vigilant garrison.

But famine was not what Madeleine feared. The break-down of the garrison seemed much more probable. The sentinels dropped asleep as their posts, and she herself went about in a sort of waking dream, as the days crept slowly on, and the besieged were almost in despair. A whole week was gone, and still no help seemed coming. But day and night the guard was kept, and the foe came no nearer.

One dark night, when heavy clouds hid the stars, and a damp mist wrapped the fort, Madeleine was sitting by the table in her father's room, while the two boys lay asleep upon a pile of coats in the corner. Her heavy eyes were fixed upon a book of prayers, which lay beside the feeble tallow candle, but she had not read a word; her mind was as drowsy as her eyes, which drooped lower till the lashes touched her cheek. With a little shake, she roused herself, and wrapped in her cloak, went out into the courtyard. Here the silence was broken by heavy snores from one of the bastions; once more the sentries had fallen asleep.



"The Twenty-fourth of May
Is Empire Day,
If you don't give us a holiday
We'll all run away."

—[Children's Song.]

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One after another she woke them, and listened to their excuses with a heavy heart.

"If help does not come soon," she was saying to herself, "it will be too late to save Vercheres."

She went into the house again, and tried to listen for the sentries' calls, but drowsiness got the better of her, and her head dropped on the hands which clasped the gun on the table. Madeleine and her brothers slept together.

For the moment, the sentries were awake, but the cries of "All's well" were growing fainter and fainter, and would soon have died away altogether, had not a muffled sound outside effectually aroused the *Sieur Fontaine*.

"Qui vive?" he cried, and four triggers clicked in the silence.

"The Virgin be praised!" came from below in a strong French voice, which was like sweet music in the ears of the half-frozen sentries, and warmed their blood like wine. "Then Vercheres is still ours. Monsieur de la Monnerie is waiting on the river with four boatloads of men, until I bring him word if the fort is occupied by French or Iroquois."

LaViolette had by this time burst into the *Seigneur's* room, calling out, "Help has come, Mademoiselle. Shall we open the gate?"

With a cry, Madeleine sprang up, still grasping her gun.

"Open the gate," she cried, as she ran into the courtyard. Without another word she listened to the scout's explanation, and then she went swiftly down to the landing-place. A dark form was pacing up and down beside the river.

"Monsieur de la Monnerie?" said Madeleine.

"It is he, Mademoiselle."

"Then I surrender my fort to you," said the young commander, proudly. "And oh! I am so glad," she added, in the voice of a child that is going to cry.

"It has been in good hands, Mademoiselle," began the officer, gallantly, but his speech came to a sudden end, for the heroine had begun to sob, as if her heart would break.

But though she proved herself only a woman after all, Madeleine de Vercheres had the heart of a hero, and her brave deeds made a stir which spread to France, and rang from lip to lip in the Canada of long ago.

COUSIN DOROTHY.

CLOTHES.

The birds and beasts are nice and warm in feathers and in fur;

They have no hooks and eyes and strings, No buttons and such horrid things

To make life hateful.

If I could make things as I chose,

I'd give each little by

A coat of fur from top to toe,

And feathers on each girl should grow—

Then life would be a joy!

—Abbie Farwell Brown, in Harper's.

THE LETTER BOX.

Dear Cousin Dorothy,—This is my first letter to the Children's Corner. I live on a farm on the north side of Queen's County, P. E. Island, near the shore. There is a bay three miles long between where I live and the Gulf of St. Lawrence, and it is separated from the Gulf by a chain of sandhills. We can see lots of schooners and boats sailing past, catching codfish and mackerel. We go out bathing in the bay, and digging clams and oysters, which are very plentiful. I have five brothers and five sisters. One brother and three sisters living in Plymouth, Mass. The rest of us live on P. E. Island. My brother, Carl, and I go to school about a mile. I am in the Fourth Reader. The schoolhouse is near the mill pond, where we skate and coast in winter. My father has taken "The Farmer's Advocate" for over 20 years. We like the Home Department very much.

ENID SIMPSON (age 9), Bay View, P. E. Island.

Dear Cousin Dorothy,—There are seven of us in the family, and we are all interested in your paper, which we get every week. We live on a farm, and milk seven cows. I help to milk, night

and morning, which I enjoy very much, and think it is healthy for anyone to get out around the barn. I read a letter in one of "The Farmer's Advocates" a short time ago, written by Gypsy, with which I did not agree. It was headed "An Old Indian Village." Onondaga is an Indian name, but the village never was inhabited by Indians, although a great many Indians come here to trade with our merchants. Gypsy said that our village was not very grand nor picturesque. Onondaga is situated on the Grand River, about seventy feet above the water level, and overlooks the Indian reserve; a more picturesque view is hard to find. We also have beautiful picnic grounds—Dufferin Grove, at the east end of the village, near Grand Trunk station, Maple Grove, at the west end, with Fairchild's Creek running through the grove and emptying into the Grand River just at the foot of the village. At this point, an old ferry boat is used to convey passengers to and fro. Gypsy also said that the Sunday school was not very inviting. Now, we have four Sunday schools, three of them at the same hour, and, according to the population of the community, they are all well attended. I consider the Sunday school that I attend is very inviting, as we have good attendance, good papers, good teachers, good collection, and a splendid library. I am fourteen years of age, and have lived in Onondaga all my life, and I do not like to hear it slighted in any way.

ROSEBUD.

That's right, Rosebud, always stick up for home. "There's no place like it," is there? Still, I expect Gypsy had no intention of slighting her own village.

C. D.

Current Events.

The staff of fire rangers to protect the pine forests of Northern Ontario has been largely increased.

* *

Two nuggets of gold, each weighing 25 pounds, have been discovered in the Larder Lake district.

* *

Alfonso is the name conferred upon the young son of the King and Queen of Spain. He will bear the title of Prince of the Asturias.

* *

New craters have formed on Mounts Etna and Stromboli, and the eruptions are becoming more threatening. The island of Stromboli has been completely devastated, and its inhabitants have fled.

* *

An invention which will, it is said, give absolute warning of approaching trains, and so reduce to a minimum railway wrecks from collisions, has been perfected by Dr. Benjamin Saurman, of Philadelphia.

* *

The unrest of the natives in India, looking to self-government, is increasing, especially in the Punjab, where the Sikhs, the most warlike tribe, are located. Lord Minto is at present Viceroy of the country.

* *

The official statement, handed out on May 10th, shows the fiscal year just ended to have been the most prosperous in the history of the Dominion, the surplus of ordinary revenue over ordinary expenditure being \$18,000,000, and the net reduction of debt during nine months about \$7,500,000.

RECIPES.

Biscuits.—One teaspoon soda, 2 of cream tartar, 1 of salt, 1 of sugar sifted with 1 quart Five Roses flour. Rub in 1 tablespoon lard. Make into dough with sweet milk or water.

Shortcake.—Two tablespoons butter and 1 teaspoon baking powder, mixed thoroughly with 1 quart Five Roses flour, enough cold water to form a dough. Bake on a griddle, and, when brown on both sides, cut in squares, split, butter, and serve hot.

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About the House.

BEDBUGS.

Many a good housekeeper has been mortified beyond words by finding a solitary bedbug in the room which a guest has been occupying—and not without reason, perhaps, considering the general, deeply-fixed idea that their presence is due to dirt. As a matter of fact, although numbers of them in a room certainly point to neglect, there is no reason for stigmatizing a housekeeper as "dirty" because of a single strayaway or two. Bedbugs may gain ingress to a house in a variety of ways, often with trunks and valises, which, in turn, have received them from some other trunk or valise in a baggage car, and when once in a room, there is no knowing when they will appear or how firmly they will establish themselves. At times in cities, where the houses are side by side, they have been known to migrate from one house to another, especially if the inhabitants of the infested one happened to move out,—for the bedbug is a sort of domestic animal, like the dog, even resembling that animal in so far that he will "leave his own kind to follow man," although his motives may be somewhat different.

When one happens to move into a house in which they have been lodged, then the fight begins in earnest, even though the house may have been vacant for ever so long. If the bedbug cannot find his natural food—blood—he is able to exist for almost an indefinite length of time on very little sustenance. Upon the juices of damp wood or upon dampened dust, which has become lodged in cracks, he can wax fat and bring forth his odoriferous tribe in astonishing prolificness; and after being sealed in a bottle for a year without any food whatever, he has been known to come out alive. When, then, you take up your abode in a long-vacant house, you may do so in fear and trembling. Search as you will during the day, you are not likely to see even the flip of a malodorous nose, for the bedbug, owl-like, shuns the day, or, perhaps, with an instinctive fear of its natural enemy, knows when to keep the peace. When the shades of night come, however, he waxes bold, and marches with great rejoicing upon the welcome sight of a bed with a sleeping human occupant in it; hence, happy indeed are you if you have no occasion to "say things" in your "new" old house. Especially from rooms full of cracks and crevices it seems a terrible task to dislodge them. Clean and scour as one will, they are likely to reappear at all sorts of inopportune times. For such harborages there is a certain cure, which will be referred to later, but which is somewhat strenuous, and only to be resorted to when all else fails. Yet even strenuous methods are not to be disregarded in dealing with the bedbug, not only because of his repulsiveness, but because of the fact that, like all other biting and sucking insects, he is capable of transmitting contagious disease.

From ordinary rooms, however, there should be no real reason why bedbugs may not be eradicated within the course of a fortnight or so. In the first place, if any portions of the wall paper be loose it will be absolutely necessary to remove the paper and put on fresh; even a few blisters behind the old covering may be sufficient to provide harborage for numbers of the pest,—being somewhat gregarious animals they are likely to herd together. The second step should be to thoroughly clean all floors and woodwork with boiling water, afterwards applying coal oil liberally, thrusting it into cracks and crevices with a feather where a brush will not enter. The liberal use of fresh paint, and the substitution of an iron bed in place of the old wooden one will about complete the work so far as the bugs are concerned, although strict vigilance will be necessary for several weeks afterwards. Should any adventurers reappear, the coal-oil can must be again resorted to.

Although brass and iron beds have, perhaps, done more than anything else towards simplifying the fight against bedbugs, a word must be said in regard to mattresses. Bugs are particularly likely to remain in them, finding warm and secure quarters in the creases and

beneath the buttons, where the eggs may sometimes be found in clusters. There is no "royal road" to cleaning mattresses. Ceaseless vigilance, ceaseless applications of boiling water, ceaseless applications of benzine or coal oil, until the last bug has disappeared, is the price of their cleanliness. It is best to do the scalding in the bright, hot sunshine where the mattress may be left to dry, and, although the smell of the coal oil or benzine may not be pleasant, it is better to choose the lesser of two evils. Corrosive sublimate may be used instead of the oil, if preferred.

For helping to drive the bedbugs from rooms where liquid applications cannot well be made, the following method is recommended: Place in the center of the room a dish containing about 4 ounces of brimstone. This dish should be placed within a larger one to guard against fire, if the burning mass should overflow. Remove from the room all metallic objects that might be affected by the fumes, and close every aperture, then set fire to the brimstone. After closing the door, fill up the keyhole, and leave four or five hours; then open doors and windows to air.

The other method referred to is the use of hydrocyanic gas, which is exceedingly poisonous, but sure death to all domestic insects. We shall give the method of using it, if anyone wishes to know.

Before closing, it may be interesting to note that the bedbug belongs to the order Hemiptera, which includes the true bugs, or piercing insects with a beak for sucking. Closely related cousins are the squash bugs and so-called "berry" bugs, both of which have a somewhat similar odor. This odor, in the case of the insects which feed on plant-life, is protective, tending to prevent the attacks of insect-eating birds, but the bedbug has a different class of enemies to deal with. It (the latter) is of very ancient origin, having been known among Asiatic nations of antiquity from time immemorial. In the time of Pliny, it was supposed to cure serpent bites. From eastern lands it was conveyed westward by ship, and its early presence in England may be known from the fact that in the old English Bible of 1551, Ps. XCI: 5, read, "Thou shalt not need to be afraid for any Bugges by night,"—truly an ancient, if not honorable lineage. They attain maturity from seven to eleven weeks after hatching, depending upon the conditions of warmth and moisture, and are extremely prolific, each female laying several batches of eggs during the season,—an added reason why measures against them should be prompt and sure.

SOME MORE HOUSECLEANING HINTS.

Treatment for a Damp Wall.—The outer walls of rooms are often damp, and the paper peels off in consequence. If coated with the following preparation there will be no more bother of this kind: Take a quarter of a pound of shellac, add a quart of naphtha, and stir well together. Brush the wall over with the mixture, allow it to dry, and you will find it has become firm and hard.

To Clean White Paint.—Mix whiting and warm water to the consistency of cream. Dip a clean flannel in the mixture, and rub the paint lightly with it. Rinse with clear water, and dry. When all traces of the whiting have been finally removed, the paint will be beautifully clean.

An excellent plan for doing up curtains is to tack factory cotton to the frames, then pin the curtains by each scallop to the cotton to dry. By this method the curtains are in no danger of being either torn or twisted out of shape.

It is only by thinking about great and good things that we come to love them, and it is only by loving them that we come to long for them, and it is only by longing for them that we are impelled to seek after them, and it is only by seeking after them that they become ours, and we enter into vital experience of their beauty and blessedness.—Henry Van Dyke.



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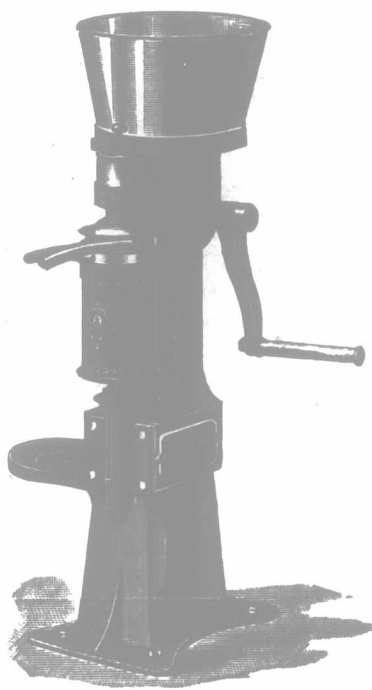
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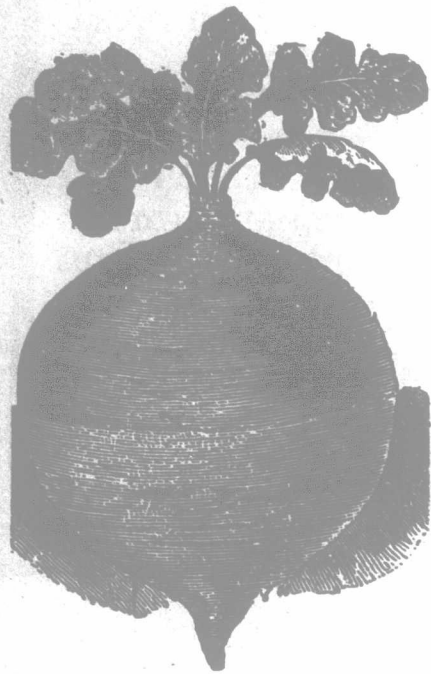
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(Continued.)

By Mary E. Allen, Davidson, M. D.

Now comes the most important thing: Forbid spitting absolutely. It is a disgusting and most dangerous habit. It is astonishing how prevalent this habit is. Many of my readers will exclaim, "Surely not!" But I have been taking note of this for years, and many men and women (and, of course, their children too), who are respectable and even fairly clean in other ways, spit wherever they chance to be—on the floor at home, in church or neighbor's house. There really are beings who chew tobacco and spit on the floor. What matter that their unfortunate babies, whose play-place has been so defiled, have to creep through this vileness? Isn't it horrible? How can such children ever struggle into decency and self-respect? These expectorations, on drying, are raised in dust, and taken into the lungs, and deposited on the food and in the milk and water. Fathers who smoke or chew, I beg of you to forget your selfishness—yes, most cruelly selfish—appetite long enough to think a few minutes. Think of the lumps of foul-smelling contamination you are making of your own bodies. Go and look at yourself in the glass, and take an honest picture into your mind. There you are, with the trade-marks of tobacco—the strongest characteristics of your personal appearance. Yellow, tobacco-stained teeth, perhaps worn into ugly jags and hollows to accommodate the pipe. Lips dry, livid, perhaps cracked, or with sores that may be incipient cancer; or, if you chew, a dirty brownish rime defiles and disfigures the mouth that should be as clean and red-lipped as when you were a baby. Your hair is dry and unkempt, for the poisonous nicotine has stolen its rich glossiness. Eye is not so bright as it should be. The clear white has turned to a dirty yellow. Isn't it so?

In regard to kitchen utensils—watch the sink. Disinfect the pipes often with boiling water having a little lye in it. The same applies to all the bath-room pipes.

As to the dining-room: Do not put food—milk, butter, meat, vegetables or breadstuffs—on the table until the family are ready to sit down. Better they should wait awhile than that they should dine off what the flies have perhaps crawled over. Clear off the table as soon as the meal is over. Leave nothing that will attract flies. If you leave a cloth on your table, let it be a dark one, unless you can exclude every fly. If any flies do gain access, try to clear your dining-room of them before and after every meal, by waving a large cloth to drive them out. This room may be darkened when not in use, as it is not a living-room, but see that there is plenty of ventilation. If needful, use fly-pads, but it is better to exercise vigilance in keeping them out of the house altogether. Have every door and window of your house closely screened. Make this a thing of prime importance. Impress it on the children's attention. Tell them why flies are such enemies to health, and enlist their help in keeping every fly out of all the house by being careful to brush flies away before leaving or entering the house, and closing the screen door tightly and at once. Be specially careful to exclude these pests from your kitchen, pantry and dining-room, because there the food supply is in danger of contamination.

Sitting-rooms—that is, parlor, library, drawing-room, etc.—I will pass over quickly, only saying that these should always be well ventilated, of comfortable temperature, and with plenty of light, summer and winter. Don't close up these rooms, pulling down the blinds, and turning them into twilight abodes of dusty mystery, only to be opened and used on state occasions, when if your children are permitted to enter they will feel awkward and away from home, afraid to move or touch anything for fear of spoiling so much grandeur. The children should never have to be taught "parlor manners." They should be taught to be kindly, courteous, deferential to elders, and helpful to every one, because this is a large part of life's work, and God looks to them to do their work well. Then they cannot fail in truest

courtesy, which is always the simplest expression of kindly feeling. For the rest, they should be left free to work out their own individuality in parlor or in field. They will be natural, sympathetic men and women.

Keep your sitting-rooms light; use the blinds only to temper the heat of the day or the too direct rays of the sun. Have sensible furniture that is substantial and that won't gather dust and get musty. Upholstered furniture, except in leather, is most unhealthy from every standpoint, and should be banished from every home. Have only what is necessary. Nothing looks worse than a room crowded with all sorts and sizes of chairs, tables, settees, etc. They take up space, and so lessen the available oxygen. Banish clutter, such as tidies, mats, too many curtains and drapes. Polished floors are the best from a health standpoint, and in my judgment from that of good taste also. Rooms should never look crowded and mussy, but spacious for their size.

When letting in air through the windows, loop back the curtains so that any dust in them will not be loaded on the incoming air. After sweeping, let your curtains fall straight; then carefully brush with a long-handled hair brush. If the menfolk indulge in smoking, try to windsweep the room as soon as possible afterward, to prevent the odor of stale smoke from lodging in every fabric, and so making the air continually offensive and unwholesome for the children. Don't allow spittoons to poison the air and offend the eye. Take out, scald with boiling water and bring in again if you must. Poor mothers and daughters, it is disgusting work, and you should not be compelled to do anything so repugnant to you, just because those who should shield you from every disagreeable task, as far as possible, choose to be selfishly indulgent. But you will do this as you do everything, because it is for the well-being and health of all the family, and because "Love constraineth."

A MEMORY SYSTEM.

Forget each kindness that you do
As soon as you have done it;
Forget the praise that falls to you
The moment you have won it;
Forget the slander that you hear
Before you can repeat it;
Forget each slight, each spite, each sneer,
Wherever you may meet it.

Remember every kindness done
To you, whate'er its measure;
Remember praise by others won
And pass it on with pleasure;
Remember every promise made
And keep it to the letter;
Remember those who lend you aid
And be a grateful debtor.

Remember all the happiness
That comes your way in living;
Forget each worry and distress,
Be hopeful and forgiving;
Remember good, remember truth,
Remember heaven's above you,
And you will find, through age and youth,
True joys, and hearts to love you.
—By Priscilla Leonard, in The Youth's Companion.

THE TONGUE.

"The boneless tongue, so small and weak,
Can crush and kill," declared the Greek.

"The tongue destroys a greater horde,"
The Turk asserts, "than does the sword."

A Persian proverb wisely saith,
"A lengthy tongue—an early death."

Or sometimes takes this form instead,
"Don't let your tongue cut off your head."

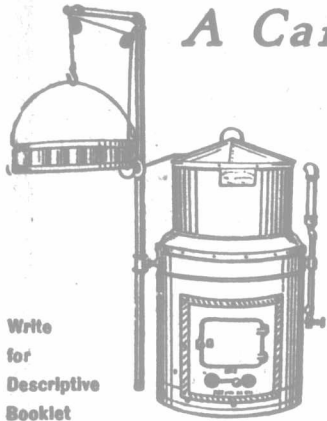
"The tongue can speak a word whose speed,"
Say the Chinese, "outstrips the steed."

While Arab sages this impart,
"The tongue's great storehouse is the heart."

From Hebrew wit the maxim sprung,
"Though feet should slip, ne'er let the tongue."

The sacred writer crowns the whole,
"Who keeps the tongue doth keep his soul."

A Canning Factory for \$30



That sounds strange, but it's true.

The Modern Canner is the individual fruit-grower's factory.

It will can fruit or vegetables quickly, easily and cheaply, allowing no waste, but large profits.

Three sizes—1,000, 2,000 and 4,000 tins in 10 hours. Prices, \$30, \$60 and \$90.

THE MODERN CANNER CO.,
Canadian Branch, St. Jacob's, Ont.

HER HONORED SEAT.

A pretty and stylishly-dressed young lady boarded a crowded street car on Main Street. More than one young man turned to look at this piece of feminine loveliness, who carried herself with such an independent air.

The seats were full, and the straps were hard to hold. She was pushed and jostled on all sides by the swaying crowd, and at last, as the car gave a sudden start, she lost her hold and sat down suddenly on someone's knee. She looked down and caught a glimpse of a black skirt, so decided to sit still, as it was almost impossible to get up.

She noticed people looking in her direction, seemingly convulsed with laughter. She knew it could not be that she had caused it; it was nothing laughable for one lady to sit on the knee of another.

She knew she was faultlessly attired, and, as the obliging old lady sat still, she decided to dismiss the matter from her mind.

The car proceeded on its way for a few blocks, before the woman made a movement, as though she wished to get out. The young lady rose at once, and turned to thank her obliging friend, when, "Oh, power!" a venerable, black-robed priest rose up and made his way out of the car. The crowd could not contain itself any longer, and such cheering, laughing and clapping of hands had never been heard in a street car before.

Finding the atmosphere a trifle hot for her, the young lady signalled the car and got off at the next corner, with burning cheeks, and not feeling quite so important as when she came in.

JAUNITA.

To win and hold a friend we are compelled to keep ourselves at his ideal point, and in turn our love makes on him the same appeal. Each insists on his right in the other to an ideal. All around the circle of our life, beloved if it is this idealizing that gives to love its beauty and its power and its grandeur. Love on character—W. C. Campbell.

Butter Boxes

Best quality, standard size, spruce butter boxes. Ask your dealers for a trial lot; if they cannot supply you get them direct from the factory. We guarantee these boxes to give entire satisfaction, or money refunded.

STANDARD BOX CO.
Lennoxville, Que.

Located on G.T., C.P., Q.C. and B.&M. Rys.

Saskatchewan

Wheat land. Easy terms.
\$10.00 to \$25.00 per acre.
Money making. City property.

The Minton Mansell Co.,
SASKATOON.

For Sale—COUNT EGOH DEKOL,
one of the greatest Hulslein stock bulls ever imported into Canada. A sire of A. R. O. caught era of extra quality. J. A. CASKEY MADOC, ONTARIO.

A GRASPING LANDLORD.
"I guess," said the man who always tries to talk like a monologue, "that the meanest hotel man lives in Pennsylvania. I won't name the town."

"I stayed at his place all night recently, and when I went to pay my bill in the morning I complained that his food had made me restless in the night and that the bed was inhabited otherwise than by me. When he handed me my bill he had two dollars for a horse and buggy."

"What do you mean?" I asked, in surprise. "I have no livery rig. Where does the horse come in?"

"You had a nightmare, didn't you?" he asked.

"Yes," I said, "but buggy?"

"The best," he answered, calmly.

—L. B. St.

QUESTIONS AND ANSWERS. Veterinary.

LOCOMOTOR ATAXIA.

Two-year-old colt has weak back. He can rise, but staggers and sometimes falls when turning short.

Ans.—This is a disease of the spine, often called locomotor ataxia. Some cases are curable, and others are not. Put him in a comfortable box stall, and keep as quiet as possible.

WOUND ON COLT'S FETLOCK.

When ten days old, my colt, now three weeks old, was tramped on by its dam, making a wound 1 1/2 inches square on the fetlock joint.

Ans.—Make a solution of 1 part carbolic acid and 20 parts water. Wash the wound, three times daily, with warm water, and, after washing, dress with the lotion.

Miscellaneous.

FALL VS. SPRING PLANTING.

A nursery agent is canvassing this neighborhood, and taking a goodly number of orders for fruit trees of all kinds, to be delivered this fall, claiming that fall (last of October and first of November) is the proper time for setting out, far ahead of springtime.

Ans.—It is as natural as breathing for a nursery agent to recommend what suits his present purpose, and the oftener he talks about it, the more enthusiastic and extreme he becomes.

CLOVER SICKNESS.

I note the following advice in a Province of Quebec paper: "What shall we do to prevent clover from dying out? Don't sow it too frequently."

Ans.—We had noticed the item quoted and further remarks of the same tenor, and would certainly dissent from the preaching of such doctrine in Canada.

most farms in Canada is not too much, but too little clover, our observation being that where it is grown once every three or four years, the surest catches and the largest crops are secured, also the largest crops of grains, roots and corn.

MISCELLANEOUS QUERIES.

1. Would sod land that was used for a night pasture for cows last summer be a good field to plant corn in?

2. Is it better to plant it in rows, two or three feet apart?

3. Is spruce ashes good fertilizer for corn?

4. Can peas and oats be cured properly in a silo, or vetches and oats, or would they be more valuable for milk cows to be cut green and made as hay?

5. Where could I get a book that would take in from the building of a silo to the feeding of the ensilage: I mean on how to store it, and how it should be treated after it is stored?

6. I have a calf that broke out in small pimples under its jaw and throat, and, later on, the hair fell out. Please give me the cause, and what had I better do?

7. How long should a cow be dry before calving? I have one that never missed a milking, and since she calved is not giving half a gallon at a milking.

8. What breed of cows are allowed to be the best dairy breed, or the most profitable in that line?

I have been a reader of your valuable paper for a year, and would not be without it now for four times its cost. No farm home is complete without it.

Ans.—1. Yes, excellent. 2. Plant corn, either in drills 3 to 3 1/2 feet apart, or in hills about the same distance each way.

3. Any kind of wood ashes makes a good fertilizer for corn, but should be used, as a rule, in conjunction with an application of manure.

4. We believe the experiments at storing mixed crops of peas and oats in the silo have been attended with indifferent success.

5. "Soiling Crops and the Silo," by Thos. Shaw, price, through this office, \$1.60 postpaid, is a work that every farmer should have.

6. This is probably ringworm. Apply a mixture of lard or oil and sulphur well rubbed in, and repeated. It may be eczema, in which case wash the parts well with warm soft-soap suds, and apply daily a five-per-cent solution of carbolic acid, or one of the sheep dips.

7. Every cow should be dried off six weeks before calving, if at all possible. Two months is better, and results in the production of a stronger calf.

8. It would scarcely be fair for us to express an opinion on this point. Consult our advertising columns, read the correspondence published from time to time, and size up the matter for yourself.

CLYDESDALE REGISTRATION.

I bought an imported Clydesdale filly on December 1st from the importer. I received the papers that went with her, but neglected to have her registered.

Ans.—It is customary in most record societies to issue a duplicate in case of the loss of a certificate of registration or acceptance, which amounts to the same thing.

ALFALFA—CEMENT—CONCRETE WALLS—FEED BOXES FOR HORSES.

1. Could I sow alfalfa in an orchard this spring, and cut it this summer?

2. How much cement and gravel will it take for pigpen and horse stable?

3. Would you recommend cement oat boxes for horses?

Ans.—1. It has been done under exceptionally favorable circumstances and used for soiling, but, as a rule, it is not advisable.

2. Where good sharp sand or gravel and broken field stone are used for bedding in the walls, it is usually estimated that one barrel of Portland cement will be required for 35 cubic feet of wall;

3. We would prefer a good hardwood feed-box, or one lined with galvanized iron, to prevent horses eating through the wood.

BOOK ON GARDENING. Where could I purchase a book explaining latest and best methods of gardening, either on a large or small plan?

Ans.—"Vegetable Gardening," by Green (price, through this office, \$1 net, or \$1.10 postpaid), is an excellent compact little book, the second edition of which was revised and published in 1899.

Western clipped lambs brought \$7.60 per cwt., at Chicago, May 15th, and Western woolled lambs, up to \$8.75. Range-feeding lambs sold as high as \$8.40.

The race for the King's Plate, at the Woodbine, on Saturday, May 18th, was won by a horse named Kelvin, in a field of sixteen; time, 2.12 1/4. Kelvin's win was quite unexpected, he being almost out of the betting, and described as a \$105 "cast-off" nag.

James McCrea, the new president of the Pennsylvania Railroad, said in an interview apropos of a false charge against a financial institution:

"This charge was more than refuted. The institution came out with flying colors. It reminds me of an incident that happened when I was a roadman in my youth."

"Working on the Connelleville line, I took a number of meals with a middle-aged farmer and his wife. One day at dinner I noticed that the farmer's wife seemed rather out of sorts, and after dinner I wasn't surprised to hear her say:

"Josiah Simmons, to think that you have forgotten that this is the anniversary of our wedding."

"Old Josh flushed guiltily, looking up from his paper with a start. Then he frowned and said in a surprised voice:

"Why, mother, you must be mistaken. We were married on the eighth."

"The wife bit her lip. "Oh, excuse me," she said, "I was thinking of my first marriage anniversary."

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POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at two cents per word each insertion. Each initial counts for one word, and figures for two words. Names and addresses are counted. Cash must always accompany the order for any advertisement under this heading. Parties having good pure-bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisement inserted for less than 30 cents.

AT Valley Mills Poultry Ranch—Fertile eggs from Single-comb White Leghorns, Buff Orpingtons, \$1 per setting, \$4.50 per hundred. Mottled Anconas, settings only, \$1. No better winter layers. Free circular. Edmund C. Apps, Box 234, Brantford, Ont.

BROWN Leghorns—Single comb—Will sell a few settings at \$3, exhibition matings. Other matings, \$1. Write quick. W. J. Payer, Galt, Ont.

BUFF ORPINGTON eggs for hatching from extra heavy layers \$1 per 15, \$5 per 100. Good hatch guaranteed. Hugh A. Scott, Caledonia, Ont.

CHANGE—S. C. White Leghorns—layers; 28 eggs, \$1.50 upwards. Quick supply. E. Hindall, Smithfield, Ont.

CANADA'S best Single-comb and Rose-comb Bl ork Minorcas; great layers winter and summer; single comb eggs, \$1.00 per 15; Rose-comb eggs, \$1.50 per 15. T. A. Faulds, 11 Victor St., London, Ont.

EGGS—White Wyandottes (McKellar strain), Barred Rocks (Thompson strain) Per two settings one dollar. W. Bryant, Cairngorm, Ont.

EGGS FOR SALE—My birds won at the Ontario, Hamilton, Owen Sound and Meaford, and seven fall shows, over 300 first prizes. Barred and White Rocks, White and Silver Wyandottes, Browns and White Leghorns, Buff and Black Orpingtons, Black Javas, \$1 per fifteen or \$5 per 100. Blue Andalusians and Rhode Island Reds, \$1.50 per fifteen. F. W. Krouse, Guelph.

FOR SALE—Eggs for hatching from pure-bred Barred Plymouth Rocks, w. Wyandottes and S. C. B. Minorcas. \$1 per setting of 15. Pekin duck eggs, \$1 per 9. R. A. Carson, Ailsa Craig, Ont.

FIFTEEN Barred Rock eggs \$1. Extra good stock. Entire satisfaction guaranteed. A. S. Werden, Anecida Farm, Bethel, Ont.

INGLENOOK Poultry Farm offers eggs from selected pens of choicest laying strains of White and Brown Leghorns, Black Minorcas and Buff Orpingtons, also a select pen of White Wyandottes for show birds, but not tested for laying quality. Eggs either separate or assorted, \$1 per 15; \$5 per 100. W. H. Smith, 41 Spruce St., Toronto.

RHODE Island Reds—Rose-comb (exclusively). bred eight years from carefully-selected heavy winter layers; large, brown eggs; \$1.50 per 15. Good hatch guaranteed. Jno. Luscombe, Merton, Ont.

WHITE Wyandottes (exclusively). Best general-purpose fowl, strongly-fertilized eggs from heavy-laying Marlin and Duston strain, one dollar per fifteen. Daniel T. Green, Brantford.

WHITE Rocks—Great layers. Non sitters. "Antwerp strain." Eggs one dollar thirteen. Highworth Poultry Yards London.



Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted, Pet Stock, and miscellaneous advertising.

TERMS—Three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order. No advertisement inserted for less than 30 cents.

I OWN and control several large and small tracts of timber near Vancouver, also several large and small tracts of fruit and ranch land in the dry belt on Thompson River, with water rights. Best climate in Canada. Will take partner on either lumbering or horse-raising proposition, or sell. Geo. D. Scott, 436 Granville St., Vancouver, B. C.

MILLET wanted—Siberian—Will buy either small or large quantities. Send samples; name price, bags included; your station. Address: The Tillson Company Ltd., Tillsonburg.

WANTED—A few good subscription agents for The Farmer's Advocate and Home Magazine. Liberal terms. The William Weid Co., Ltd., London, Ont.

WANTED—Farmers and others who desire farm lands and domestic for the spring. Apply to A. Stevenson, emigration agent, Killmarnock Scotland.

WANTED by experienced man (married) situation as farmer. Has also had ranch experience, fitting live stock for show ring. Address: Farmer, care Farmer's Advocate, London, Ont.

WANTED—Ladies in rural districts desirous of engaging in profitable business will do well to write the Robinson Corset & Costume Co., London, Ont.

WANTED—Women to take orders for our Tailored Skirt in their community. Send for free samples, cloths and terms. The Central Skirt Co., London, Ont.

Mention Advocate

GOSSIP.

CASTRATING LAMBS.

Much loss in the selling value of grade male lambs in the fall results from neglect to castrate them at the proper time, which is when they are from ten to fifteen days old, when the tails of all lambs should be docked. When gelded at the age of four or five days, the whole scrotum, with its contents, may be safely clipped off with a sharp pair of shears, and, up to two weeks old, by cutting off the end of the scrotum, the testicles may be drawn out separately, casing and all, with scarcely any risk of suffering or loss. At three weeks or over, the risk becomes greater, and the cords should be scraped through with a knife, instead of being drawn whole.

Mr. Arthur S. Gibson, of Ruddington, Nottingham, England, has been secured to officiate as judge of Shorthorn cattle and heavy horses at the Winnipeg Industrial Exhibition, to be held July 13 to 20, next. Mr. Gibson, who has for years been one of the most successful breeders of Shorthorns and Shropshires in England, and manager in the last few years of the noted herds and flocks of the late Mr. Philo L. Mills, of Ruddington, is a brother of Messrs. Richard, John and William Gibson, so widely known in Canada and throughout America as successful breeders and expert judges of stock. Mr. A. S. Gibson has frequently acted as judge at the Royal and other leading shows in Great Britain, and last year officiated in this capacity for the Argentine Government at the great fair at Buenos Ayres, where 3,500 bulls were on exhibition.

AN EXCELLENT INVESTMENT.

I am a firm believer in the Holstein cow for a dairy business. We are located by a cheese factory, and after weighing each cow's milk for a season, I decided that there were better cows for my business, so bought three registered Holsteins of a Michigan breeder. I thought at that time I was paying a big price for cows; but my valuation of a good cow has changed since then, and I now think that it was the best investment I ever made.

I noticed a decided increase in size of calves after putting a Holstein bull at the head of the herd; quite often they would weigh 90 to 100, and one pure-bred weighed 110 lbs. when born. It has not been necessary to veal calves from the registered cows; from those three head I have sold three bull calves for \$90, one two-year-old at \$60, and have on hand two heifers and three yearling heifers.

In 1903, milked 17 cows; three Holsteins averaged 6,792 lbs.; balance of herd, 5,240 lbs.

In 1904, milked 17 head; three Holsteins averaged 7,232 lbs.; balance of herd, 5,115 lbs.

In 1905, milked 10 head; three Holsteins averaged 8,742 lbs.; balance of herd, 5,506 lbs.

I expect the three older cows to average 10,000 lbs. this coming season. I am convinced that the Holsteins pay.—Will Gallup.

Mr. N. A. Wagg, of Claremont, Ont., the well-known Clydesdale expert, reports one of the best seasons' trade in Clydesdales in his many years' experience. Mr. Wagg is noted for dealing in strictly high-class animals, hence his success. Just now he has on hand about a dozen, including the big, flashy and grandly-bred stallion, Lothian McQueen, by the prince of sires, McQueen (imp.). His dam, grandam and great-grandam are all imported. He is a six-year-old bay, weighs a fraction under the ton, and is got up just about right. Then there is a bay yearling stallion, by Imp. Baron Primrose, the making of a show horse of a high order. In mares, there is the 1,500-lb. Susan M., by Imp. Two-in-One, a big, smooth mare of grand quality throughout. Lady Margaret, by Imp. McQueen, is a bay three-year-old that now weighs 1,610 lbs., a rare good one, and a show mare. Maggie McHattan, by Imp. McHattan, is a bay four-year-old, another 1,600-lb. mare, and an exceptionally good one. Rosie McHattan is a bay three-year-old half-sister, heavy in foal to Lucky Ronald (imp.). Besides these, there are half a dozen others, some heavy in foal, some with foals at

foot, and one, Maggie of Greenoak, is imported. All are registered and well worth looking after by anyone wanting a big, flashy brood mare.

QUESTIONS AND ANSWERS.

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

2nd.—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.

3rd.—In veterinary questions, the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.

4th.—When a reply by mail is required in urgent veterinary or legal enquiries, \$1 must be enclosed.

Miscellaneous.

PRESERVING SHINGLES—EXPRESS RATE ON PIGS.

1. Would you give a name or recipe of any mixture that would be good to preserve shingles on barn roof that would last well, and with as little expenses and trouble as possible?

2. Could you give an estimate of what it would cost to ship a pair of pigs from Ontario, taking London as shipping point, landed in Summerside, P. E. Island?

R. L. C.

Ans.—1. Laying them in ordinary lime plaster or mortar is practiced with good results.

2. Inquiry at the express office elicits the information that the rate from London to Summerside, P. E. Island, would be \$4.50 per cwt. There is no half rate offered by express companies for the transport of pure-bred stock. Half-rate privileges apply only to shipment by freight.

IMPROVING GARDEN.

The ground of my garden has been covered about eighteen inches deep with a heavy, very sticky clay from the cellar. This clay is very solid, and turns up in big clumps, when being dug, that you cannot do anything with, and I am anxious to have a small-sized experimental farm.

W. F. G.

Ans.—It will take a long time for the hard clay subsoil in your cellar to be converted naturally into fertile surface soil. This will be brought about gradually after many years by the action of frosts and plants which may grow upon it; but to get a good soil in which you can grow plants readily, it would be quicker to remove as much of the clay as is necessary and replace with good surface loam. Or, if it is not necessary to remove the clay, all you need do is cover it several inches deep with good mellow loam, and the clay could be gradually converted into good soil by exposing a little of it each year to the action of the frost when the garden was dug in the fall.

H. L. HUTT.

FERTILIZING ASPARAGUS.

I have four rows of asparagus, ten rods long. Would you kindly tell me what to use to get a quick return and large stalk growth? Kindly explain just how much and how often to apply. I grow the asparagus for profit, but it has made a spindly growth last year or two, though it has been given plenty of stable manure.

A. S. C.

Ans.—A profitable asparagus bed depends largely upon the selection of good, thrifty young plants, setting them in good, rich, warm soil, keeping them well cultivated and free of grass, and enriching the ground frequently with some manure or fertilizer, which will cause the plants to make vigorous growth. As a general fertilizer, I know of nothing better than well-rotted manure. Much, of course, depends upon the requirements of your soil. Some soils are much benefited by an application of potash as contained in wood ashes. This could be determined by a little test, applying wood ashes to a portion of the bed, and leaving another part untreated. The best time to apply the manure is in the summer after the stalks have been cut for the last time. Manure applied at this time stimulates a strong growth of roots, which store up plenty of plant food to produce large stalks the following spring. This is much better than applying the manure in the fall, which tends to hold the frost in the spring, and often unduly retards the spring growth.

H. L. HUTT.

Veterinary.

SKIN DISEASE IN TAIL.

Horse has lost nearly all the hair out of his tail. The hairs are thick at the roots, and only about 1 inch long.

C. D. L.

Ans.—This is due to a chronic disease of the skin of tail, and in many cases it is not possible to cause a regrowth of normal hair. Make a mixture of 8 ozs. glycerine, 2 drams carbolic acid, and 2 drams cantharides, and 8 ozs. alcohol. Rub this well into the skin once daily.

V.

POLYURIA.

Imported stallion drinks very large quantities of water, and voids excessive quantities of urine.

SUBSCRIBER.

Ans.—This is called polyuria, or diabetes insipidus. Give him 1 dram iodine, three times daily, until his desire for large quantities of water and his voiding of large quantities of urine ceases. If the treatment does not cause an improvement in three days increase the size of the doses.

V.

BURSAL ENLARGEMENT.

Stallion had influenza last fall. When recovering, a soft bunch appeared on his hock. It is now as large as an orange, soft and movable.

SUBSCRIBER.

Ans.—Enlargements of this nature are hard to remove, but care and patience in treatment is usually successful. Take 4 drams each of iodine, iodide of potassium and iodide of ammonium, and 5 ounces each of alcohol and glycerine. Mix. Rub a little well into the lump once daily. Repeat the prescription as often as necessary, and exercise patience.

V.

TENDER MOUTH—LUMP JAW.

1. Mare has a very tender mouth. When the bit is in her mouth, she slavers a great deal. I have washed the mouth with alum water, which seemed to do some good.

2. Conical lump appeared on cow's upper jaw at the roots of teeth. I blistered it, but it has not disappeared.

P. L.

Ans.—1. It is probable her teeth require dressing. Get your veterinarian to attend to this, and then drive her with an ordinary snaffle bit covered with leather or rubber, and deal very gently with her mouth when driving. Some horses have congenitally tender mouths, and all that can be done is to handle them gently with an easy bit.

2. This is lump jaw. Give iodide of potassium, three times daily, dissolved in warm water and sprinkled on her food. Commence with dram doses and increase the dose daily by 10 to 15 grains until her appetite and desire for water fail, tears run from her eyes, and saliva from her mouth, and her skin becomes scurfy. When any of these symptoms appear, cease giving the drug. Repeat treatment, if necessary, in six weeks.

DISTEMPER, ETC.

1. Mare, due to foal in a few days, has distemper. The abscess has just broken. Is the foal sure to have the disease, and how can I prevent it?

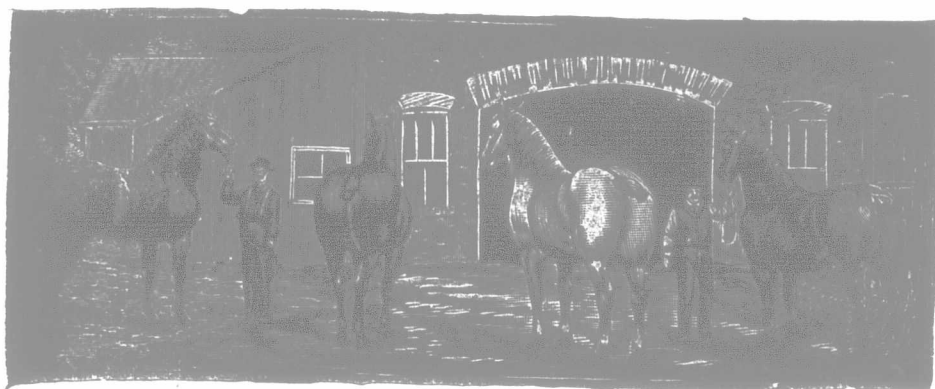
2. Ewe has difficulty in breathing. The trouble is all in the neck and head. There is a discharge from the nostrils and mouth. Is it contagious?

R. C.

Ans.—1. While foals of mares suffering from distemper frequently become diseased, it is not necessarily so. All that you can do to prevent it is to give the mare three drams hyposulphite of soda three times daily; flush the cavity of the abscess, three times daily, with a five-per-cent. solution of carbolic acid, and thoroughly disinfect the premises by sweeping thoroughly, and then giving a coat of hot lime wash with five per cent. carbolic acid. If the foal contracts the disease, send for your veterinarian, as it will require prompt and skillful treatment, depending upon the symptoms.

2. I do not think this is contagious. It probably is grub in the head, for which little can be done. Some claim that causing the patient to inhale the fumes of burning sulphur will dislodge the grubs. Of course, air must be allowed to mix with the fumes else suffocation will result.

V.



30 PERCHERONS

Also Shires, Hackneys and Clydes, have just arrived with our new importation from Scotland, England and France, of high-class stallions and mares. Many of them prizewinners in their native lands. Bred by the best breeders. Percherons, blacks and grays, weighing 1,600 to 2,000 pounds. Shires at two years old weighing 1,700 pounds. Clydes, bays and blacks, 4 and 5 years old, weighing 1,800 to 2,000 pounds, bred by the best in Scotland. Our Hackneys are bays and chestnuts, combining size, quality and breeding that cannot be beaten. We have a few first-class young stallions that we will sell at cost, to make room for our next importation; and all for sale at reasonable prices.

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80 miles south-west of Toronto on the G. T. R.



Clydesdales, Percherons and Hackneys

I have still on hand 12 Clydesdale stallions, 4 Clydesdale fillies, all imported; Scotland and Canadian prizewinners; 3 years old, that will make 2100-lb. horses of choicest quality and richest breeding; 4 black Percheron stallions, 3 years old, big, flashy, quality horses, and 6 Hackney stallions, 1st-prize and championship horses among them. Will sell reasonable and on terms to suit.

DR. T. H. HASSARD, Millbrook P.O. and Stn.

HODGKINSON & TISDALE, BEAVERTON, ONT.



Importers and Breeders of Clydesdale and Hackney Horses. We have on hand at present the choicest specimens of Clydesdale fillies in Canada, also a few extra fashionably-bred young Clyde stallions. People wanting good ones should see these before buying. Our farm, "Simcoe Lodge," is situated near Beaverton, on James Bay and G. T. Railways. Long-distance 'phone No. 18. Visitors will be met at Beaverton on notification.

40 WAVERLY HACKNEYS 40
Imported Stallions and Fillies.



Every one a high-class actor and a show animal. Splendidly-matched pairs and singles. Positively the highest class lot of Hackneys to be found on any one farm in America. All ages. Also 4 imported Clydesdale fillies. A big, flashy lot, full of style and quality.

ROBERT BEITH, Bowmanville P. O. and Station.
Long-distance 'Phone.

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of highest possible quality and richest breeding. Have sold as many stallions the last year as any man in the business, with complete satisfaction in every case. I have always a large number of high-class horses on hand. My motto: "None but the best, and a straight deal." Will be pleased to hear from any one wanting a rare good one. Terms to suit. Long-distance 'phone. **LISTOWEL P.O. AND STATION.**

SMITH & RICHARDSON, COLUMBUS, ONT.,



have now on hand a choice selection of Clydesdale Stallions, combining size and quality with straight, true action. Breeding unsurpassed. Individuality unexcelled. Scotland prizewinners. Also a few Canadian-bred stallions, and imp. and Canadian-bred fillies.

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'Phone to residence.



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GRAHAM & RENFREW, BEDFORD PARK, ONT.

QUESTIONS AND ANSWERS.
Miscellaneous.

DUROC-JERSEYS AND POLAND-CHINAS.

Kindly give me the address of some breeders of pure-bred Poland-China or Duroc-Jersey swine in Ontario, P. J. R.

Ans.—Duroc-Jerseys were advertised by Mac Campbell & Sons, Harwich, Ont., in "The Farmer's Advocate" of May 9th, page 812, and Poland-Chinas, on same page, by W. G. Baldwin, Colchester, Ont.

INDIGESTION.

I have a two-year-old heifer, which bloats up every day. In the morning she appears to be all right, but is bloated up every evening, and seems to be getting larger. Have lost one already with something similar. Can you tell me the cause and treatment?

OLD SUBSCRIBER.

Ans.—This is evidently caused by indigestion. Give 1 lb. Epsom salts dissolved in warm water, as a drench. Repeat the dose in 36 hours, if necessary. Follow with two drams nuxvomica and one dram each of sulphate of iron and gentian, night and morning for three days. Feed lightly. If bloating continue or recur, give 1½ pints raw linseed oil and two ounces oil of turpentine.

STAGGERS IN PIGS.

I have a litter of five pigs weaned about two weeks, which appear to be all right. They are in a small pen. When we feed them, they come to the trough and take a swallow, and run backward a couple of feet, and fall on their side, kick and squeal for a short time, then get up, and apparently get better. Do the same every time they are fed.

J. A. D.

Ans.—This trouble occurs not infrequently with young pigs too liberally fed, and is generally supposed to be the result of indigestion, but is not well understood. It is also thought to be of the nature of apoplexy from a rush of blood to the head. Feeding dry meal and giving drink in a separate trough has been recommended as a preventive, also mixing food less sloppy, say in a thick, pasty form, or scattering grain on a clean plank floor, so they have to eat more slowly. Any food tending to relax the bowels will be helpful. A mixture of charcoal, ashes and salt kept where the pigs can take it at will may also have a good effect. Can any of our readers suggest a better treatment or preventive.

FALL TURNIPS VS. SWEDES—ASHES FOR POTATOES.

1. What difference in feeding value is there between Swede turnips and white turnips? Would the larger yield of white turnips make up for the difference in quality? Would the white turnips keep up till January 1st? Are the white turnips subject to aphids?

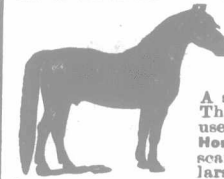
2. Are ashes valuable to a potato crop? How should they be applied?

SUBSCRIBER.

Ans.—1. Henry gives the following comparison: Swedes contain 11.4 per cent. dry matter, of which 1 per cent. is protein, 8.1 per cent. carbohydrates, and .2 per cent. ether extract, or fat. Flat or fall turnips contain 9.5 per cent. dry matter, of which 1 per cent. is protein, 7.2 per cent. carbohydrates and .2 per cent. fat. It is probable that the difference in quality is about compensated, as a general rule, by the difference in yield, but the growing of Swedes is advised where the roots are intended for winter feeding on account of their better-keeping quality. White turnips are all right for early winter, and will, if properly stored, keep fairly well until Christmas. So far as we have observed, the fall turnip, being late, is not troubled to any extent, if at all, by attacks of the aphids.

2. Broadcasted at the rate of 25 bushels per acre, and then worked in well before the potatoes are planted, ashes often show marked results in increase of yield. There is a danger, however, of causing an increase of scab at the same time, if there are any scab spores on the tubers planted or in the soil. The effect of the ashes is to induce an alkaline condition of the soil, which favors scab. For this reason avoid a heavy application.

HORSE OWNERS! USE GOMBAULT'S CAUSTIC BALSAM.



A safe, speedy and positive cure. The safest, Best BLISTER ever used. Removes all bunches from Horses. Impossible to produce scabs or blenches. Send for circulars. Special advice free.

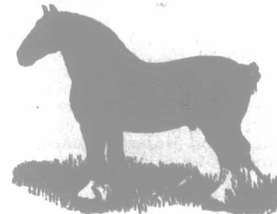
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Holdenby, Northampton, England,



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Long-distance 'Phone. St. Thomas, Ont.

Dr. Page's English Spavin Cure.

For the cure of Spavins, Ringbones, Curbs, Splints, Windgalls, Capped Hock, Strains or Bruises, Thick Neck from Distemper, Ring worm on Calf, 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. Frederick A. Page & Son, 7 and 9 Yorkshire Road, London, E. C. Mailed to any address upon receipt of price, \$1.00. Canadian agents: on

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Imp. Clydesdale Fillies!



Have now on hand about a dozen, nearly all imported. A high-class lot and very richly bred. Combine size and quality, and all in foal. Also one-year-old stallion. Write me, or come and see them.

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SHETLAND PONIES!

F. McCullough & Son, Breeders and importers of Shetland ponies, Markdale, Ont. We showed 8 ponies at Toronto Exhibition in 1905, and got 8 prizes: 3 firsts, 4 seconds and 1 third. All our ponies are imported. Our stallion, Foxglove, took first prize at Toronto. Our mare, Bessie, took first prize, and their foal, Bruce, took first prize also. Good accommodation for mares sent from a distance to breed. Ponies for sale. Our address: **Markdale P. O., Ont.**

CANADIAN CLYDE STALLION

FOR SALE

LOTHIAN PRINCE (4000) C.C.S.B.

Jet black; four white feet; star in face; four years old; a good, big, upstanding colt, and will be sold worth the money. Apply:

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Monday, June 17th, 1907

The Monday following the International and Richmond Shows.

Included in the sale there will be such famous mares (with their foals) as Orange Blossom (champion mare, H. S., London), Surprise, Eona, Welcome, Orange Ghl, Gay Ophelia, Hersey, La Cigale, and a number of colts and fillies out of these mares by Garton Duke of Connaught, Mathias St. Thomas. Also a superb collection of **stallions and geldings**, by Goldfinder VI., Gentleman John, Royal Danegelt, Polonius, Lord Hamlet, Ganymede, Diplomatist, etc.

The following are some of the prominent horses sold from this stud during the last few years: Forest King, champion harness horse in America; Hildred, champion mare in New York; Plymouth (champion) and Hildred, champion 15-2 pair, New York; Hopwood Squire and Jubilee King, twice champion pair, Richmond Show; Radiant, champion H. S., London Show, 1906; Lissington Kit Kat, champion pony, H. S., London Show, 1906-7; Kitty Grey and The Baron, champion lady's pair, New York; Marvellous, novice champion, Richmond; Gentleman John, twice champion, New York; Lord Beley II., champion, New York; Prince Compton, champion, New York; Meanwood Majesty, champion, New York; Muscatel, champion Brussels Show; Diplomatist, twice champion, H. S., London; Bonwick Belle, champion mare, H. S., London; Stella, champion mare, H. S., London; Queen of the South, champion mare, H. S., London; Tithania, junior champion mare, H. S., London.

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The Ferry Stud Farm,
Chatteris, Cambridgeshire.



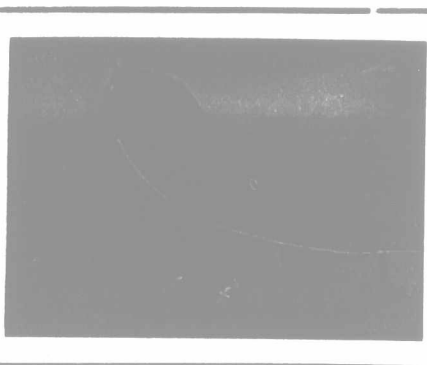
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**HACKNEY,
CLYDESDALE and
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New importation of winners
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Breeders and Importers of Hackneys, Clydesdales,
Shropshire Sheep, Berkshire Pigs and Scotch Collie Dogs.

2 Choice Hackney Stallions for Sale.

Hackney fillies and mares for sale. Three young Berkshire sows in farrow for sale. We are booking orders for March and April by Danesfield Donovan and from our imp. sows. We have a beautiful litter of puppies—two weeks old for sale, from Hollywood Rose, sired by Niwel Conqueror—also one beautiful puppy half grown.

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Scottish and Canadian winners, stallions, mares and fillies. The Clydes represent the blood of such noted sires as Baron's Pride, Up to Time, Royal Favorite, Ethiopia and Aeneas. They combine size, quality and action. The French Coachers are a big, flashy, high stepping lot, and are winners in both France and Canada. Our prices are right, and our horses as good as the best. Long-distance telephone.

ROBT. NESS & SON,

Howick, Quebec.

QUESTIONS AND ANSWERS.
Miscellaneous.

COWS CHEWING BONES.

What would be good to give cows to satisfy their desire to chew bones?

H. W.

Ans.—Poison will effectually remove their desire. We know no other certain specific. The chewing of bones becomes, with some cows, a chronic habit. It is believed to be induced in the first place by deficiency of some of the mineral elements in the food, the lacking elements being most probably phosphoric acid. In such cases, fertilizing the land with bone meal, phosphates, and sometimes lime and ashes, may result in the growth of fodder that more nearly meets the animals' requirements. The feeding of a balanced ration, one containing plenty of nitrogenous foods, such as clover, alfalfa, bran and oil meal, is advised, though not guaranteed to cure the habit. About all we can suggest in the way of specifics is to allow plenty of salt, and feed, once or twice a week, a small closed handful of sifted wood ashes per cow.

CONCRETE SILO.

We contemplate building a concrete silo this summer. What should one cost—13 feet in diameter by 30 feet high? What would be the proper proportions to mix, what the thickness of wall necessary, and how many tons of ensilage would silo this size hold? Also, how many tons of ensilage would we be likely to grow in this northern country? BEGINNER.

Ans.—Such a silo should cost not over \$140 or \$150, not counting the cost of hauling the gravel. In mixing the concrete, be guided by the manufacturer's directions for the particular brand of cement used. Walls ten inches thick at the bottom, and tapered to six or eight inches at the top, mixed in the proportion of one part cement to from eight to twelve parts clean gravel, and reinforced with wire or other imbedded metal, are strong enough. The upper foot or two of wall should be mixed rather stronger, say one part cement to three or four of gravel, to stand weathering and wear, or the strain of a roof if one is put on. A silo, 30 feet high and 13 feet inside diameter, would hold pretty nearly 80 tons of silage. We should judge that with good cultivation, enough corn to fill it could easily be grown in Grey County on six or, at most, eight acres of land.

PRUNING GRAPEVINES.

I would like to know when is the proper time to trim grapevines, and how should it be done, and which year's wood should be cut off?

O. H.

Ans.—The proper time to prune grapevines is late winter and early spring, but the work may be done late, even after buds have started. The objections to late pruning are the loss of a certain amount of sap by bleeding, and the danger of breaking off buds in pruning and tying. The loss from bleeding is not nearly so serious as the uninitiated would suppose; nevertheless, it is a point of some consequence. In pruning grapes, leave as much new wood as possible. Last year's growth will throw out the largest number of vigorous shoots this spring, and it is on this present season's growth that the 1907 crop will be borne. For best results, grapes require very severe pruning. Cut out nearly all the old wood, leaving, however, if possible, one or more vigorous new canes starting from a point low down towards the root, and three or four others higher up. Commercial grape-growers allow only about 30 or 35 buds to each vine. Thus, to an amateur, would look like utter destruction, but experience proves it is the way to insure a large crop of fine clusters.

TRADE TOPIC.

BUSINESS BARRING.—A useful little book called "Business Barring," dealing with cream separation and other practical dairy questions, may be obtained free by sending a post card to the Sharples Separating Co., of Toronto, Ont., West Chester, Pa., or Chicago, Ill. In writing, mention "The Farmer's Advocate."

Bone Spavin

No matter how old the blemish, how lame the horse, or how many doctors have tried and failed, use **Fleming's Spavin and Ringbone Paste**. Use it under our guarantee—your money refunded if it doesn't make the horse go sound. Most cases cured by a single 45-minute application—occasionally two required. Cures Bone Spavin, Ringbone and Sidebone, new and old cases alike. Write for detailed information and a free copy of **Fleming's Vest-Pocket Veterinary Adviser**.
Ninety-six pages, durably bound, indexed and illustrated. Covers over one hundred veterinary subjects. Read this book before you treat any kind of lameness in horses.
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For Strains

- of Back
- of Stifle
- of Whirlbone
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- of Pastern
- of Shoulder
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Swelling and all Lameness in Horses use **Fellows' Leeming's Essence**.
Two or three teaspoonfuls in a little Rum or Brandy, cures Sprains, Bruises and Lameness in 24 hours—takes out all the soreness—and puts horses "on their feet again."
50c. a bottle. If your druggist does not have it, send to **National Drug & Chemical Co. Limited, Montreal.**

VETERINARY ADVICE FREE

Dr. S. A. Tuttle, a veterinary surgeon of long experience has written a book entitled "Veterinary Experience" on the diseases of horses, giving symptoms and treatment in plain terms. It is fully illustrated with diagrams showing the skeleton and circulatory and digestive systems with references that make them plain. Tells how to buy a horse and know whether it is sound or not. Every horse owner should have one. It is sent to any one.

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Is the only guaranteed cure for Cuts, Curb, recent Shoe Sores and Callous. It locates lameness, relieves and cures Spavin, Ring Bone, Cockeye, Grease Heel, Strabismus, Cataract, etc. Send today and get the book free and information about Dr. Tuttle's specifics.

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ABSORBINE

Will do it and restore the circulation, assist nature to repair strained, ruptured ligaments more successfully than Firing. No blister, no hair gone, and you can use the horse. \$2.00 per bottle, delivered. Book 2-C Free.

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SAVE YOUR HORSE

BOG SPAVIN BONE SPAVIN RINGBONE **CURB SPLINT POLL EVIL** **LAMENESS SWELLINGS SOFT BUNCHES**

are CURED—leaving the horse sound as a dollar—by

KENDALL'S SPAVIN CURE

No matter what you have tried—nor how many veterinaries have failed—get KENDALL'S SPAVIN CURE, use it as directed and it will give perfect results.

NOTRE DAME DES BOIS, P.Q., Sept. 20 '06.

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\$1. a bottle—6 for \$5. Our "Treatise On The Horse" will give you many a hint as to how to keep horses free from blemishes and lameness. Write for free copy.

DR. B. J. KENDALL CO., ENOSBURG FALLS, VERMONT, U.S.A.



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Do you know how much each cow is earning for you? The only way to know this is to buy a

Peerless Babcock Tester

IT WILL TELL YOU ORDER TO-DAY

4-BOTTLE MACHINE, PRICED, \$5.00

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LONDON CEMENT PRESSED BRICK MACHINE.

One man operating makes 5,000 brick per day. Don't waste your time operating a cheap machine; it is capacity and quality that counts.

We are the largest makers of high-grade concrete machinery in Canada.

Send for descriptive catalogue of The London Cement Brick Machine, The London Face-Down Block Machine, Drain Tile Machines, Sill Moulds, Fence Post Moulds, Sewer Pipe Moulds, Concrete Mixers, etc.

LONDON Concrete Machinery Company
28 Redan Street, London, Ont.

Queenston Cement

successfully used by the farmers of Ontario for over 30 years. Direct from manufacturer to consumer. Positively the best and cheapest cement you can buy. Price, 70c per barrel, f.o.b. works. All information cheerfully given. Write us.

Isaac Usher, Queenston, Ont.

HORSES FOR SALE

7 horses and mares fit for light farm work \$25 to \$50
 7 horses and mares good for farm work 50 to 75
 20 horses and mares 75 to 125
 30 horses and mares 125 to 185
 24 horses and mares 175 to 210
 3 drivers, wagons and harnesses. Harness, wagons, sleighs, neckyokes, whiffletrees, also slush and wheel scrapers. Apply to:

M. A. PIGOTT & CO., Goderich, Ont.

The Sunnyside Herefords.

To make room for my new importation, I will sell four cows with heifer calves by side, two yearling heifers, one yearling bull and two bull calves at a 20% reduction if taken in the next 30 days. The best of breeding and individual merit. Herd is headed by a son of the grand champion, Prime Lad.
 Address: **M. H. O'NEIL, Southgate, Ont.**

Broxwood Herefords

Cows, heifers and calves

For Sale.

R. J. PENHALL, Nover, Ont.

Advertise in the Advocate

Ingleside Herefords.

BULLS FOR SALE.

"KEEP ON," 5 years old, one of the best herd bulls in Canada, and a show bull too.

One yearling bull by "Bourton Ingleside," also a fine lot of bull calves, sired by the above noted herd bulls.

Females for sale: All ages, best breeding and of highest merit. 60 head to select from. Some 1 and 2 year heifers of show-yard quality. Visitors welcome.

H. D. SMITH, Hamilton, Ont.

FOREST VIEW FARM HEREFORDS
 Four bulls from 8 to 18 months old, prize winners and from prize-winning stock. Several heifers bred on the same lines; choice individuals for sale.
JOHN A. GOVENLOCK,
 Forest Sta. and P.O.

GOSSIP.

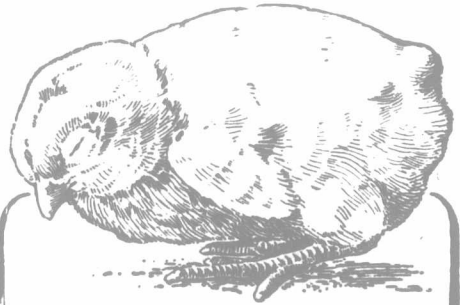
AYRSHIRES FOR CANADA.

After a visit of six weeks in Scotland, says the Scottish Farmer, Mr. Wm. Hunter, of Robert Hunter & Sons, Maxwellville, Ontario, sailed on April 29th with one of the very best shipments of Ayrshires that ever left Scotland, numbering forty-five head, all of which were bought from or under the guidance of Mr. A. W. Montgomerie, Lessnessock, Ochiltree, Ayrshire, who has a thorough knowledge of the class of Ayrshires wanted in Canada, and where they are to be found, and is admitted to be one of the most discriminating judges of the breed.

Mr. Geo. M. Smith, Haysville, Ont., writes: "Our Yorkshires have come through the winter in good shape. Our imported sow, Dalmeny Lassie, has just farrowed a litter of fifteen pigs, and twelve of them are doing well. Our young sow, Northcot Lassie, has just farrowed a litter of fifteen, and is raising ten fine pigs. We give our brood sows plenty of exercise during the winter. We have two or three young boars about six months old, ready for shipment, also a few young sows just bred and safe in pig. Our shipping stations are New Hamburg (on main line, G. T. R.) and Bright (on Buffalo and Lake Huron branch)."

Mr. H. G. Boag, Barrie, Ont., writes: "I have had a very successful winter with my imported Clydesdale fillies and stallions. Of the fillies I have sold two to John Barton, Beeton, Ont.; one each to John Sinclair, Bradford; H. J. Barnhardt, Mitchell Square; James Duncan, Oro; Geo. Crawford, Gilchrist, and Geo. Raikes, Barrie; two to H. W. Boag, Queensville; one to John Lombard, Bradford, and one to John Miller, Glassville, N. B. Of the stallions, the big, stylish Sir Everard horse, Sir Lachlan, went to the Oro & Vespra Clydesdale Horse Association. He is a grand big horse, and should do lots of good in this country. The well-known show and stock horse, Lyon Stewart, has gone to Lavery & Currie, Elmvale, Ont., and his stock will soon be giving a good account of themselves in that vicinity. McKinley 2nd goes to H. J. Barnhardt, Mitchell Square; he is an A1 stock horse, and will be greatly missed in the part he has left."

Situated thirty miles west of London, Ont., on the G. T. R., C. P. R. and Wabash Railroads, is the thriving town of Glencoe. Adjoining the town is the Elm Park Stock Farm, the property of John M. Beckton, successor to Thos. Beckton & Son, who has a choice selection of Shorthorns, Clydesdales and Berkshires. The herd is headed by the Choicely-bred Campbell-Claret bull, British Flag (imp.) =50016=, by Golden Fame, bred by Duthie, a bull of the deep, thick sort, and a grand sire. The breeding females comprise such well-known families as Marr Missies, Bruce Mayflowers, Beautys, Rose of Autumn and a number of dual-purpose sorts, tracing to Beauty, by Snowball, and Lily (imp.). Among the cows, special mention might be made of Pineapple of Sylvan 2nd, out of Pineapple 12th (imp.), and sired by Chief of Stars (imp.). This is an extra good cow, and a splendid breeder. Mayflower 2nd (36663) belongs to a good old family, and is nursing a splendid bull calf, sired by Hot Scotch, champion at London in 1905. Elm Park Beauty has a bull calf, sired by the herd bull. This calf is eight months old, red, with some white, and is the making of a show bull. This bull's dam was sired by Palermo (imp.), by Prince of Retic. Myrtle Red Rose, of the Rose of Autumn family, is nursing an extra good heifer calf, by Hot Scotch. This cow is a splendid milker. There are a number of cows and heifers in the herd, sired by British Flag, and any or all are for sale. The Clydesdales are the get of such horses as Craigevar (imp.), Marquis of Salisbury (imp.), Lord Armadale (imp.), Farmer's Pride (imp.), and are a good lot. The Berkshires are descended from Green's and Teasdale's breeding stock, and are sold off pretty close at present, but will have some fit to wear in a few weeks, sired by Concord Top Gallant. Anyone wanting anything in Shorthorns, Clydesdales or Berkshires will find it to their advantage to correspond or inspect this stock.



Lice Kill the Chicks

That sleepy-acting chick is infested with lice. Act promptly or you will lose the whole brood. Dust each chick with a very little Instant Louse Killer, and dust the hen thoroughly. When you next set a hen, do not fail to dust both hen and nest with this wonderful insecticide.

Instant Louse Killer

is sure death to lice on poultry, horses, cattle, ticks on sheep, bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc.; and is also a reliable disinfectant and deodorizer. Comes in convenient shaker-top cans and being a powder may be used winter or summer with equal convenience. Sold on a positive written guarantee. Be sure to look for the word "Instant" on can as there are many imitators.

1 lb. 35 cents 3 lbs. 85 cents.

If your dealer cannot supply you, send your order to us.

Manufactured by

Dr. HESS & CLARK
 Ashland, Ohio, U.S.A.

Aberdeen - Angus Cattle

If you want anything in this line, write or come and see them at Elm Park, Guelph. James Bowman, Guelph, Ont.

The Salem Herd of Shorthorns

IS HEADED BY JILT VICTOR (IMP.).

It contains a number of the most noted matrons of the breed. Write for what you want.

R. A. & J. A. Watt, Salem, Ont.

Elora station, G. T. R. and C. P. R.

1 BULL

16 months old, sired by Royal Bruce, imported; 2 10 months old, sired by Lord Lieutenant, imported; cows and heifers imported and home-bred. All at reasonable prices.

SCOTT BROS., Highgate, Ont.

High-class Shorthorns—Just now we are offering a few choice heifers of show-ring form, pure Scotch, the get of Imp. Major Alpine and Imp. Greengill Archer, and out of Roan Duchess and Braeclat dams; also one 5-mos.-old bull calf, a rare good one.

A. DUNCAN & SON, Carlisle P.O., Ont.
 11 miles from Hamilton.

Maple Leaf Short horns

Chancellor's Model heads the herd. Some good cows and heifers and prizewinning Berkshire pigs for sale. Terms reasonable. **ISRAEL GROFF, Aima P. O. & Stn., G. T. R.**

ARLINGTON SHORTHORNS AND LEICESTERS
 Present offering: 2 bulls 8 and 11 months old, by Christopher's Heir 45459; also a few females of different ages, some from imp. sires. No sheep for sale at present. Stock guaranteed as represented. John Lishman, Hagersville P.O. & Stn.

Scotch Shorthorns Clarets, Stamfords, English Ladys, Mildreds, Nonpareils. Present offerings by Springhurst 44864 and Mildred's Royal Prices moderate. **F. W. EWING, Salem P. O., Elora Station.**

SCOTCH SHORTHORNS
 For sale: 7 young bulls, also my stock bull, Royal Prince =31241= (roan), sire of the two noted females, Fair Queen and Queen Ideal, World's Fair champion. **H. K. FAIRBAIRN, Thedford, Ont.**

Scotch Shorthorns A grand pair of also a few heifers, bred from imp. sire and dams. Pure Scotch and fashionably pedigreed. Will be sold right. **C. RANKIN & SONS, Wyebridge P. O., Wyevale Station.**

THE EFFECT OF ELECTRICITY ON DISEASE

No Longer a Matter of Doubt



Every day brings fresh proof of the value of electricity as a remedy for human ills. Cases which only a few years ago were considered incurable are now treated with the utmost success. Patients who have been trying medicines until they made a drug shop of their stomachs suddenly realize that the old system is wrong. They have been dosing their poor stomachs with poisonous materials until the entire organic system has rebelled against it. It is suicidal to continue such a practice. Electricity is the remedy which should be used in all cases. Thousands owe their recovery to it.

Prof. O. S. Fowler, in his work on the treatment of nervous diseases, says: "Sufferers little realize how far they are restorable—yet they seek relief in the wrong directions, for medicine cannot cure this class of disease, but, on the contrary, they almost universally prove injurious. They are no more adapted to reach these cases than a dose of ipecac or jalap is to assuage a mother's grief for the loss of her darling babe, for the disease being largely local, the restoratives must be applied directly to those prostrated parts; and since electricity is undoubtedly the instrumentality of all life, it necessarily follows that this element constitutes Nature's one most potent remedy in these diseases, when rightly applied."

Every scientist who has devoted any time to the study of electricity is enthusiastic in its curative powers. It cures because it supplies the necessary life element. The cure is pleasant, being accomplished at night while the patient sleeps.

DR. McLAUGHLIN'S ELECTRIC BELT

Is peculiarly adapted to nearly all general ailments. It is, without doubt, the most successful treatment known to-day.

All forms of weakness are cured by it. Electricity takes the place of weakness, banishing it forever. It cannot resist it. Nervousness, Neurasthenia, Insomnia, Paralysis, Neuralgia, Hysteria, Locomotor Ataxia, and Epilepsy yield to it in a surprising manner. It has no equal as a cure for Rheumatism, Sciatica, Lumbago, Gout and Backache. Its success in Dyspepsia, Constipation, Diarrhoea, Liver and Kidney troubles is brilliant. Many other complaints are being cured by it, and women find it just as satisfactory and effective as men.

"This is to certify that your Belt completely cured me of weak back."—W. G. Arnell, Poplar, Ont.

"Your Belt has cured me of Rheumatism and Piles, and I would not take \$100 for the benefits I have received."—J. H. Mikel, Mapleview, Ont.

"I take pleasure in telling you that your Belt has been a stimulant to me. I would not be without it."—E. N. Beaulieu, St. Therese de Blainville.

Any man who is suffering from any weakness, let him come to me and I will cure him, and if he will give me evidence of his honesty and good faith by offering me reasonable security he may use the Belt at my risk and

PAY WHEN CURED

FREE BOOK I have a book which every man should read. It contains hundreds of letters from men all over Canada, telling of how they have been cured when hope was lost and all other treatments failed to give the desired relief. If you cannot call, write to me for a copy of this valuable book, setting forth the key to strength and manhood. Call or write to-day.

Put your name on this coupon and send it in.

DR. M. S. McLAUGHLIN,
112 Yonge St., Toronto, Canada.

Dear Sir,—Please forward me one of your books as advertised.

Name

Address

Office Hours—9 a.m. to 6 p.m.; Wednesday and Saturday until 3 p.m.

J. Watt & Son

Are offering about one dozen females (all ages), most of them in calf or calves at foot, including some choice show yearlings and calves. Herd headed by Imp. Pride of Scotland and Heatherman. Prices moderate. Correspondence invited.

SALEM P.O. Elora Stations, G.T.R. and C.P.R.

Shorthorns, Clydesdales and Shropshires.

In Shorthorns we have 100 head to select from, of both sexes and all ages. No fancy prices asked. Several choice young Clyde mares and fillies. 75 Shrop. lambs of both sexes. Small profits and quick returns is our motto.

EDWARD E. PUGH,
Claremont P. O. and Station,
Telephone connection.

MAPLE + GROVE + STOCK + FARM Scotch and Topped SHORTHORNS

Present offering: Cows and heifers in calf to Lord Mysie—59627. Some good young bulls and prizewinning heifers at very reasonable prices. For particulars write to
L. B. POWELL, Wallenstein P. O.,
Wallenstein Station on the Guelph and Goderich Ry., C.P.R. Farm one-half mile from station.

Please Mention this Paper



White Hall Shorthorns

Missies, Cecillas, and Lady Victorias. 4 young bulls, 7 heifers, and a few older females. Bred right and will be sold right.

N. A. Steen, Meadowvale P.O. and Station, Peel Co.

WILLOWBANK SHORTHORN HERD

ESTABLISHED 61 YEARS.

FOR SALE: Young bulls and heifers from imp. sires and dams, of most fashionable breeding and type; exceedingly choice. Prices to suit the times.

JAMES DOUGLAS,
Caledonia P.O. and Sta.

Glen Gow Shorthorns

Our present offering is 9 bulls, from 6 to 14 months of age, sired by Imp. Ben Loman and Imp. Joy of Morning, and out of Imp. and Canadian-bred cows. Also a number of very choice heifers. No fancy prices asked. Long-distance phone.

WM. SMITH,
Columbus P.O.

Young Shorthorn Bulls!

Am now offering 3 grand ones from Scottish Peer (imp.). Will make show animals. A few Berkshire boar pigs 3 months old. Also Leicester sheep.

JAS. SNELL, Clinton, Ont.

GOSSIP.

Two remarkable cases of fecundity in sheep were recorded during lambing season of 1901. One occurred in Scotland, where a ewe dropped five lambs; the other case in Derbyshire, where a cross-bred ewe gave birth to six. In the latter case three of the lambs survived.

Messrs. Scott Bros., Highgate, Ont., write: "Since our last report we have made the following sales of Shorthorns from our herd: To Jno. Fleming, Kintyre, Ont., one yearling bull, sired by our imported bull, Lord Lieutenant—50050—, dam Lady Steel, a winner in the Shorthorn dairy test, at St. Louis, in 1904; one bull calf to W. H. Bradshaw, Bradshaw P. O., Ont., from the same sire and dam, also the beautiful roan four-year-old cow, Roan Kelso; to J. H. Lampman, cow and calf, Red Beauty, a grand young cow, and an excellent milker. This calf is an extra good one, by our imported bull. The young bulls we are offering are good ones. The one sixteen-months old is a beautiful red, sired by Royal Bruce, Mr. Arthur Johnston's stock bull. We bought this young bull to breed a few heifers, and now will sell him at a reasonable price. The ten-months-old bulls are both sired by our imported bull. They are a pair of good ones—one red, the other dark roan. We have some good cows for sale, and heifers from our imported bull, some now safe in calf to Prince of Florence, by Royal Bruce, dam Florence Fanny."

RECORD IMPORTATION OF AYRSHIRES.

Mr. Andrew Mitchell, Barcheskie, has recently completed what will be admitted is the biggest deal in Ayrshires ever made by one man. A few weeks ago we chronicled the large number of important purchases being made by Mr. Mitchell in anticipation of the foreign demand. He has not had long to wait, for last week Mr. R. R. Ness, of Howick, Quebec, who is recognized as the best judge and pluckiest buyer that ever landed on these shores, turned up, and to him has been made this record sale. In all, he purchased seventy-four head, sixty-four of that number from Mr. Mitchell, and the remainder from Mr. Thomas Barr, Monkland, Kilmarnock. About thirty head were selected from the Barcheskie herd, and the remainder from the herds of Sir Mark J. McTaggart Stewart; Mr. Wallace, Auchinbrain; Mr. Osborne, Morton Mains; Mr. Allan, Beuchars; Mr. Moffat, Gateside; Mr. Lindsay, Torrs; Mr. Wardrop, Knockterra; Mr. Kennedy, Glenshamrock; Mr. Woodburn, Holehouse, and his sons in Whitehall; Mr. Goldie, Old Hall; Mr. N. Duncan, Kilmory; Mr. Scott, Nether Hall; Mr. McKimlay, Hillhouse; Mr. James McAlister, Little Kilmory, and Mr. Lawrie, West Newton. Those were shipped on the Donaldson liner, Tritonia, on April 29th, and were much admired by a large number of breeders, who turned up to wish Mr. Ness the good luck he so well deserves. Mr. Mitchell reports that one satisfactory feature this year is the small number that has reacted to the tuberculin test. Out of nearly 100 head purchased, only eight fell, which is the best in his experience. In addition to the sale above reported, Mr. Mitchell also sold Mr. Gibson, Manager to Mr. Morgan, Montreal, eleven head, which were also shipped by the Tritonia. They consisted of a four-year-old cow, which was first in the uncalved three-year-old class at last Glasgow Show; a two-year-old heifer, which has been a well-known prizetaker in the West, from Ardlyne; a five-year-old cow from Mr. Hamilton, Newhouses, a prominent prizetaker the last two years at all the Lanarkshire shows; the first-prize two-year-old heifer at Cunnock, from Mr. Kennedy, Glenshamrock; two three-year-old heifers, bred by Dr. McGill, Challock; one two-year-old heifer from Mr. Murray, Borrowmoss; a two-year-old and a one-year-old heifer from Sir Mark J. McTaggart Stewart, which were both in preparation for this year's shows; a three-year-old heifer from Mr. Goldie, Old Hall, and one from Mr. Todd, Harperland, both prizetakers at the late Dundonald Show; and one heifer, bred at Barcheskie, which was intended for the Highland. These were a level, well-selected lot of dairy cattle, which should give a good account of themselves at the Canadian shows; this fall. (Scottish Farmer.)

Many Women Suffer UNTOLD AGONY FROM KIDNEY TROUBLE.

Very often they think it is from so-called "Female Disease." There is less female trouble than they think. Women suffer from backache, sleeplessness, nervousness, irritability, and a dragging-down feeling in the loins. So do men, and they do not have "female trouble." Why, then, blame all your trouble to Female Disease? With healthy kidneys, few women will ever have "female disorders." The kidneys are so closely connected with all the internal organs, that when the kidneys go wrong, everything goes wrong. Much distress would be saved if women would only take

DOAN'S KIDNEY PILLS

at stated intervals.
Price 50 cents per box or three boxes for \$1.50, all dealers or sent direct on receipt of price.
The Doan Kidney Pill Co., Toronto, Ont.

JOHN LEE & SONS, Highgate, Ont.



SHORTHORNS & LINCOLNS

The champion herd of Elgin, Kent and Essex counties.

For Sale: 6 choice young bulls, 3 reds and 3 roans, of grand type and quality; also good selection of young cows and heifers. Visitors welcome.

Glenoro Shorthorns and Lincolns

Imp. Marr Roan Lady, Missies, Miss Ramsdens and Urys. Strictly high-class in quality and breeding. Winners at Canada's leading fairs. Five grand young bulls, from 9 to 12 months old. Two from great milking dams (over 50 lbs. per day). Prices right. Come and see them, and you will buy. One hundred head of Dudding-bred Lincolns. Grand crop of lambs from imp. sires and dams.

A. D. MCGUGAN, Rodney, Ont.

DOMINION SHORTHORN HERDBOOK WANTED.

The Dominion Shorthorn Breeders' Association will pay \$1 each for the following volumes of their herdbooks: Volumes 8, 9, 12, 13, 14, 15, 16, 17 and 19. Parties having these volumes to part with, write for wrappers and mailing instructions to

W. G. Pettit, Sec.-Treas., Freeman, Ont.

Pleasant Valley Shorthorns

Herd headed by Imp. Ben Lomond—45160—, assisted by Bud's Emblem, 2nd-prize senior bull at Toronto, 1906, son of Old Lancaster 50068. Correspondence solicited. Inspection invited.

GEORGE AMOS & SON, Moffat Sta. & P.O., C.P.R.

Farm 11 miles east of City of Guelph.

John Gardhouse & Sons

Importers and breeders of Scotch Shorthorn cattle, Shire and Clydesdale horses, and Lincoln sheep. Call and see us.

Highfield P. O., Weston Station 3 1/2 Miles, Telephone.

Blm Park Shorthorns, Clydesdales & Berkshires

Herd headed by the choicely-bred bull, British Flag (imp.) 50016. Stock of all ages for sale.

JOHN M. BECKTON, Glencoe, Ontario.

G.T.R., C.P.R. & Wabash Farm adjoins town limits.

MAPLE HILL STOCK FARM—High-class Scotch Shorthorns.

Herd headed by Rose Victor—64835— and Victor of Maple Hill—65480—, both sons of the Duthie-bred bull, Sittytion Victor (imp.)—50083—, and from richly-bred imported cows. W. R. Elliott & Sons, Box 426, Guelph.

Spring Valley Shorthorns

Bulls in service are: Bapton Chancellor (imp.)—40359— (78286), Clipper Chief (imp.)—64220—. Stock for sale at all times.

KYLE BROS., Ayr, Ontario.

Shorthorns for Sale—Five choice bulls, all from imp. sires, and three of them from imp. dams; also females of all ages.

Scotland's Fame (imp.) at head of herd.

ALEX. BURNS, Rockwood P.O. and G.T.R. Sta.

Brown Lee Shorthorns!

Nonpareil Victor—63307— at head of herd. Young stock for sale at all times. Prices very reasonable. Ayr, C.P.R. Drumbo, G.T.R. DOUGLAS BROWN, Ayr, Ont.

Belmar Parc Shorthorns

WE think we have as great a lot of young show animals as has ever been on one farm in Canada. Our herd is large, the individuals are choice and of the richest Scotch breeding, and our prices are moderate. 15 young bulls, 25 heifers under three years. A splendid group of breeding and show matrons. Mostly in calf to the champion Marigold Sailor =53258= and the prizewinning Nonpareil Archer (imp.) =45202=. Pembroke is on the main line of the C. P. R. and the Canada Atlantic Division of the G. T. R. You can leave Toronto 11 a. m., arrive Pembroke 12.05 p. m., see the herd, and arrive Toronto next morning at 7.20. We prefer you to see the cattle, but if you can't spare the time we take special pride in filling mail orders satisfactorily.

John Douglas, Manager.

PETER WHITE, Pembroke, Ont.

AT "MAPLE SHADE"

Our young bulls are the best that our herd has ever produced. We can furnish Cruickshank bulls of high quality to head the best herds, and some that should produce the best prime steers. We have a bull catalogue. Send for one.

JOHN DRYDEN & SON, Brooklin, Ont.
Stations: Brooklin, G.T.R. Myrtle, C.P.R. Long-distance telephone.

Valley Home Shorthorns and Berkshires

Special offering at very low prices for immediate sale: Eight young bulls 10 to 15 months old, five cows from 3 to 5 years old, with calves at foot; four 2-year-old heifers in calf to Royal Diamond and =53459=; also eight heifers one year old. The above are straight Scotch and a choice lot; and 10 young Berkshire sows, just bred to Myrtle's Prince (imp.) =14133=, and 30 young pigs of both sexes, from one to two months old. Visitors welcomed for personal inspection.

E. J. PEARSON, SON & COMPANY, Meadowvale, Ontario
Stations: Meadowvale and Streetsville Jct., C.P.R.



Special Offering of Scotch SHORTHORN BULLS

9 just past two years old; 15 just over one year old; 7 just under one year old.

The best lot we ever had to offer in individuality and breeding, and prices are right. Catalogue.

John Clancy, H. CARGILL & SON, Manager. Cargill, Ont.

SIX IMPORTED SHORTHORN BULLS

One bred by Duthie, one by Marr, and one by Durno. Show bulls and sires every one. Imported cows and heifers, home bred bulls and heifers, all of high-class. THREE IMPORTED CLYDESDALE MARES, all in foal. Shropshires and Cotswolds in large numbers. Will price anything I have at a living profit. Write me.

ROBERT MILLER, STOUFFVILLE, ONTARIO.

Pure Scotch Shorthorns

19 Bulls. PRESENT OFFERING. 75 Cows and Heifers.

1 imported bull, 3 two-year-olds, and 15 yearlings and calves from 10 to 18 months old—all from imp. sires and choice dams. Cows and heifers all ages, including some show animals. 1 imp. Clydesdale mare four years old, due to foal May 1st. We will book orders for young Yorkshires for May delivery. **W. G. Pettit & Sons, Freeman, Ont.**

Burlington Jct. Station. Long-distance Telephone.

Shorthorns and Clydesdales

I am now offering 6 young bulls from 8 to 30 months old, all Scotch bred, two of them from extra good milking families, and a few registered fillies of good quality.

JOHN MILLER, Brougham, Ont.
Claremont Sta., C.P.R.; Pickering, G.T.R.

Glover Lea Stock Farm SCOTCH SHORTHORNS

Superior breeding and individual excellence. For sale: Bulls and heifers—reds and roans, some from imp. sire and dam. Visitors met at Ripley station, G. T. R.

R. H. REID, PINE RIVER, ONTARIO.

SHORTHORN SNAPS

Roan bull, just 3 years old, purchased from Messrs. R. A. & J. A. Watt; also one white bull 18 months old, two roan cows, 4 and 5 years, purchased from Messrs. J. Watt & Son; also 3 red heifers, 2 mos., 1 year and 2 years old. Will sell cheap, as I am going out of business. Am also offering two well-bred Ayrshire bulls, 14 mos. and 2 years, the younger is sired by Lessnesock King of Beauty (imp.); also two Ayrshire cows. For particulars and prices write

D. ALLAN BLACK, Kingston, Ontario.

SHORTHORNS

Six superior yearling bulls, some of them out of great milch cows; heifers of all ages. A lot of very big yearlings and a few heifer calves cheap.

CLYDESDALES

Two mares 5 years old, one an extra good one, and a pair of geldings 4 years old.

JAS. McARTHUR, Gobles, Ont.

SHORTHORNS

Just closed out the season's crop of bulls of breeding age, but have a few very nice youngsters coming up. Anyone wishing a stock bull from the noted Derby (imp.)

send orders ahead, as they are all picked up as soon as ready. **W. J. SHEAN & SON,** Box 859, Owen Sound, Ontario

A. EDWARD MEYER Box 378, Guelph, Ont.

Offers for sale, at prices you can stand, young SHORTHORN BULLS

Four of them from imported sire and dam; several cows with heifer calves at foot by imp. Scottish Hero, and a few yearling heifers. All are of the choicest Scotch breeding. Write, or better come and look them over. Long-distance phone in house.

MAPLE GROVE SHORTHORNS

My present offering consists of imported and home-bred cows and heifers, also four young bulls bred by Lord Banff's Conqueror. He is one of the best stock bulls of his breed. Terms and prices to suit the times. **C. D. WAGAR, Enterprise Stn. & P. O. Addington Co.**

Queenston Heights Shorthorns

Show animals in yearling and two-year-old bulls, also bull and heifer calves. Young cows and heifers at very reasonable prices. Canadian and American registration.

Hudson Usher, Queenston, Ontario.

QUESTIONS AND ANSWERS. Miscellaneous.

PROTECTING A CONCRETE WALL.

I intend to build basement wall of gravel, stone and cement, for a barn 80 x 44 feet, the coming summer, and put the barn on it early next year.

1. Will there be any danger of the wall heaving or cracking, and, if so, what could I do to prevent it?

2. How deep should I put the wall in the ground to get a good foundation? The land is heavy red clay, but is a little low and soggy along one end and inside, which I intended to grade up. I intended to build the wall 18 inches wide up to the door sills. F. W. C.

Ans.—1 and 2. If the foundation walls are put down, say two feet, or below risk of frost, and the site is drained so that no water lies about, the proposed plan should be safe. Banking up the wall inside and out with clay would help. We would advise laying planks on top of the wall to prevent water soaking into interstices, and causing damage through frost. One man we know proposes building a wall in that way, putting on the sleepers and rough flooring, and then building his big straw stack above, housing his stock within the basement temporarily the first winter.

FEEDING NURSING MARE—SOWING MANGELS—CORN FOR FODDER.

1. What is best to give a mare with a foal to make her give milk? She is not working.

2. What is the best way to sow mangels, on ridges or on the level?

3. What is the best kind of corn for green feed?

4. What is the best kind of corn to sow for winter feeding without a silo? C. W. B.

Ans.—1. The best feed for a nursing mare is grass, although the change to it should be made gradually, and, if the pasture is very young and sappy, some other feed should be given as well, for some time. If lacking pasture, use hay containing a considerable proportion of well-cured, bright clover or alfalfa, taking care, however, not to overload her stomach, as this causes heaves. Along with hay, feed-oats and bran in the proportion of two parts oats to one of bran. Two or three carrots or turnips a day will also help.

2. If the ground is in good condition, fairly clean of weeds, and the husbandman prepared to give early and frequent cultivation, we recommend sowing on the flat, using a grain drill. If the land is not so clean as it should be, or if the farmer is liable to be dilatory about cultivating and thinning, low-ridge culture is advisable.

3. For early feeding, some of the sweet corns are excellent, such as Duke's Improved, Stowell's Evergreen, etc. For late August and September, use the dents, such as Whitecap Dent, Wisconsin's Earliest White Dent, Leaming, and in some localities the Mammoth Southern Sweet are preferable on account of their greater yield. For green feed, sow these rather thickly, from a peck and a half to two pecks per acre. If sown thin, as for silage, many of the stalks will be left by the cattle.

4. The same varieties as recommended for autumn use will do for winter feeding; but if the corn is grown for husking, we would rather prefer one of the flint corns, such as Compton's Early, or else one of the earliest dents. Whitecap or Butler's Dent is good.

Maple Lodge Stock Farm 1854-1907.

Am now offering a grand lot of young Shorthorn Bulls, several from choice milking strains. Also a few extra good heifers.

A. W. SMITH, MAPLE LODGE, ONT.

Six Red Shorthorn Bulls

12 to 15 months old, got by Froud Gift =5007= (imp.); also cows and heifers, imported and home-bred. Inspection solicited. We think we have as good Shorthorn cattle as we have Lincoln sheep. 14 firsts out of a possible 19, our record at Chicago, 1906.

J. T. GIBSON, Denfield, Ont.

GREENGILL HERD of high-class

SHORTHORNS

We offer for sale 8 young bulls, a number of them from imp. sire and dam; also females with calf at foot or bred to our noted herd bull, imp. Lord Roseberry.

R. MITCHELL & SONS, Nelson P.O., Ont.; Burlington Junc. Sta.

T. DOUGLAS & SONS STRATHROY, ONT.



Breeders of Shorthorns and Clydesdales. 15 bulls, 60 cows and heifers, 1 imp. stallion, imp. and home-bred fillies. Write us what you want or come and see our stock. Farm 1 mile north of town.

KENWOOD STOCK FARM. SHORTHORNS.

Headed by (imp.) Jilt Victor =4517=. Offerings are two bull calves, an 11-months Miss Ramsden, from imp. sire and dam; a 19-months Missie, by Rhythome Euler, and other bulls; also heifers of choice breeding. A few choice Berkshire pigs just off the sow.

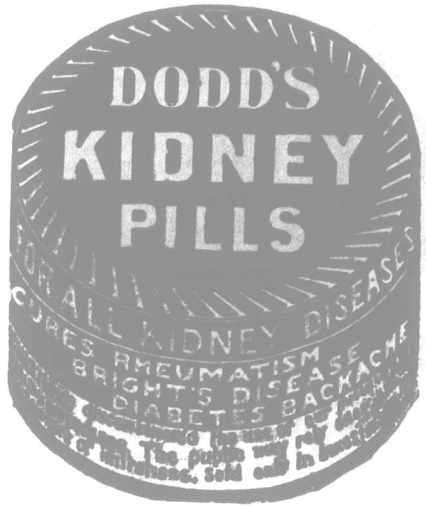
HAINING BROS., Highgate, Ont. Kent Co.

SHORTHORNS, YORKSHIRES and S.-O. WHITE LEGHORNS.—I have sold all my young bulls advertised, but can offer straight Scotch-bred heifers of the noted \$2,000 bull, Joy of Morning (imp.) =39070=, and young cows bred to him. Also choice Yorkshires, 5 months old, imp. sire and dam. Leghorn eggs supplied at 75c. per 13. **Geo. D. Fletcher, Binkham, Ont., Erin Station, C. P. R.**

Shorthorn Bull—Prince of Stars =49804=, Rich roan. Sire Chief of Stars (imp.), dam by Blue Ribbon (imp.), g. dam Estelle (imp.). Kind, sure, a good handler. Will sell to avoid inbreeding. Look up this pedigree, and write **H. M. VANDERLIP, Gainesville, Ont.**

PHYSIOLOGY.

A pupil in a school near Chatham Square, New York City, thus defined the word "spine": "A spine in a long, limber bone; your head sets on one end, and you set on the other."—[Lippincott's Magazine.]



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The Happy Medium

"Cheap" paint is the kind you DON'T want. "High price" paints cost more than they are worth, because you can buy better for less. **Ramsay's Paints** are the happy medium. All the goodness of the most expensive kinds—with none of the faults of the "cheap." They are mixed just right—always the same—and hold their surface and their color through zero snows and torrid suns.

Write us, mentioning this paper, and receive Souvenir Post Card Series showing how some houses are painted.

A. RAMSAY & SON CO., Paint Makers since 1842, MONTREAL.

SHORTHORNS AND BERKSHIRES
 Three young bulls fit for service; the right sort at reasonable prices and easy terms. Also heifers and cows with calves at foot by Bando-leer—40108—. In Berkshires. Sows five months old, and pigs soon ready to wean.
F. Martindale & Son,
 Caledonia Sta. York P.O.
 Haldimand Co.

GREEN GROVE SHORTHORNS
 Fairy Queens, Urys, Floras, Clarets, Isabellas, Rose of Autumn, Village Girl. Females of all ages 3 choice young bulls. Prices right. Breeding unsurpassed.
W. G. MILSON,
 Goring P. O. Markdale Station

Shorthorns and Leicesters
 Present offering: 1 extra good bull calf, 6 months old, from a grand milking young cow, and sired by Rosierucian of Dalmeny (imp.); also young cows with calf at foot. Leicesters of all ages.
 Address: **W. A. Douglas,**
 Caledonia Station, Tuscarora P. O.

Shorthorns, Cotswolds and Berkshires.
 For sale: 3 yearling bulls, also 5 bulls ranging from six to nine months; also yearling heifers and young calves. Will book orders for Cotswolds and Berkshires.
CHAS. E. BONNYCASTLE,
 P. O. and Stn. Campbellford, Ont.

Maple Hill Shorthorns: For immediate sale are two yearling bulls—one a Crimson Fuchsia, the other a Duchess of Gloster; both by Imp. Royal Prince, and both herd headers. Also a number of heifers that are strictly high-class. Send for catalogue.
DAVID BIRRELL, Greenwood P. O. Pickering, G. T. R.
J. BRYDONE, Breeder of pure Scotch Shorthorns. Breeding females imported. Headed by the pure Cruickshank (Duthie-bred) bull, Bixton Victor (Imp.)—5003—(87397). Young stock from Imp. dams for sale. Prices reasonable. Telegraph, Telephone, R. R. Sta. and P. O., Milverton.

ROCK SALT for horses and cattle in ton and car lots.
TORONTO SALT WORKS TORONTO

T. E. ROBSON,
 Live-stock Auctioneer
 2 BECHER ST., LONDON, ONT.

MAPLE GLEN HOLSTEIN HERD
 Quality Tops for Sale
 In A. R. O. test a Sylvia female has just made 8052 lbs. milk and 26.04 lbs. butter for 7 days. Who wants her son by Sir Alta Posch Beets? Four other of his sons for sale. A sister to his dam has just made over 32 lbs. butter in 7 days. Prices right.
G. A. GILROY, Glen Buell, Ont. Brockville Sta., G. T. R. or C. P. R.

LOOK HERE
 Have on hand bull calves from choice dams, and sired by son of greatest cow in Canada, Boutsje O. Pieterje De Kol; 643 lbs. 7 days; 26 lbs. 1 day. His sire's dam and granddam have records averaging over 26 lbs. butter week. Also choice bulls fit for service. Prices right.
FRED ABBOTT
 Fairview Stock Farm, Harrietsville, Ont.

Fairview Herd Holsteins
 Home of Pontiac Rag Apple, the cow that sold a few days ago for \$8,000. Highest price ever paid for an A. R. O. cow. I have her sire, Pontiac Kornidye, the greatest living sire of the breed, and also over 40 of his daughters, sisters to the one that brought the top price, and they are all good ones. Also bull calves by the best sires in the States. Write me, or come and look the herd over. Only seven miles from Prescott, Ont.
E. H. DOLLAR, Heuvelton, St. Lawrence County, N. Y.

RECORD OF MERIT HOLSTEINS
 Herd 110 strong. Over 40 head now in the Record of Merit. Two of the richest-bred bulls in Canada at head of the herd. For sale: 18 bulls, from 2 months to 1 year of age, all out of Record of Merit cows and sired by the stock bulls.
P. D. EDE, Oxford Centre P. O. Woodstock Station.

Spring Brook Holsteins and Tamworths
 Herd headed by the first-prize bull, Nannet Pieterje Paul, whose dam and sire's dam and 6-dam have official butter records averaging over 26 lbs. in 7 days. Females bred and young bulls sired by him for sale. Tamworths of all ages and both sexes. Come and see, or write at once for prices.
A. C. Hallman, Breslau, Ont.

QUEEN CITY HOLSTEINS
 If you would like to purchase a young Holstein bull whose sire's dam has an official record of 560 pounds of milk and 26 pounds of butter in seven days, write to **R. F. HICKS,** Newton Brook P. O., York Co.

Greenwood Holsteins and Yorkshires
 For sale: A few richly-bred bulls from one to eighteen months old. Also a few choice females of all ages. Yorkshires of either sex.
D. Jones, Jr., Caledonia P. O. and Sta.

Grove Hill Holstein Herd
 Offers high-class stock at reasonable prices. Only a few youngsters left. Pairs not akin.
F. R. MALLORY, Frankfort, Ontario. G. T. R. and C. O. Railway connections.

Imperial Holsteins
 Bull calves for sale.
W. H. SIMMONS, New Durham P. O., Ont.

Holsteins and Yorkshires
R. HONEY, Brickley, Ont., offers a very choice lot of young bulls, also boars and sows fit to mate.

Evergreen Farm Holsteins.—All bulls sold that are old enough for service. Present offering: Bull calves from one to three months old out of A. R. cows, sired by Prince Pauline De Kol.
F. C. PETTIT & SON, Burgessville, Ont.

QUESTIONS AND ANSWERS.
 Miscellaneous.

RED WATER.

I have a Shorthorn heifer, six months old, which passes bloody urine, but seems to be in good health. What is the cause? What treatment do you recommend?
 C. H. W.

Ans.—Bloody urine or red water is sometimes caused by certain weeds in fodder that irritate the kidneys, and may be caused by stones in the bladder, or a severe strain of the back. Give, as a drench, 1 lb. glauber salts, and follow with the following powder: Ground gentian root, ½ pound; sulphate of iron, ½ pound. Mix well, and give a large tablespoonful, night and morning, in feed.

WORKING ON SHARES—CREAMERY CHARGES.

Now that so many of our Ontario young men have gone to the West, it becomes necessary for farmers to arrange in some manner the handling of the crops.

1. In some sections, it is easy to rent; in others help is so deficient that the farms are worked on shares. In this district, the latter method prevails, but I think the shares are not as satisfactory as might be.
2. Take, for example, hay. To merely cut and draw in hay here, a half share is asked, regardless of the season, whether hay is plentiful or not, and I contend that one-third is good value, when no seed has been furnished by the person doing the work. With grain, would you suppose the person putting in the crop and harvesting it, also threshing, was getting good value in receiving two-thirds, and what is the custom or rule in taking off clover seed?
3. What are the usual rates charged by butter factories for hauling the cream from the farmers' homes, and the making and selling of the product?
 We enjoy "The Farmer's Advocate" each week, and find each department helpful and practical, and may it continue so is the wish of—

A SATISFIED SUBSCRIBER.

Ans.—1. In working farms on shares, the division of expenses and proceeds between the owner of the farm and stock and the man who does the work, varies with circumstances, the latter receiving in some cases we have in mind, about one-third, and in others, 40 per cent. In one particular case, the owner furnishes, besides the land and buildings, all the live stock and implements, buys new ones required, and pays 60 per cent. of the taxes, repairs, etc. (tenant paying 40 per cent.), and receives 60 per cent. of the proceeds. The other party does all the work, including paying for the hired help, and receives 40 per cent. out of the proceeds. In this particular case, a separator is run, and cream and other dairy products are hauled to the nearest town.

2. A practical farmer of extended experience in Middlesex County advises us that, in his judgment, one-third of the hay crop is ample return for the labor of taking it off.

[Note.—We would like the experience of readers on the foregoing questions, especially concise statements as to the most desirable arrangements in working farms on shares.]

3. The usual rates for hauling, making and selling by creameries, which retain the buttermilk, may be put at 3½c. to 4c. per pound of butter. Some creameries will make it for 2c. and the overrun, overrun being the pounds of butter in excess of the pounds of butter-fat received. This system is, however, a pernicious one, lending itself readily to fraud. The maker, who is getting the overrun, has before him a continual temptation to incorporate a large amount of water, thereby increasing the overrun, and, consequently, his wages, but running the risk of injuring the quality and price per pound, which, of course, falls on the patron. Even if the maker is honest and does not incorporate an injuriously large amount of water, he still gets more than most of his patrons surmise. The modern and proper method is for the patron to get the full price of the butter sold, less a stipulated rate per pound for hauling, making and selling.

The Cream of Cream Separators

The Sharples Dairy Tubular is the cream of cream separators—the pick of the whole bunch. Supply can wait low, you can fill it with one hand. All gears enclosed, dirt free, absolutely self-oiling—no oil holes, no bother—needs only a spoonful of oil once or twice a week—uses same oil over and over. Has twice the skimming force of any other separator—skims twice as clean. Holds world's record for clean skimming.



Bowl so simple you can wash it in 3 minutes—much lighter than others—easier handled. Bowl hung from a single frictionless ball bearing—runs so light you can sit while turning. Only one Tubular—the Sharples. It's modern. Others are old style. Every exclusive Tubular feature an advantage to you and fully patented. Every Tubular thoroughly tested in factory and sold under unlimited guaranty. Write immediately for catalog and ask for free copy of our valuable book, "Business Dairying."

The Sharples Separator Co.,
 West Chester, Pa.
 Toronto, Can. Chicago, Ill.

ANNANDALE FINE STOCK FARM
 TILLSONBURG, ONT.

Premier sire, Prince Posch Calamity, whose dam and sire's dam average in official test 86 lbs. milk in 1 day and 26 lbs. butter in 7 days.

No stock for sale at present.
GEO. RICE, Tillsonburg, Ont.

HOLSTEINS FOR SALE



Four imported and one home-bred bulls, from 8 to 18 months old; also an entire crop of spring-bull calves, from week old up.

sired by the grandly-bred imp. bull, Sir Howitt's B. Pieterje, whose dam record is over 28 lbs. milk in one day, and from great-producing cows of the most fashionable strains. Can spare a few cows and heifers, from one year up; 75 head to select from. Cheese 15c. Don't delay if you want one from this herd.

H. E. GEORGE, Crampton, Ont.
"THE MAPLES" HOLSTEIN HERD
 Is made up of Record of Merit cows and heifers with large records, and headed by Lord Wayne Mechthilde Calamity. Bull calves from one to five months old for sale.
Walburn Rivers, Folden's, Ont.

Lyndale Holsteins
 Two bulls fit for service, sired by a son of D. Kol 2nd's Butter Boy 3rd; also a number of bull calves, out of Record of Merit cows.
BROWN BROS., LYN, ONTARIO.

Maple Hill Holstein-Friesians
 Bull calves from No. 1 dams, sired by bulls with great official backing.
 Write for prices.
G. W. Clemons, St. George, Ont.

"GLENARCY" HOLSTEINS
 43 head of big, deep-flanked, heavy-producing Holsteins, many of them milking from 50 to 60 lbs. a day on grass. Young stock of both sexes for sale. A straight, smooth lot
G. MACINTYRE, Renfrew P. O. and Sta.



A Remarkable Invention FOR THE CULTURE OF HAIR.

THE EVANS VACUUM CAP is a practical invention constructed on scientific and hygienic principles, by the simple means of which a free and normal circulation is restored throughout the scalp. The minute blood vessels are gently stimulated to activity, thus allowing the food supply which can only be derived from the blood, to be carried to the hair roots, the effects of which are quickly seen in a healthy, vigorous growth of hair. There is no rubbing, and as no drugs or chemicals of whatsoever kind are employed, there is nothing to cause irritation. It is only necessary to wear the Cap three or four minutes daily.

60 DAYS' FREE TRIAL!
The Company's Guarantee.

An EVANS VACUUM CAP will be sent you for sixty days' free trial. If you do not see a gradual development of a new growth of hair, and are not convinced that the Cap will completely restore your hair, you are at liberty to return the Cap, with no expense whatever to yourself. It is requested, as an evidence of good faith, that the price of the Cap be deposited with the Chancery Lane Safe Deposit Company of London, the largest financial and business institution of the kind in the world, who will issue a receipt guaranteeing that the money will be returned in full, on demand, without questions or comment, at any time during the trial period.

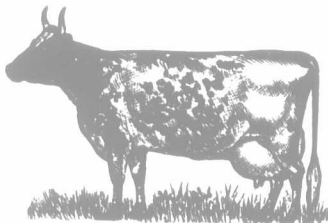
The eminent Dr. I. N. LOVE, in his address to the Medical Board on the subject of Alopecia (loss of hair) stated that if a means could be devised to bring nutrition to the hair follicles (hair roots), without resorting to any irritating process, the problem of hair growth would be solved. Later on, when the EVANS VACUUM CAP was submitted to him for inspection, he remarked that the Cap would fulfill and confirm in practice the observations he had previously made before the Medical Board.

Dr. W. MOORE, referring to the invention, says that the principle upon which the Evans Vacuum Cap is founded is absolutely correct and indisputable.

An illustrated and descriptive book of the Evans Vacuum Cap will be sent, post free, on application.

THE SECRETARY, EVANS VACUUM CAP CO., LTD.,
REGENT HOUSE, Regent St., London, Eng.

AYRSHIRES AND YORKSHIRES



We offer several young calves of either sex, of choice dairy breeding a few young cows and heifers in calf. We are importing several head of both sexes from Scotland. Our John Reison has already selected 1st and 2nd winners of "The Derby," 1906, and 1st and 2nd in the Official Milk Record by Highland and Ayr Societies, 1906. He is bringing out young stock of the same stamp and breeding, which will be for sale. Write us if you want something right at a reasonable price. Young hears fit for service. Young sows just bred. Feb. and April pigs for sale.

ALEX. HUME & CO., MENIE, ONT.
Long-distance 'phone (Campbellford).

BRAMPTON JERSEYS

Select your stock bull or family cow from Canada's most famous and largest Jersey herd.

B. H. BULL & SON
Brampton, Canada.

Cattle and Sheep Labels

Send your name and address for circular and sample. It costs nothing. Write to-day. Address: F. G. James, Bowmanville, Ont.

High Grove Jerseys—Choice young bull for sale, 12 months; fit for service; a prizewinner at Toronto last fall. "Bim of High Grove" 73688.

ROBT. TUFTS & SON, Tweed, Ont.
STOCKWOOD AYRSHIRES FOR SALE

All ages, from imp. and Canadian bred stock. Prices and terms to suit purchaser.

D. M. WATT, St. Louis Sta., Que.

Ayrshires 3 prizewinning bulls fit for service at reasonable prices also younger ones for quick buyers.

N. DYMENT, Hickory Hill Stock Farm,
Dundas Stn. and Tel. Clappison, Ont.

Hillview Herd of Prizewinning AYRSHIRE CATTLE.

All animals bred and carefully selected for size, constitution, long teats and deep-milking qualities. Select animals of both sexes for sale at reasonable prices. For further information and prices write:

A. KENNEDY & SON,
Hillview Stock Farm, Vernon, Ont.
Winchester Station, C. P. R.

SPRINGBURN STOCK FARM, North Williamsburg, Ont., Ayrshires, both sexes and all ages; Berkshires, both sexes and all ages; Oxford Down sheep, a few choice ones left; Buff Orpington fowls, eggs \$1.00 per setting, \$4 per hundred. **H. J. Whitteker & Sons, Props.**

SHANNON BANK STOCK FARM FOR AYRSHIRES AND YORKSHIRES

Young stock of both sexes for sale from imported stock.

W. H. TRAN, Cedar Grove, Ont.

AYRSHIRES FROM A PRIZEWINNING HERD
Have some nice bull and heifer calves for sale at reasonable prices. For particulars, etc., write to **WM. STEWART & SON,** Campbellford Stn. o Menie P.O., Ont.

SHROPSHIRE

Can sell about 20 Ram Lambs. Mostly by an Imp. Buttar-bred ram.

GEO. HINDMARSH, Ailsa Craig, Ont

Oxford Down Sheep, Shorthorn Cattle Yorkshire Hogs.
Present offering: Lambs of either sex. For prices, etc., write to **John Cousins & Sons** Buena Vista Farm. o Harriston, Ont.

QUESTIONS AND ANSWERS.
Miscellaneous.

CANADIAN CENSUS.

Could you inform me where I could get a correct statement of the last complete census of Canada, and its probable cost.
C. N.

Ans.—Write Archibald Blue, Chief Census Officer, Ottawa, Ont.

VACCINE FOR BLACKLEG.

Can you give us any information re vaccinating calves to prevent being subject to "blackleg," as there were about 25 lost here by it last fall and winter, and where can we get the serum to vaccinate with?
R. T.

Ans.—Vaccination is a reliable preventive of blackleg in cattle. The Department of Agriculture, Ottawa, has arrangements with the Pasteur Vaccine Company, of Chicago, whereby blackleg vaccine is supplied direct to owners or veterinary surgeons at 10c. per dose, in lots of not less than ten doses. Write Dr. J. G. Rutherford, Chief Veterinary Inspector, Department of Agriculture, Ottawa, for what you want.

FEET OVER HALTER-SHANK.

Three-year-old colt gets his front feet over his halter-shank. I tie him not more than two feet long, but still he will get his feet over.

A NEW SUBSCRIBER.

Ans.—Possibly the manger is lower than necessary. If so, raise it by adding a plank or scantling. Bore a hole in this near the top, and run the halter-shank through it, attaching securely to the end of a block of wood or iron, which, while not heavy enough to cause the colt inconvenience when lying down, will take up the slack when he is standing.

SALE OF UNSOUND COW.

In your April 18th issue we notice an answer to J. A. W. re sale of an unsound cow, in which it seems to be the opinion that B is not liable to A, the drover. Now, we know of a similar case, where the farmer made full refund to drover, and such seems to be the general custom in our locality.

1. Is the drover required, by law, to run all risk?
2. Would a guarantee of soundness from seller make a difference?
Ontario.

Ans.—1. Each case must depend largely upon its own special circumstances. It is open to the drover in every case to protect himself by proper terms of agreement. In the one referred to, it did not appear that he had taken the necessary precaution.

2. Most assuredly, for then the purchaser would have a right to damages for breach of warranty in the event of the animal turning out to have been unsound at the date of the contract.

MAMMSTITIS.

What is mammitis? I have had two cows this winter that went wrong in one quarter soon after calving. The end of the teat became sore first, and it then seemed to work up in the udder, which swelled considerably. There still seems to be an obstruction in teat that hinders the milk from coming out freely, and seems to grow shut from one milking to another.
READER.

Ans.—Mammitis, also known as garget, consists of inflammation of the mammary gland. It occurs in two forms: in one form being confined to the superficial structures of the gland—this is the mildest; and is sometimes caused by a companion cow stepping upon the udder or teat. In the other form, the interior of the gland is affected. Your case would appear to be the former, as in the latter, lameness and loss of appetite usually accompanies. Treatment, in either case, consists of a purgative of 1 lb. Epsom salts, followed by two-dram doses nitrate of potash, in feed, three times a day for three or four days. Poultice with hot bran or steamed hops, and apply carroll oil or camphorated oil to the teat twice a day. If milk cannot be drawn by hand, use a milk tube, being careful to disinfect it each time before using, and enter it gently so as to irritate as little as possible.



Zam-Buk is compounded from pure herbal extracts, is highly antiseptic and applied to a wound or sore kills all bacilli and disease germs which otherwise set up festering, blood poison, etc. It heals cuts, burns, scalds, bruises; and cures eczema, prairie itch, salt rheum, poisoned wounds, ulcers, etc. All stores and druggists sell at 50c. per box, or post free from Zam-Buk Co., Toronto, for price. 6 boxes for \$2.50. Send 1c. stamp for trial box.

250,000,000 Sheep Every Year Dipped In



COOPER DIP

Has no equal. One dipping kills ticks, lice and mites. Increases quantity and quality of wool. Improves appearance and condition of flock. If dealer can't supply you, send \$1.75 for \$2.00 (100 gallons) packet to

National Drug and Chemical Co., Limited, Toronto and Montreal.

The Waters Place, Herts, England

REGISTERED HAMPSHIRE DOWN FLOCK
(ESTABLISHED IN 1874).

the property of Mr. T. F. Buxton, who is giving up ram breeding, undoubtedly one of the best of the breed in existence, and possessing a brilliant show-yard record. Will be sold by auction on

FRIDAY, JULY 19th, 1907.

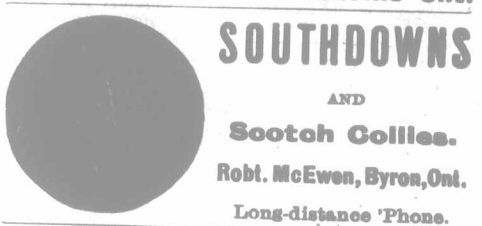
This grand breeding flock consists of about 800 ewes, ewe lambs, rams and ram lamb, including fitted sheep. Catalogues and full information from the

Auctioneers: Waters & Rawlence, SALISBURY, ENGLAND.

Fairview Shropshires

Orders can now be booked for shearing rams and shearing ewes, for ram lambs and ewe lambs, fitted for showing or for sale. Don't forget that this flock has produced more winners than any other flock in all America, and stock sold are producers of winners.

J. & D. J. CAMPBELL,
Fairview Farm, Woodville Ont.



SHIP US YOUR CALFSKINS

Write for our prices.
E. T. CARTER & CO., Toronto, Ont.

Sheep Breeders' Associations.

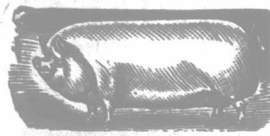
American Shropshire Registry Association, the largest live-stock organization in the world!
G. Howard Davidson, Pres., Millbrook, N. Y.
Address correspondence to **MORTIMER L. W. BRING, Secretary, Lafayette, Indiana.**

Canadian Agents for the Original McDougall's Sheep Dip & Cattle Dressing
Imported direct. Price: Imperial pint, 50c.; Imperial half gallon, \$1.25; Imperial gallon, \$2.50. Sold by druggists, or charges prepaid on one-gallon tins. **THE WORTHINGTON DRUG CO., Toronto, Ontario.**

CHESTER WHITE SWINE and **SHROPSHIRE SHEEP.** Right in quality; right in price. Come and see, or apply by letter to **W. E. WRIGHT, Glanworth, Ont.**

For Sale—Ohio Improved Chester Whites, the largest strain, oldest established registered herd in Canada; young sows in farrow; choice young pigs, six weeks to six months old; pairs not akin; express charges prepaid; pedigrees and safe delivery guaranteed. Address: **E. D. GEORGE, Putnam, Ont.**

YORKSHIRES of Choicest Type and Breeding.

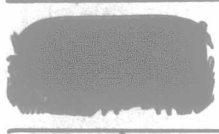


I have on hand 75 brood sows of Princess Fame, Cinderella, Clara, Minnie, Lady Frost and Queen Bess strains. My stock boars are true to type and richest breeding. For sale are a large number of sows bred and ready to breed, boars fit for service, and younger ones of both sexes. Pairs and trios not akin. J. W. BOYLE, P. O. Box 563, Woodstock, Ont.



Woodstock Herd of Large English Berkshires

For sale: Boars fit for service. Sows ready to breed. March and April pigs supplied in pairs and trios not akin; bred from my imported and home-bred sows. My pigs are all bred on prizewinning lines, and true to type. Come and see, or write for prices. DOUGLAS THOMSON, Box 1, Woodstock, Ontario. C. P. R. and G. T. R. stations.



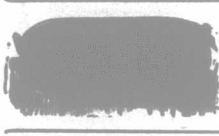
Rosebank Berkshires. — Present offering: Boars fit for service

Sows ready to breed. Choice young stock ready to wean, sired by Maple Lodge Doctor and Sallie's Sambo (Imp.), a Toronto winner.

Lefroy, G. T. R. JOHN BOYES, JR., Churchill, Ont. Long-distance Phone

HILLCREST BERKSHIRES

Stand unrivalled for individual merit in the herd. Our business for 1906 surpasses former years. The enquiry for choice things increases from year to year. Some choice sows for sale due to farrow in the spring. Also a few boars on hand. Vine St. G. T. R. near Barris. JOHN LAHMER, Vine P. O.



OAKDALE BERKSHIRES Largest Berkshire herd in Ontario.

Stock boars and several brood sows imported. For sale: Sows bred and ready to breed, boars ready for service, and younger ones, all aged, richly bred on prizewinning lines and true to type. Everything guaranteed as represented. Long distance phone. L. E. MORGAN, Milligan P. O., Co. of York.

Glenhodson Yorkshires

Sows bred or ready to breed. Young pigs from three to six months old. Pairs not akin. Satisfaction guaranteed.

GLENHODSON COMPANY, Myrtle Station, Ont. Long-distance phone at farm. Lorne Foster, Mgr.

DUROC-JERSEYS

Booking orders for spring pigs. All others sold.

Mac Campbell & Sons, Harwich, Ont.



MAPLE LEAF BERKSHIRES!

Now offering King of the Castle sows bred to British Duke (Imp.) also young sows and boars, 9 and 10 weeks old, from British Duke (Imp.).

Joshua Lawrence, Oxford Centre P. O. Woodstock Station.

Berkshires—Chief herd boars: Compton Duke (Imp.), and Elmhurst Swell (Imp.). For sale: 5 boars, 5 gilts, 1 nine-months' sow, due in May. Pigs ready to wean. Motto: "Goods as represented." Careful selections for mail orders. H. M. VANDERLIP, Cainsville, Ont.

Dunrobin Stock Farm

Clydesdales, YORKSHIRES, Shorthorns

We are booking orders for breeding stock from our grandly-bred Yorkshire sows. Twenty-five sows to farrow in the next few weeks. Unrelated pairs a speciality. Write for prices and particulars.

DONALD GUNN & SON, Beaverton, Ontario. G. T. R., C. N. O. R. stations 1 1/2 miles from farm. Customers met on notification.

PINE GROVE BERKSHIRES!

Bred on aristocratic lines and from high-class show stuff, sired by the Toronto winner, Willow Lodge Leader. For sale are young animals of both sexes—4 and 6 months of age; of choice bacon type and showing form. W. W. BROWN-RIDGE, Ashgrove P. O., Milton Sta.

Yorkshires and Tamworths—Either breed any age, both sexes; sows bred and ready to breed. Yorkshires bred from Imp. sire and dam. Tamworths from Toronto winners. Pairs not akin. As good as the breeds produce. CHAS. CURRIE, Schaw Sta., C. P. R. Morriston P. O.

ELMFIELD YORKSHIRES Have 40 young pigs from 2 to 5 mos. Some young boars ready for service; also young sows bred and ready to breed. Pairs supplied not akin. Prices right. G. B. MUMA, Ayr, Ont.

ORCHARD HOME TAMWORTHS Herd headed by Newcastle Warrior. This hog won first prize and silver medal at Toronto 1905, and defeated his sire, Colwill's Choice (1343), who has won these honors three years in succession. Our brood sows are large and of the same high quality. If you want choice stock, we can satisfy you at a reasonable price. Young boars fit for service; also young pigs now on hand. One good Yorkshire boar one year old. Express prepaid and satisfaction guaranteed. CRANDALL BROS., Cherry Valley, Ont.

Newcastle Herd of Tamworths and Shorthorns. We have for quick sale a choice lot of boars and sows from 2 to 6 months old, the produce of sows sired by Colwill's Choice and Newcastle Warrior, both our own breeding, and winners of sweepstakes and silver medal at Toronto, 1901-02-03-05. Several very choice sows due to farrow in March and April. Pedigree furnished with every pig. Several choice heifer calves and heifers in calf to our present stock bull. All of high show quality. Prices right. Daily mail at our door. COLWILL BROS., Newcastle, Ont.

Mount Pleasant Tamworths and Holsteins. Herd of For Sale: Pigs of either sexes, from 6 weeks to 7 months; pairs not akin; also bull and heifer calves under 5 months. Phone in residence. BERTRAM HOSKIN, The Gully P. O.

TAMWORTH SWINE and DORSET HORN SHEEP of both sexes and different ages. Some shearing rams and ewes from choice stock. JAS. DICKSON, Orono, Ont.

QUESTIONS AND ANSWERS. Miscellaneous.

CORN FOR HUSKING—EMMER.

Have a piece of new land to break up. I want to pasture it as long as I can, and then put in corn. Could you please tell me the best variety to plant that would make the best corn in cob, and also the best stalks for feed, as I intend to cut it up for winter feed?

2. What is emmer? A recent issue of "The Farmer's Advocate" recommended sowing it, as it produced 60 bushels to the acre. I inquired at principal seed stores in London, and they knew nothing of it. P. T. C.

Ans.—1. White Cap Yellow Dent, Compton's Early, Longfellow or King Phillip should give satisfactory results.

2. Emmer (Triticum dicoccum) is one of the seven distinct types of wheat recognized by botanists. It should be distinguished from spelt (Triticum spelta), which is not nearly so valuable.

A certain amount of emmer has been grown in Canada, however, under the mistaken name of spelt. Emmer is grown in Russia, Germany, Switzerland, Spain, France, Italy, and to a slight extent in some other countries. For the past seven years it has been grown experimentally at the Ontario Agricultural College, where it has made a good showing in comparison with barley as a grain for stock feed, producing very heavy yields of grain. From Guelph, it has been more or less widely distributed throughout Ontario for co-operative experiments, and, writing of it in 1903, Prof. Zavitz said the average yields thus obtained were higher than the average yields of the best varieties of barley. Since then, it has been mentioned favorably a number of times in "The Farmer's Advocate." The grain of emmer is tightly enclosed within the chaff, from which only a small portion is separated in threshing. For feeding purposes, the grain and surrounding chaff are usually ground together in the same manner as oats are ground into meal. The average percentage of hull of emmer is only about three-quarters as great as the average percentage of hull in oats. Feed of emmer may be procured from farmers who are growing it here and there, and the wholesale seedhouse is behind the times which does not keep it in stock.

ALFALFA ON CLAY.

1. Having read with interest your article in issue of May 2nd, "Don't Let the Crust Form," would like to ask, through your valuable columns, if anything could be done to a field of 12 acres to be sowed to lucerne without a nurse crop, as some of the land is stiff clay.

2. Can we get a crop this season, if conditions are favorable, to be seeded at the rate of 20 lbs. per acre? G. P.

Ans.—1. It is rather risky business trying to break the crust on a field after it has been seeded with alfalfa, clover or grass. If a rain came within a few days after the seed were sown, something might be done, as soon as the ground dried up, with light harrows, or a weeder, but if the seeds had sprouted, great care should be taken not to disturb them. Perhaps the safest plan when seeding such a field is to have the surface harrowed, then, if a rain comes, and a crust forms, after it has dried off fairly well on top, run over it a roller with a small diameter. This will crush and pulverize the lumps, leaving a slight dust mulch. A roller of small diameter is best for crushing clods, because it grinds them down, whereas a large roller merely presses them into the surface. In using the roller, remember that rolling a dry, crusted surface helps to form a dust mulch, which retains moisture in the soil below. Rolling a moist surface has the opposite effect. It compacts the soil, producing a condition under which the soil moisture is drawn (by capillary attraction) to the very surface, and there evaporated by sun and air.

2. It is unlikely that the first season's growth on clay land would warrant cutting for hay. It will be better for next year's crop to clip the growth when six or eight inches high, or, at any rate, before any weeds go to seed, and leave the clipping on the ground for a mulch. It is harder to get a catch of alfalfa on heavy clay than on lighter soil, but once secured, it lasts longer and does better, as a rule.

DR. WOOD'S



NORWAY PINE SYRUP

Stops the irritating cough, loosens the phlegm, soothes the inflamed tissues of the lungs and bronchial tubes, and produces a quick and permanent cure in all cases of Coughs, Colds, Bronchitis, Asthma, Hoarseness, Sore Throat and the first stages of Consumption.

Mrs. Norma Swanston, Cargill, Ont., writes: "I take great pleasure in recommending Dr. Wood's Norway Pine Syrup. I had a very bad cold, could not sleep at night for the coughing and had pains in my chest and lungs. I only used half a bottle of Dr. Wood's Norway Pine Syrup and was perfectly well again."

Price 25 cents a bottle.

Large White Yorkshires



Am offering at the present time a number of choice boars and sows of breeding age, also some imported sows in pig. Also young pigs of spring farrow direct from imported stock. Pairs and trios supplied not akin. Write for what you want.

H. J. DAVIS, Woodstock, Ont. Breeder of Shorthorns & Yorkshires



MONKLAND Yorkshires

Imported & Canadian-bred

We keep 35 brood sows, and have constantly on hand between 100 and 200 to choose from. Can supply pairs and trios not akin. Quality and type unsurpassed. Prices right.

JAS. WILSON & SONS, FERGUS, ONT.

G. T. R. and C. P. R. Long-distance Phone.

Glenburn Herd of Yorkshires.

Winner of gold medal three years in succession. Young boars and sows of different ages. Also a grand good Shorthorn bull (roan) 7 months old. fit to head any herd.

David Barr, Jr., Box 3, Renfrew, Ont.

Maple Grove Yorkshires



are among the leading Canadian herds for size, quality and true-ness to type, and are prizewinners all around. For sale are both sexes. All aged. Bred from Imp. and home-bred stock. There are none better.

H. S. McDIARMID, Fingal P. O., Shedden Station, Breeder and Importer.

Fairview Berkshires



Are second to none. My herd has won high honors wherever shown. Am now offering sows bred and ready to breed, and younger ones of both sexes, the get of Masterpiece and Just the Thing. An exceptionally choice lot.

JOHN S. COWAN, Donegal P. O., Milverton Sta.

SUNNYMOUNT BERKSHIRES.



Sunnymount Berkshires are unsurpassed for ideal bacon type and superior breeding. For immediate sale: A few choice boars from 5 mos. up to 15 mos. old.

JOHN McLEOD, Milton P. O. and Sta., C. P. R. & G. T. R.

Fairview Berkshires



Bred from imported and Canadian-bred sires and dams, and bred on prizewinning lines. My brood sows are large, choice animals. Young stock of both sexes. Some sows bred to Imp. boars. HENRY MASON, SCARBOROUGH P. O. Street cars pass the door.

When Writing Mention this Paper.

GOSSIP.

R. HUNTER & SONS' IMPORTATION OF AYRSHIRES.

The following is a short sketch of the animals and the herds from which were drawn the 45 head of Ayrshires recently imported by R. Hunter & Sons, Maxville, Ont.: From Lessnessock there go sixteen head, composed of three bulls and thirteen cows and heifers. One of the bull stirks is bred by Mr. Logan, Bargenoch, got by his great breeding bull, Durward Lely, and out of one of his famous old cows, which has a wonderful record in spite of her years. Another bred by Mr. Logan, and by the same sire, is a splendid two-year-old heifer, calving in August. A second bull stirk is out of one of Mr. Montgomerie's great Snowdrop cows, and sired by his now famous breeding bull, Marshal Oyama. This is an upstanding, stylish bull, and worthy of his breeding. The third bull stirk is by the same sire, and out of a grand old cow. A pair of splendid two-year-old heifers, calving in August, and sired by Marshal Oyama, are showing wonderful teats, and give great promise of being big, good dairy cows; while there also goes the best three-year-old quey that has left Lessnessock for Canada since 1898, when the four famous cows, Minnie, Edith, Marget, and Alice were exported. Another is a four-year-old of the Sara Macgregor strain, a heavy milker, with large teats; and two others are young things equally promising. Other four are bred by Mr. Sloan, Castlemaims, New Cumnock, a five-year-old, a four-year-old, a two-year-old, and a yearling, all out of his best strains, and they can be depended on to give a good account of themselves. Another is a grand big cow, bred by Mr. Stevenson, farmer, Thornhill. From Mr. Robert Wallace's great herd at Auchenbrain there go a splendid five-year-old cow, of the White Beauty family, and her two-year-old daughter, by Spicy Robin. Another is the great cow, Dainty X., a cow that has few equals in any breed. Mr. Watson, Barboigh, supplies a big six-year-old cow of the right stamp; and another grand, big, stylish cow, calving in August, for Canadian shows; while a third is a stylish and very well-bred bull stirk. Mr. Andrew Baird's well-known Garclaugh herd contributes seven head. One is a grand cow, very near the top in the milk records, and out of the Dainty family, without a doubt one of the best of the herd. She supplied one of the present stock bulls at Lessnessock. Another is a bull stirk, out of the great Prinosa cow that was exported a year ago, and by Flying Fox. There is a yearling quey; and two others are of the Snowdrop and Rose families; while there goes a grand big two-year-old, of the Sonsie strain, and a promising bull calf. From Messrs. R. & W. Sillars, Whiteside, Monkton, goes a bull stirk, bred at Lessnessock, got by Marshal Oyama, and out of the same dam as Royal Star, a bull that was exported in 1903, and which, in Mr. Alex. Hume's hands, won first three years in succession at the Canadian National at Toronto. Another is a three-year-old quey, full of promise, and out of the Lessnessock Royal Rose family, and calves in August. From Mr. Andrew Logan, Overton, goes a grand cow, calving for Canadian shows. She is a half-sister to the famous Not Likely; while another, from Overton, is a very promising young thing of the best of breeding. Mr. Robert M. Reid, Toward Point Farm, supplies a pair of splendid two-year-old heifers, bred by Mr. Mackay, Auchafour, and out of splendid cows. They calve in August. A third is a bull stirk, bred by himself, and got by the Auchenbrain bull, and out of the same dam as Royal Delight, a bull exported in 1903, and which in Mr. J. W. Black's (Lachute) hands made an enviable record as a breeder and show bull. The fourth is a very promising young thing. From Mr. John McAllister, Ardyne, goes a great big three-year-old quey, bred by Mr. Robert Reid. It is doubtful if as good an uncalved three-year-old quey as this ever crossed the water. Mr. Mackay, Auchafour, supplies a worthy mate for her in another grand three-year-old, calving in August. Messrs. Knox, The Lane, Drongan, sends a young thing, the dam of which is well up in the milk records; and Mr. Hugh Smith's (Whitehill) herd supplies another.

of equal promise. From Mr. James Seaton's, Shawatton Mains, Dundonald, goes still another that will yet be heard of; and, last, but by no means least, there goes a very promising heifer from Mr. David Stevenson, Changue, Cumnock. Quite a number of these animals have been prizewinners in Scotland, and all of them will give a good account of themselves at Canadian shows, should they get the chance. But the main object in view when buying these animals was to secure only those of the very heaviest-milking strains, so that when they come to be entered for dairy tests or the Record of Merit (which is now in full force in Canada), they will make their owners proud of them.—[Scottish Farmer.

FAIRVIEW SHROPSHIRE.

Once more the journeyings to and fro of "The Farmer's Advocate" road man brought us up at Fairview, the ideal farm home of Mr. John Campbell, of Woodville, Ont., one of Canada's leading importers and breeders of Shropshire sheep, and, as usual, we found his champion flock of 160 head of Shropshires in remarkably nice condition. The public, and especially the sheep-loving public, need not to be told by us of the high standard and quality of this noted and continental-famed flock. For years, at the leading shows of Canada and the United States, they have considerably more than held their own against all comers. They are well known from the Atlantic to the Pacific. To say that a Shropshire was bred by John Campbell is a guarantee of excellence, and, to use Mr. Campbell's own words, the flock was never in better shape, and never contained so many high-class sheep as at present. The past year was away the best for sales and prices in his many years' experience. Practically all the breeding stock are imported, and the stock rams are marvels of the breed for type, quality, size and covering. About 65 youngsters were to be seen gambolling around the yards, already showing that typical mould and evenness of form that develop into winners, and well they should, if the well-established law of breeding, that like begets like, is still potent. Mr. Campbell has also one of the nicest herds of Shorthorns in the country, practically all belonging to the well and favorably known Strathallan strain; better than which there is none. The active demand Mr. Campbell enjoys for his surplus stock of Shorthorns has not left one for sale, a state of affairs that must be very satisfactory to Mr. Campbell, as well as being a guarantee that the kind of Shorthorns he breeds is the kind the people want. Mr. Campbell having taken his nephew into partnership, the firm name is now J. & D. J. Campbell, as their advertisement shows.

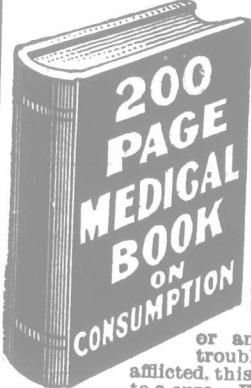
A NEW BREED OF PIGS.

Vol. 1 of the pedigree record, recently issued of a breed of English swine, the name of which will doubtless be new to most of our readers, has been received at this office. It is the herdbook of the Lincolnshire Curly-coated Pig Breeders' Association, which was incorporated in March, 1907, with a membership of 115, and a registration of 174 boars and 446 sows. They are described as a fairly-lengthy, strong-boned white pig, with straight face, drooping ears, and curly or wavy hair, hardy, early-maturing and prolific. Two specimen gilts, illustrated on the title-page of Vol. 1, winners of first and second prizes at the county show at Gainsborough, 1906, are said to have weighed, at 10 months 2 weeks and 2 days, 911 lbs. the pair, as compared with the two cross-bred pigs which won first prize and the champion cup at the Smithfield Show of the same year, which, at 11 months 2 weeks 2 days, was 867 lbs. The secretary of the Association is Mr. Chas. E. Williams, Thornhayes, Sleaford, Lincoln.

TRADE TOPIC.

CEMENT BUILDING BLOCKS are coming rapidly into favor as economical and enduring building material. With one of the concrete-cement building-block machines advertised in this paper by Vining Bros. Mfg. Co., Niagara Falls, Ont., a farmer can make his own building blocks on the ground. Write for their catalogue A, and read what they say as to the merits of the machine.

Consumption Book FREE



This valuable medical book tells in plain, simple language how Consumption can be cured in your own home. If you know of any one suffering from Consumption, Catarrh, Bronchitis, Asthma or any throat or lung trouble, or are yourself afflicted, this book will help you to a cure. Even if you are in the advanced stage of the disease and feel there is no hope, this book will show you how others have cured themselves after all remedies they had tried failed, and they believed their case hopeless. Write at once to the Yonkerman Consumption Remedy Co., 129 Rose Street, Kalamazoo, Mich., and they will send you from their Canadian Depot the book and a generous supply of the New Treatment, absolutely free, for they want every sufferer to have this wonderful cure before it is too late. Don't wait—write today. It may mean the saving of your life.

ALBERTA

Offers Opportunities.

Northern Alberta is the garden land of the West. The district around MILLET is unsurpassed. The town presents many chances for business openings. For full information write:

P. J. MULLEN,
Sec. Millet Publicity Committee,
MILLET, ALBERTA.

5,000 MILES NEW RAILWAYS

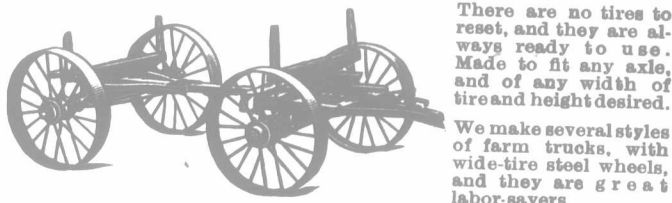
building in Canada to-day. Telegraph operators are scarce. Many more are wanted. It will pay to qualify and thus earn a good salary. Particulars free. Write: CENTRAL TELEGRAPH SCHOOL, 3 Gerrard St., East, Toronto. W. H. SHAW, PRESIDENT.

Alberta Lands

IN THE FAMOUS STETTLER DISTRICT Improved and unimproved farms. Prices right. Crop payment. Terms to suit. Write for particulars. W. E. FOOTE and J. P. GRIGG, Stettler P. O., Alta. Red Willow Land and Investment Co.

THE FARMER'S FRIEND

Our extra strong wide-tire steel wheels run easy, are low and handy.



There are no tires to reset, and they are always ready to use. Made to fit any axle, and of any width of tire and height desired. We make several styles of farm trucks, with wide-tire steel wheels, and they are great labor-savers. The material and workmanship are the best, and both wheels and trucks are fully guaranteed. Write for illustrated catalogue. DOMINION WROUGHT IRON WHEEL CO., LIMITED, ORILLIA, ONTARIO

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Write for our circulars on PORTABLE WELL-DRILLING MACHINES AND DRILLERS' SUPPLIES. London Well-Drilling Machine Co. LONDON, ONT.

ARREST IT—\$50 REWARD.

A small sample bottle of Eo-sine will be sent free to every reader of The Farmer's Advocate who is suffering with any kind of skin disease or eruption—Eczema, Blind or Bleeding Piles, Blood Poison, Fever Sores, Cancer, Rheumatic Pains, or any other Germ or Virus disease or sore of any name or nature. \$50 reward will be paid for any case of Eczema that is not cured with Eo-sine. Eo-sine will heal any sore or cure the worst skin, and make it look like velvet. Never mind what you have tried; forget the failures made by other remedies, and send for free sample of Eo-sine, which always gives relief and permanent cure. A \$1.00 bottle often cures in hospitals, and by physicians generally. It is not a patent medicine. If your druggist does not have Eo-sine, send direct to us. State nature of disease and years' standing. Address: THE PHYSICIANS LABORATORIES, 112 Dearborn Street, Chicago, Ill.

Heinmiller & Schaab

Real Estate and Financial Agents, REGINA, - - SASK.

We have some good bargains in improved farms to suit the most particular settler. Prices and terms reasonable. We deal in none but the choicest farm lands. Have also prairie lands for sale in best districts, and good bargains in Regina City property. Correspondence solicited. Any information desired cheerfully given

Water Supplied at Cost

—OF A FEW CENTS A WEEK—

An Economy Hot-Air Pumping Engine is so adjusted and constructed that there is no possibility of anything going wrong.

When the fire-pot is red-hot, give the fly-wheel half a turn and your engine is in motion. It can be run for 24 hours of more without any attention whatever.

Fuel can be regulated to keep the engine running until you have the desired quantity of water, when the engine will stop automatically. It is absolutely noiseless in operation.

A child old enough to build a fire in a kitchen stove is old enough to run a hot-air engine.

An Economy Hot-Air Pumping Engine will supply both the stables and the house with fresh water under pressure. It is always available.

You have the comfort and knowledge if your surplus supply of water is exhausted you can replace it with a fresh supply in from ten to fifteen minutes.

It does away with the necessity of having elevated storage tanks in your barn and house, with all the attendant inconveniences of strengthening beams and the danger of leakage and filthy accumulations.

The Economy Hot Air Engine also serves as a protection against fire.

Displaces the windmill and the gasoline engine.

The windmill during the dry, hot, calm summer days is a very uncertain quantity as a provider of water. You are dependent altogether on the wind, and if you store enough water to tide you over a period of calm, the water becomes stale.

Stagnant water isn't any more wholesome for horses and cattle than for human beings.

A windmill is unsightly. There is always an element of danger in ascending a narrow ladder to oil its running parts.

A gasoline engine is such a complicated bit of mechanism that it almost requires the attention of an expert engineer to keep it in running order.

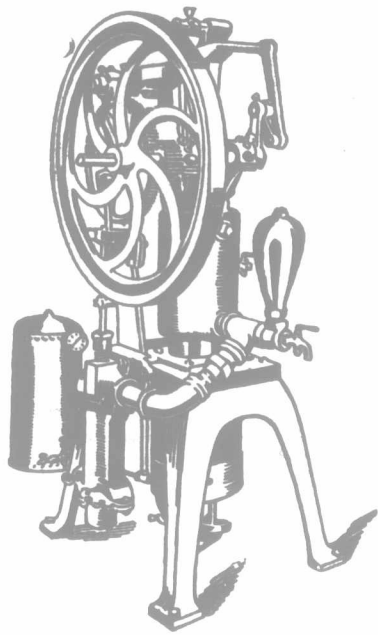
An Economy Hot-Air Pumping Engine will burn wood, charcoal, coal, coke, gasoline, kerosene.

The amount expended in repairs on a windmill will be found quite sufficient to pay the running expenses of an Economy Hot-Air Engine.

The Economy Hot-Air Engine is sold subject to an unconditional guarantee that it will do all that is claimed for it.

We will send an Economy Hot-Air Engine to you on approval, and if after ten days' trial it is not as represented you may return it to us.

Write us, and we will send you our illustrated booklet, which describes fully the operations and points of superiority of the Economy Hot-Air Pumping Engine. We will be pleased to give you information as to the size of engine and pump best adapted to your requirements, and all other necessary particulars. Address:

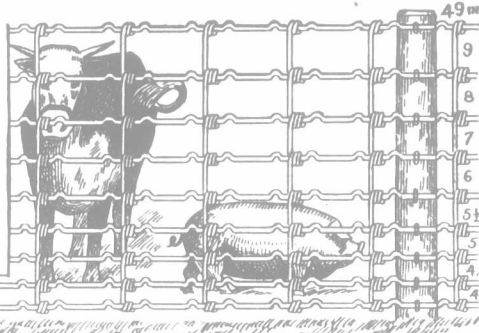


CLUFF BROTHERS

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**AMERICAN
FENCE
PROTECTS
CROPS.**



SPECIAL STEEL, SPECIAL GALVANIZING,
ALL NO. 9,
HARD, STIFF, SPRINGY WIRE,
used in the

AMERICAN WOVEN WIRE FENCE

Tension curves
prevent stays
from slipping.



Hinge joint allows the
American to fit the
hills and hollows.

THE CANADIAN STEEL & WIRE CO.,
Hamilton, Canada. (LIMITED)

**When Writing Advertisers
Please Mention this Paper.**

GOSSIP.

Mr. David Barr, Jr., Renfrew, Ont., orders a change in his advertisement in this issue, in which a good young roan Shorthorn bull is offered for sale.

The noted Rawlinson Stud of Ranched Hackneys, from whence came the World's Fair champion, Robin Adair II., and other prizewinners, including the full sisters of Saxon, Pricilla and Menona, champions at St. Louis, is advertised to be dispersed by auction some time in July. Catalogues will be ready early in June, and may be obtained by writing Jordison Bros., auctioneers, P. O. Box 1172, Calgary, Alta. A grand lot of brood mares, sired by Robin Adair and other high-class horses, are in the sale. This should be a fine opportunity to obtain strong, hardy breeding stock, full of quality and endurance. See illustrations on another page in this paper, also the advertisement.

CRAIGALEE HACKNEYS.

It is with a great deal of confidence that we introduce to the readers of "The Farmer's Advocate" Mr. H. J. Spencely, of Boxgrove, Ont., owner of Craigalee Stock Farm, situated in the County of York, four miles from Markham Station (G. T. R.), three miles from Locust Hill (C. P. R.), and about twenty miles north-east of Toronto. Mr. Spencely is well-known to many of the leading horsemen of Canada, having for many years been an extensive breeder and dealer in high-class harness horses, particularly Hackneys. He, also, generally has on his magnificent farm a few up-to-date Clydesdale mares and fillies. He is a natural-born horseman, and many of the red-ribbon winners at our leading exhibitions were bred or educated by him, and always in his splendid stables at Craigalee may be seen a few of the kind that delight the eye and cheer the heart of lovers of the most noble of animals. Just now there are on hand something over a dozen really good ones, at the head of which is the double champion, Colorito (imp.) (8796), E. H. S. B., sired by the invincible sire and champion of many rings, Rosador; dam the noted show mare, Syringa; grandam Countess, a noted show mare. Colorito has been a winner from colthood up, is an ideal type of the breed, with a style and flashiness of action that commands admiration, and, as a show horse, he has had few equals in the Canadian show-rings. Among the brood mares, probably the peer of any is Rosalie, a bay six-year-old, by Matchless of Londesboro. Rosalie has probably more winnings to her credit than any other Hackney mare in Canada, and is one of the most sensational all-round actors alive, besides being a remarkably sweetly-turned mare. She is about due to foal to the champion, Rosary, Saxon Girl, as her name would indicate, is by the great champion, Saxon, and out of Lady Malgon. She is a brown, rising four, a superb mare, with faultless action and grand quality. She, too, is heavy in foal to Rosary. Queen of Craigalee is a chestnut, rising five, by Imp. Ganymede. This is a very stylish, flashy-moving mare, smooth to a turn, and of beautiful contour, well-broken in all harness. Sensation's Best is a chestnut five-year-old, by the great sire, Hillhurst Sensation. She is a rare nice family mare, thoroughly broken, and has splendid action. High Roller is a brown six-year-old, by Royal Standard, 16 hands high, a high-class actor and harness horse, thoroughly broken. Black Princess is a black four-year-old, by Muckle Wilkes, an exceedingly sweetly-turned combination harness and saddle mare, well broken, and a splendid mover. Space will not allow mention of all, but two youngsters certainly deserve a passing word. One of these is a brown filly yearling, out of that great mare, Rosalie, and sired by Royal Oak. This is the making of a great show mare. The other is a yearling chestnut horse colt, by Whitewall Fashion. Here are a pair of colts hard to duplicate in any stable in the country, a rare good pair. Anything on the farm is for sale, and parties wanting something nice are pretty sure to find it here. The farm is connected with the city by telephone.

A Montreal news despatch, dated May 13th, says: "Dr. Shirres, of this city, had an experience this morning which he is not likely to forget. While out riding on Lachine road his horse was attacked by a bulldog. The dog sprang at the horse's hindquarters, and tore him badly, and when the doctor dismounted to save his horse, he was attacked by the dog, and badly bitten in both feet, and several toes will have to be amputated as a result. The dog escaped, although a vigorous search was made for him by the police."

Colwill Bros., of Newcastle, Ont., who have been wonderfully successful in the show-rings of leading Canadian exhibitions for many years, have lately strengthened their noted herd of Tamworths by the importation of a stock boar from one of the leading herds of England. No breed of any class of pure-bred animals in Canada to-day was in such need of fresh blood as the Tamworths, and Mr. Colwill deserves the thanks of every Tamworth breeder in supplying that long-felt want. This young hog is seven months old, bred by Mr. Stephens, and out of a sow that has repeatedly won the championship of England, and by a noted prizewinning sire. He is an ideal bacon-type hog, strong-boned, smooth and even. Just now, Mr. Colwill is offering a large number of young sows, bred to him, and got by Colwill's Choice and Newcastle Warrior, both championship winners at Toronto. This is an offering of choice young Tamworth sows that has never before been equalled by the breed in Canada. Tamworth breeders make a note of this. This firm is also offering a few extra nice Shorthorn heifers of heavy-milking strains, nearly all sired by Donald of Hillhurst, a son of Imp. Joy of Morning, with dams sired by Imp. Oxford, and being bred to the present stock bull, Baron Tulip 53879, a son of Imp. Baron Beaufort. There are also for sale two young bulls, bred the same, a good pair.

SENATOR BEITH'S HACKNEYS.

When in Bowmanville, Ont., a few days ago, "The Farmer's Advocate" road representative improved the opportunity by calling on the Hon. Robt. Beith, and was favored with a look over his magnificent Waverly stud of Hackneys. At the time of our last visit some months ago, we found the horses to a more or less extent suffering from their long and rough sea voyage, but our "hoss" sense and instinct told us that here was certainly the most sensational bunch of Hackneys ever landed on Canadian shores, once they got on their feet and filled out with good Canadian hay and oats. This time we found our predictions more than fulfilled, as the dozen or more were, one by one, led out and sent through their paces as only "Jimmy's" master hand knows how. We were certainly amazed at the phenomenal improvement they presented, not only in condition, but in action and manners as well. But why be surprised? They were selected by Mr. Beith in person, acknowledged to be one of the most expert Hackney judges on the continent, and they were bred by the two leading Hackney breeders of the British Isles; sensational in action, royal in breeding and perfect in contour and quality, about describes the bunch. A coming champion is a brown two-year-old son of the great Copper King, a colt of exceedingly sweet mould and superb action. What particularly took our eye was a pair of chestnut daughters of that grand old sire, Ruby. They are four and five years old, a grand pair indeed, beautiful at rest, wonderful in action, practically faultless in make-up, a pair that when fully educated, single, tandem or double, will certainly be invincible. Another pair of exceedingly well-matched daughters of Ruby are a pair of brown four-year-olds, a pair of sensational actors, with style and quality to spare. Probably one of the best of the lot is a three-year-old chestnut daughter of Garton Duke of Connaught, with dam by Wildfire, a mare that for sweetness of mould, style, all-round action and quality certainly could not be improved on. Space forbids individual mention of all of them. Several are being fitted to appear before the footlights at the coming light-harness horse show in Philadelphia, when we expect them to more than sustain Canada's reputation as the home of some of the best light-harness horses in the world.