

**PAGES
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FARMER'S ADVOCATE

AND HOME MAGAZINE

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

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VOL. XXXII.

LONDON, ONT., AND WINNIPEG, MAN., MAY 15, 1897.

No. 430.

EDITORIAL.

Canadian Stockers in Demand.

Reference has been made in the FARMER'S ADVOCATE to heavy shipments of Ontario beef stockers to Buffalo and Iowa City. Our Chicago market report in this issue states that Iowa is "short" on cattle but "long" on corn. From the counties of Ontario, Durham, and Peterborough an order for 1,000 head is now being filled to go to that State. Whether or not the shipments will cease at the end of this contract it is difficult to say, but we learn that the lots being sent are pleasing the market there exceedingly well. While this can be done with profit to American beef raisers in spite of duty and freight, surely there is some money to be made in Ontario by keeping such cattle here and finishing them on our cheap coarse grains and future cheap American corn. While we do not like to see such animals leaving the country just at a time when the feeding of them is commencing to be more profitable, it does indicate more life in the beef business. No doubt the almost universal run into dairying in some quarters and sheep raising in others is largely responsible for this condition of shortage in the States referred to. Now is just the time to use only good bulls of whatever sort they may be. If for beef specially, use good beef bulls; if for the dairy, use the sons of good dairy cows and sires having a performing history. We, as Canadians, have no time to waste growing or trucking in inferior or even ordinary stock.

The British Agricultural Produce (Marks) Bill.

The sequel to the British embargo designed to shut out Canadian and other store cattle, sheep or swine, by requiring all to be slaughtered within ten days of landing at the port of entry, is now progressing through the English House of Commons under the title of the "Agricultural Produce (Marks) Bill." The first named was largely protectionist in its nature; so is the new legislation sought. Its purport is to require every seller of imported meat to display a notice that he is a registered "dealer in foreign meat," and to have the carcasses branded as such. It was explained on the second reading that butchers would "not be compelled to mark every chop or small piece of meat" and that its sole object was to prevent fraud, by making it an offense to palm off juicy, toothsome foreign or colonial cuts as the genuine British or Irish article. If this bill becomes law it will behoove Canadians to send over nothing but the very best finished cattle or the finest dressed meat, in case that trade be developed, so that the consumers will in time realize its outstanding excellence. The measure will no doubt be vexatious to dealers there, and is based on the claim that British meat is superior to the imported article. We notice that the *Agricultural Gazette* objects to the definition clause according to which "foreign meat" means only meat imported dead, so that no branding would be necessary in case of the carcasses of Canadian cattle, for example, shipped in alive and slaughtered at Liverpool or other ports. In fact the *Gazette* would prefer the bill dropped than passed in its present shape, and it urges the Select Committee, in whose hands the bill now is, to amend this definition so that "British or Irish meat" will mean only the flesh of animals fattened in the United Kingdom, and "foreign meat" the flesh of animals imported either alive or dead.

The Outlook for Canadian Butter.

Mr. Alex. W. Grant, the well-known cheese and butter exporter, of Montreal, on returning from a six weeks' visit to the British markets, points out that Canadian or U. S. butter must go forward in its best condition to supplant other butters that now have a regular place there. Denmark ships

to England annually \$28,000,000 worth of butter out of a total importation of \$65,000,000. The essentials to a successful trade are regular weekly shipments of fresh butter of uniform good quality. Denmark, Ireland, and Normandy ship weekly, and so must Canada. There is no need to fear Australia, except on second quality. Canada the past season shipped finer butter than anything that came from Australia, but the quantity was infinitesimally small. It is given the preference over States butter because it is fresher and complies more with the requirements. Light straw color and light salting are called for, though some markets take more color than others. As to packages, the square box is most economical and has many friends, but the quality of the butter is more than the package. In an interview, in New York, Mr. Grant expressed the opinion that the U. S. Government could spend \$200,000 or \$300,000 to advantage by giving farmers a bounty of 1c. to 2c. per pound for all the butter they would ship to England within a week or ten days after being made, citing the example of other countries in justification. We must say that the experience in Quebec Province with a butter bonus was most unsatisfactory, very little, if any, of the bonus ever reaching the dairy farmer, who is simply "exploited" for the benefit of a few interested parties. The farmer is usually "helped" or "bonused" or "fostered" in that very way while through taxation directly or indirectly he has to provide a large proportion of the "help" himself.

One of the largest and best lines of export in Canada to-day is cheese—a trade that was not boomed or bonused into existence. Like British trade, it developed naturally upon its merits and mainly by private enterprise. In the Province of Ontario it was helped by the Government, through the Dairymen's Associations, establishing a system of factory inspection and instruction, association meetings, and teaching both of makers and patrons through the press. The rigid exclusion of the "filled-cheese" fraud and the "skim-cheese" business from Canada—rocks on which the American cheese industry came to grief—has been of inestimable advantage to Canada. The factory system, insuring uniformity, was the foundation and the foregoing measures the superstructure upon which a permanent success was built. We apprehend that a flourishing and abiding butter trade can, with the promised transportation facilities, be established on precisely the same principles. Is its future promising? Yes! is the decided conclusion reached by Mr. Grant. The whole world is competing more in other articles than in the finest butter, which is a product of great skill, and the consumption of butter increases with the population, which cheese does not do to anything like the same extent.

Since Denmark developed butter dairying she became also a large exporter of bacon to Britain. Swine rearing fits in admirably with either branch of dairying, Canada already possessing a splendid bacon trade in Great Britain, particularly as to quality. In buttermaking the by-products are utilized to best advantage by raising calves on the skim milk as well as hogs on skim milk and buttermilk. Winter is the proper time for calf rearing—a strong point in favor of buttermaking at that season. Buttermaking, too, is less exacting in its demands upon the fertility of the soil. We may therefore very safely push the butter business, but at the same time there should be no relaxation of attention to the cheese industry. There is room for both and to spare in this broad Dominion, and in many factories now buttermaking is successfully carried on in winter and cheesemaking in summer.

E. McVEETY, Librarian North Dakota Agricultural College, writes: "Your excellent paper has been received at this Station during the past year. It has been largely read by students and faculty, and is highly appreciated."

Selection of Judges.

The selection of judges who are likely to give general satisfaction to exhibitors is one of the most difficult matters which claim the attention of fair boards. We are fully persuaded that as a rule the honest purpose of such boards is to select men who are known to be competent judges of the classes of stock they are invited to pass judgment upon, and to avoid appointing men who are likely to be interested in any way in the stock competing or likely from any relationship they may sustain to any exhibitor to show partiality to a friend or neighbor. There is, of course, a possibility that some member of the board may be interested in securing the appointment of a friend as judge who would be likely to give him or his friend who may be an exhibitor the benefit of a doubt, if not more, and it is this point we desire especially to emphasize in treating the subject in this article. In the first place we take it that the directors of a show or fair association desire its success. They must know that it is the exhibitors who make the show, and that the greater number who can be induced to enter the list of exhibitors with meritorious animals the greater will be the success of the exhibition. In order to secure a large entry it is essential that all cause for suspicion that the appointment of judges is being manipulated by interested parties should, if possible, be removed; and if such suspicion, whether well founded or not, is known to exist, it is well that it should be dispelled by making such changes—if not in the directorate, at least in the judges—as will be likely to restore confidence and lead to a fuller entry of exhibits. Indeed it would seem to be none too great a sacrifice in such a case if some of the directors, in order to restore confidence on the part of exhibitors, should voluntarily retire and make room for new blood which, while it may be no better, would have the virtue of being a change. One feature at least which has existed in certain shows and which has caused unfavorable comment, namely, the appointment of judges from among the directors, should be studiously avoided. Surely competent judges are not so rare that it is necessary to select them from the list of directors of the show and to continue them from year to year or to have them reappear every other year on the list of judges.

In making these remarks we wish it to be distinctly understood that we are not reflecting upon the honesty, fairness or competency of the judges in any particular case. We have no reason to so reflect, and our only object is the greatest amount of success for our shows, which we contend can only be secured by sustaining confidence on the part of exhibitors and a consequent fuller entry of exhibits. This whole question requires careful and considerate handling in view of the many conflicting interests involved, and it should be the aim of fair boards to choose for judges men of sterling character, independence, and a fine sense of honor—men having a good share of that firmness and fearlessness which is commonly known as backbone, and men who are acknowledged to be close and critical judges of the class of stock they are called to pass upon. A man may have all the necessary experience and may be a good judge, but if he be weak and vacillating, and have not the courage of his convictions, and allows himself to be swayed by fear of what an exhibitor or interested parties may say or think, and does not record his independent judgment, he makes an unenviable exhibition of himself, does injustice to other exhibitors and to the character of the show, and is little, if any, less culpable than the judge who deliberately plans to favor a friend. To appoint to the position of judge a man who has not a reputation worth guarding, or who, even if a competent judge, is so mixed up with exhibitors as to be liable to the suspicion that he is not independent of such relations, is a mistake which should be carefully avoided.

While we are writing upon this subject we will go further and say that in our opinion it only makes matters worse when an exhibitor who feels that he has not received his due in the awards made in one class withdraws his stock and declines

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to show any more. The public have some rights as well as exhibitors, and one of their rights is to see the stock which is entered in the catalogue of exhibits, which in most cases they have paid for in addition to paying their admission fee. To refuse to place the entries on exhibition weakens the show and tends to bring it into disrepute. Besides this, the exhibitor, particularly if he has a substantial grievance, will in large measure lose the sustaining judgment of the onlookers, which in these days of well-informed, independent criticism is surely worth something. Due allowance should be made for difference of opinion and of judgment; and even if a mistake is made in one class it does not follow that it is going to be repeated in others, and to throw away the opportunity of advertising one's stock by withdrawing them from the ring is only making matters worse for the owner as well as disappointing to visitors. The exercise of proper discretion in the selection of judges is the first desideratum. The publication of the names of judges some months before the show is due to exhibitors, in order that they may file objections or use their own judgment as to entering under the judges appointed; but when the entries are made subject to the conditions, rules and regulations of the show the exhibits ought to be forthcoming under penalty of a fine, unless good reasons, such as the death or sickness of the animal, can be assigned. This is the rule of the Royal Agricultural Society of England and of other leading fair boards in that country, and we see no good reason why it should not apply here.

Dealing in Options.

Prof. Robertson, lecturing before the Manitoba and N.-W. T. Dairy and Live Stock Associations recently in Winnipeg, alluded to the injurious effects upon market values of option dealing, stating that the low price of cheese last spring was caused in great measure by one or two big firms offering at low prices cheese not yet made—offering June cheese in March. He believed the law should interfere and lock any man up who sold things he did not own. That the gambling in wheat carried on at Chicago has a depressing effect on values is generally admitted, but the question of option dealing is perhaps not very well understood by those not initiated into its mysteries. The following extract will be read with interest:

"Mr. W. E. Bear read a paper before the London (Eng.) Farmers' Club dealing with 'Wheat Options.' In the course of his remarks Mr. Bear dealt with the subject from the point of view of the farmer. After explaining the intricacies of the question, the speaker referred to the effects of the system, pointing out the extent to which spot prices were regulated by the prices ruling in America for 'paper' wheat. Mr. Bear then came to what he termed his first indictment. It interfered with and governed legitimate trading. The lecturer dealt with the influence of the 'bull' and

the 'bear,' which, he maintained, were not in any sense counteractive. In other words, prices did not in consequence become self-balancing. Nearly all the merchants whom he had conversed with on Mark Lane were agreed upon this point. The daily offering of vast quantities of fictitious wheat tended to lower prices. 'It is objected,' continued the speaker, 'that there are as many buyers as there are sellers. This would be the case if the actual quantity of wheat were multiplied ten times. There would always be buyers at a price, and yet no one will contend that the offer of ten times the quantity of real wheat would not lower prices. It may be objected that enormous purchases of fictitious wheat raise the prices on a particular day, just as great offers depress them. Then why do not the ordinary purchases of fictitious wheat, which go on daily, tend to raise prices, though in a less degree?' This last argument, the speaker said, was the strongest which the supporters of the option system had. The conclusions arrived at by the speaker were as follows: (1) That the option system is a system of gambling which ought not to be allowed in the commercial exchanges of any country; (2) that the price quotations of the great option markets are those of gambling transactions, and that they entirely rule the prices of wheat in the United States, and influence the prices of grain of all kinds throughout the world; (3) that profuse offerings of fictitious wheat have a lowering effect upon the market prices; (4) that the maintenance of the option system involves the active operation of men who are professional market wreckers; (5) that in ordinary times the 'bears' are much more powerful than the 'bulls,' because it is easier to create panic than to produce inflation, also because most of the persons who rank as 'bulls' are the outsiders who have no opportunities of manipulating the markets; (6) that the fixing of low prices for distant 'futures' reduces the prices of spot wheat and near 'futures,' and tends to stereotype the prices of distant months at low rates; (7) that the gambling and trickery of 'bears' and 'bulls,' and their frequent defalcations, create a constant feeling of insecurity among capitalists, and so exercise a generally depressing effect upon the markets."

Practice, with Science.

(Concluded.)

My last on this subject was not complete, and inasmuch as you have devoted a leader upon the subject perhaps you will allow me space to finish my argument so as not to be placed upon a wrong footing. My excuse for not furnishing the remainder of article promptly is illness.

In my last I stated that I would give extracts from a paper prepared by Mr. James Black for publication in report of Highland and Agricultural Society, covering some eight counties in all. I will only give a few, commencing with

ABERDEENSHIRE.

Mr. Mailland.—"Cattle rising two years old are kept growing rapidly and in good condition till October, when they are housed and fed as many turnips three times a day as they will eat, with a little cotton and linseed cake, and sometimes a mixture of hashed oats about 3 p. m. They are well groomed, part in the forenoon, part in the afternoon. They are washed when put up to fatten, and occasionally at other times, with soft water and McDougall's dip."

Mr. Smith.—"The winter ration begins about the end of September in the stall. It is 120 lbs. to 130 lbs. turnips per day, straw *ad libitum*, and two to seven pounds of cake or meal, increasing as fattening advances. The turnips are given at 6 a. m., 11 a. m., and 4 p. m., the extra feeding at 8 p. m. The cattle are all groomed daily and occasionally washed."

Mr. J. Reid.—"The winter ration begins in stalls. It is as many roots and as much straw at 5 a. m., 10 a. m., and 4 p. m. as they will eat, with oats and barley at 8 p. m. All feeding cattle are washed once a fortnight after being housed, and are groomed once a day, the leaner half from 8.30 to 10 a. m., and the fatter half from 1 to 4 p. m."

I might give several more extracts, which while they would differ in minor points still the general tenor is as above. Before drawing the attention of your readers to the salient points of the system of feeding embodied in Mr. Black's report, I would say that those of us who attended the cattle markets of the Midland Counties in England in the fifties can well endorse the quality of the steers sent weekly from Aberdeen and Banff, seeing that they came into competition with our own district fed stock. Notwithstanding we were feeding more scientifically, as we thought, we never sent them out as ripe or in such bloom. The feeding in Scotland was then practically as now—turnips, straw, linseed cake—while we in England were employing labor and machinery to cut hay into chaff, and pulping turnips, mixing cake and grain all together, feeding three times a day, straw scarcely used except for bedding, hay at night *ad lib.* Yet, notwithstanding the extra feed given and trouble taken, we could not ripen our cattle as thoroughly. It may be argued they have a better feeding lot of cattle. Not so. They depend upon purchasing their feeders. Often Ireland supplies them, and they were the men whose representatives fought so hard to remove the Canadian cattle from the list of scheduled ones. As Mr. Colvin also quoted in the paper above referred to:

"I have found that Canadian cattle have paid

better for the past five years than either Irish or home-bred beasts, as they can be bought at less money and they are healthier than Irish and as a rule fatten more quickly."

What I would particularly wish your readers to notice is the large quantities of turnips used and small amount of concentrated food, the cake ration being two pounds a day at commencement of feeding, gradually increasing to seven pounds as the extreme limit. Oats and barley are occasionally substituted, fed warm at night, and these feeds do not exceed six pounds. I may say that in addition to the words quoted of the foregoing noted breeders, the majority of others in the report state that the grain is all fed at night, 8 p. m. the rule. I would ask what sort of a balanced ration is this, 120 lbs. turnips, 10 to 15 lbs. oat straw and 4 lbs. linseed cake per day? And this is the ordinary feed of the steers that top Inlington market during the winter months! Note every steer is curried or brushed every day, occasionally twice. Some enthusiasts has written "tillage is manure." The Aberdonian might with equal propriety declare "currying is food." And then in addition to this daily toilet operation note the occasional washing. This keeps the skin clean and cool, as well as checking vermin. Another thing that seems queer to us is the manner of giving the grain at one feed, generally at night. Now, in England we would be fussing about cutting into chaff all the hay and straw and pulping the roots, mixing all together with whatever grain or cake may be.

This appears the rational way, and science endorses it, and by her aid we know just how to mix the various foods in the proper proportions, the number of feeds a day, and the amount graded so that the digestive organs are supplied in just the quantity and at the time required. The engineer who supplies his engine with coal and water at the right time will get more work out of it and at less cost than one who is continually either letting his fire door or blowing off steam. Now, I think this seems reasonable—is reasonable—but if I were to say that the Aberdeen farmer does not understand his business, and that he is feeding at a great loss because he does not follow the scientific principles as laid down, I should leave myself open to ridicule with those who know better. No men in any business or occupation look closer after their interests than these same Aberdeen farmers; none keener at a bargain; close, careful observers; and could there have been a better or cheaper way for them to convert their roots into beef they would have found it out long ere this. And this brings us to a point that must not be overlooked when criticising the methods pursued by others when they do not agree with our own views. Here comes the question, "Does the scientist in formulating his scale of nutritive equivalents take into consideration the sources of the various food elements?" Is the protein in linseed cake of no more value for feeding purposes than that derived from blood? Is not the value of turnips greater than analysis shows? Practice in Scotland surely proves such.

As I stated in my former letter, this is not intended as casting any reflection on the chemist or his laboratory work, but it is intended to teach the young feeder—the enthusiast—that there is something more in stock-feeding than simply dumping down before them a balanced ration, no matter how skillfully prepared. There is the everyday schooling, as it were—the day-by-day practice that the man who becomes a skillful feeder learns little by little. He must be an observant man, for he quickly learns his charges are as kittle as a lot of boarding-school girls, and that a stray dog, a steer loose or any excitement will cause a day's feed to be thrown away. He must study each steer's appetite. Science would say: "Here is a 1,200-lb. steer; he must be fed so-and-so." Practice, as exemplified by the watchful feeder, would say: "This fellow did not clean up yesterday. I'll wash out his manger and stop his grain: he'll get no more until his appetite sharpens."

Nearly every agricultural paper now has its food expert, and the common talk is of albuminoids, carbohydrates, etc. Why, in going to New York Fat Stock Show I came across a Chicago traveler who could give me pointers in feeding. He vouchsafed: "Oh, you fellows just keep in the same rut. You ought to feed scientifically. You know nothing about protein. If you would bring the same intelligence to bear in farming as we do in business, and read up the science of feeding, you would coin money." I got riled, hence this letter.

I wonder if our scientific friend knew anything of the brushing, the washing, the tempting of the appetite, the root ration; and whether he, with his intelligence, his business habits, without the concomitants mentioned, would get far ahead of Sandy.

The motto should be: Practice, with Science.
"Belvoir." R. GIBSON.

A Note from Mr. Macpherson.

To the Editor FARMER'S ADVOCATE:

SIR,—In carefully reading over my letter in the ADVOCATE of May 1st I notice several corrections which I wish made.

1st. In referring to "The expensive mineral elements are phosphate, potash, lime, etc., and one (not our) air element."

2nd. In referring to constituent elements ("market value and constituent value") you have "The

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same \$1 worth of constituent would be found in 1,000 lbs. of milk, having a market value of about \$18." Should be \$8.

3rd. Referring to the total gross gain in fattening 25 steers you have \$1,000. There should be deducted from this the total cost, which was \$375, making a total net profit of \$625.

D. M. MACPHERSON.

[NOTE.—We find on referring to the manuscript of the letter referred to that the printer "followed copy" strictly.—EDITOR.]

STOCK.

The Canadian Horse Show of 1897.

The third annual horse show, which terminated well-nigh midnight of May 1st, is claimed by the management to have been a fairly satisfactory one. It was only, however, by the practicing of some economy, the paring down of purses, and by the liberality of a few public-spirited citizens, added to the provincial and civic grants, that a financial success was secured. During the three years of the show's career over ten thousand dollars has been distributed in the effort to encourage the production of the best type of horse, and we may say that the average quality of the lighter legged sorts shown this year was superior to that seen at former shows. This, however, was due to a considerable extent more to the absence of inferior entries than an increase in exhibits, as the numbers were much reduced in many classes. The exhibits were this year entirely Canadian, as only one American made entries and he failed to appear with his stock of Standard-bred trotters. This was indeed regrettable, as that was the weakest represented breed at the show. The Americans can lead us in Standard-bred horseflesh, and we had hoped to have learned on this occasion something of what we lack in this class.

Although the show was of only three days' duration, and the price of admission considerably reduced, at no time was the capacity of the Armories taxed beyond the comfortable limit. Had Saturday night not been dimly lit a jam would no doubt have been experienced. The earlier sessions were not what was looked for in attendance. Rural visitors were conspicuous by their absence, except a few from very near Toronto and leading breeders whose faces we invariably see at such shows at any season of the year. Whether holding the show earlier would have brought out a sufficiently increased number to have warranted doing so we are not prepared to say, but are conscious that what some style the farmers' breeds of horses would have been much more numerous represented had taking them to Toronto not been likely to interfere with business in the stud. In so far as the show itself was concerned it was splendidly managed, everything running like clockwork.

THOROUGHBREDS.

The Thoroughbred mature stallion class was well represented by six creditable horses out of eight entries made. Each individual had unusual substance, and all were brought out in grand form. They were of the sort that are bound to do good in their respective sections where the proper sort of mares can be furnished. A popular winner was found in Strathclyde, a breedy son of Strathmore, exhibited by Geo. Hendrie, Hamilton. He is a chestnut, of eight years, that has not been broken down by turf work. Another new show-ring contestant was a Kentucky-bred horse, Lee Christie, exhibited by the Thoroughbred Horse Association, of Bradford, Ont. He was sired by Longfellow, and has much to commend him to saddle and carriage horse breeders. He is a particularly game horse with good action. We well remember individuals of his get which have won first prizes at the Industrial and other fall shows. The third prize fell to Graham Bros.' Montana, by Muncaster, a useful sort of Thoroughbred. A single entry appeared in the class for stallions foaled subsequent to January 1st, 1894, in Terremont, a bay colt of much promise, by Dandy Dinmont, shown by A. Frank & Sons, The Grange. Thoroughbred stallions qualified to improve the breed of saddle horses and hunters made up a class of excellent horses with a deal of substance. Graham Bros.' (Claremont) big useful chestnut, Godard, that was placed 2nd a year ago, and 1st at the '96 Industrial, was placed 1st on this occasion. He is a Kentucky-bred horse by King Ban. He beats them all at the trot; in fact, one would suppose he could easily be made a trotter. Wyndham, by Warwick, shown by S. B. Fuller, Woodstock, was out last year, as was also Sleight of Hand, by Uncas, shown by D. L. McCarthy, Toronto, but did not at that time get places, but on this occasion they were placed 2nd and 3rd as named. The former is brown in color, with white markings. He is a flash horse that catches the eye at once and should be a boon to his vicinity. The Toronto horse is chestnut, much like Godard, but a little less in substance and individuality. The class for filly

or gelding not Thoroughbred but sired by a Thoroughbred stallion, foaled on or subsequent to Jan. 1st, 1894, looked a mixed lot of six at first view, but the difference in ages accounted for the unevenness. Desirable saddle qualities were strikingly noticeable in nearly all the entries. The get of well-known and highly-reputable stallions won the ribbons. A son of Dennison, shown by G. Ward, Woodhill, won 1st. Wyndham's get, Norwich, shown by Thos. Abraham, Norwich, Ont., was placed 2nd, and Flossy, by Wiley Buckles, shown by D. B. Simpson, Bowmanville, followed next in order.

CARRIAGE OR COACH STALLIONS.

as they appear at our shows, are usually more or less disappointing. While there are usually two or three very good animals shown, the majority of those brought out have little to commend them. Long backs, narrow bellies and poor action are not desirable qualifications for sires of carriage stock. In this contest, outside of the two German Coach horses, Graf Bremer, shown by James McCarty, Thamesford, and Ludwig, shown by Geo. Cockburn, Baltimore, there was not a good horse in the class. Graf Bremer was a popular winner here two years ago, as was he also on this occasion. He is a big fellow, of fine conformation and a great actor. Ludwig is a little larger horse, not quite so smooth, but also stylishly gaited. He was placed 2nd. Morgan Gold Dust, by Gold Leaf, shown by J. D. Smith, Campbell's Cross, possesses the required action, but he lacks in substance for this class. No 3rd premium was awarded. A two and a three year old came out to contest in the young stallion class. The three-year-old Rainbow, by Regent (Thoroughbred), shown by J. L. Reid, Derry West, is a solid bodied chestnut. He had his tail banged, which gave him a saddle look. He was placed ahead of Pilot Chief, by Jubilee Chief (Hackney), shown by Wm. Galbraith, Brampton. This colt was foaled in 1895. His dam, by Little Billy, we would judge is well-nigh standard bred, as her son is much after that pattern. This class was judged by Richard Gibson, Delaware, and John Hendrie, Hamilton.

STANDARD-BRED ROADSTERS.

We had hoped to have profited by the appearance of some American entries in this breed, but were doomed to disappointment, as the mares expected from Philadelphia did not materialize. In mature stallions there were seven entries present, several of which were going lame. They were not the sort that are likely to do much for our future stock, as too many of them were plain and lacked substance. The prizes were awarded almost entirely from the exhibition of action as shown on the line. Had they been shown, as they should, before a vehicle in all probability the judgment would have been changed. The 1st prize (also sweepstakes) horse, Bryson, by Simmons, shown by Hugh Scott, Oaledonia, was evidently sound and went away free, but there is not enough of him. Next to him came Ambrosial, by Red Wilkes, exhibited by J. M. Morgan, Ottawa. He is more after our style, but owing to an injury in his younger days he goes a little stilly at the jog. He is a strong brown that is leaving good stock about Ottawa, where he won 1st last autumn in the stallion class and for the sire of three. Perhaps the most handsome horse in the class was Uncle Bob, by Wildbrino, exhibited by Hugh Smith, Claude. He is a brown horse of four years that has been before the public on several occasions, always commanding a good place. He is a graceful mover, but would be the better of more size. He was placed 3rd, but might well have exchanged places with the winner of the red ribbon. Leotard, by Walsingham, was highly commended. There were just two entries in stallions three and under. A Kentucky-bred three-year-old, Charity Bell, by Liberty Bell, exhibited by A. N. Smeal, Toronto, is a colt of good substance and quality and possesses excellent muscular development. He was placed ahead of S. A. MacKay's (Shawville) Lord Velvo, by the noted Geneva (2.15) that died on an ocean voyage to Europe a few weeks ago. He is two years old and shows a good sort of natural gait. The ribbons were placed by H. Ten Eyck, V. S., Hamilton.

HACKNEYS.

What would the horse show be without the Hackneys? They certainly put up the most flash and finished performance of the three days' programme. Their beauty, intelligence, docility and usefulness, together with their catchy action and pleasing manners, cause even the mutual-admiration element in the boxes to forget themselves for the time being while singly or together the beauties were sent round the tanbark on the white lines. Last year's winner, Royal Standard, exhibited by Graham Bros., Claremont, was if possible in better shape than ever before. It takes a good sprinter to stay with him even for a short distance, while his trappy style is enough to please the knowing critics. He goes with confidence, seldom leaving his feet even in the excitement of a brass band above his head. Of course he won 1st in stallions over 15.2 and sweepstakes for best stallion. The others in the competition were horses that have frequently shown before—Courier, Rosseau Performer, and Fireworks. The first named is the property of Logie Farm, Mt. Albion. He was always a great actor, but this year he surpassed his former feats, and was therefore placed 2nd. Fireworks, Mr. H. N. Crossley's well-known stock horse,

beat him last year, but on this occasion he dropped down two places, leaving the third to his roan stable mate, Rosseau Performer, a colt that improves at each appearance. He, like Fireworks, is of the typical English Hackney sort, quite cobby and a high goer. The roan horse brought out the most enthusiastic applause of the class, his knees and hocks flexing in beautiful style, but some of the others would beat him in a race. As a sire of high-acting, sweetly-put-up park horses, Rosseau Performer should score a great success. Stallions foaled previous to Jan. 1st, 1894, not exceeding 15 hands 2 inches, were only two in number, but they gave the judges, Messrs. Gibson and Hendrie, quite a task to decide between them. The competitors were Barthorpe Performer, from Hillhurst Stock Farm, and Banquo, exhibited by Robert Beith, Bowmanville. Each of these horses has gone to the front in strong company, and on this occasion each had his admirers among the best horsemen. The Hillhurst horse had just returned from a great victory at Boston, but when the two beauties gave their trial exhibitions at Toronto, one after the other, it was a hard matter to decide which should have the preference. As a Hackney, the Bowmanville horse has the advantage. He comes down a little deeper in body, and his way of going is positively more graceful than his opponent, who goes more rapidly but more nearly resembles a Standard-bred trotter. The Hillhurst horse won the first ribbon with little to spare. Other good judges might have placed them differently and no fault could have been found. Hillhurst Farm had out a noble three-year-old colt and a handsome two-year-old. The former is Danish Duke, by Fordham, and out of Princess Dagmar. He is a smooth, strong, well-finished colt, possessing pleasing and rapid action. He is no discredit to his notable dam. The two-year-old is Hillhurst Sensation, by Hayton Shales, and out of Miss Baker, the winning mare now owned by Messrs. Sorby Bros., Guelph, Ont. He had to compete with Lorenzo, by Banquo, and out of Lady Aberdeen, exhibited by R. Beith, Bowmanville. There need be no fault found with Banquo as a sire if this youngster is a fair sample of his stock, as he is a sweet colt with much quality and good action. Stallions with three offspring left the field open to Courier and Fireworks. The former was accompanied by three two-year-old fillies, each one a beauty, that exhibited considerable schooling on the top of grand natural action. Two of the get of Fireworks were very sweet cobby daughters of Lady Bird and Lady Cockling. They were about the correct sort, but the third was a yearling half-bred, a good filly but not up to any of the others. Courier and his family won the prize.

Hackney mares were out in good force. A half dozen contested in the class not over three years old. They were all two-year-olds, and were made up of two from the farms of Messrs. Beith, Crossley, and Cochrane. Portia, the chestnut daughter of the deceased Ottawa, is if anything a little overgrown, but she is not at all coarse. She goes well, and won 1st. Birdie, the get of Fireworks, came next. We could not help noticing her close resemblance to her stable companion, Althorpe Duchess, the mare that has won so frequently as a high-stepper. The Hillhurst winner was Lady Isabel, by Hayton Shales, and out of a Danegelt mare. She is a smooth bay filly, with a good deal in her for the future.

The class for high-stepping mare or gelding, 15 hands and over, sired by a Hackney stallion, and shown before a suitable conveyance, brought together a number of the best stock at the show. H. N. Crossley's imported Althorpe Duchess has previously proven her excellence in this capacity by carrying off a number of 1sts. Her right to the red ribbon was keenly though unsuccessfully contested by Jessica, the three-year-old daughter of Jubilee Chief, that so closely resembles her full brother Banquo. She has been a sensational mare all the way up from her first appearance as a foal. She improves with age, and won 2nd prize. A slashing fine son of Lord Bardolph, exhibited by T. A. Crow, Toronto, was placed 3rd, followed by Beith's Lady Aberdeen, an excellent mare of much substance, smoothness and fine action. Jessica won the sweepstakes for best Hackney mare any age, and also for best Hackney mare or filly by an imported sire and out of an imported dam. Banquo won the silver medal for best Hackney male from imported sire and dam. The sweepstakes saddle horse by a Hackney stallion was found in Diamond Jubilee, a worthy son of Jubilee Chief, exhibited by F. Doan, Toronto, while his half-brother from another mare was placed 2nd; and that grand old mare of fourteen summers, Lady Cockling, that won first prize at the World's Fair for her owner, H. N. Crossley, was considered next best. She has done a lot of valuable service in the breeding stud, and yet comes out fresh and sprightly.

SHIRES.

The show of Shires was indeed meager. Two males and two females included the whole entry. They were judged, as were also the Clydesdales, by Robert Beith, M. P., Bowmanville, and Jas. Torrance, Markham. Two imported stallions competed. The better of the two was Duke of Blagdon (foaled in 1892), shown by J. M. Guardhouse. He is a very neat, showy, and compact horse, possessing a deal of quality. His clean, flat bone and smooth joints could not be found fault with and his action is free and springing, but he is somewhat undersized. He is said, however, to breed well, which after all is the important consideration.

His opponent, Darnley (foaled 1882), exhibited by George Garbutt, Thistleton, is a horse of considerable substance, but his quality is not prime. The two females were shown by H. N. Crossley, Rosseau, and Wm. Hendrie, Hamilton. The former exhibited Rosseau Maid, by Bravo II., and out of Queen of Althorpe. She is a capital two-year-old, full of quality. Her flat, clean limbs, fringed with straight silky hair, is just what we like to see. She was not in high fit, but fairly well grown for her age. Mr. Hendrie's number was Midnight, alias Bess of Winona, by Duke of Lancaster. She is a monster that could be made a ton weight without overloading. She is rather a good sort for a cart and moved as well as one could expect from her size.

CLYDESDALES.

The Clydesdale class has dwindled down to a mere handful at the Canadian Horse Show. In the aged class four horses were out, and only two of those may be termed prime good ones. Robert Davies' Prince of Quality, by Cedric, was in fine form. He is allowed to carry quite as much weight as is good for him, but he does it well. He is one of those low-down, big little horses that is all horse. He has great thickness and depth in front, indicating a grand constitution, while his middle, hind quarters and limbs are of the wearing sort. There was no question about his position in the front. Graham Bros.' Str'aven Gallant, an imported horse of 12 years, was the next in order of merit. He too is of the broad, low sort, with good middle and limbs. King of Ardmacross, imported and exhibited by Neil Smith, Brampton, is by Duke King. He is a horse of considerable substance, but might have a better set of limbs. He was placed 3rd. Graham Bros.' Merry Monarch, by Macneillage, was the 4th horse. He possesses very good ends and limbs, but carries hardly enough middle. Three three-year-old colts met before the judges. The champion of the show was found among them in Graham Bros.' new importation, Young Macqueen (2208), from the stud of R. B. Ogilvie, Madison, Wis. He is by Macqueen and will doubtless resemble him very closely when he matures. He is a flash, bright colt, but he will need to do a lot of thickening before he overtakes King's Own, shown by Robert Davies, Toronto. King's Own is by Queen's Own and out of imported Candour. He has always been a big colt, and now looks more like a mature horse than a three-year-old. He is well come and shows it in his grand body and limbs. The third colt is also by Queen's Own, and is named Macqueen (2218). He was shown by Alex. Doherty, Ellesmere. He is a tidy colt with nice limbs and feather, but hardly large enough. It was generally conceded that the judges were justified in placing Young Macqueen 1st, but considerable exception was taken by good judges outside the ring when he was placed ahead of Robert Davies' Prince of Quality in the sweepstakes contest. While the newcomer shows a deal of outcome (in fact, he suggests a great future), as he stood at the show the black horse beats him. Constitution is a great point in a sire, and Prince of Quality is very strong just there, while the colt needs all he shows to possess at present. The judges took a long time to reach a conclusion, and only decided as they did after calling in Mr. Robt. Ness, Howick, P. Q. It is understood that the question was put to Mr. Ness in this way: which of the two would he prefer as a breeder to take home with him? And naturally it would be the younger horse; but at the same time it is open to question if that was a fair way to put it. Two good two-year-olds contested in their class. James Henderson's (Belton) newly-imported colt, Goldfinder II., by Goldfinder, is a big good one. He is well-proportioned, well-developed, and moves well on capital limbs and feet. We referred to this colt in the "Gossip" of last issue. Black Prince, shown by Robert Davies, is a full brother to King's Own in the former class. He is a good sort of colt that will be heard from again. He would be good property to pick up right now. Prince of Blantyre, by Prince of Quality, exhibited by Alex. Doherty, was the only yearling shown. He was not in condition, but appeared a fairly good youngster. Just three Canadian-bred Clydesdale stallions out of four entries were out. The fourth was in the city, but through some misunderstanding missed his class. He is Grand Salute, by Grand Times, owned by H. G. Boag, Queensville. It is difficult to say where he would have been placed had he met in competition. He is a nice limbed horse and moves exceedingly well. The best horse in the ring was Captain Willie, by Lord Lieutenant, shown by Graham Bros. He is a big, rangy horse, with nice action and limbs. A greater depth of body would not have been lost on him. Bay Wattie, by Prince Imperial, exhibited by W. J. Howard, Dollar, was placed 2nd. His breadbasket is his strong point. He is just three years old, and of a sort that will improve. Addison, by Macneillage, shown by Wm. Foster & Son, Humber, was the remaining entry.

Out of eight mares just three contested—Kate Hill 2nd, by Lewie Gorden, shown by Wm. Brewster, McIntyre, Ont., and two full sisters by Bay Wallace, shown by J. W. Robinson, St. Mary's. The first named was foaled in the stud of Jas. I. Davidson, Balsam, Ont., in 1891. She has proven her excellence by winning good prizes on a number of occasions. At the last Industrial she stood 1st in Canadian-bred brood mares. She is a sweet mare of good size, without a sign of roughness. She has an extra fine set of limbs. The other two mares were of entirely different pattern—large, roomy, and heavy quartered. They possess good

limbs and capital feet. They won 2nd and 3rd in this class, also 2nd for pair of pure-bred Clydesdale mares or geldings shown in harness. The team that surpassed them was shown by W. Hendrie, Hamilton. They are a slashing fine dray team. Draft teams not pure bred were four in number. W. Hendrie, Hamilton, showed two pairs and won 1st and 2nd on them. They were all big and good. The nicest team in the class was shown by Geo. T. Ward, Woodhill, but they were hardly large enough. J. W. Robinson, St. Mary's, had out a pair of Bay Wallace mares, but they did not mate up quite as well as the others. The class was good throughout.

HORSES IN HARNESS.

The horses in harness, whether single, double, tandem or four-in-hand, were numerous and well brought out. They were judged by Robt. Graham, Claremont, and J. N. Scatcherd, Buffalo, N. Y. Some of them came from the stables of wealthy men, who calculate on having the best obtainable. Dealers also competed largely, and carried away some of the money. The same horses came forward in several of the classes. A number of the classes were unwieldy, but in every case it was not difficult to quickly thin them down to half a dozen entries. The Hackney type is becoming more and more conspicuous in these classes. Unless a horse is a good actor and gets up well he need not compete, and a solid body is almost as essential to win. In mare or gelding not exceeding 15 hands 2 inches there were twenty entries present. The prizes went as follows: 1st, E. B. Clancy, Toronto; 2nd, T. A. Crow, Toronto; 3rd, R. Beith, Bowmanville; and 4th, S. B. Fuller, Woodstock.

There were twenty-four entries in mare or gelding over 15.2. The prizes were awarded as follows: 1st, F. Doan; 2nd, Geo. H. Gooderham; 3rd, Isaac Watson; and 4th, T. A. Crow; all of Toronto.

Pairs not exceeding 15.2; eight entries: 1st, T. A. Crow; 2nd, Jessica and Lady Aberdeen, R. Beith; 3rd, Adam Beck, London.

Pairs over 16.2; sixteen entries: 1st, S. F. McKinnon, Toronto; 2nd, Geo. H. Gooderham; 3rd, T. A. Crow; 4th, J. Ross Robertson, M. P., Toronto.

The harness tandems were the best we ever saw shown in Canada. Former winners were among them and took most of the money. Jessica and Lady Aberdeen proved equal to the occasion. The young mare took the lead, and did it admirably, while the more cobby Hackney left little to be desired between the wheels. The 2nd went to a gray and a black driven by T. A. Crow; 3rd, T. A. Crow. Four-in-hand: 1st, T. A. Crow; 2nd, Toronto Horse Exchange.

SADDLE HORSES.

The saddle classes were all well filled. They were judged by J. N. Scatcherd, Buffalo. The prize winners were invariably bright, handsome animals, exhibiting much of the Thoroughbred type. Mare or gelding over 14.2 and not exceeding 15.2; 8 entries: 1st, D. Hughes Charles, Galt; 2nd, G. W. Beardmore, Toronto; 3rd, Adam Beck, London; 4th, F. J. Capon, Toronto.

Mare or gelding over 15.2; eighteen entries: 1st, D. King Smith, Toronto; 2nd and 4th, Adam Beck; 3rd, S. B. Fuller, Woodstock.

Ladies' saddle horses; thirteen out of seventeen entries present: 1st, John A. Gunn; 2nd, Geo. A. Peters, Toronto; 3rd, Mrs. J. Kerr, Toronto.

Best saddle harness horse, 15 hands and over, shown in harness and under the saddle; fifteen entries: 1st, Adam Beck; 2nd, Hume Blake, Toronto; 3rd, John A. Gunn.

Hunters and jumpers were numerous and varied. Out of large classes seldom could be got more than three or four that would clear all the hurdles. The horses were usually of light weight and tucked-up in body. The Thoroughbred type was evident in each of the classes. Qualified hunters must have been regularly hunted with a recognized pack of hounds more than one season, and within a year from date of entry. Green hunters—must not have been hunted more than one season. There were just five entries in heavy weight qualified hunters up to carrying 180 pounds: 1st, Adam Beck; 2nd, J. Phillips, Toronto; 3rd, G. W. Beardmore.

Qualified hunters up to carrying 150 pounds; eight entries: 1st, D. King Smith, Toronto; 2nd, Royal City Stables, Guelph; 3rd, G. W. Beardmore.

Green hunters were green indeed, as very few out of thirteen entries cleared the hurdles: 1st and 2nd, Adam Beck; 3rd, F. Chisholm, Milton.

Green hunters, lightweight; nineteen entries: 1st, Royal City Stables; 2nd, Geo. A. Peters; 3rd, Adam Beck.

Best performance over six jumps: Adam Beck's Huntsman won an easy victory in a class of twelve.

Corinthian class, open to hunters by members of a recognized Hunt; twenty entries: 1st, Adam Beck's Huntsman; 2nd, D. King Smith; 3rd, E. Phillips. This was a very close competition.

ROADSTERS.

There were eleven entries made in single roadsters, and just nine of these came forward. The missing entries were American. They were much of the Standard-bred pattern, several of the entries sidewheelers. A roan mare, Blue Bells, shown by J. J. Burns, Toronto, was evidently the choice of the judge. H. T. Eyok, but there were others we would have been glad to see. P. Irving's (Woodstock) Tilly Sprague is a dandy bay mare that any man should be pleased to drive. She won 2nd. The next two were pacers. The fastest animal in the ring was Prince Hal, a six-year-old gray gelding, shown by A. W. Holman, Toronto. Goldwinner, a rapid mover, shown by A. N. Smeal, Toronto, got the 4th place. There were just three pairs shown, and they were not a starting lot. They were capitally shown, and they were not a starting pair that got 1st moved in nice form, and a plainish little bay Thos. Oliphant, Clarkson. The 2nd pair were heavy-quartered, plainish horses of good size, shown by T. A. Crow. A pair of sweet chestnuts none too free in action, shown by Dent Dalton, Delhi, was the remaining entry.

PONIES.

Robt. Beith, M. P., won 1st prize in harnessed ponies with a pretty brown mare that many considered too large. Robt. Miller, Brougham, came next with a beautiful gray Welsh gelding. S. Nordheimer, Toronto, won 3rd prize. Jumping ponies were few in number. Robert Davies' Creta caused quite a sensation by the excellent manner in which he cleared his jumps.

Polo ponies: 1st, Major Lessard, Toronto; 2nd, Capt. Forester, Toronto.

Best and best-appointed pair of horses to cab as let for hire: 1st, F. Doan, Toronto; 2nd, P. Mayer, Toronto.

Mare or gelding shown in harness and delivery wagon: 1st, The Harry Webb Co.; 2nd, Thos. Bartrem, Toronto.

Best performance of professional private coachman: 1st, Walter Rud, coachman for A. E. Gooderham; 2nd, John Milligan, coachman for W. B. Simpson, Toronto; 3rd, James Norton, coachman for Geo. Gooderham, Toronto.

Best amateur driving of pair to four-wheeled vehicle: 1st, Adam Beck; 2nd, E. B. Clancy, Toronto.

Best driving of tandem: Adam Beck, London, and G. A. Stimson, Toronto, equal—prize divided.

Best riding by gentleman: Geo. A. Carruthers, Toronto.

Royal Love-making.

Mr. F. S. Peer, of Mt. Morris, N. Y., in a review of the London Hackney Show, written for the *Country Gentleman*, referring to the interest taken in this and similar affairs by members of the royal family, says:

"Speaking of royalty reminds me of a little incident that happened to come under my personal observation last year while attending this show. The press gallery, in which I had a seat, adjoins the royal box, and on the occasion of the visit to the show of the Prince of Wales, among other members of the royal family was Prince Charles of Denmark, who was seated directly behind Princess Maud, daughter of the Prince of Wales. The announcement of this young couple's engagement had but recently been made. Prince Charles in a sly manner pulled a stray lock of hair in the Princess' neck and otherwise amused himself after the fashion of lovers. The great audience that was staring at them of course saw nothing of this, but I was guilty of looking on from a side view. The Princess put her hand back of her chair ostensibly to arrange the set of her cape—after the manner of all women. The Prince's hand stole slyly up to meet it and held it fast. Presently the Princess looked around at Prince Charles with a face that at the start assumed a look of reproof, and was intended to say 'Don't'; but when their eyes met it said the very reverse, and I fear I became more interested in watching this pair of lovers than I did in the brevet king of England, Scotland, Ireland, Wales, and all the colonies, and his presentation of the grand challenge cup; for the first I knew, the Princess, in turning to see if any one was looking, caught me in the very act. The tell-tale crimson covered her face, confessing the whole, and showed that even a princess of the greatest monarchy and a prince of royal lineage were flesh and blood—not unlike a pair of rustic lovers that at the same moment were hanging over the rail in the arena, looking at each other, as oblivious of the presence of their future king as if they had set up a republic for themselves, which no doubt they have done before this. Four of a kind make two pair—and the band played 'God Save the Queen.'"

Our Scottish Letter.

The show season is now upon us, and if one might he could easily fill a letter with superabundance of details regarding prize-winning stock. That this would be of interest to Canadian readers is, however, doubtful, and hence some effort will be made at summarizing.

Ayrshire Cattle have many admirers in Canada, and there is evidence, so far as the shows have gone this year, that the discussions, of which some account has been given, are tending to wiser counsels amongst judges. There is a decided inclination on the part of societies to put down doctoring—otherwise, the manufacturing—of show cattle, and the success which has attended really useful, well-bred commercial cows at the shows now past should encourage breeders to persevere in the line marked out for them. The system of setting teats and soaping the bodies of cattle is ridiculous, and although plausibly defended, it cannot be said to admit of much real defence. The great show of the year for Ayrshire cattle has yet to take place—that is, the show at the county town of Ayr—but alike at Castle Douglas, Kilmarnock, and Glasgow the quality of the stock was above an average and several choice animals were exhibited. The noted herd at Burnhouses, now owned by Mr. William Howie, furnished leading prize winners at the more recent shows, and Mr. Andrew Mitchell, Barcheskie, and Sir Mark J. McTaggart Stewart, Bart., exhibited first-rate cattle at Castle Douglas. Mr. Robert Montgomerie, Lessnessock, has several quite superior animals on exhibition this season. He secured the championship at Glasgow with a two-year-old bull named Sensation, which we rather think will take some beating. There are still some exhibitors who work away with bulls which produce animals with small, short teats, but the number of such is becoming small by degrees and beautifully less. The tribe with these characteristics cannot die out too soon. An effort is being made to establish test records of butter-fat and quantity of milk in connection with Ayrshires, and there is some hope that ere long rules will be in force in the Scottish dairy breed similar to those with which breeders of Jersey cattle are familiar.

In the *Clydesdale world* the great event is the victorious career of the comparatively young horse Baron's Pride 9122 as a breeding horse. He is owned by Messrs. A. & W. Montgomery, and although but seven years old he has twice won the family group prize at Kilmarnock, while he is himself perhaps the best Clydesdale stallion of the day. He was shown at Kilmarnock Saturday last along with nearly twenty of his progeny, all of which were prominent prize winners, and in one group there were four first prize animals and one second prize animal, all got by him. Baron's Pride is a genuine Clydesdale alike in breeding and character, and his breeders, Messrs. R. & J. Findlay,

deserve to such Another is Mr. F. prize w group a dales e sure to them. continu always gregor son has Marqui season, female done m north c colors r Glasgow the cel which but un Maud, maid w best of after a began l six dau excepti equal t well-n been ex The interne all disp by a m Stud B abando to the cession able ac but the taring has be book o the Sh there betwee three will s whose system or later — but vent a vative some terests affecte system follow count the sa few h formed treated buyers very r they w the s cerned Mes Sin colum stead to visi and two farm 4 tration Robe steers some The st no do Shorti did n Thom five in some lot ha over t carefu very l were b tie not to the ot ing hi do as better tage econo more atten Robe land, one h troug mill, six w field rich a desir

deserve the highest credit for pinning their faith to such a horse and bringing him out to perfection. Another horse which promises to breed very well is Mr. Peter Crawford's Royal Gartley 9844, a noted prize winner himself and sire of the first prize group at Glasgow this week. These young Clydesdales exhibit fine quality of bone and are pretty sure to be wearers, as their sires have been before them. Sir Everard 5353, the sire of Baron's Pride, continues to breed very well and his stock are always improving. These, with the veteran Macgregor 1487, are, so far as the present show season has gone, still in front as breeding horses. The Marquis of Londonderry's stud is doing well this season, several of the best animals exhibited in the female classes coming from it. His Lordship has done much to promote Clydesdale breeding in the north of England, and it is pleasant to see his colors going to victory. Another youngster at Glasgow was Montrave Mermaid, the daughter of the celebrated champion mare Moss Rose 6203, which also was exhibited, looking fresh and new, but unfortunately yield. Her daughter, Montrave Maud, was female champion, and Montrave Mermaid was second in her class. She looks to be the best of the foals left by the grand mare, which, after an unprecedented career in the show-yard, began breeding rather late in life and has produced six daughters and two sons, all of which, with one exception, have lived. Her colts are not nearly equal to her fillies in merit. The latter have been well-nigh invincible—neither of the former has been exhibited.

The Clydesdale world has been in the throes of internecine conflict for several months back, but all disputes have been amicably settled this week by a mutual compromise. If the opponents of the Stud Book are not now satisfied, then they must abandon the pretense that their opposition is not to the Stud Book under any conditions. The concessions which have been made involve a considerable advance by the more conservative element, but they also abrogate forever the system of registering horses whose sires are not registered. What has been done is practically to run the Clydesdale book on parallel lines with those of the Shire book so far, of course, as there can be similarity of system between the two. The standard is three registered crosses, and there will soon be no animals registered whose sires are not registered. This system had to come to an end sooner or later—it could not last indefinitely—but in order to attain this and prevent a split in the Society the conservative had, as we have said, to make some concession to those whose interests would have been injuriously affected had simple abolition of the system without rearrangement been followed. The net result, taking the country all over, will be very much the same as at present, although a few horses will be numbered which formerly were not entitled to be so treated. The advantage to foreign buyers of the new system will be very marked, and our hope is that they will at once begin to operate—the sooner the better for all concerned.

"SCOTLAND YET."

Messrs. McMillan's Method of Feeding Loose Steers.

Since the favorable letters have appeared in our columns upon the subject of feeding steers loose instead of tied a member of our staff took occasion to visit the farms of Messrs. John McMillan, M. F., and two sons, near Seaforth, Ont. These gentlemen farm 450 acres, divided into three farms. The illustration on this page represents the basement of Mr. Robert McMillan's barn, where fifty-two dehorned steers are running loose in two immense boxes, and some half-dozen heifers are tied in the cow stable. The steers are three-year-olds this spring, varying, no doubt, a few months. They are apparently Shorthorn grades, and were wisely chosen, as there did not seem to be a bad doer in the lot. At Mr. Thomas McMillan's barn there are about twenty-five in each of two pens, and at the father's home some fifty odd head, half tied and half loose. Each lot have about equal space. It is intended to fix over this basement so that all may be fed loose. In carefully looking over the two lots we could see very little if any difference between them, but we were informed that the best cattle were selected to be tied up last fall, and when an animal appeared not to be thriving well he was turned loose among the others, which invariably had the effect of causing him to do better. While only some cattle will do as well tied as loose, all will do as well and many better loose than tied; and if there was no advantage in the gains made by the loose cattle the economy of labor by so feeding is sufficient to far more than justify the practice. The man who attends the fifty-two loose and six tied cattle at Mr. Robert McMillan's place was driving a team on the land, and was able to attend them thoroughly in one hour three times a day. They have water in troughs before them constantly, pumped by a windmill, and they are only cleaned out once in five or six weeks, when the manure is taken direct to the field and spread, and such capital dung as it is—rich and short. Whenever it so happens that the desired field cannot be reached, the manure is

never put out in the open, but in a covered shed. Messrs. McMillan were very emphatic when speaking of the advantages of a covered manure shed. Another point worthy of mention is that the dung is always kept near the surface of the fields. It is applied to corn ground and pasture.

The exceedingly thrifty condition of the steers was the more to be wondered at when we learned the economy with which they are fed. Their daily ration was 35 pounds of ensilage (a good sample with plenty of ears), mixed twelve hours before feeding, with cut straw fed in three feeds. They also received a pound to each beast night and morning of a mixture of ground oats, peas and barley and bran in equal parts. Mr. Thos. considers that the average gain of the whole 165 head since last autumn on this feed is not less than 150 pounds, and some he claimed had gained 250 pounds. Messrs. McMillan do not finish their cattle in the stable, but pasture them until July. They are then taken to the Glasgow or other British markets and disposed of. Cattle fed in this way during the winter do not lose flesh when turned out to grass, but continue to thrive from the day of the change. They get no grain on the grass, except a few of the leanest, which are given a small allowance of oil cake and meal, about two pounds per day, which brings them up to the condition of the good ones. The loose winter-fed cattle do a little better when turned out than do the tied ones. They get larger paunches, which enables them to hold more grass.

Through the latter part of the summer and fall their supply of steers are bought up, and even in winter an opportunity to get a good beast is not lost. They do not keep cows at all, except very few for milk for the families. The farm is cropped in a three-course rotation, generally running over four years: clover, pasture, corn, and oats or barley seeded down. Enough corn will be grown

this way the winter of 1891. They were pleased with the first results, and the longer they pursue the practice the better they like it. They consider 100 acres of good land will easily carry from 40 to 50 steers, bought in the fall and sold the following July, without buying any feed.

Are Shorthorn Men Breeding Consistently?

To the Editor FARMER'S ADVOCATE:

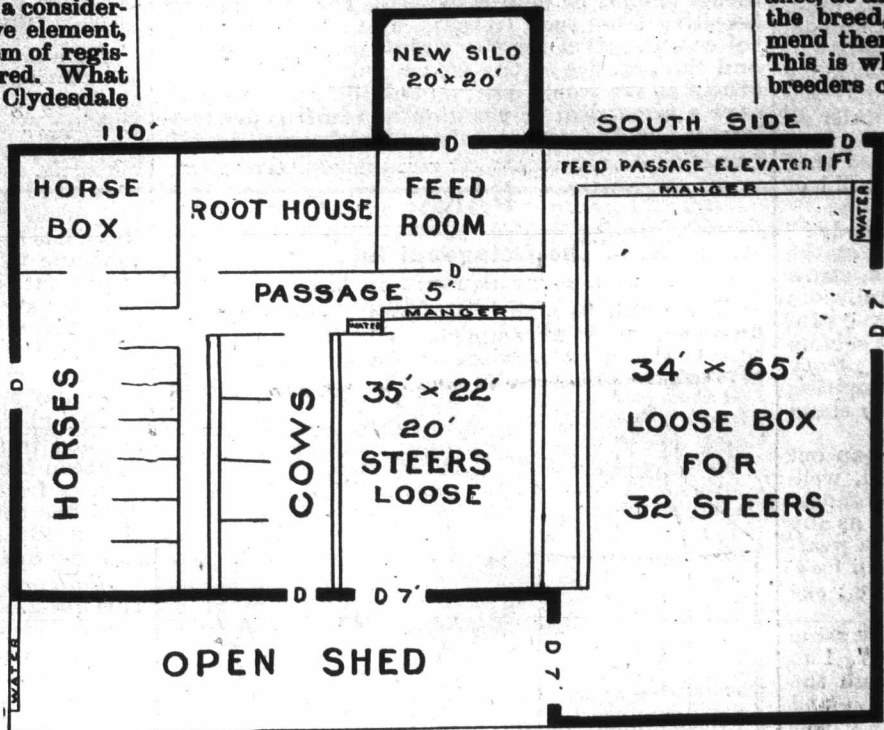
SIR,—This subject was again forcibly brought to my mind in reading Mr. Gibson's paper, "A Retrospect," read before the Shorthorn Breeders' Association. Mr. Gibson in it speaks of the interest now taken in England in the dairy Shorthorn and that there is some talk of starting a record of such animals. Here I may say that in England there are Shorthorns, and plenty of them, that are dairy cows, while in Canada real dairy Shorthorns are comparatively scarce. Mr. O. C. Greig, Director of Farmers' Institutes for Minnesota, having occasion to get together a herd of dairy Shorthorns, was able to get the cows, but when it came to finding a bull he failed and stated that he did not think a really good specimen could be found on this side of the Atlantic. I do not think this state of affairs is hard to account for, the beef Shorthorn being the show beast, and the tendency has been, therefore, to import animals of that description. The Shorthorn was, however, originally a grand dairy beast and the power of atavism is strong in them, and, consequently, among the get of these imported beef animals we are continually finding very fair and occasionally very fine specimens of dairy cows. On the same page of the ADVOCATE with Mr. Gibson's paper we find Mr. Smith's paper, "Why Do We Breed Shorthorns," in which we find the following statement: "So these breeders produce the type of beast which will bring a full, ripe carcass of beef of good size, with a massive appearance, at an age unthought of in the earlier days of the breed, possessing milking qualities to recommend them as the cattle for the general farmer." This is where the inconsistency of the Shorthorn breeders comes in. They are aiming at a perfect

beef beast, and at the same time wanting to get good dairy qualities. They cannot do it! The two types are entirely opposed to each other, and as they produce a beast approaching the ideal of the one type, so have they lost the points which go to make up the good qualities of the other. The Shorthorn breeders of Canada are today breeding for beef and at the same time claiming milking qualities for their breed. This being the case, their failures are the animals that are keeping up the reputation of Shorthorns as milkers, for it is those animals that, by the strength of atavism in the breed, came of the original dairy type and are good milkers that keep up this reputation. There must be something wrong in the system of breeding when any of the good qualities of the breed depend on the failures, and I fail to see that in this case the dairy qualities can be ascribed to any other cause. I believe there are a few breeders breeding with a view to dairy qualities? I am, of course, speaking of the general plan.

Now, the question is what sort of a cow does the general farmer want?

A very large percentage of them say a general-purpose cow, but fail to describe what they do want. I believe the man who says he wants a general-purpose cow really wants a big dairy cow. Of the breeds we have the Holstein is the only one that comes under this head, and in my opinion, for reasons unnecessary to state here, she does not fill the bill. A dairy Shorthorn would be just what the Canadian farmer is asking for, but where are they? Practically, they do not exist. If a farmer wanted a Shorthorn dairy bull where would he get one? He might after some searching find a bull calf out of a first-rate milking Shorthorn cow, but then what was his sire? He is probably told, as a great point in the calf's favor, that he was first in his class at Toronto Industrial, in which case he would not be likely to have imparted any dairy qualities to the calf unless he as a sire proved to be one of the failures I have spoken of. Another thing: most farmers, on going to a breeder to buy a bull, when shown two, one of the beef type and the other having some pretensions to the dairy type, even though he was looking for a bull of dairy qualities, would buy the beef beast. Farmers as a rule are not being sufficiently educated to the beauties of a dairy animal.

How is this state of affairs to be remedied? The one way of doing so that I see is a separate registration of the beef and dairy Shorthorns. I proposed this some time ago as the only solution of the problem, for it is impossible to go on breeding cattle for beef points and have them remain good dairy animals. From what Mr. Gibson says it is evident the Englishmen see the difficulty which they do not suffer from to anything like the extent that the farmers of Canada do, for they have plenty of big and profitable dairy cows. A separate registration does not necessarily mean a separate association. Both branches of the breed could be managed by the same association, but separated they must be if the Shorthorn is ever to



PLAN OF ROBERT M'MILLAN'S CATTLE FEEDING BASEMENT.

this year to fill three monster silos. When we were there Mr. Isaac Usher was laying out one of two cement concrete silos, 20 x 20 feet inside and 30 feet high. The corn grown last year was Western Yellow Dent and it gave good satisfaction.

With regard to the plan indicated in the figure on this page there need be little said, as everything is so simple. There are no floors except in the passages. The ground must be well drained, and have a good firm clay surface. The passages are raised one foot, and built of stone, gravel and cement. The troughs or mangers sit on stone foundation, or on the edge of the passage platform. The troughs of plank are 14 inches deep, 17 inches wide at the bottom, and 20 at the top. All the partition that is necessary between the steers and the passage is a heavy pole 19 inches above the edge of the trough on the cattle's side. The mangers are then within the passage, which makes it convenient to feed, and the cattle seldom if ever drop manure into them. The 7-foot doors admit of a team and wagon to drive through for cleaning out. The whole stables are well lighted by numerous large windows. To keep the pens clean and dry it would require more bedding than if the cattle were tied, but these steers were neither clean nor dry, and yet they did better than the tied ones that were comfortably bedded. So long as the stable is warm, but well ventilated, the same amount of straw as would be used for tied cattle will answer with the loose ones, though it would no doubt be better to use more bedding if one had it, as there is no better way to make it into first-class manure. To the question, "Would the loose system of feeding cattle answer as well for finishing the cattle?" Mr. McMillan replied, "By all means." All that is necessary is to feed heavier. If clover hay were fed instead of straw, and a few pounds more grain daily, cattle could be rushed along very rapidly and finished prime for the spring market. This firm commenced feeding in

take part in profitable dairying in Canada. Again, if Shorthorn breeders would be consistent in the praise of their favorites there must be a separate registration, for they cannot make them ideal beef animals and good dairy cattle at the same time, while with a separate register they can aim for both ideals.

Why should the Dominion Shorthorn Breeders' Association not be the first to adopt this principle? It would no doubt be the means of bringing to Canada some grand dairy stock, and in the course of a few years farmers would be enabled to get what they cannot now get, viz., a first-rate Shorthorn dairy bull.

A Word for the Jersey.

To the Editor FARMER'S ADVOCATE:
Will you allow me space in your valuable paper to answer a few questions which have been asked me from a number of your readers in Manitoba, the Northwest, and even from Dakota?

1st. "Did your investment turn out a paying one?" My first investment was two pure Jersey heifers and a bull. I purchased from Mrs. E. M. Jones, Brockville, a yearling heifer and a bull calf. The other heifer, nearly a pure St. Lambert, I bought in this country. I have only tested the butter yield of Rieter's Lassie (half-sister to Mrs. Jones' 1st prize bull). When she was hardly two years old she made me 1 lb. 13 oz. of butter a day, and I am satisfied she kept it up till within six months of dropping her second calf, when I endeavored to dry her. Two years ago I tested her for nearly five months, and she made from Dec. 6th to May 2nd, 250 lbs. butter, and I am sure she added 250 lbs. more in the next five months she was milking.

In reference to Prize of the West, I have never tested her butter yield. I had all my cows tested by Babcock tester last summer, and she tested 6.8 per cent. butter-fat and gave over 30 lbs. of milk. Rieter's Lassie tested the same. Bell of Rosedale, daughter of Prize of the West, a two-year-old heifer, tested 5.5 per cent. This was on grass alone and they were milking all winter. A grade Jersey tested 5 per cent., and gave 2 1/2 pails milk daily on grass alone. I consider it the best paying investment I ever made. I have two heifer calves that money could not buy. In three years the bull had paid the original cost in service fees.

2nd. "Are the Jerseys constitutionally hardy?" Yes. I have never tried wintering my cattle on the sunny side of a wire fence or living at a straw stack, but one winter I drove them 1 1/2 miles to water, and since I have had to drive them 1/2 of a mile. I keep my cattle in stables that very seldom freeze, and then only near the door, but give plenty of fresh air. They are healthy, and in good spirits; run and kick up their heels like colts. They stand the winter better, I think, than Shorthorns.

3rd. "How do you find the grade steers pan out in beef?" Comparing them with well-bred, well-fed Shorthorn steers, they will not weigh as much. I have a two-year-old steer that is as large as any steer same age in this settlement. I killed a yearling steer that dressed 440 lbs. of the finest of beef, and a pure Jersey heifer that weighed 450 lbs.; she was three years old.

4th. "Does the steer give more beef for the same amount of feed than another animal would?" I do not know. The steer I killed was taken from the grass. The heifer was taken from the grass and fed till Christmas. I gave her at first one wheat sheaf a day, and the last three weeks I gave her two a day and all the hay she would eat. She was the fattest animal I ever killed, and I have helped kill a good many. A Jersey steer will weigh more than a Shorthorn according to measurement. I have known it to be tested. I have been told by beef breeders that the Jersey is a hard keeper. This is true in reference to the milking cows, but is not true in reference to the others. I find they are very easy to keep, and will keep fat on far less than either Shorthorns or scrubs.

Eastern Assiniboia. J. B. POWELL.

Scrub Bulls at Large.

A subscriber who has been subjected to vexation and loss through the spoiling of a valuable registered heifer by a scrub bull breaking over the fence asks us for an opinion as to his right to compensation and as to the man who knowingly allows a bull to run at large. We understand there is a provincial statute under which municipal councils may pass a by-law prohibiting live stock, and especially male animals, from running at large on the public highways, under penalty of being impounded. If under such by-law damage is sustained by the trespass of animals unlawfully abroad, the party injured may recover in an action at law, but it would be difficult, if not impossible, to impress a judge or jury with a full sense of the loss sustained by the owner of a pure-bred cow in such a case, since it means not only the loss of a calf which should have been entitled to registry if the cow had been bred to a registered sire, but it means the loss of all the progeny of such calf, which would, in all probability, have lived the average life of such animals and would have produced the average number of offspring. The law of compensation in this view of the case is cumulative, and is consequently difficult of determination, and there is very little probability that in an action at law the plaintiff would get much more than nominal damages. Besides this, it is quite within the range of possibility that the cow may be permanently

disqualified for breeding true to the type of her class, for there are numerous instances on record where the first impregnation having been effected by an inferior sire the future offspring of the same mother have been marked with the peculiarities and characteristics of the sire interested in the first impregnation, so that she may never be safely counted on to produce a typical animal of her own breed. In view of the uncertainty of the outcome in law and the undesirable nature of that tribunal, we submit that a provincial statute should be placed on record dealing out severe penalties in all cases where such animals are allowed to roam outside the limits of their owner's domain, and in the meanwhile all municipal councils should use the power vested in them to prohibit.

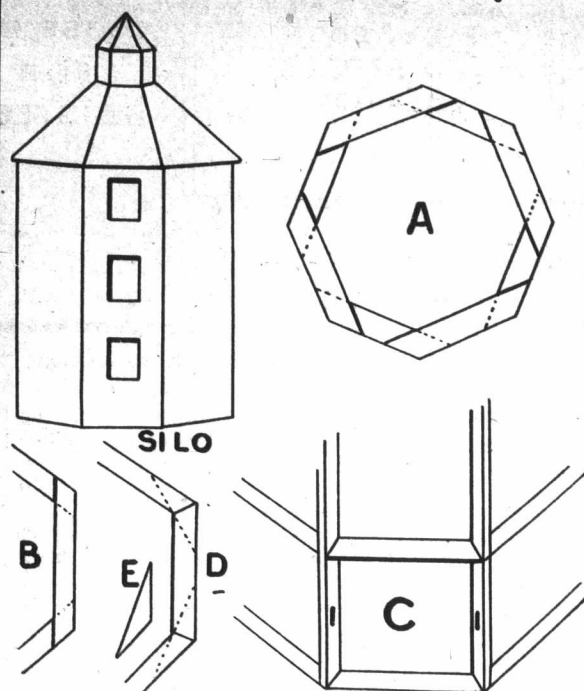
But apart from this view of the case we have our own opinion, and a very strong one, of the man who knowingly and deliberately allows a bull or other male animal to run at large without regard to the rights or interests of his neighbors. It may be, and no doubt frequently is, done through mere carelessness or from want of thought, but even in this case it is wholly inexcusable, and if it is done through selfish indifference, as we fear it too often is, we have only to say that we regard it as a very mean spirit and one which no one should entertain who wishes to be considered a good neighbor. When such cases occur it is well to give friendly notice to the owner to restrain the animal, and if this does not have the desired effect the complainant should have no hesitation in impounding the animal at least, and may use his own judgment as to claiming damages if he has sustained any loss. We might go further and state that we think these remarks apply for the most part in the case of bulls breaking through fences between adjoining farms. Bulls, whether scrub or pure-bred, should not be allowed to run in the fields if they have contracted the habit of going over or through fences, and the owner should be held responsible for any damage resulting from such trespass. But a little thoughtful consideration for the rights of our neighbors and the practice of the golden rule of doing unto others as we would they should do unto us will save a great deal of vexation and unfriendly feeling, and is the proper rule to be observed by all.

FARM.

The Octagonal Silo.

BY J. MOUNTAIN, PERTH CO., ONT.

There will be many silos built this season, and no doubt many are enquiring what form of structure is the most serviceable, durable, and cheap. It is to give assistance to such that I send you these



descriptions and diagrams of the octagonal as the form which, in a somewhat extended experience both in building and filling, seems to me to fill the bill best. The farmers in this vicinity were early in adopting the silo system, and as a consequence we have structures of many forms—perhaps two-thirds of the farmers having silos of one form or another. Those who are building outside permanent frostproof silos this year are, as a rule, adopting this form. It may be built of wood entirely, wood with cement or stone base, or cement entirely.

The claims made for this form of silo are that it is to all intents and purposes equal to a round one, can be built of wood much cheaper and more durable and a great deal easier to build than round, excepting the stave form, however, which for an outside silo is not first-class on account of frost, which sometimes makes it very inconvenient feeding, if it does not injure the fodder. The octagonal can be built of cement, which it is next to impossible to use in a round one. Its advantages over a square one are that it takes at least one-sixth less material in construction for the same capacity. Its power to resist the outward pressure is much greater, having only short girts and greater strength at the corners, and, as a consequence, lighter studding can be used. The silage settles

much more evenly, there being no sharp corners.

To build a wood silo material to be used for siding may be either pine or hemlock, two thicknesses for inside, joints well broken, with tar paper between, first or outside ply of inside lumber especially being better if dressed to an even thickness; one ply of lumber on outside, better if battened. Studding, sound hemlock, pine, elm, etc., 2x10, overlapped at corners and well spiked. These studdings are placed horizontally and may be placed at proper distance apart to suit the lumber (studs, B). Then there must be uprights at each corner (C, No. 1), they may be either plank or round poles cut into lengths, and must be well toe-nailed at bottom, and each row of studs spiked to the top. Three feet apart will be quite close enough for studs. Each ring of studs should be plumbed by line or level. In beginning to build draw a circle with stake and line on the ground or on barn floor the size intended to erect (A), then draw at right angles the diameter, dividing the circle into eight equal parts; then draw from extreme points of lines, through A, and you have the working model.

A silo 30 feet deep and 15 feet across, inside measure, will hold 100 tons of ensilage.

An experienced builder of cement will be able to arrange his material equally as well as in a square one, the only difference being that his moiding planks will be shorter and twice as many of them. If cement is used for this form or any other form, either for foundation only or for whole silo, it is advisable to dig out the size of silo four or five feet below the surface; cement from the bottom and cement the bottom also. It makes the most valuable part of the silo for summer feeding if made water-tight, the silage being kept cool during warm weather. It might be banked three or four feet with earth for the same purpose.

Ohio Experiments with Corn.

Bulletin 78 of the Ohio Experiment Station contains a summary of six years' experiments in the culture of corn. The tests do not encourage the making of abrupt changes in the variety of corn grown in a given locality. Some of the most valuable sorts, such as Leaming and Hess' White, have been fixed by careful selection through a considerable period of time in single localities, and thus far there has been no evidence that such sorts may not continue to improve under the same method of treatment; but when removed to a different soil and climate these same sorts are often disappointing. Even when the differences in latitude are small, if the character of the soil be radically different there is likely to be considerable variation in the behavior of the crop.

The highest per cent. of sound corn has been reached from an average stand of one stalk every eighteen inches, but the total yield has not been so large as from closer planting. The most profitable yield has come from giving a foot in linear length of row to each plant, the rows being three and a-half feet apart.

Shall we plant the butt and tip grains of corn? This question has been studied for nine years. The average yield for the nine years' test is 53.9 bushels per acre from the butts, 59.3 bushels from the middles and 53.7 bushels from the tips, a difference of only half a bushel, and that difference one which shifts from year to year. The average of the first eight years was slightly in favor of the tips. These experiments fail to indicate that there is any sufficient reason for rejecting any portion of the ear for seed, so far as average productiveness is concerned. As the ends of the ear dry out more quickly than the middle it may be that under some conditions the middle grains may be injured when the butts and tips escape; but the use of modern machinery for planting makes it necessary that the grains of the seed corn should be uniform in size, hence the rejection of the butts and tips, in thoroughly cured seed, is justified as leading to a more uniform stand.

Deep and shallow cultivation of corn.—The Ohio Experiment Station began studying the comparative effect of deep and shallow culture of corn in 1888. At that time the implements available for shallow culture were imperfect, and for two years the results were negative or slightly in favor of deep culture. During recent years general attention has been drawn to this subject, especially by the results attained at the Illinois Experiment Station, and manufacturers have produced implements better adapted to shallow culture. With some of these implements the work has been continued in Ohio since 1891, with results uniformly in favor of the shallower culture, the average yield from cultivating one inch and a half deep with the spring-tooth cultivator being six bushels greater than from cultivating four inches with the double shovel.

The same problem has also been taken up at thirteen other stations, besides the two named, with results generally favoring shallow culture. Counting each season's experiments at each station as a single test, forty-five such tests had been reported up to the close of 1895. Of these, twenty-seven showed larger yields from shallow culture, seven were inconclusive and eleven showed larger yields from deep culture. Of these latter, however, cultivating only three inches deep was in some cases called "deep culture."

Judging from these tests there seems to be little doubt that the average yield of corn in Ohio may be very considerably increased by the use of shallow-working cultivators.

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Experiments in Corn Growing.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—I notice in the last few numbers of the FARMER'S ADVOCATE that you have given a considerable amount of practical information on the very important subject of corn growing in Ontario. In addition to what you have already furnished your readers, I might add a few words by referring to the results of two or three experiments conducted at the Agricultural College, which might be of both interest and service to your readers.

Hills vs. Drills.—Several experiments have been conducted at the College, and also by Ontario farmers through the medium of the Experimental Union, in growing corn in hills and in drills. These tests have been carefully made, there being exactly the same number of grains used in both methods of planting. The result of every experiment shows that in total crop per acre the corn which was planted in rows gave a little larger yield than that which was planted in hills; but in grain per acre the corn planted in hills gave a slight increase in yield over that which was planted in drills. It might be given as a general rule that corn planted in drills is likely to produce a total crop a little larger in quantity and a little poorer in quality than that produced from corn planted in hills, when the same amount of seed per acre is used in both cases.

Varieties.—During the past six years much careful work has been done in the experimental department in testing different varieties of corn. Fifty-three varieties have been grown under uniform conditions in each of these six years, and in 1896 one hundred and thirty-two varieties were grown, and the yield of each variety was accurately determined. For the results of this experiment the reader is referred to the annual report of the Agricultural College for 1896, page 182. Twelve of the most promising varieties have been tested over Ontario since 1892 with very gratifying results. Some of the very best varieties for quantity and quality combined are as follows, commencing with the latest variety: Cloud's Yellow Dent, Mammoth Cuban, Wisconsin Earliest White Dent, Salzer's North Dakota, and Compton's Early. The Cloud's Yellow Dent seems well adapted to the warmest portions of Ontario, and the Compton's Early to the more northerly sections. Several of the sweet corns have given good satisfaction for green fodder purposes, such as the Mammoth Sweet fodder among the late varieties, and the Hickox Sweet among the early kinds. In selecting varieties of corn for any locality, not only is it important to select those which produce large yields of total crop and of grain, but also to select the varieties which are sufficiently early for the particular locality in which the corn is to be grown. I wish to make it clearly understood that the Mammoth Cuban is a yellow dent corn, and is very different from the Cuban Giant, which is a white dent corn. The three varieties of corn so highly recommended by Mr. D. M. Macpherson, M. P. P., in a recent issue of the FARMER'S ADVOCATE, are included in the fifty-three varieties which we have grown for six years in succession, and were obtained by him after he learned the results of the experiments conducted at the Agricultural College.

Mixing Varieties.—When good seed of the varieties best adapted to any particular soil and locality is secured, I think there is not much need in mixing the varieties together. When varieties of different habits of growth are planted together one kind is almost sure to be injured to a greater or less degree by the other, and the results are sometimes quite disappointing. We now have varieties well adapted in themselves for almost any requirement, whether for the production of grain, green fodder, dry fodder or ensilage. When a careful study is made of the characteristics of the different varieties of corn, I believe it will generally be found that more satisfactory results can be obtained by growing the varieties of corn separately than by growing them in mixtures.

O. A. ZAVITZ, Experimentalist.
Ontario Agricultural College.

The Use of Potash Upon the Farm.

As most of our soils have been formed by the decomposition of rocks containing a large amount of potash, we would naturally think they were rich in this element. This is quite true with heavy lands. The results of many experiments show wide differences in the needs of different soils. The question may be asked, What classes of soils are in need of potash fertilization? The farmer should put the question to the soil itself and then get the answer in the crop produced. As a rule, peaty soils, sandy soils, and soils rich in lime are deficient in potash. The most practical way of finding out the special needs of particular soils with regard to potash is to make a "field test." The farmer can set apart two small plots of land. On one plot he should apply potash in addition to nitrogen and phosphoric acid; on the other plot he should leave out potash. The growth and yield of the crops upon the plots thus treated will indicate to what extent potash is needed. Some cultivated crops require more potash than others, and this may be shown by the following examples. Take the effects of potash upon peas grown in clay soil and again in sandy soil. The clay soil, as we would expect, is naturally somewhat rich in potash, while the potash in the sandy soil is considerably less. The difference in the growth of the peas is just what we

would expect. The good results of potash fertilization are more pronounced in the sandy than in the clay soil, and yet even in the clay soil potash fertilization has produced a considerable increase of yield. We will take a similar case with rye growing under conditions the same as in the peas. Here the difference between the growth of rye in plots fertilized with potash and those not so fertilized is striking. We would naturally imagine that rye requires more potash than peas. This is true of all grain crops, and the use of potash for all grain crops is now known to be a necessity. This is contrary to an old notion that such crops were not much in need of potash fertilization. Of course some grain crops require less potash fertilization than others. As an example of this we will conduct an experiment with oats under the same conditions as with rye and peas; that is, two kinds of soil to be used—clay and sandy. And in this case potash fertilization gives considerable increase of oats, but it is less than in the case of rye. The conclusion is that oats do not require quite as much potash as rye. Of all grain crops, barley is the one that seems most in need of potash. In fact, the yield of barley follows very closely the amount of potash in the soil and in the fertilizer applied, other conditions being favorable. Sometimes a nitrogenous fertilizer does not produce the result naturally expected. This should not be taken to indicate that barley is not much in need of nitrogen. It only goes to show that the nitrogen application to barley does not give full effect when potash is deficient in the soil.

The potato, as most of us are aware, is a plant that requires a large supply of potash in order to produce good yields. It seems to respond best to the application of potash indirectly—that is, applied to a preceding crop, which converts potash salts into organic compounds. If direct application of potash to potatoes is unavoidable, the best time to apply it is in the fall. Practically, a great deal of potash is returned to the land upon farms in the form of stable manure. And the true economy of manure can be understood only when we are acquainted with the special characters of the crops we produce.

In conclusion it may be stated that the sooner a farmer gets his manure on the land the greater benefit he will derive from it, especially in clay loam. This practice will also prevent, to a great extent, leaching, so common on many farms.

York Co., Ont. F. L. SMYTH.

Underdraining.

[A Farmers' Institute paper by Mr. Simpson Rennie, York Co., Ont.]

The most important of all sciences is that of farming, to know how to cultivate the soil so as to raise the largest crops with the least expense and without permanent injury to the soil. The best authorities on agriculture say that thorough drainage will increase the produce at least one third. Drainage will often convert useless land into the most productive. Rain water should not be permitted to run off the surface of the soil, but should filter through it and then be removed, thus imparting to vegetation the valuable properties it contains so necessary to the support of vegetable life. All soils of ordinary richness which contain a fair amount of clay will withstand a severe drought without great injury to the crops growing thereon if thoroughly underdrained. Land which requires draining hangs out the sign of its condition to the practiced eye. Sometimes it is in the broad banner of standing water or dark, wet streaks in plowed land when all should be dry and of even color; sometimes only a fluttering rag of distress, such as the curling of the leaves of corn or wide crack in clay, or feeble, spindling grain. To recognize these conditions is the first office of the drainer; the second is to remove the causes from which they arise. Land which requires draining is that which at some time during the year becomes filled with water that does not naturally find a ready outlet, but remains until removed by evaporation, which is a slow process and becomes more slow as the level of the water recedes from the surface. Often in midsummer the top of the water of saturation is within a few inches of the surface, preventing the natural descent of roots, and by reason of the small space to receive fresh rains, causing an interruption of work for some days after each storm.

With regard to durability of underdrains, all I shall say is, if properly constructed there is no fear of them wearing out in man's lifetime. They seem to work better year after year, and the satisfaction obtained from walking on dry ground instead of wading through water and mud each spring and fall is certainly very great. I am sure that any person who is willing to risk a few dollars in underdraining some wet piece of ground will be well pleased with the result. The length of time it will take to repay the cost of draining depends on several conditions: the need for draining, the nature of the subsoil, the depth of the drains and the distance they are apart. Generally it will repay the cost in from three to five years.

On commencing to drain, locate the main drains through the lowest ground, unless the grade is very steep and there is danger, at the time of a freshet, of the tiles being washed out and the drain destroyed. In such a case it would be well to keep a few feet to the one side. To cheapen the cost of making the drain, first mark them out with an ordinary plow, and if a draining machine is not to be used, then go back and forth four times. The

last twice is better to be done without the mold-board, as the plowing should not be wider than nine inches at the top for an ordinary drain of two and a half to three and a half feet deep. When the loose earth is shoveled out after the plow there will be a drain of nearly one foot, which can be finished in a very short time. After the plowing is done start and dig from the outlet or lowest point, and when a point is reached where a branch or lateral drain is required start the lateral and run it out for a couple of yards, then proceed to dig in main drain. By all means avoid sharp turns or square joints in joining one drain with another. The depth of drains should vary according to the nature of the subsoil. In porous soils the drains should be put down three feet or more, but where there is a hardpan bottom there is no necessity for going so deep. The bottom of the drains should be very carefully graded, avoiding sudden changes in grade. That this may be well done some system for levelling is necessary, but out of the many that I have seen used, to my mind there is none equal to water. Usually when digging, especially in the fall and spring, there will be sufficient ooze from the sides of the drains which can be utilized for levelling purposes, but if the soil should be dry it is an easy matter to take out sufficient water to try the grade of a drain.

As the freezing and thawing is liable to break and destroy the tile at the outlets, I recommend wooden outlets. Take a round cedar, split it through the center, hollow out the heart and then nail it together, and put this in for the outlet. In laying tile always lay from the outlet up grade, place so that they will fit close and lie solid, stand on each tile, and if any places in the drain are found to be soft so that the tile will settle with one's weight, then these soft places should be made solid by tramping in strong clay. This will also prevent quicksand from working up from the bottom and getting in at the joints and probably through time destroying the drain.

In clay soil nothing more need be put on the tile than a portion of the moist clay taken from the sides of the drain and tramped solid before filling in the drain. In sandy soil a layer of dead grass or straw should be put over the tile to prevent the sand from getting into the joints, then tramp a few inches of earth solid on top of the straw, after which an ordinary plow may be used to fill up the drain.

Regarding the distance drains should be apart, no hard and fast rule can be laid down, but in any ordinary porous soil they need not be closer than thirty-five or forty feet, providing they are put down a good depth, for the deeper the drain the greater the pressure, and consequently they will draw further.

Cross-Fertilization.

BY HARRY BROWN, MANITOBA EXPERIMENTAL FARM.

In your issue of Feb. 15th, 1897, one of your subscribers (Mr. A. E. Hoshal, Lincoln Co., Ontario) laments the fact that many people are ignorant that the organs of reproduction are as perfect in the vegetable as in the animal kingdom, and that the work of procreation is carried on on precisely similar lines. With due deference to that gentleman's opinion, I think that at the present day this class of people are in the minority, and with such powerful factors for the dissemination of knowledge as the agricultural and horticultural journals, farmers' organizations, etc., they will soon be unknown.

Cross-fertilization, reduced to its simplest form, is the crossing of two varieties of the same species possessing distinct characteristics and having for its object the combination of the traits of the two varieties. As most plants with which the agriculturist has to deal produce what are known as perfect flowers (that is, the male and female organs are combined in the individual flower), I will take this class as an illustration of my point. The composite parts of such a flower are: (1) the *calyx* or outer covering (generally green), (2) the *corolla* or colored portion of the flower, (3) the *stamens* or male organs, slender filaments bearing at their tips the small sacs which contain the yellow, dust-like pollen, (4) the *stigma* or female organ, which is borne in the center of the flower, and (5) the *ovary* or seed pod, containing the *ovules* or embryonic seeds, and from which the *stigma* proceeds. All these parts are readily distinguishable by a casual observation, but perhaps the common garden poppy affords one of the plainest examples. At a certain stage in the development of the flower the receptacles containing the pollen burst and scatter the fertilizing dust on the surface of the stigma, which is at this period covered with a mucilaginous substance, enabling it to retain the pollen long enough to ensure fecundation. If the fertilization has been perfect, rapid changes take place. The ovules commence to grow, and in due time develop into ripe seeds with which to perpetuate the variety.

This would be the result if nature were allowed to follow her course without interruption, and here comes in the cross-fertilizer's art. Before the pollen has been released the stamens are removed with a delicate pair of forceps, and the flower is said to be sterilized. A piece of fine muslin is then tied round it, to ensure the exclusion of foreign pollen, and in this condition it is impossible for it to produce seed. Sterilization must be performed at a comparatively early stage of the flower's development, for the pollen is distributed, in many

cases, before it is fully expanded. When the sterilized flower has arrived at the condition for impregnation, which is indicated by the moist state of the stigma, the muslin is removed and the pollen of the variety with which it is intended that the cross shall be made is gently deposited on the stigmatic surface. The muslin is replaced and kept on the flower until fertilization is accomplished, when it may be removed.

Of course the results will sometimes be disappointing, and the plants produced as a result of the cross may show no different characteristics from one or the other of the parents. But generally some of the offspring show the effect of the cross, by distinct variations in color, vigor, etc., and it is this that commends the experiment to us and makes it worthy of a trial by even the most humble of nature's admirers.

In conclusion, let me say that I know of no other place that offers such an illimitable field for the prosecution of this study as Manitoba. Even in our most favored districts Red Fyfe wheat is occasionally nipped by frost, clearly showing the necessity for procuring an earlier variety, and there is every probability that in the near future cross-fertilization will furnish the solution of the problem. Careful experiments have been made in this direction by the Experimental Farms, and the results so far are encouraging. Take apples, again, for an illustration. It has been conclusively proved that even the varieties that stand the rigorous winters of Russia will not succeed in our Province, yet what a vista is opened up in this line by the agency of cross-fertilization. I offer these two suggestions to show the great work that may be accomplished by the most humble of us, and to the man who succeeds will be accorded the deserved eulogy, "Well done good and faithful servant."

The Crow and Other Insectivorous Birds.

BY MARTIN BURRELL.

"From blossom clouded orchards, far away
The bobolink tinkled." —Lovell.

What sort of a country would it be without orchards and birds? Hard is the heart and dull the ear that is not responsive to the fine appeal from the bird world! Of all men farmers have the greatest opportunities for acquiring an intimate knowledge of birds and their manner of life, and too often the opportunities are completely ignored and a stolid indifference shown on the whole subject. Nevertheless, the clear call of the oriole, the morning song of the catbird, the cheery piping of the robin, the soft flute notes of the bluebird, and the music from a score of other songsters do give universal pleasure and doubtless exercise a formative, even if unconscious, influence on the child-life of the country home.

We are living in a utilitarian age, however, and the money test is applied all round. If a weak indulgence in the poetic side of life should lose one a dollar, he is straightway urged to push sentiment and poetry to the wall. One shudders to think what we might be tempted to do if the birds in the struggle for life affected our pockets unfavorably! Fortunately, the reverse is the case, but the fact is not sufficiently understood or appreciated. We have wise legislation on the subject as far as it goes. It might go a trifle farther. Hawks, crows, blackbirds, and English sparrows are unprotected. Possibly the day will come when the last alone will be on the "free" list. It is questionable even whether a bounty wouldn't be advisable in the case of this ubiquitous pest. In the State of Michigan the authorities pay three cents a head for English sparrows killed during the winter months. This is a wise provision, not only because it anticipates the breeding season, but because the bounty hunter who knows little of ornithology would undoubtedly kill many of the useful species of sparrows if he were encouraged to prosecute his work during the summer when the song birds are with us. Europe has long condemned the English sparrow, Australia "cusses" him, and on this continent opinion is practically undivided. He is detestable, especially for the relentless war he wages against the natives. His impudence and pugnacity are the means of banishing dozens of birds whose usefulness is unquestioned and whose voices are incomparably more musical than that of Mr. Passer Domesticus.

As to hawks, while Cooper's hawk—or the chicken hawk—plays occasional havoc in the poultry runs, nearly all other species are beneficial, feeding very largely on mice and insects. Blackbirds too are insectivorous to a degree hardly suspected by the average agriculturist.

When we come to our familiar friend, *Corvus americanus*—the common crow—the evidence is strongly in favor of the bird. He should be protected by law. Fortunately, he is fairly well able to protect himself.

Personally I have a strong liking for the "dusky embodiment of worldly wisdom and prudence." He is a cheerful, optimistic fowl, and were he wiped out of existence we should sadly miss his sable form and confident, if unmusical, voice. With respect to his economic status, the United States Government in 1895 issued a most exhaustive bulletin which deals most thoroughly with the whole subject, and its decisions are practically final as regards the relation of the crow to agriculture. That part of the report which deals with the diet of the bird is exceedingly interesting and is based upon an examination of nearly 1,000 stomachs collected from various parts of the States at different seasons of the year. Farmers have always had doubts as

to the crow's usefulness, and more than once bounties have been offered for his destruction. The most serious charges brought against him are that he pulls sprouting corn, injures it in the milk, and feeds largely on the eggs and young of poultry and beneficial birds. It appears, however, that while during the entire year about twenty-five per cent. of the crow's food is corn, most of this grain is in a sense wash grain picked up by the bird during the winter months, and that the sprouting corn and corn in the milk consumed only amounts to 3% of the total food of the crow. As for the sprouting corn, it is a well-established fact that all danger may be avoided by tarring the seed corn. This practice was adopted as far back as 1800, and with complete success. The objections are that the process retards germination of the corn and makes the seed too sticky to work in the planter. If the tar is made thin and a stick dipped in and then the seed corn stirred with the stick till it is all a brownish color, and enough air-slaked lime mixed with it to coat the grains, there will be little trouble. The germ of the corn will not be killed, as some people imagine; and after the crows have tried one or two hills they will start using "cuss" words, and seek "fresh fields and pastures new." With regard to the accusation of devouring eggs and young birds, while it is true that the crow does practice such villainies it should be understood that this species of food only constitutes 1% of his whole diet. Our black friend is an omnivorous feeder, for rabbits, mice, bats, moles, snakes, lizards, frogs, toads, fish, and insects are all embraced in his bill of fare. Insects constitute 26% of his animal food supply, and, speaking agriculturally, it is by the character of this insect food that the crow must stand or fall. The analysis of the stomach contents were very carefully conducted by entomological experts, and the different species of insects duly tabulated. Some very interesting facts were elicited, facts which told heavily in favor of the crow. Grasshoppers, cutworms, May beetles, and other injurious insects were the kinds most largely eaten. Beetles appear to be specially liked. While the total percentage of insect food in the year is only 26, we must especially bear in mind that in January the percentage is but 3, while during April nearly 53% of the food consists of insects, and in May and June the figures are nearly as high. Young crows while in the nests live still more largely on insects, and it is an important fact that the breeding period of the crows correspond closely with the May beetle season, and the "white grub," the larva of the May beetle, is often an extremely injurious insect. Amongst our most prominent beneficial insects are the "ladybirds" (*Coccinellidæ*), and various species of four-winged and two-winged flies: "Ichneumon" flies, *Tachina* flies, and so on. These insects were almost entirely absent in the hundreds of stomachs examined.

Altogether, the testimony is overwhelmingly in favor of the crow. We must admit that a bird which devours such enormous numbers of our worst pests, and whose corn-pulling proclivities are so easily checked, should no longer be outlawed and classed with a feathered scoundrel such as the English sparrow.

DAIRY.

Cheese Sales Inspection.

A bill has been introduced in the Dominion Parliament by Mr. McMullen, M. P., of which the following is the substance:

"If any dispute arises between the buyer and the seller of cheese sold subject to inspection as to the quality or condition thereof, either of the said parties may refer the dispute to the chief inspector of cheese appointed under this Act, or to such other person as is authorized by the Governor-in-Council to act as referee in such cases, and the decision of such chief inspector or referee as to the quality of the cheese shall be final, and the costs of the proceeding shall be borne by the party against whom the decision is given."

We fail to see the need for creating an office of this description to settle a few disagreements which the cheese boards throughout the country ought to be able to deal with themselves. These boards are composed of factory salesmen and cheese buyers and are surely competent to make rules governing their methods of doing business that will suit the local conditions, providing for a simple arbitration. As a matter of fact, this course has been adopted in the past where such a case has arisen. There is no legal Canadian standard for cheese, and exporters are governed by the requirements of the particular English trade for which they are buying, and the practicability of having an inspector or referee to pass judgment in case of dispute is very questionable. Government has its proper functions in connection with the development of the dairy industry, but we very much doubt that this is one of them. If the bill were passed it would simply afford the opportunity to impose another batch of officials upon the taxpayers of the country. We notice that the London (Ont.) Cheese Association at a recent meeting, after careful discussion, very properly declined to endorse the proposed Act.

How to Improve the Canadian Butter Trade.

BY F. C. HARRISON, BACTERIOLOGIST, O. A. COLLEGE.

A great deal has of late been written in the papers with regard to cold storage and the exportation of Canadian butter to England, and in order to see the extent of this market for our produce let us examine for a moment the capabilities which the United Kingdom possesses to satisfy its own requirements and also note what colonial and foreign importers send.

Competent English authorities (Profs. Long and Sheldon, and Messrs. Morton, Rev. Turnbull, etc.) estimate the yearly English production of butter at 92,000 tons, and of cheese, 120,000 tons, but the annual consumption of butter is about 215,000 tons, and cheese, 230,000 tons. Thus the English production is very far behind the total consumption, and the balance not made there necessarily has to be imported. Since 1890 the growth of the butter trade has averaged 8,000 tons yearly of this increase. Denmark has supplied 3,380 tons; Australia, 2,445 tons; Russia, 1,200 tons; and Canada but 239 tons; these figures being the yearly average of the last five years. This enormous increase of imported butter may be accounted for by the bad seasons in England, all the crops but one for this period being below the average; also on account of the low price realized by the English farmer for butter, causing him to pay more attention to the supplying of milk, and the uniformity of quality of the imported butter, the bulk of it being manufactured in large factories, which are provided with the most scientific appliances, combined with skillful manipulation in its manufacture.

Russia, Australia, and the Argentine Republic are among the more recent competitors for the British market, the last named State sending in nine months 637 tons, which realized good prices. Russia also is to the fore with 6,428 tons for 1895, whilst Australia sent 15,670 tons, and Canada only 1,947 tons. These figures are eloquent, and it behooves Canadians to do their utmost to attempt to capture a larger share of the English market, and now is the opportune time. Canada has many advantages. She is much nearer than Australia, and butter is always at its best when it is new, and the age of Australian butter reduces its value from \$1.50 to \$2.50 per 100 pounds. In Denmark the wage question is yearly increasing their difficulties, wages having risen 32% in the last ten years. The Danes look very carefully after winter feeding, as is seen by the fact that 117,400 tons of bran and 60,300 tons of oil cake were imported, and Canada need not expect any supremacy in the British market unless an all-the-year-round supply of butter be secured. This will of course necessitate winter feeding. Again, 75% of Danish butter is made from pasteurized cream and pure culture starters added to this, which of course gives them greater uniformity, and because of its uniformity Danish butter maintains its high-standing. It is all first-class, has the same color, same degree of saltiness, and varies but slightly in aroma. Not so with other countries; for although some is of fine quality, no two lots are the same.

This contest for supremacy is just commencing, and the victory will belong to the competitor who can make the best quality and place it on the market at the lowest cost. Some of the considerations entering into the contest are as follows:

1. *Properly Equipped Dairy Schools.*—These we have, and no person should be allowed to take control over factory of creamery unless duly certificated from such a school.
2. *Selected Herds to Produce Butter and Cheese Instead of Beef.*—The methods of feeding followed in countries like Denmark, where cows are fed on artificial food for six months in the year, must be studied, and to a modified extent followed.
3. *The Newest Methods of Buttermaking, such as the Pasteurization System, must be Developed.*—This must be done in order to produce the necessary uniformity in aroma and taste, and also to increase the keeping quality.
4. *The Special Requirements of the British Market must be Studied.*—Small but vital points, as the amount of salt best suited for English palates, most desirable color, neatness of package, etc.
5. *Low Freights and Cold Storage.*—These are of prime importance to the success of the trade, and there is no reason why both cannot be arranged to the mutual satisfaction of the railway and storage companies and the producers.
6. *Regular Supplies.*—An irregular supply is very detrimental to Canadian butter's best interests. Enough should be shipped week by week to meet requirements, for butter is best when it is freshest. Denmark follows this question very closely; for instance, the week preceding Xmas 1,158,100 pounds more were sent than in the week following.
7. *Provincial and Dominion Aid to the Dairy Industry.*—The Province in its annual grants to dairy societies already does much in this direction, but notice might also be taken to what Denmark does in encouraging the improvement of dairy breeds by the so-called "Bull Association"; that is, the State pays a cost of keeping pure-bred bulls, provided the Association keeps certain specified rules; also, the appointment of an official residing in England, whose duties are to aid the sale of Danish dairy products, to meet and correct through the press all false and injurious statements regarding Danish products, to counteract such frauds as adulteration of Danish butter with oleomargarine,

etc., to answer all inquiries and direct close attention to the markets. The increasing demand for Danish butter in England is, perhaps, largely owing to the efforts of the present Danish official in England.

The cheese trade supplies us with an object lesson. In 1886 the United States supplied England with one half of its import of cheese, and Canada a little better than a quarter. To-day the positions are reversed—Canada supplies more than the half and the United States contributes less than the quarter. This is directly due to the adulteration of United States cheese as compared with the genuineness of that manufactured in Canada—the success of the genuine article over the spurious. If this can be done in cheese, why not in butter?

The Susceptibility of Butter to Taints.

A little joke which forcibly illustrates the susceptibility of butter to flavors is told by a lady reader of the FARMER'S ADVOCATE as follows: "One evening in April two visiting ladies were taking tea at our house, when one remarked, 'What a delicious grass flavor your butter has?' while the other friend—a farmer's wife—knowing that no pasture was yet obtainable, also remarked upon the peculiarly pleasant taste of the butter. I did not consider it necessary to make an explanation, but knew at once the secret of the mystery. A few evenings before last churning some oranges came home to be made into marmalade, and knowing the habits of brothers, of which I have several, I placed the package inside the churn for safe keeping. They were not there long, and the churn was, as usual, scalded well before turning in the cream, yet the peculiar orange flavor was easily perceptible in the butter." Unfortunately, all the flavors that come in contact with butter are not harmless as orange.

"A Good Dairy Cow: How to Get Her, and How to Keep Her."

[A paper read by D. Munroe before the Manitoba Dairy Association.]

It is fair to suppose that no one disputes the advantage of a good cow over a poor one, and yet the fact remains that the very great majority of our cows are poor ones. It is as surely a fact that we may have good ones if we will. I don't bring you anything "new under the sun," but only hope to show from actual practice the value of teaching already old. "A good cow?" Yes, everyone knows she is more desirable than a poor one. How to get her? You have all read of and been talked to death about slim necks, wedge shapes, big udders, pure-bred sires, raising heifers from best cows, etc. How to keep her? I'm sure you're tired of being preached to about lots of feed, good warm stables, gentleness, cleanliness, and 101 stale but sound principles of cow keeping. Do you want to hear all this from me now? I'm afraid not. Do you believe these fundamental principles? I think everyone does. Then why all the talk and printer's ink, and precious time wasted about it? Well, there seems to be an element in human nature that will shout *Amen* to the truths of religious gospel, of dairy truths, and of animal, agricultural, and commercial principles, then wilfully violate them both in the spirit and the letter, and come back to shout *Amen* again. What am I going to do about it? I'm going to try to show the working out of these old truths in actual commonplace practice. I'm going to try to alarm you at the negligence that so generally exists.

Dairying, dairying, everywhere dairying, and a steady decline in prices is the unmistakable turn things are taking. Elgin butter market quotations 1st October each year: In 1893, 13,800 lbs., at 29c.; 1894, 41,420 lbs., at 25c.; 1895, 21,600 lbs., at 22c.; 1896, 63,360 lbs., at 15c. Nearly 50,000 lbs.—400% increase in quantity—90% less in price.

Do I hear you say you are doing well enough, why bother your head about us? Yes, but all that benefits you benefits me, and if we are benefited you are. If the country gets a good name we each get a slice of its reputation; and reputation is a good thing to trade on. John W. Decker, who is a leading authority on cheesemaking in the United States, said publicly a month ago: "The cheese factories of Western Ontario rule the English market." Can you tell me of any good reason why the butter from Canada, perhaps from Manitoba, should not rule the English butter market? I don't know of one. Are we too small? We feel big enough; at least we are broader than Elgin or Denmark, and they do a lot toward making prices because of quality and reputation. We have with us Prof. Robertson, who will tell us we can surely equal if not excel them. How shall we figure to get to the position of boss? We must begin at the cow end. The cow and her care is the central sun around which all dairy prosperity must revolve, which by its light and heat animates and nourishes it, around which all its life must dance attendance. Ambition, intelligence, care, energy and all the good qualifications that may grace a good dairyman are dwarfed or blotted out if devoted to a poor cow, and yet this poor cow cuts a figure everywhere. The average for New York State—an old-established dairy country containing many noted herds of large producers—is less than 130 lbs. butter per cow annually. The average of Manitoba does not exceed 125 lbs. probably. Records show that we have some good cows; sorting them out only makes the distinct inferiority of the inferior ones more painful. Shall we not make some improvement distinguish 1897 over 1896? You cannot do

business any more with the old grain cradle, hand rake and straw bands; nor can you do any better with poor old Brindle and the straw pile, and the log stable without windows or much plastering.

You keep cows? Yes, a herd of twenty-five. What is the average cost to keep? \$15 per year. What the average product? 125 lbs. butter at 12c. \$15; profit, nothing. That came out well, didn't it? Didn't lose a cent.

No, we'll keep 25 good cows only. The average product is 300 lbs. butter per year, at twelve cents, \$36. We'll feed them each \$10 worth of grain more than the ones that we didn't lose a cent by, and they then cost for keep each \$15 and \$10, \$25; profit, \$11. Such cows pay an income of 22% on a cost of \$50 each after all expenses are paid, and the coarse feed has been marketed at home at full values. Then the calf from this kind of cow is worth something, for having good cows you would breed from a first-class sire. The manure from this herd is worth something too. You have fed about 50 tons of bran and its manurial value is more than \$3 per ton, or about \$6 per cow. The better the quality of the feed the more value in the manure, and consequently the more loss if wasted. This calf and this fertilizer are worth fully the cost of the labor, and you thus have a very fair percentage of profits. This good cow has another value, she is part of the best kind of a programme to keep the children on the farm, and give them a practical, useful education that will qualify them for the actual life's work. The farmer's son or daughter is either unfortunate in natural inheritance, or else badly reared, who cannot be attracted by a good, well-kept cow, that by the profit on her daily industry helps to earn and furnish a home and home comforts, and besides affords an interesting, profitable study in the yearly propagation and improvement of her species. Likewise no boy or girl of the timber go-a-heads are built of will be satisfied to remain on the farm to waste their days on a no-account cow or perpetuate her by rearing her offspring. Encourage the children of the farm with interesting, attractive work. I've tried to impress the lesson that the number of cows is no indication of profit. It's better to keep one cow and get \$10 profit than 25 cows and get nothing for profit. Then increase that one kind as fast as we can, but by all means get rid of the no-profit kind.

I've spoken to you before of Menzo Wilcox, of New York State. He started with cows making less than 300 lbs. In 1895 his herd averaged 418 lbs., and for 1896, 465 lbs. of butter each. This is from a herd that does not boast of pedigrees and fancy figures. They are mostly Jersey grades.

BE SURE YOU'RE NOT MILKING THE WRONG COW.

This brings us to part second of our subject—"How to get her"—which implies, of course, that you must know her. You would at once say it's a very ignorant person who does not know the difference in value in a pound of stone or a pound of gold. There is no more need of being ignorant of the difference in value of the good or the poor cow. The accuracy, simplicity, and cheapness with which the cow's product may be tested and valued is no longer a matter of dispute. To get her we may buy her, or must raise her. To buy her, the usual plan has been to depend on one's skill to select by signs the good and avoid the poor. In this the most expert are more or less failures. As a rule, dairy quality follows dairy type, but more especially is this true of the quantity of milk. There are signs which are said to indicate quality, but they are not so reliable as the signs of quantity. To illustrate: A friend visiting, shortly after purchase of some cows, walked out to the field to see them. "I don't think much of her," said he, pointing to "No. 5." "No do I," was my reply, "but the auctioneer got the drop on me, and I got a cow I didn't want, though I bid on her." Well, "No. 5" has a record of 316 lbs. butter last year. That friend is an acknowledged authority on cattle judging. The "Babcock" judgment revealed the incompetence of both of us. If one is buying without a chance for testing, he must depend on his skill in selection, and take the risk of being taken in; but if an opportunity for testing is given, her real value can be known to a certainty. This test may not be infallible, but the attendant conditions, such as the feed, care, condition, period of lactation, etc., can be pretty accurately estimated. The Babcock test is a great boon to dairymen if they will only use it; simple, cheap, practicable, reliable. It has established some facts which have knocked the wind out of some theories.

Under normal conditions the average percentage of butter-fat is practically permanent and regular, varying in the different periods of the milking season on a nearly fixed scale.

The more her ancestry is backed by continuous lines of good performers, the more certainly is the quantity of milk and percentage of fat determined. The percentage of fat is practically a fixed qualification in the cow, and cannot be increased by the quantity or quality of the food after she is regularly supplied with a properly balanced ration sufficient in quantity to equal her full capacity; but if she is fed a ration too small, or badly balanced, both quantity of milk and percentage of fat will be diminished. The percentage of fat is very perceptibly affected by changes, by worry, exposure to cold or storms, by lice, rough treatment, etc., and more variably than the quantity of milk. Cows of a beefy type are not so easily affected by such things as those of pronounced dairy type, and

this is very conclusive evidence that the milk-giving function is directly a result of the operation of nervous forces, and also a very good reason for exercising great care that the dairy cows should be especially protected from such hurtful conditions or treatment.

I would not buy a cow on superficial signs alone, without deducting from her probable value sufficient to cover the risk of failure. The records so frequently advertised of pure-bred dairy cattle, covering a short period of one day or seven days, are usually, to a certain extent, misleading, being the result obtained from a few days' forcing that the animals would not stand for a whole season. Several experimental stations, notably Guelph, Michigan, and Minnesota, and a few prominent breeders, are working on the only true system by making the tests cover a whole year. For these reasons I do not regard our exhibition-ground tests as worthy of being continued on our present plan. Hence, from my experience "to get her" by buying, the Babcock test is the only sure method of value. But by far the most satisfactory way is to raise her. The right sort of breeding will almost invariably give the results you are entitled to look for, and the right sort of handling will establish correct habits, which adds much to her value. Only don't forget that one or a few poor cows as breeders yield but little evil influence as compared with the damage a poor sire may spread through the whole herd, and it will be three years—three generations of breeding—when you have realized it.

[TO BE CONTINUED.]

POULTRY.

How to Make Hens Pay.

- 1.—How many hens do you consider it wise to keep on the average 100-acre farm, and to what age?
- 2.—With a view to eggs, table birds or both, what breeds or crosses would you recommend as likely to give most general satisfaction?
- 3.—What plans would you suggest for improving an ordinary farm flock of mixed fowls, such as selection or "weeding out," new breeding birds, setting of eggs, etc.?
- 4.—What period of the year is it advisable to retain male birds with the flock? How about numbers together?
- 5.—By what means do you secure the best eggs for hatching?
- 6.—What treatment would you suggest for a pen of breeding hens (from which the eggs are to be set) during the latter part of winter and spring?
- 7.—What sort of a house do you recommend with regard to (a) size, (b) location, (c) warmth, (d) sunlight, (e) ventilation, (f) dust bath, and (g) watering, and to what extent should fowls run out in winter?
- 8.—How do you manage to keep hens free from lice and disease?
- 9.—What foods or mixtures do you recommend for (a) egg production, (b) fattening, (c) how often would you feed per day, and (d) what value do you place on green bones, and vegetables, and sunflower seed?
- 10.—How many eggs per year should a good farm bird lay to be profitable, and at what age should broilers be sold?
- 11.—Should turkeys, ducks or geese be allowed to run in the same house with hens; if not, why?
- 12.—What is your idea of keeping turkeys, ducks or geese on the average farm, and how do they compare with hens as to profit, etc.?

To Prevent Hens from Sitting—The Poultry Question Well Handled.

- 1.—The number of hens one might keep for profit depends on the accommodations provided for them. The average farm could support from three to five dozen hens and give a nice profit. The smaller the farm the better the hens can be made to pay, for more attention can be given to them. Don't keep any more than you can care for properly. As to age, I would not keep any, except a valuable fowl, after they are two years old. I generally market the old hens in February and keep some for consumption in summer.
- 2.—I am much pleased with Barred Plymouth Rock hens crossed with Dark Brahma cockerel, or Light Brahma hens crossed with Barred Plymouth Rock cockerel; either of these will please almost any person. They mature earlier than pure-breds and are large, plump fowls. If you would like a lighter fowl try Plymouth Rock cockerel with Leghorn or ordinary hens. For the shiftless farmer who allows the hens to scratch for themselves, the Barred Plymouth Rock, or Rock and Leghorn cross (which is an active hen with small comb), comes close to filling the bill. However, I have a good word for the Langshan, for they are excellent winter layers and also good mothers. Their eggs, like the Brahmas, are the popular color and always command a ready sale, sometimes bringing an advance in price per dozen.
- 3.—For improving the ordinary hen I would say get a pure-bred male only (a good vigorous one) and no other. They can be bought for \$1, and I am safe in saying it will be the best small investment you ever made. Any of the following, Brahma, Plymouth Rock, Indian Game or Wyandotte, will produce superior results. Never practice inbreeding. Procure an early-hatched, well-developed cockerel with yellow beak and shanks. My plan is to select six or seven yearling hens and place with a cockerel and save these eggs for hatching.
- 4.—It is better to keep the flock from 1st July until 1st March; then you will not be troubled with fall chickens. In 1895 I had only two cockerels (Brahmas). I kept them caged from fall until 10th March, then I placed one with six and the other with seven hens. The eggs hatched remarkably well: one hen hatched thirteen chicks from thirteen eggs (pure Lt. Brahmas). The remaining hens I left without any male. They laid exceptionally well for three and a half months, and only one hen wanted to sit. The hens were Lt. Brahmas and Barred P. Rock crossed. Last

winter I repeated the same with equally good results. I put no males with laying hens from December 1st until July 15th, and out of 33 hens I had only one broody in April and three in May. Try it once! I have not the average of eggs, but the results were satisfactory. This shows that instinct teaches the hens not to become broody, and I am confident that without the male the hens will lay 20% more eggs. This was my experience, I do not say this will apply to all. I would say to dispose of males unless they are very valuable or you wish to exhibit them. If you summer a cock, keep him penned up, then he will be useful next spring, otherwise he may be incapable.

5.—Fowls for the breeding pen should be the choicest of the flock. Take seven yearling hens or half the number of extra good pullets, making part of each. This is the number when mating with Rock, Game or Leghorn.

6.—Have for them lime (mix up sharp sand and lime), gravel or grit, and dust bath. Feed freely on cooked vegetables and meat with bran and shorts; also small quantity of wheat, buckwheat and oats, well scattered to make them take plenty of exercise, which doesn't take long for them to gather up, probably about fifteen minutes or less. I can recommend a better plan to those who feed hens; i. e., give the grain in the straw. I am sure that I can take half the grain in the straw and get as many eggs as the person who feeds about double the quantity threshed. It keeps the hens out of mischief and gives the much-needed exercise—nature's stimulant. Allow them to run in yard as soon as snow and frost are gone.

7.—In building a henhouse the first consideration would be *warmth and light*; the second, paint, etc. (a) As to size, I would suggest a house 12x24 feet and 4 feet high at front and 7 feet at back. This would be sufficiently large for 40 hens. I would divide it into different parts. (b) I would join the henhouse to barn at the south or west, or, the next best thing, put it where it would be exposed to the sunshine all day. Have nothing but a dry board floor and keep plenty of straw on it; remove litter quite often. (c) Warmth is the greatest factor in carrying on a successful poultry business in the winter. Use plenty of felt paper and lumber, with four-inch air space; also, if possible, have a slat door opening from the cow stable, to keep the hens warm at night when the mercury generally lowers. A still better plan would be to have a roosting room off the cow stable. (d) Have windows twelve inches from floor so the hens can stand in the rays of sunshine. (e) A dusting place is indispensable. Use for this a box 2x4x1 ft. Place in it road dust or some dry sand and ashes. The ashes may make your white birds look a little brassy, but it will not injure them except for exhibition. (f) Furnish plenty of drink, as the hens will lay better. Give water lukewarm in cold weather. I have never used a fountain, but think they are fine. When I have a large number together I use a trough; when only a few I use a square tin outside of pen. Use something that the hens cannot scratch under and which is handy to rinse out daily. Keep your fowls in all the time after the ground freezes and snow comes; also when it rains. The hens get cold and only warm up at the expense of the food.

8.—Use plenty of insect powder. Give the hens a general dusting with a bellows; at night is the best time. I have been exceptionally fortunate in keeping disease from my hens. I have not lost any from disease. Lice and cold are the two hardest things to contend against. Make your roosts of planed stuff and put coal oil on both sides frequently.

9.—In the first part of the winter I fed cooked potatoes thickened with bran and barley, but since January 15th I have fed every morning (except Monday, when I give a scalded mash) cooked turnips, apple and potato parings mixed with bran two parts and pea meal one part. The cooking is done on previous p. m. At noon I give some of the following: Peas in straw, oats in straw, corn on cob broken in two or three pieces, barley scattered on a lot of straw, short-cut clover hay scalded and having shorts mixed with it. At night I give corn, barley, peas or oats. Hulless oats and buckwheat I believe are the two best egg-producing grains. When cold I always warm in the oven, grain to be fed at night, and give them all they can eat. I also give apples, cabbage or a mangal for them to pick at. I formerly thought I had to feed Cayenne pepper to make them lay, but for the last four years I have used nothing but a little salt and oil meal, and they lay equally as well. So many poultry writers say: "Don't let the hens get too fat." This is all nonsense and an erroneous idea. I would like to ask if they ever killed a laying hen that was otherwise than fat? The reason the hen does not lay is because she is not supplied with certain ingredients that go to stimulate the egg production. Why is it so many farmers' hens lay so well when spring comes? The reason is just here: they get out and help themselves to grass, grit and gravel, and scratch and take a dust bath, something they have not had for four or five months. Substitute summer treatment for the hen in her winter quarters if you want hen fruit. For fattening fowls I use ground corn, barley and wheat scalded or mixed up with milk (ground grain is easier digested); also cooked potatoes for a change and some cracked corn. Give them all they will take, and milk for drink if you have it. I always feed three times daily. Feed as soon as possible in the

morning, at noon, and as late at night as they will eat, or just before going to roost. I have never fed any green bone, but I am sure it is quite essential. I would prefer meat and milk to bone for laying hens. We saved up about a bushel of egg shells last summer and I fed them, crushed fine, in the cooked feed. Vegetables are invaluable as a part ration in order to make a profit. I do not think sunflower seeds will ever become general for poultry feed. Although they are very rich in fat, I have not used any for some years; corn suffices for me.

10.—I am not prepared to say for a certainty, but think that the Barred P. Rock or Brahma will lay from nine to eleven dozen in the year. I have no doubt that the Leghorn or Minorca will do much better than this, but I prefer having the former around, particularly when you dress one for dinner. Do not dress them too green, let them get up to two and a half pounds; the breed would do much in governing the weight. Small breeds would do at less weight.

11.—I would prefer keeping turkeys (geese and ducks also) and hens separate. I think that to place all together is similar to allowing cattle, sheep and pigs to run together and expect profitable results. The turkey will winter well in a dry, tight shed if you give it about the same ration as a hen. Keep your ducks and geese together, for they usually make their quarters too damp for the good of the hens. My ducks never got too fat, but rather the reverse, when I allowed them the same chance with the hens.

12.—I believe the turkey is the most profitable fowl on the farm. Give them plenty of attention while young, in keeping dry and free from lice, and as soon as they present a ruddy appearance they will take care of themselves. The turkeys go about in search of bugs, etc., and will not destroy your grain as geese, ducks and hens will do. Prepare them nicely for Thanksgiving and Christmas, and some buyer will pay you for your trouble. Ducks, when properly cared for, come next for profit. Hatch them early; rush them along and market when well feathered. Don't keep them until fall and then sell them for the same and probably less than in August. By doing this you lose your profit. Geese are also fair money-makers, but they must be placed where they cannot destroy grain, vegetables, etc. A creek or its equivalent, with a grassy inclosure adjoining, would be a fine thing to have for them. They are very destructive if allowed to go at large. I believe the turkeys or ducks are more profitable than hens when eggs sell no better than they have for the last two winters. Formerly we received on an average 25 cents per dozen for fresh eggs in winter. The prices I have received for fresh eggs (market weekly) for the last two winters are as follows: December, '95, 20 cents; January, '96, 20 cents; February, 21 cents; March, 14 cents; April, 10 cents; December, 20 cents; January, '97, 17 cents; February, 15 cents; March, 11 cents.

The surroundings and inclinations of the person thus engaged add largely to its success.
Prince Edward Co., Ont. W. C. HUFF.

How to Make Hens Pay.

To the Editor FARMER'S ADVOCATE:

SIR,—On reading the article in your paper on how to make hens pay, and having been a breeder for thirty-five years of pure-bred fowls, I wish to write a few observations.

1st. I have kept 100 to 125 hens for several years on 80 acres profitably by having four houses some rods apart. I have learned I can keep four times as many hens and make them profitable in four houses as I can in one.

2nd. I have found a cross of W. Leghorn and W. Rock, also Buff Leghorn and Buff Cochinchina or Partridge Cochinchina and Brown Leghorn a good general purpose fowl for both eggs and meat.

5th. I have learned that to secure eggs in winter at least expense a farmer wants 50 lbs. of deodorized blood meal. I would not bother with a bone mill as a present when I can get blood meal.

7th. Here we build a house 5½ feet high, with double roof, and the sides are double boarded, with tar paper between. We always place the windows on the sill so the heat will reflect on the hens any sunny day in winter, and windows being low down keeps the house cool in summer.

8th. I have practised dipping my hens at least twice in summer for the last few years; it pays as well as to dip sheep for vermin, and I would rather dip 100 hens than 5 sheep. I dip in a non-poisonous preparation called zenollum.

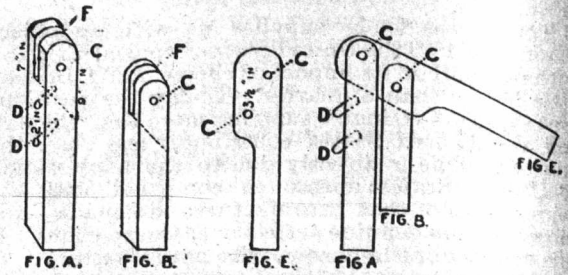
I consider the ADVOCATE second to none of my six agricultural papers. Wishing you continued success, I remain,
H. A. DANIELLS,
Tuscola Co., Mich., U. S.

Preserving Eggs.

Following is an English recipe for an egg-preserving mixture: "2½ lb. of unslacked lime, 6 oz. of salt, ½ oz. of cream of tartar, to be added to 3 gallons of water. Pour the water boiling on the lime and salt, and when cold add the cream of tartar. Place the eggs in the mixture the following day. The lime will remain at the bottom of the jar and the first layer of eggs must be embedded in it and all the eggs kept covered with the liquid. The above quantity is sufficient for eighteen dozen of eggs."

THE HELPING HAND.

A Handy Wagon Jack.



A. J. PUTLAND, Riversdale, Assa., N.-W. T.—
"Fig. A—Take piece of hardwood 3 ft. 6 in. x 2 in. square, cut slot F ¼ in. wide by 7 in. long on front side, 9 in. on back; bore two holes (DD) slanting for two plugs to stand out 1½ in., 10 in. from top. The next 10 in. bore ¼ in. hole for bolt C 2 in. from top. Fig. B—2 ft. 9 in. x 2 in. square, cut slot in top same as in fig. A; bore hole for bolt C. Fig. C—¼ in. x 2 ft. 6 in. long; the end that goes into slots F is 5 in. wide for 6 in., the rest is 3 in. wide; bore holes for bolts C 2 in. from top and bottom edge, 3½ in. apart. (See fig. E.) Now put your handle E into slots F, put in bolts C, and you have jack complete. To raise wheel from ground put leg A under axle, so that axle will rest on one plug (D), raise handle, put leg B under as far as possible, and then press down on handle and your wheel is off ground."

A Homemade Trocar.

RODERICK McLEOD, Nipissing District, Ont.—
"Take a worn-out three-cornered file, break off a little piece of the point, then grind it on the three sides to a sharp point, leaving no creases in the file. When putting a ring in a bull's nose keep a flat side of the file next the gristly part of the partition between the nostrils. Get the cap of a coal oil can spout (marked A in the accompanying illustration), and put it on the open end of ring marked C (a revolver cartridge may do), and the ring will slip through easy. I think this is a better plan than the one described in the ADVOCATE, March 15th issue. There is less friction, and the instrument can be got on any farm."



GARDEN AND ORCHARD.

Planting Shade Trees and Windbreaks.

BY ALF. BROWN, PRINCE EDWARD CO., ONT.

Farmers generally do not take advantage of the very easy and sure way of adding value to their real estate by planting our native trees in neat lines along roadsides and lanes, around buildings and yards, and in clumps on waste or unsightly places or bluffs that are too rough for cultivation. These places planted with black walnut, I believe, will be as good an investment as the same area of apple orchard on suitable soil, although dividends would not be realized from the walnut timber as early as from the apples.

American Black Walnut can be grown better by planting the nuts directly where the trees are wanted, as the walnut is a little difficult to transplant owing to the large taproot and absence of fibrous roots; this condition applies to most of the nut-bearing trees. The walnut begins to bear at "Maple Glen" [Our correspondent's fruit farm.—Ed.], when planted from the nursery, about eight to ten years, and although quite strong flavored, are relished by some people. For planting, the nuts should be gathered when ripe and not allowed to dry, and can be kept outdoors by packing in box of sand or may be planted directly where desired about three inches deep, mulching lightly and keeping down grass and weeds. Use plenty of manure. When once started they increase in diameter about one half inch every year. To lovers of trees they are attractive and add variety to the collection.

American Sweet Chestnut is grown for commercial purposes mostly in its natural state, but when planted in the clearance makes a good shade tree. The leaves are nicely serrated and glossy, giving the tree a beautiful appearance.

Hickory nuts have grown quite popular in the markets, and in selecting for planting only use from trees bearing good-sized, plump meated nuts. These and the chestnut require the same treatment as mentioned for the walnut.

Basswood when planted in the clearance forms a very pretty, compact shaped head, and besides being valuable for a timber, shade and ornamental tree, is a source of the best crop of honey produced by any plant grown in Canada, and as our forests are being destroyed it would be wise to have the basswood planted extensively for the encouragement of apiculture, so valuable to fruit growers and farmers to insure fertilization of flowers. They can be propagated from seeds.

Sugar or Hard Maple—our national emblem—should be planted broadcast wherever there is room for a tree, as it may be had in most localities for

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the digging. It grows a symmetrically shaped head when properly pruned and planted.

Soft Maple grows very rapidly and will succeed on a greater variety of soil than the hard maple. Trees in our yard planted eight years are six inches in diameter and give plenty of shade for hammock. Maples can be dug best with a strong, sharp spade, cutting a circle around the tree about 25 to 30 inches in diameter, lifting out the tree with what soil and leaves will adhere to it. Cut off all branches and saw off top not more than seven feet from the roots. Do not plant more than two inches deeper than where the plant stood in the bush. The sized trees that have given us the best growth were 1 1/2 to 2 inches in diameter a foot from the ground when planted. When growth starts rub off all buds except a few at the top of the bare trunk to form the head.

Norway Spruce is the best evergreen for practical use in Ontario, either as a windbreak or an ornamental tree. It makes a dense, upright growth, of uniform cone shape, and is very attractive planted alone or alternately with deciduous varieties. Keep trees well mulched, which comes nearest to their natural condition. The writer does not favor planting trees thicker than they are to remain, except where long, straight trunks are required for timber, for it requires more courage than most men have to thin out a row of trees when once they get established. The Farmers' Institute meeting at Glen Allan placed the estimate that a farm having 100 shade trees well arranged would sell for \$500 more than a similar farm alongside without the trees, other improvements being the same. Where young trees can be found not more than a mile from the place needed, 100 trees can be selected, dug, trimmed, and planted for \$5 if the work had to be hired, but most farmers are strong-handed enough to plant 100 trees every spring.

POSSIBLE INJURIES.

1. Where planted too thickly so as to form a windstop, which is not desirable, a free circulation of air might be prevented and thus encourage insect and fungous growth.

2. Encroachment: adjacent crops will certainly be injured, but a good windbreak or line of ornamental trees are well worth the land they occupy.

DECIDED ADVANTAGES.

1. Evaporation is lessened and the moisture in the soil utilized by growing crops instead of being hurried in the air by heavy winds. For illustrating this point refer to Prof. Panton's experiment in Report of the Superintendent of Ontario Farmers' Institutes for 1895-6, page 60, which shows that wind helps to hasten the moisture out of the soil.

2. Protection of bloom from cold, rough weather will insure a good crop, which might from exposure result in a light yield.

3. Snow and leaves are retained and help retard bloom in localities subject to late spring frosts.

4. Less injury is sustained from wind when trees are loaded with ice, which ruins so many fruit trees and also reduces the loss from windfalls.

5. Erect growth is difficult without protection from prevailing winds.

6. Encouragement of insectivorous birds. This advantage alone is worth the land and care required to have a good windbreak where the birds will build their nests and rear their young largely on insects that destroy our crops. These birds and their nests should be protected by legislation, including the extermination of the English sparrow which are driving innocent and friendly birds out of the country by destroying the eggs and taking possession of their nests for their own use.

7. Ornamentation by shade trees tastefully arranged is enjoyed by the travelling public and the farmers themselves and makes a home look worth living in.

Trees can be planted in spring any time after the soil is dry enough to work up to the time the leaves are half-grown. Early planting is preferred, as that the spring rains can help firm the soil about the roots and the mulch applied before the soil has become dry. Fine soil should be worked in around every rootlet.

Care must be exercised that roots are not exposed to sun and wind, for if allowed to become dry they may as well be thrown on the brush heap as to waste time planting them. This applies to all trees, and, perhaps, is the cause of so many failures from transplanting evergreens.

We have never tried planting in the fall, but on account of so much water in spring where the soft maple seedlings grow shall try a few hundred this fall, as we find them cheaper than cedar posts to build wire fencing and never heave out.

The man that plants trees successfully must be interested in the work; if not he might better go fishing and hire some one that knows how, for few men are capable of doing all lines of farm work well.

The Thistle milking machine is now at work in the Dairy Department of the Ontario Agricultural College, regularly milking the whole dairy herd night and morning, and apparently doing the work to the satisfaction of all concerned.

On the 7th inst., Mr. F. C. Harrison, Bacteriologist of the Ontario Agricultural College, sent out the first lot of tuberculin manufactured at the College to a veterinary surgeon in the neighborhood of Owen Sound, to test some cows in that locality.

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Miscellaneous.

ANTS ON FRUIT.

E. S. L., Dundas, Ont., asks for a remedy to stop ants from working on his cherry and plum trees. He states that they were very troublesome last season, and he would be much pleased to learn how to stop them from working on the fruit.

[I do not think that ants injure fruit trees in any way. It is just possible, of course, that when fruit is cracked or in some other way injured that they may do a small amount of harm, but I have never observed it. I think it far more probable that the presence of the ants upon the trees indicated that the trees were infested by some species of plant louse or scale insect which secrete a substance known as honey dew, eagerly sought for by ants. Indeed the remarkable investigations of Sir John Lubbock have proved that ants not only feed on this substance, but that they actually domesticate many kinds of plant lice found upon the plants which the lice infest naturally, and also carry them to their own nests and tend them there with the greatest care. Some of the plant lice are collected in the perfect state, while in the case of others the eggs are gathered and kept safely through the winter, and when the young lice hatch in the spring they are colonized upon their proper food plant. In view of the above facts, ants can hardly be called beneficial insects, but they are certainly a great assistance to the fruit grower in drawing his attention to an infestation of his trees by plant lice or scale insects which he might very easily overlook. Ants, however, can be kept away from a tree by surrounding the trunk first with a band of cotton wool and then over this a band of tin to be kept painted at short intervals with any common oil.

JAS. FLETCHER, Dominion Entomologist.]

BUDDING.

OLD SUBSCRIBER, Bruce Co., Ont.:—"When is the proper time for budding, and how is it done?"

[To answer these questions fully would require more time and space than we can devote to them here, but we will endeavor to give the salient points briefly. Budding is commonly performed during the growing season, usually in the late summer or fall, because mature buds can be procured at that time and young stocks are then large enough to be worked readily. But the operation may be done early in the spring, just as soon as the bark loosens; in this case the buds must have been taken in winter and kept in a cellar or other cool place. Budding is always best performed when the bark slips or peels easily. The one style of budding in general use in this country is known as shield-budding, from the shield-like shape of the portion of bark which is removed with the bud which is cut from a young twig of the present season's growth. It is inserted underneath the bark of a young stock or branch and is then securely tied. Stocks should be at least 3/4 inch in diameter to be budded with ease. The bud is inserted an inch or two above the surface of the ground, or as low down as the bud can work. The advantage of setting the bud low is to bring the resulting crook or union where it will not be seen, and to enable it to be set below the surface of the ground when the tree is transplanted, if desired. It is well, also, to place the bud on the north side to shield it from the sun. The bud is usually cut about an inch long; the leaves of the bud are removed, but a part of the petiole or stalk is left to serve as a handle for the bud. The wound which is to receive the bud is made by two incisions with a knife, one perpendicular, the other horizontal. These are light cuts, extending only through the bark. The vertical slit is usually made first, and the transverse cut is made across the top of the vertical cut by one rocking motion of the blade. This is an inch or inch and a half long. The corners of the bark are lifted a little by an outward motion of the blade, so as to allow the bud to be pushed in. The bud is now inserted in the cleft of the bark. It is pushed down till the entire bud has passed into the cleft. The bud must now be tied. The whole wound should be closed and bound securely; any soft cord may be used. In two or three weeks the bud will have united to the stock. The bandage must then be cut on the side opposite the bud, and may be allowed to drop off as it will. The bud remains dormant till the following spring, when the stock is cut off two inches or more above it before the swelling of the bud. To secure a straight and erect tree, the new shoot when a few inches long is tied to the remaining stump of the stock. By another month no further support will be needed, and the stump may be wholly cut away and the wound allowed to heal by the rapid formation of new wood. Budding is sometimes employed the same as top-grafting for changing over the top of an old tree from one variety to another. The buds cannot easily be inserted in very old and stiff bark, but in all smooth and fresh bark they work readily, even if the limb is three or four years old, but the younger the limb the greater the proportion of buds which may be expected to live. In trees six or seven years old or less, budding is fully as advantageous as grafting. For full directions in detail as

to this and everything else pertaining to nursery, orchard, and garden work, we recommend the work referred to elsewhere in this issue entitled "The Nursery Book," by Prof. L. H. Bailey, which we can furnish for \$1.00, or for two new paid-up subscribers to the FARMER'S ADVOCATE.]

SPOT OR BLIGHT OF THE NATIVE PLUM.

(Clavosporium carpophilum, v. Thumen.)

HARVIE DOAK, Northumberland Co., Ont.:—"1. I have several plum trees which have a splendid appearance when in blossom, but soon after the fruit forms it seems to have black spots through it and drops before coming to maturity. Will you please inform me as to the cause, and advise what will prevent. 2. Can you or any of your readers of the ADVOCATE tell me how to make a small refrigerator for house use and give illustrations of same?"

[1. From the brief description given by your correspondent I judge the disease to be the same as that affecting native American plums (Prunus americana) in this vicinity for some years past. This enemy manifests its presence by the appearance of pale greenish or yellow patches upon the skin of the half-ripe plums. These patches are at first not larger than a pin head. Close examination will reveal these spots when the fruit has reached not more than half its normal size. In older specimens these blotches become darker in color, more

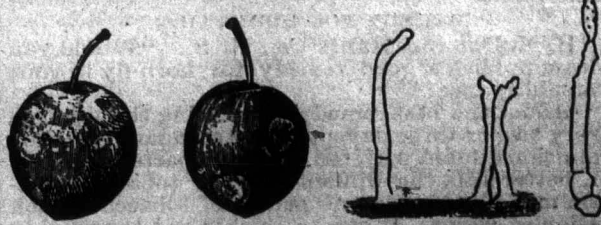


FIG. I.—Plum Spot. FIG. II.—Spore-bearing Threads (much magnified).

irregular and somewhat raised, as in Fig. I. The plums finally shrivel and fall from the trees before maturing, but after they have begun to color. On the old native plum trees in the vicinity of Ottawa it is not at all an uncommon sight to see at harvesting time a tree hanging full of these shrivelled specimens. Microscopic examination of the affected portion of the plum shows the cuticle and the cells immediately beneath to be filled with a network of almost colorless mycelium, the vegetative portion of the fungus. As the fruit approaches maturity the parasite produces fruiting threads which bear small two-celled oval spores, Fig. II. These germinate readily when placed in water. These are the agents which carry the disease over from year to year. This fungus also causes the skin of the plum to crack, allowing other parasites to affect an entrance, thus inducing rot and the like. The disease is of comparatively recent appearance, having been first described by Felix von Thumen in 1887. It is known to science under the name of Clavosporium carpophilum, v. Thumen.

REMEDIES—TOP-GRAFTING.—Some varieties are more resistant to the disease than others. Wolf and Hawkeys have not, to my knowledge, been attacked. Wherever the tree is strong and vigorous I would advise top-grafting it with a variety which thus far has proved immune. In character and manner of growth this parasite is closely related to the apple spot fungus, and may be controlled in the same way by persistent spraying with fungicides. I have used Bordeaux mixture and ammoniacal copper carbonate with satisfactory results. Use Bordeaux mixture first immediately after the blossoms fall, follow this with two other applications at intervals of two weeks. Make an additional and final application, using ammoniacal copper carbonate, when the fruit is beginning to color. This is used instead of Bordeaux mixture for the last spraying because it does not stain the fruit to the same extent. Diseased fruit should be collected and destroyed or deeply buried in the earth.

JOHN CRAIG, Dominion Horticulturist.

Central Experimental Farm.

2. Will some reader send in a description of a homemade refrigerator with plainly drawn diagrams.—EDITOR.]

BUCKWHEAT—DIPPING SHEEP—PLEASED WITH THE "ADVOCATE."

NEW SUBSCRIBER, Peterboro Co., Ont.:—"1. I wish to know about buckwheat—best kind; time to sow, quantity of seed per acre? 2. Also about dipping sheep to kill ticks, way to proceed, material to use? I am more than pleased with the FARMER'S ADVOCATE."

[1. The Japanese variety of buckwheat is giving good satisfaction wherever grown, while the Silver Hull and common gray do fairly well. At the Guelph Experiment Station the Japanese gave an average yield in two years of 19.7 bushels per acre; Silver Hull, 12.3; and common gray, 11.6. These are low yields, but it shows their comparative value. It should be sown from June 20th to July 5th at the rate of one bushel per acre.

2. There are a number of sheep dip preparations which give excellent satisfaction. Any of those advertised in our columns, which are kept by druggists generally, are thoroughly reliable, and full directions for mixing and using are given on the packages or cans in which they are sold. Those in the form of powder and those in a liquid state

are first mixed with cold water and then warm water is added. Those in the form of paste or salve are first dissolved in hot water. They are all more effectual if used with water about as warm as the skin will bear safely, as the application is then more searching, and will soften any scabs or sores that may be on the skin. In about a week from the time the ewes are sheared in the spring the lambs should be dipped, as most of the ticks will then have gotten on the young things, which have more wool to hide in than the ewes have. The ewes may be dipped in the mixture which remains, or it may be poured on their backs from a dipper, and rubbed in with the hand. A dipping vat or trough made of planks about 5 feet long, 20 inches deep, and 22 inches wide is generally used. A draining or dipping rack is placed at one end of the vat and elevated at the other end so that the water which is squeezed out of the wool is returned to the vat. In a small flock the lambs may be dipped in an ordinary coal oil barrel and stood in a tub to drain and the residue of the dip may be poured on the ewes. If there are any ticks on the sheep at the commencement of winter, the "dip" should be poured on them, about a quart to each sheep, the wool being parted every 4 or 5 inches and the solution poured from a coffeepot or other vessel having a spout. Keeping the flock clear of ticks is one of the secrets of success in sheep raising, and it requires very little outlay of money and very little time.]

REMEDY FOR HORN-FLIES.

H. McDONALD, Hants Co., N. S.:—"Would you please publish a good remedy for horn-fly in your valuable paper?"

[About the best remedy is spraying the animals every two or three days with the standard kerosene emulsion diluted with ten to fifteen parts of water, or, better still, the diluent may be tobacco decoction made by boiling one pound of tobacco in each gallon of water. It can be quickly and thoroughly applied with a knapsack sprayer and cyclone nozzle. Two men can treat the animals at the rate of one per minute. The work may be well done just after milking in the morning. Other remedies are: A mixture of one-third coal tar, two-thirds lard or other grease, smeared on the horns and other favorite places for the fly. Pine tar and grease may be used with equal success, or fry fish oil and pine tar with a little sulphur or carbolic acid, or tallow and a small quantity of carbolic acid. A good sheep dip has been tried and does good for a day or so. If the skin is not broken, tobacco dust may be used on the back and at the base of the horns. One of the ointments would be better for the under parts of the animal, simply because it would stay on longer. The tobacco dust is speedily fatal to the flies. When the flies are very bad, daily applications are found necessary. There is also in use a mechanical device called the Guthrie Fly Trap for brushing off and catching the flies as the cows go into the stable.]

TO KEEP MICE FROM TREES.

B. C. SUBSCRIBER:—"Please inform me through the FARMER'S ADVOCATE of a remedy to prevent mice from eating the bark off young fruit trees under the snow during the winter, and you will greatly oblige."

[A good remedy is to lap wire screen or old split-down stovepipe around the trunk. Another good plan is to clear away before winter, from near the trunk, all vegetable matter, such as grass or weeds that would serve to harbor mice, and after the first few snowstorms tramp the snow firmly around each tree. If this were done several times during the winter there would be very little trouble from mice. Still another plan recommended through the FARMER'S ADVOCATE by Mr. M. Burrell is to clear away all rubbish, such as weeds, grass, etc., from about the root of the tree and then bank up a small mound about the foot of the trunk.]

HOLSTEIN STEERS FOR BEEF.

J. N. REID, Wellington Co., Ont.:—"I would like to ask some questions through your valuable paper with regard to the beefing qualities of Holstein cattle. 1. How do Holstein steers compare as feeders with Shorthorns? 2. Are there any reliable records of their gain per day, and also of the cost per pound? 3. Would the beef from well-finished Holstein cattle be considered first-class? 4. Would steers from milking strains of Shorthorns be likely to give better satisfaction as beefers?"

[1. Holstein cattle (we assume that our correspondent refers to pure-breds) having been selected, fed and trained for generations along the line of milk production, without any special attempt at improving their beefing qualities, we could hardly expect them to compare favorably with Shorthorns.

2. Experiments have been conducted with a view to ascertain the relative merits of Holstein cattle as economical beef producers as compared with beef breeds at Michigan Agricultural College in 1890, and at the Ontario Agricultural College in 1892. The report of the former is given in Bulletin No. 69 of the Michigan Station. The animals tested were pure-bred Galloways, Devons, Herefords, Holsteins, and Shorthorns. The steers were as nearly typical and as nearly the same age (two years old) as could well be got. The result was that one Holstein stood as the greatest consumer of food to gain, while his companion Holstein stood third in this respect, a Hereford coming between them. The test made at the Ontario Agricultural College was with seven animals secured from leading breeders. Each individual was the offspring of a pure

registered sire, except in the case of a native or scrub. The dams of all, except the scrub, were common grade cows. They were secured as calves nearly the same age and wisely fed and kept account of until sold at about two years. The animals were grades, one each of the following breeds: Galloway, Shorthorn, Aberdeen-Angus, Hereford, Devon, Holstein, and scrub. In order of profit the animals ranged as follows: Galloway, Devon, Shorthorn, Aberdeen-Angus, Hereford, Holstein, and scrub. The Galloway was fed at a gain of \$10.17 the Holstein at a loss of \$20.79, and the scrub at a loss of \$34.27. The Galloway made an average daily gain during the two years of 1.84 lbs., the Holstein 1.79 lbs., and the scrub 1.67 lbs. The difference in profit resulted from the difference in the quantity of food consumed. The total cost of the Galloway was \$82.19, the Holstein \$104.32, and the scrub \$92.14. The Galloway weighed, when sold, 1,345 lbs., the Holstein 1,303 lbs., and the scrub 1,215 lbs.

3. Buyers are said to discriminate against Holstein beef on the score of its being less marbled and juicy than beef from beefing breeds.

4. The nearer a cow approaches the dairy type in breeding and conformation the less satisfaction will she give as a beefier, and vice versa. Many hold to the "golden mean" between the two extremes. There are, of course, remarkable cases of individual variation within breeds. Interesting observations on this subject appear in "Cloughbane's" letter elsewhere. We once saw a bunch of fat grade steers from a Holstein sire which at three years old weighed 1,525 lbs. each and sold for five cents per pound, but the feeder had made no estimate as to the cost of production.]

CARE OF YOUNG BULL.

A subscriber whose letter has been mislaid asks how to feed and care for a young bull. His feed should be such as to promote growth of bone and muscle rather than fat. In addition to good clover hay and roots or ensilage in winter, a moderate feed of ground oats and bran fills the bill of fare. In summer, until grass or other green feed is fit to cut, continue the above rations, and when green fodder is available the ration of oats and bran in less quantity should be kept up. A roomy, loose box with a yard or paddock to exercise in is the best quarters for him; and in hot weather when flies are troublesome he should be closed in his box in daytime with the windows darkened, and allowed to run in his yard at night. If he must be tied up he should be led out every day for exercise or turned in a yard for an hour or two in the cool of the evening. Some breeders have an arrangement for exercising their bulls made by planting a post in the yard, with a sweep pole or beam on the top of it to swing round after the manner of a merry-go-round or revolving clothes drier. One or two bulls can be exercised at a time by simply fastening them by the nose-ring to a strap on the end of the arm. They will soon get used to it and travel round in a circle. This device was illustrated in our issue of Feb. 1st, 1897, page 59.

DOG POWER FOR CHURNING.

A correspondent asked for plan and description of dog power for churning. Two illustrations of such powers, with full descriptions, were given in the FARMER'S ADVOCATE of May 1st, 1896, page 189. If our correspondent has not a file of the paper, and will write again, giving his address, his letter having been lost, we will supply description.

HAY FORK OR SLINGS.

The above writer also enquires how slings compare with the horse fork for handling hay. We have not used the slings for hay and cannot speak from experience; they are very satisfactory for sheaves, but our impression is that for hay or peas the hay fork is preferable, it is certainly very satisfactory.

We believe the same writer made enquiry as to the working of the hay loader. Our own experience with this machine has been entirely satisfactory, and we would not be without it, but as to whether it would pay to buy one for the handling of 50 tons of hay we are not prepared to say. It will depend very much upon the help one has on the farm, and what the necessary help would cost. We have noticed that some farmers who have the machine have laid it aside, and do not use it, though for what reason we are not aware.

BROOD SOW ON SHARES.

A SUBSCRIBER enquires:—"On what terms may a brood sow be put out on shares to be fair and just to owner and feeder?"

[We have had no experience in this line, and have not met any one who has. We should think that for grade sows a fair arrangement would be an equal division of the litter at weaning time, say eight weeks old; the owner of the sow paying for service of boar. If the pigs are kept longer it might be agreed that the owner of the sow should pay for his share of the pigs the market price per pound, live weight, at the time he claims them. We understand it is not unusual for breeders of pedigreed pigs to furnish farmers with sows in pig, retaining full control of the sows as to time of breeding and the boar they are bred to, with the privilege of buying as many of the choice pigs as are up to standard for breeding purpose at a fixed price at weaning time, the balance of the pigs to be bought by either party at the market price per pound, live weight, at a time agreed upon. A modification of these terms to fit the circumstances may be adopted.]

MARKETS.

Toronto Markets.

There has not been so many cattle on this market for a long time and so little disposition on the part of buyers to do business. Cattle have been accumulating in the market for the past two weeks, sellers and drovers hanging on for better prices rather than come down in price. Exporters are in no hurry to buy until navigation is open for the big boats at Montreal; the early arrival of the boats may have the effect of relieving the present glut in the market. Under these circumstances the new covered sheds which have been recently erected have proved useful, and are highly appreciated by the owners of cattle who have been compelled to keep them on their hands.

A proposition is made in Melbourne, Australia, to send over 20,000 sheep and 5,000 head of cattle to England in connection with the dinner which H. R. H. Prince of Wales is promoting for the poor of the slums of London upon the occasion of the celebration of the Queen's Diamond Jubilee, June 22nd of this year.

Export Cattle.—Best shipping cattle are quoted at \$4.50. Farmers who have cattle would do well to keep them for a couple of weeks longer, until the market gets into better shape; only the choicest cattle fetched top prices, 4 1/2c. per lb.; prices range from 3 1/2c. to 4 1/2c. per lb.

Butchers' Cattle.—There was a large quantity of inferior butchers' cattle on sale; as a result the prices were inclined to be easier. Picked lots brought about 3 1/2c. per lb. A bunch of 14 sold at \$33 per head; the general run was from 3c. to 3 1/2c. per lb. Good to medium sold at 2 1/2c. to 3c. per lb. Common sold as low as 2 1/4c. per lb. A price that was often paid was 3c. per lb. There was really no life in the market; very little buying for Montreal or Buffalo.

Bulls.—The market for export bulls was easy. Choice brought from 3c. to 3 1/2c. per lb.; top price for the day was 4c.; stock bulls are quiet at 2 1/2c. to 3c. per lb.

Feeders.—A very fair supply of the best kinds were on offer; all sold; the market practically unchanged at from 3c. to 3 1/2c. per lb.

Stockers.—About eight loads of stockers were taken for the Northwest; markets steady and unchanged. Good stockers sell for 2 1/2c. to 3c. per lb.; a few are wanted.

Sheep.—The market was fair, about 150 sheep on offer and sold at 3c. per lb., and from 5c. to 5 1/2c. for yearlings; there was very little demand.

Lambs.—Some very fine spring lambs were on offer and sold at from \$2 to \$4 per head; for the general run sales are quoted at 5c. to 5 1/2c. per lb.; good lambs wanted.

Yearling Lambs.—Good grain-fed yearlings are wanted; they fetch from \$5 to \$5.50 per cwt. for really choice lambs averaging 100 to 110 lbs. each.

Calves.—There is better supply; the quality improved; prices, \$4 to \$5 per head.

Milk Cows.—A very fair supply, at \$20 to \$35 per head; good cows wanted at once.

Hops still maintain their value; good inquiry from outside points; short supply keeps the price steady; only 2,000 on offer. Best selections of singlers, \$5.12 per cwt.; just a trifle over last week's price. Thick fat hogs, \$4.75; sows at \$3, and staggs at \$2.

Wheat.—The offerings are small; there is a good steady demand from the home millers, and the market is steady to firm. Red quoted at 76c. and white at 77c. per bushel; goose at 68c.

Oats are very dull and easy, at 19c. for mixed; on the street market two loads selling at 25c. to 26c. per bushel.

Hay.—Only five loads per day; selling at \$13 to \$14.

Straw.—One or two loads only, at \$7.50 per ton to \$8.

Butter.—The offerings are fairly free, and mostly of large rolls; dairy pounds, 11c. to 13c. per lb.; creamery, 17c. to 18c.

Eggs.—Offerings have fallen off; prices firm at 9c. per dozen; for strictly new laid, 10c. to 11c. per dozen.

Cheese.—Prices on the local market are firm at 10 1/2c. to 11c. per lb. The public cable quotes 54c. 6d. per cwt., for both white and colored, at Liverpool. Mr. Weir, buyer for Messrs. Warrington, of Montreal, says that "fodder cheese made in Dundas County this year was the best he had seen."

Hides are unchanged, with cured quoted at 8c. to 8 1/2c. per lb. Dealers pay 7 1/2c. for No. 1, 6c. for No. 2, and 5 1/2c. for No. 3.

Calveskins.—Market dull, at 7c. to 8c. for No. 1 and 5c. to 6c. for No. 2. Sheepskins, \$1.25 to \$1.50 each. Lambs skins, 20c.

Wool.—The market is quiet and prices unchanged. Combining fleece nominal, at 21c. to 22c., and rejections, 17c. Pulled supers at 22 1/2c., and extras at 22 1/2c. to 23 1/2c.

Montreal Markets.

There was not a great deal of movement in our local market during the week past, drovers evidently thinking the opening of navigation would cause a better feeling in good beef cattle, consequently though the offerings were fairly heavy values were fairly well maintained.

Export Cattle.—With the sailing of the SS. Montezuma on Friday morning, May 7th, the season has once more started in briskly, and from now on there will be more or less demand for cattle suitable for export. A few lots that have been so far sold for export purposes have ranged all the way from 4 1/2c. to 4 3/4c. per lb., the last being an outside figure for something very choice. At these prices quite a few were picked up to-day (Monday, 10th), and as the shipments for the remainder of the week will be heavy, there will doubtless be a good demand for good export steers and heifers.

Butchers' Cattle.—The demand for butchers' stuff has been only fair, and no high prices have been paid, the greater quantity ranging in price from 2 1/2c. for a middling 900 to 950 lb. beast to 3 1/2c. to 4c. for a nice straight steer or heifer scaling 1,050 to 1,100 lb. In the absence of better quality most of the latter weights are taken by exporters.

Sheep and Lambs.—Not many are being offered, and the former meet with little enquiry, most of the demand being for good lambs from 85 to 100 lbs., not too fat, for which good prices are being obtained, tops making up to 5 1/2c. to 5 3/4c. per lb. live weight.

Hogs.—The run of hogs just about meets requirements, choice bacon lots making \$5.25 to \$5.30 per cwt.; heavy fats and mixed packers from \$5 to \$5.10 per cwt.

Calves.—The offerings have been exceptionally heavy of late, and the consequence poor prices. The latter have been further stimulated by the poor quality of the stock brought in. This is evident by the actual figures here given per pound between good calves and poor ones, namely, 3c. to 6c. per lb., the difference being entirely that between a well finished and a poorly finished one of the same weight. Prices have ranged from 50c. to \$7 for good calves, very few making anything higher.

Hides and Skins.—There has been no change in the market since the decline of one cent per pound noted in our last report in beef hides, and they still remain steady at 9c. per lb. for No. 1 green hides, salted, to the butcher, dealers turning them over at one-half and one cent advance on these figures to tanners. Sheep and calf skins steady and unchanged.

Space.—There is no space to be had on the market for the month of May, unless it is given as a concession by present holders, and most of it has been taken at outside figures—42s. 6d. to 46s., at the last some one or two of the lines asking five shillings advance on the above to Liverpool, but I am not aware of any being let at this price.

The British Markets.

Unless the markets improve considerably between this and the landing of the first batch of Montreal steamers, shippers stand to lose quite a bit of money, as in the present state of the markets, with the freight being paid and the price the cattle cost, there does not seem to be much chance of a margin.

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Shippers are, however, hoping for a turn before the steamers arrive. The first steamer to sail from Montreal was the Montezuma, for London, with 658 head of cattle and 180 head of horses.

Canadian Live Stock Export.

The following are the live stock reports for the week ending Wednesday, May 12th, as prepared by R. Bickerdike, of the Live Stock Exchange, Montreal:

Table with columns for location (e.g., Montreal, London, Liverpool, Glasgow, Manchester) and quantity (cattle, sheep).

Chatty Stock Letter from Chicago.

Following are the current and comparative prices for the various grades of live stock:

Table with columns for 'CATTLE', 'HOGS', and 'SHEEP', listing various grades and their prices.

Receipts of cattle and sheep are lighter than last year so far, while hogs show an increase.

G. B. Wilson, of Creston, Iowa, passed through here with eight cars of young Canadian stock cattle.

Mexican and Canadian stock cattle are being hurried in ahead of the new tariff bill.

It is thought cattlemen who are looking for a corner in prices are not taking in the whole range of the situation.

Last month 16,044 cattle were sent from Omaha for fattening purposes, against 6,193 the corresponding month last year.

The cattle being sent to market are not as heavy in average weight nor as well fattened as a year ago, but they are quite as good as the average for a number of years past.

The Standard Cattle Company, of Ames, Neb., marketed 72 Western steers, 1,360 lbs., at \$4.70; 18 steers, 1,450 lbs., \$4.85, and 125 heifers, 1,255 lbs., at \$4.50.

The Western Union Beef Company sold 50 head of 1,275 lbs. fed Western steers at \$4.55 and 14 heifers at \$4.

T. B. Hord marketed from Nebraska 97 Western heifers, 940 lbs., \$4.15, and 123 steers, 1,112 lbs., at \$4.55.

A Montana man says: "There is a continued activity in both cattle and sheep with us. Prices rule firm and business is good."

Exporters of bulls are beginning to discriminate a little against the big heavy bulls. The advent of warm weather is one of the reasons given.

A cattleman just back from Dickinson, North Dakota, says that the winter was the longest ever known there, and early estimates of losses of range cattle were very heavy, but since men have been able to ride the range these estimates have been reduced to 25 per cent, or less, and stockmen generally are feeling good because it is no worse. Some of the smaller ranchmen who feed hay got out of it, and lost a large percentage of their stock, but the majority of them managed to pull through with a light loss.

The past was a busy week for cattle exporters. They sent out 7,042 cattle, divided as follows: Schwartzschild, 897; Lehman, 723; A. McIntosh, 105; Gordon & L., 75; Blackshere, 133; United D. B. Co., 211; Shamburg, 1,285; Morris, 1,187; Swift, 1,015; Reeder, 708; Duff, 238; Hathaway, 432. Of these 2,496 were shipped from New York, 2,323 from Boston, 917 from Newport News, 861 from Baltimore, 400 from Philadelphia and 75 from Portland.

W. F. Fleming, of Dinsdale, Iowa, marketed here during March and April 459 head of cattle, including 55 cows, 23 stags and 15 bulls, which averaged 1,155 lbs., and averaged \$4.21, with a net average of \$3.92, cost of shipping and all other charges being 29 cents per 100 lbs. The range of prices on the steers was \$4.10 to \$4.75. The cattle were mostly of his own feeding.

There is considerable inquiry about red polled cattle. There have not been enough of them on the markets here to make much of a practical test.

In New York last week 45,000 lbs. of fall Texas wools sold at 11c. per lb., and in Boston 50,000 lbs. of spring Texas wool sold at 10c. to 12c. per lb.

Texas lately has been monopolizing the sheep markets, selling thousands and thousands of 80 and 90 lb. sheep here at \$3.70 to \$4.00. The supplies of fed Western sheep and lambs have been pretty well exhausted.

Average weight of hogs last month, 235 lbs.; the second lightest month's average since October, 1895. Last March the average was only 230 lbs.; April, 1896, 243 lbs., and April, 1895, 226 lbs.

Hog buyers look for liberal hog receipts during May and June and a big demand for them.

The packers continue to buy hogs freely regardless of the fact that they are compelled to depend on the fresh meat and the bacon and ham trade to give them profit.

The hog receipts and average weight of same at three of the principal markets during the first third of the year will be found interesting.

Table with columns for Receipts and Average weight for Chicago, Kansas City, and Omaha from January to April.

At the spring sale of speed horses at the Union Stock Yards, H. W. Marks bought for \$15,000 the famous Joe Patchen, 2:03. The bay stallion Lee Simmons sold to D. McPhee, Doblin, Austria, on a bid of \$1,600, and will be exported for both breeding and racing purposes. Other sales included Chapple, b. g. 5, by Directory, dam Pride of Girard, by Magna Charta;

P. J. Sexton, Chicago, \$725. Allanzo, b. g. 7, by Allendorf, dam Mimic Merrill, by Young Jim; L. Newgass, \$600. On the closing day of the sale Benegro, with a record of 2:26, sold at \$625, the highest of the day. Most of the other offerings sold at \$100 to \$250, with a few at \$305 to \$410.

THE BOOK TABLE.

Valuable New Literature.

One of the most encouraging signs of the times in connection with the pursuit of farming is the increasing circulation of good agricultural papers and the demand for books on agriculture. Once men begin to study their business as they ought, and to industriously apply sound principle in their work, then is there success in store. So it has been in the past, is to-day, and will be in the future. With the demand comes the supply. Sometimes, indeed, it precedes the demand, though not the actual need, which enterprising publishers recognize and prepare to meet. The latest noteworthy contribution to agricultural literature are two admirable series called "The Rural Science" and "The Garden Craft," published by the Macmillans, of New York and London (Eng.). Seven of these volumes we have already received for examination, and can, without hesitation, commend them to our readers, not only because of the value of their contents, but their mechanical get-up. Publishers and authors are alike to be congratulated on the useful contribution they have made to the literature of the day. They combine the results of the latest scientific research with the best practice, each one being written by a specialist. Not only are they up-to-date, but written in language that can be read and understood at the fireside. We might say that Prof. L. H. Bailey, the eminent authority under whose editorial supervision these series were prepared and who wrote several of them, has such a particularly happy faculty of expressing himself that even a "dry" subject becomes intensely interesting. The binding is substantial, paper and typography excellent, and most of the volumes are copiously illustrated, the engravings for the most part being of a practical nature. In order to bring these works within access of the farmers of Canada we have effected arrangements with Messrs. Macmillan whereby they can be secured through this office on very reasonable terms. Below will be found short reviews giving an idea of the nature and value of the volumes, which we have carefully examined:—

SPRAYING OF PLANTS.—By Prof. E. G. Lodeman, Cornell University. New York: Macmillan & Co.; pages, xvii. + 399. Price, \$1.00; or for two new paid-up subscribers (at \$1 each) to the FARMER'S ADVOCATE.

This timely book in the Rural Science series, issuing from the press of the Macmillans, is, in its binding, typography and illustration, quite worthy of the high reputation of the publishers. Its author, Prof. Lodeman, is instructor in horticulture in Cornell University. A cursory glance over its pages and foot-note references shows what an extensive literature he has laid under contribution, and a careful reading discloses how well he has systematized his labors and formulated conclusions with a judgment ripened by much actual experience.

Spraying as a means of combating the injury done to farm, garden and orchard crops by fungi and insects is a recent art. The resistless march of the potato beetle, which reached Ontario in 1870, having taken only about ten years to extend itself from its native feeding-ground in the Rocky Mountains, educated the people of the United States and Canada to look to spraying with poisonous solutions, especially the arsenious ones, as a protection against insect ravages. About the same time the grape mildew was causing a panic among the vinegrowers of France and preparing the way for the immediate and general use of copper solutions as fungicides. In a comparatively short time almost every farmer, gardener and fruit-grower became acquainted to some extent with the use of Paris green and Bordeaux mixture, as the principal insecticide and fungicide were respectively called. Many careful observations upon numerous and extensive experiments were made to discover the best means of compounding these chemical mixtures and the best times and means of applying them to the various crops. Experiment stations all over the civilized world have been busy in this field; a stream of bulletins has issued from their printing presses; a host of modified or quite distinct preparations have been proposed and tested. Our author has made a comprehensive survey of the field. He has given us a readable history of the art of spraying and an intelligible relationship between cause and effect; he has summarized the results of a host of experiments in a chapter of 65 pages on materials and formulas; in another of 43 pages, profusely illustrated, he discusses the merits of the numerous spraying devices, and concludes with specific instructions for spraying the apple, currant, rose, cabbage, wheat, potato, and over sixty other kinds of plants, trees and flowers. In the chapter on the action of these poisonous mixtures he discusses the healthfulness of sprayed fruit and of the forage under sprayed trees. He cites a case of poisoning from eating sprayed foliage, but he holds that eating grass under sprayed trees will not poison stock. He fed clover carefully cut from under a sprayed tree to a horse, and repeated the experiment time and again with sheep, without any noticeable effect.

This useful manual will answer almost everything you will think of asking about spraying, and suggest many other useful hints you might not think of.

PLANT-BREEDING.—By Prof. L. H. Bailey, Cornell University. New York: Macmillan & Co.; pages, 298. Price, \$1.00; or for two new paid-up subscribers (at \$1 each) to the FARMER'S ADVOCATE.

In a discussion on "change of seed," which took place last year in these columns, the ADVOCATE insisted on the importance of selecting the very best of one's own growing

rather than depending on a mere change of seed, which has often introduced a strain inferior to the home-grown and therefore rejected one. In the book before us, while Prof. Bailey maintains, with reasons well set forth, the advantages that may come with a change of seed, he emphasizes again and again in different connections the necessity of selecting the best plants for seed, of being alert to discover and preserve favorable individual differences and variations. He seems to agree with Darwin that mixing, or planting in alternate rows, seeds of the same variety grown under conditions of climate, soil, etc., as different as possible is greatly preferable to a simple change of seed. "All permanent progress lies in continued selection. This," says he, "is the one eternal and fundamental principle which underlies the improvement of plants under the touch of man."

The possibilities of improvement and variation of plants by intelligent selection are shown by accounts of experiments related by the author. A seedsman wrote out the specifications of a bean that he believed would commend itself to his customers, and sent the description with the name of the proposed bean to a certain seed-grower, and asked him: "Can you make it for me?" "Yes, I will make you that bean," replied the grower, and in three years fulfilled his promise. Another seedsman asked this same grower to produce a round-podded, stringless, green-podded bean. In five years he had fifteen acres of the seedsman's ideal.

Prof. Bailey's contention cannot be too strongly emphasized, that "We need not so much varieties with new names as we do a general increase in productiveness and efficiency of the types which we already possess; and this augmentation must come chiefly in the form of a gradual evolution under the stimulus of selective care."

The philosophic arguments of Darwin, Wallace, Herbert Spencer and others are laid under tribute to show why feeding, selection, crossing, etc., produce certain pretty definite results. These thoughts prepare the reader for the intelligent use of the plain directions for hand pollination and hybridizing given in the last chapter. Anyone desirous of improving the seed he uses will derive much encouragement and instruction from a perusal of this book.

MILK AND ITS PRODUCTS.—By Prof. H. H. Wing, Cornell University. New York: Macmillan & Co.; pages, 290. Price, \$1.00; or for two new paid-up subscribers (at \$1 each) to the FARMER'S ADVOCATE.

In Canada during the past ten years no branch of agriculture has received anything like as much public attention as dairying, nor to any other has so much study been devoted. From the management and feeding of the cow to the care and testing of milk and the manufacture of cheese and butter the highest intelligence and skill is necessary, so that the reason for all this study is at once apparent. The opening of our various dairy schools has stimulated study, and to the students of these as well as the dairy farmer the above volume by Prof. Wing of the Dairy Department of Cornell University, will be welcome. While not as technically exhaustive in some respects as Fleischmann's (Prussia) more bulky Book of the Dairy, it is better adapted to present-day needs in America. It is, in short, a complete treatise upon the nature and qualities of dairy milk and the manufacture of butter and cheese by modern methods, which are the result of the revolution brought about by centrifugal cream separation and the Babcock test. An idea of its completeness may be given by quoting its chapters: i. Secretion of milk; ii. Composition of milk; iii. Testing of milk; iv. Ferments and fermentations of milk, and their control; v. Market milk; vi. Separation of cream; vii. Ripening of cream; viii. Churning; ix. Finishing and marketing butter; x. Milk for cheesemaking; xi. Cheddar cheese making; xii. Varieties of cheese; xiii. By-products of the dairy; xiv. Butter and cheese factories; xv. Statistics and economics of the dairy industry, together with an appendix of rules and tests, metric system of weights and measures, legal standards and laws (U. S.) against bogus dairy products. One good feature of this work that especially commends itself is the way in which the practical application of the ascertained principles follows the statement of them, such, for example, as milk secretion and milking; the effect of feeding, etc., on the quality of milk, fat globules and cream separation and churning; the origin of butter flavors and the keeping and other qualities of butter. On one or two points there might be room for debate. Prof. Wing admits that there are points still unsettled where it may be difficult to distinguish fact from conjecture, but his aim has been to give the present state of knowledge having the support of the preponderance of the best evidence. Where he deals with the development of the factory system, the economical status of the industry and dairy legislation, Prof. Wing might have with advantage included some Canadian data, thus making the work more cosmopolitan in that respect. In cheese dairying leading American dairy authorities frequently bemoan the fact that in several particulars they have departed from the good example set by Canada, to their very great detriment.

THE NURSERY BOOK.—By Prof. L. H. Bailey, Cornell University. New York: Macmillan & Co.; 365 pages, 153 illustrations. Price, \$1.00; or for two new paid-up subscribers (at \$1 each) to the FARMER'S ADVOCATE.

This book is just what it claims to be, a complete guide to the multiplication of plants, treating the subject in six chapters, and dealing in minute detail with the several branches of orchard, garden and lawn work, under the headings of seedage separation, layerage, cuttage and graftage, with full directions for propagating, planting and training for the best results. The chapter on budding and grafting, giving full instructions for the practical work, illustrated with engravings, is well worth the price of the book, as this, we believe, is destined to play a very important part in the improvement of fruit in all parts of the Dominion. Aside from this the nursery list is an alphabetical catalogue of about 1,500 plants and trees of fruit, kitchen garden and ornamental varieties, with directions for their propagation, culture and care. The book is most complete of its kind and should be in the home of every farmer and fruit-grower and of all who love flowers or ornamental plants, for it treats of those as well as of food plants.

THE HORTICULTURIST'S RULE BOOK.—By Prof. L. H. Bailey, Cornell University, New York; Macmillan & Co.; 4th edition; 312 pages. Price, 75 cents; or for two new paid-up subscribers to the FARMER'S ADVOCATE at \$1.00 each.

A compendium of useful and valuable information for fruit-growers, truck gardeners, florists and others. The index contains 2,000 entries, showing the great range of its contents. It is full of useful information relating to injurious insects, with remedies and preventives; recipes for the destruction of insects, for the cure of plant diseases, remedies for injuries from mice, rabbits, etc.; a chapter on laws, their preparation and care, and the weeds and insects which affect them, with the means for their removal. Other chapters deal with the preparation of wax for grafting, cement, paints and glues, seed tables, planting tables, yields of various crops, computation tables, greenhouse and window-garden work, methods of keeping and storing fruits and vegetables. The concluding chapters treat of collecting and preserving specimens for cabinets or exhibition, perfumery labels, wood, etc., rules for gardeners, standard score cards and scales of points. A glossary is appended as a chapter giving definitions of many technical terms and of familiar words whose meanings are usually well understood. A complete index concludes the book, which commends itself to every intelligent student of horticulture and floriculture. It is an able work and worthy of a place in every household.

THE SOIL.—Its nature, relations, and fundamental principles of management.—By F. H. King. New York and London: Macmillan. Price, \$1; or for two new paid-up subscribers to the FARMER'S ADVOCATE at \$1 each.

One of the most practical scientific works on agriculture is a volume on the soil by F. H. King, Professor of Agricultural Physics in University of Wisconsin. To do the work justice it would be necessary to reproduce it, which is impossible. The contents include the introduction, dealing with "Sunshine and its work," "The atmosphere and its work," "Water and its work," "Living forms and their work," and "Over and over again," embracing 21 pages. The twelve chapters have the following headings: "The nature, function, origin and wasting of soils," 6 pages; "Texture, composition, and kinds of soil," 43 pages; "Nitrogen of the soil," 37 pages; "Capillarity, solution, diffusion and osmosis," 26 pages; "Soil water," 19 pages; "Conservation of soil moisture," 30 pages; "Distribution of roots in soil," 23 pages; "Soil temperature," 9 pages; "Relation of air to soil," 21 pages; "Farm drainage," 12 pages; "Irrigation," 15 pages; "Physical effects of tillage and fertilizers," 8 pages. Each of these chapters is subdivided or broken up in such a manner and treated so simply and practically that any reader who is at all studious can gain an accurate knowledge of the underlying reasons for many changes and conditions of the soil. This work is of special value to tillers of the soil, because agriculture has developed into a system of clear and correct thinking; and inasmuch as every man's habit of thought is determined greatly by the accuracy of his knowledge, it follows that a successful prosecution of rural pursuits is largely a subjective matter.

Under the heading, "Management of soil to secure good tilth," the writer has among other things the following to say: "A mellow seed-bed, with its many aerated pores, allows the roots to grow unhindered in any and every direction, and to place their absorbing surfaces in vital touch with the soil grains and soil moisture. In this way the nourishment in the seed produces the maximum root surface in the shortest time, which is an evident and great advantage.

"In the second place our methods of tillage tend inevitably to so alter the texture of the surface soils, especially if they are heavy, as to make the spread of young roots through them more difficult, and hence thorough stirring for tilth becomes more important than it was in the virgin state. The frequent stirring tends to break down the compound grain structure, so that the action of rains, and of stirring when too wet, causes the soil grains to run together into masses of so close a texture that the young roots find difficulty in making their way among them, and are insufficiently supplied with air even if they succeed in doing so. It is this physical change forced upon heavy clay soils which makes it so essential that they be laid down frequently to grass and given time for bringing together again into compound grains the minute particles which frequent tillage tends to separate, and which the rains cause to run together into masses of close texture."

"THE FORCING BOOK"—A manual of the cultivation of vegetables in glass houses.—By Prof. L. H. Bailey, Cornell University, N. Y. Published by The Macmillan Co., New York and London, Eng. Price, \$1.00; or for two new paid-up subscribers to the FARMER'S ADVOCATE at \$1 each.

This work is written especially for the commercial grower of winter vegetables, but contains much that is intensely interesting, showing the modern demand for what is choice and early and the modern methods of production whereby frost, snow, and the short, dark days are all set at naught. It is full of hints for the amateur in growing vegetables for his own table. To do this when the snow lies deep against the house affords peculiar satisfaction. The work comprises 266 clearly printed pages, splendidly illustrated wherever a figure or photo-engraving seemed necessary. It is divided into thirteen chapters, finely subdivided so that the details in vegetable forcing are practically treated. The last chapter consists in a summary of the management of the following crops: Asparagus, bean, beet, carrot, cauliflower, celery, cress, cucumber, dandelion, egg-plant, lettuce, mints, musk melon, parsley, pea, pepin, pepper, radish, rhubarb, spinach, and tomato. This work is entirely modern, as is the subject of which it treats, containing the lessons of the most recent researches and developments in this line of advanced horticulture which requires the nicest skill and the closest personal study of plant life. Of special interest are the portions dealing with sub-irrigation, electric light in forcing-houses, and pollination, which is generally done by hand, though bees have been utilized as pollen-carriers in spring and fall when they could forage inside and out at will, but an attempt to use them in winter inside proved a failure from sheer perverseness or some other cause. They spent their time bumping their heads against the panes and probably every one in the swarm went to a honeyless death.



Spring Salads and Greens.

BY MARY E. MILLAR.

"O green and glorious! O herbaceous treat!
"T'would tempt the dying anchorite to eat!"

—Sidney Smith.

This class of foods, so welcome at this season of the year, contains but little nutriment of the heat-giving and flesh-forming kinds, but is of value as being rich in saline matters, especially in potash salts, and also because the "crisp, cool succulence" is particularly tempting to a jaded spring appetite. Some contain sulphur and kindred substances which the æsthetic "new woman" prefers to serve to her unsuspecting family in this attractive guise rather than in that repulsive compound which her grandmother considered as indispensable to health and happiness as its equally "delightful" contemporary, spring housecleaning.

Of salad plants the most common is lettuce, but some authorities declare that a few others have a finer flavor, placing pepper-grass at the head of the list. Watercress and endive make very pretty salads, and an attractive appearance is especially desirable here; in fact, one writer affirms that a maker of salads should be an artist and mix the materials as real artists do, "with brains." Whatever may be the ingredients used in concocting a salad, let them be served cold—not lukewarm—and let the green be crisp and, if possible, fresh from the garden. In farm homes a dressing made with cream will be more popular than one containing olive oil, though if the flavor is liked there can be no objection to the use of a fine vegetable oil.

Cream Dressing.—Rub the yolks of three hard-boiled eggs to a smooth paste, add gradually one teaspoonful salt, one-fourth teaspoonful sugar, one-half salt, spoonful Cayenne pepper, one tablespoonful mustard, and two tablespoonfuls vinegar. Chill and whip over ice one pint of cream and add it to the egg mixture a spoonful at a time. This dressing is to be freshly made when wanted.

Custard Dressing.—Melt one tablespoonful butter in a saucepan, add one tablespoonful flour, one teaspoonful each of salt, sugar, and mustard, and a speck of Cayenne pepper; cook till frothy, but not browned, and then add gradually one-half cup vinegar; cook till thickened, stirring carefully to insure smoothness. Heat one cup of milk in a double boiler, add the beaten yolks of two eggs, and cook till creamy like soft custard, stirring constantly. Mix this with the vinegar sauce, beating until perfectly smooth. Use when quite cold. This dressing will keep for weeks if packed in little jars and kept in a cool place. Stir thoroughly before using. One whole egg may be substituted for the two yolks in this recipe, but the resulting mixture will not be so smooth. If a thicker dressing is desired, use a little more flour or cornstarch. A thick dressing is nicer with watery vegetables, while for others it may be better thinned by adding a little vinegar, cream or stock to the quantity to be used. Any special seasoning can also be added to a small portion for certain kinds of salad, such as celery for a chicken salad, or celery salt when fresh celery cannot be obtained, and a few drops of onion juice for a potato salad, etc.

Almost any cold cooked vegetable such as green peas, young carrots, turnips, parsnips, beets, asparagus or cauliflower may be used as a salad with either of these dressings, but with the last three the cream dressing is preferable. A macedoine salad is made of a combination of several kinds, but the vegetables should always be cut fine and in quarter-inch dice or fancy shapes. More nourishing salads are made by using cold cooked chicken or any meat cut fine—not chopped—also canned or cold boiled fish of any kind, and served either with a vegetable or separately.

Egg Salad.—Remove the shells from hard-boiled eggs which have been chilled in cold water and cut them in halves lengthwise. Remove the yolks and rub to a paste, adding an equal amount of chopped and seasoned meat, or fish, and moisten with salad dressing. Carefully place a ball of this mixture in each half white and place on a pretty lettuce leaf. More dressing may be added when served. To make individual salads, which are generally prettier, spread a thin layer of salad dressing in the center of a dainty plate and cover it with a loose bunch of shredded lettuce, keeping it in a neat round shape. Lay on this a prepared half egg and sprinkle over it all a little hard-boiled yolk rubbed through a fine strainer—sometimes called golden rain—or else garnish with tiny triangles or strips of cold cooked beet.

Potato Salad.—For this, cold boiled potatoes may be used, but it is better to cut them in small dice or balls before cooking and then boil in salted water carefully that they may keep their shape without breaking. Some prefer to add the dressing and seasoning while hot, and the garnishings just before serving. These may be varied to suit individual tastes and circumstances, some using onion juice, chopped parsley, celery salt or seed, chopped cucumber pickles, or boiled beets or car-

rots; while others mix chopped walnuts or butternuts with the potatoes. To one quart of potatoes add one teaspoonful of onion juice (obtained by wringing chopped onion in a bit of cheesecloth), one saltspoonful of celery salt or seed, and salad dressing to moisten. Put into a pretty salad bowl, with a border of watercress, and garnish with a liberal quantity of chopped beet and the hard-boiled white of egg placed alternately in little mounds. The hard-boiled yolks—if not used in making the dressing—may be rubbed through a sieve and piled in the center with a sprig of parsley or cress.

Cucumber Salad.—Cut a thick paring from the cucumbers and shave into thin slices crosswise, then soak in ice water. Scald and peel three or four large tomatoes, cut them in halves and remove the seeds. Drain the cucumbers, drying them lightly in a towel, and put them in the tomato shells, lay a spoonful of cream dressing on each and serve garnished with endive or parsley.

Spinach Salad.—Cook half a peck of well-washed spinach in a little boiling salted water until tender. Drain and chop fine. Add two tablespoonfuls of melted butter, salt, pepper and lemon juice to taste. Press into little dariole moulds and chill. The moulds should be buttered so it will slip out easily without breaking. Serve on thin slices of cold tongue and garnish with thick salad dressing and parsley.

Domestic Science.

BY MARY E. MILLAR.

We may live without poetry, music and art;
We may live without conscience and live without heart.
We may live without friends; we may live without books;
But civilized man cannot live without cooks.

He may live without books—what is knowledge but grieving?
He may live without hope—what is hope but deceiving?
He may live without love—what is passion but pining?
But where is the man that can live without dining?
—Bulwer Lytton.

THE ECONOMICAL COOKERY OF MEATS.

Foods have already been divided into two classes, animal and vegetable, and we have also noticed that the former, as its composition is more similar to that of our own bodies, is more readily digested or undergoes less chemical change before being assimilated. Yet the housekeeper looks upon the cookery of animal foods, particularly fresh meats, as being less simple than that of vegetables. The difficulty seems to be not so much to have it sufficiently cooked as to prevent certain parts of it from being overcooked.

The value of meats as food depends on the presence of two classes of nutrients, protein and fat; and with these constituents in the proper proportions it would be possible to arrange a diet of meat alone which would provide the heat and muscle-growth of the body, but the vegetable foods supply certain constituents better suited to produce energy.

Meat as it comes to us from the market is composed of water; waste material such as bone, gristle, skin, etc.; fatty tissue, lean or muscular tissue, and extractives on which depend the flavors. The waste portions contain a little nutriment in the form of gelatine of bones, etc., which is extracted by long simmering in soup-making. The water of meat is of no more value than ordinary water; so an economical purchaser will select meat with a good deal of fat, for as a rule the larger the percentage of fat the less water it contains. Besides the fat which is visible there is also, even in lean meat, a certain amount of fat distributed throughout the muscular tissue in minute particles which we cannot see. Cut a piece of lean meat, say a piece of the round, "across the grain" and you will see what are really the ends of little bundles of muscle fibers held together by connective tissue, and tiny gelatinous cells containing a semi-liquid substance. These albuminous juices, the fibrin and the gelatine, are all of food value, yet require somewhat different treatment to bring them into the condition in which they are most easily assimilated and most palatable. The objects of cooking meats are to loosen and soften the tissues so that they may be the more fully exposed to the action of the digestive fluids, to coagulate the albumen, to develop and improve the natural flavors, and to kill injurious parasites which might be present and render them harmless.

The albumen coagulates at a low temperature (of 160° to 170°), it is then soft and easily digested, but at a higher temperature becomes hard and some of its value is lost to us. The fiber of very tender meat, like sirloin steak from a young beef creature, will also be palatable with very little cooking, but if from an old or poorly-nourished animal, or from the "tougher cuts," it will require much longer cooking. For this reason only tender meat should be used for broiling and other methods used in cooking tough meat.

We should fix clearly in mind the principles underlying the cooking of meat, remembering that we wish to obtain the greatest amount of nutriment from all parts of it, and also to retain the natural juices and develop the flavors. True economy teaches us that no part of this may be neglected, for it would be extravagant to sacrifice nourishment for the sake of flavor, though it is important to please the palate and so stimulate the digestive organs to more vigorous action. Prof. Williams says "a veneration of costliness is one of the vulgar vices especially dominant below stairs or among the poor, who, through ignorance, buy expensive cuts when cheaper ones might with proper cooking yield not only better flavor but more nourishment with less expenditure."

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Meat is cooked in two ways—(1) by the application of dry heat and (2) by moist heat—yet in both processes, if properly conducted, the fibers of the meat are cooked in their own juices. The ideal method is roasting before an open fire in a free circulation of air with a constant basting of hot fat. Our nearest approach to this is broiling over hot coals, baking in an oven, or frying in a deep kettle of hot fat. These methods develop the finest flavors, and by quickly searing the surface cook a coating of the albumen nearest the outside and so close the pores, keeping the natural juices in the meat.

Roasting Meat.—The "cuts" best adapted for roasting are those from the ribs, though sometimes tender "shoulder" and "rump roasts" can be obtained. In buying beef select meat of a good red color, smooth, open grain, and white fat. Bear in mind that the more cut surface you have the more chance there is for the juices to escape. For this reason it is not advisable to have your roast boned and rolled; also because there is not so much chance of destroying any injurious germs with which its surface may have been contaminated by contact with tainted meat or blocks in the market, as the inside of the roll does not reach the high temperature of the outside, which temperature is sure death to parasites. Remove any wrapping papers from your meat as soon as received and wash off with a wet cloth. Never plunge meat into cold water to wash it or you will waste some of its juices. Sear the outside quickly by turning it about in a hot pan or kettle containing a little hot fat, then place in a hot oven (about 340° F.), elevating it above the pan on a meat rack or a few iron rods. If the meat is very lean lay on it a piece of suet or even fat pork to baste with. Do not put any water in the pan. Baste every ten minutes or oftener and when half done salt, pepper and flour may be dredged over it. Keep on basting and if the fat is likely to burn a very little water may be added when the cooking is well advanced, or, better still, reduce the heat by setting a separate dish containing water beside it in the oven. Allow about twelve to fifteen minutes to the pound if in a square or compact form, but, of course, a long, narrow shape would cook more quickly. The smaller the piece the hotter the oven may be, for if a large roast were exposed to a fierce heat the outside would burn before the inside could be sufficiently heated. The light pink heart of a roast would register only about 160° if tested with a chemist's long thermometer. An iron frying-pan is good to use in cooking small roasts. These general rules apply to the roasting of different kinds of meat. Pork, however, must be cooked at least twenty minutes to the pound, and veal even longer or one and a half to two hours for a piece under four pounds, as they are not wholesome unless thoroughly cooked. To make the gravy, remove the roast, add an equal quantity of dry flour to the fat in the pan, cook a minute, season and add hot water to make of right consistency.

[TO BE CONTINUED.]

Domestic Girls.

To the weary business girl who rushes through life like a whirlwind the dear little domestic home girl is as refreshing as a lake breeze. If you are a wage-earner with your mind all befuddled with business cares, just seek one of these little housewifely maidens and you'll get as much comfort just from looking at her as you would from a two-weeks' vacation. She is so restful. She hasn't been foolish enough to save some money and invest it in stock and then have her brain temporarily unsettled every time the price goes down a notch or two. She doesn't care two cents whether it rains or storms—she can fuss around with her flour sieve and her cake tins and be as happy as if the sun were shining.

A Word to the Boys.

If you have anything to do, do it at once. Don't sit down in the rocking-chair and lose three-quarters of an hour in dreading the job. Be sure that it will seem ten times harder than it did at first. Keep this motto: Be on time, in small things as well as great. Habit is everything. The boy who is behind time at breakfast and school will be sure to get "left" in the important things of life. If you have a chronic habit of dreading and putting off things, make a great effort to cure yourself. Brace up! Make up your mind that you will have some backbone. Don't be a limp, jellyfish kind of a person. Depend upon it that life is very much as you make it. The first thing to decide is, what are you going to make it. The next thing is to take off your coat and go to work. Make yourself necessary somewhere. There are thousands of boys and young men in the world who wouldn't be missed if they were to drop out of it to-morrow. Don't be one of this sort. Be a power in your own little world, and then, depend upon it, the big world will hear from you.

Educational Item.

A Texas gentleman took his rather obtuse son to a school to enter him as a pupil. The teacher did a sum on the blackboard, as the would-be pupil could not do it himself, remarking: "Now that I have shown you how to do that sum, I'll prove it to you, to show you that it is correct." "No need of proof, professor. I will take your word for it. I know you wouldn't tell a lie," replied the pupil, much to the disgust of his parent.

Our Most Gracious Majesty.

In a recent number we spoke of our honored Queen in her character of sovereign, and of the increase of the power and influence of Great Britain during her long reign. The progress made in industry, art, science, and literature is marvellous; education, instead of being the possession of a favored few, is now the heritage of every British child.

Our Queen has done all in her power to promote the advancement of all that is good, she is interested in all true work, and the ablest minds of the day know that they will receive encouragement from her.

No nation can help being interested in its sovereign, and we are fortunate in having a queen whose character and actions have so endeared her to the hearts of her loyal people that any information regarding her is eagerly welcomed. When the Archbishop of Canterbury and the Lord Chamberlain went to Kensington to inform her of the death of King William, her first words were, "I ask your prayers in my behalf"; and when she went in state to dissolve Parliament she addressed the House thus: "I ascend the throne with a deep sense of the responsibility which is imposed on me, but I am supported by the consciousness of my own right intentions and my dependence upon the protection of Almighty God"; and throughout her long reign, during which she has passed through many and deep trials, has her faith been unwavering. In Her Majesty's first great grief—the death of the Prince Consort—knowing what was expected of her, she called her children around her and appealed to them to give her their assistance, that she might do her duty to them and the country. "I must not fret too much," said she; "how many poor women have to go through the same trial." And the Duke of Argyll writes that "during all the years of the Queen's affliction, she omitted no part of that public duty which concerned her as sovereign, but devoted herself without



one day's intermission to those cares of government which devolved upon her."

The Queen tried to soothe her own sorrow by relieving the sorrow of others, visiting the sick and dying, reading and praying with them, rejoicing to take with her delicacies to tempt the appetite or warm clothing to increase the comfort of the sick and afflicted.

Her Majesty's subjects are preparing to celebrate the Diamond Jubilee in the manner most in accordance with the wishes of the Queen, with deeds of mercy and charity to assist the sick and suffering. Our sovereign is revered by all countries throughout the world, and congratulations will flow in from princes and rulers of every nation, but that which our Queen values most is the fidelity and love of her own people, and these will never fail her.

Proper Care of a Piano.

A musical instrument may be regarded in the light of an exotic, costly and requiring constant and careful attention.

Frequently, though, a costly and beautiful piano grows worthless and tuneless because it is neglected.

In frosty weather, especially, always close it when not in use, and, if possible, throw a cover over it. Keep in a moderately warm room, not too near the source of heat, and let the temperature be even—not cold one day and hot the next, but warm all the time—say 60 or 70 degrees the year round.

Always place the piano against an inside wall, and a little out from it. Do not allow the children to drum on it.

Frequent wiping off of the case with chamois skin wrung out of tepid water is recommended; and where the case is very highly polished and dark, this is not only necessary but productive of good results and little else will answer to remove the dust that settles resolutely in the rightly named fretwork.—Lillie Winter.

THE QUIET HOUR.

Weary Not.

Sow with a generous hand:
Pause not for toil or pain;
Weary not through the heat of summer,
Weary not through the cold spring rain;
But wait till the autumn comes
For the sheaves of golden grain.

Sow, and look onward, upward,
Where the starry light appears—
Where, in spite of the coward's doubting,
Or your own heart's trembling fears,
You shall reap in joy the harvest
You have sown to-day in tears.
—Adelaide Proctor.

Scattering to Keep.

"There is that scattereth, and yet increaseth; and there is that withholdeth more than is meet, but it tendeth to poverty."

This paradox has become familiar by frequent use. The proverb, like a well-worn coin, has become smooth by long-continued handling, and passes easily from mind to mind in the intercourse of life. It is a sharp weapon, always at hand, by which a man may deal a blow against selfishness in himself or his neighbor. In agriculture, to scatter grain is the only way to increase it. The farmer exercises faith in the unseen when he casts good seed into the ground. His direct design in scattering his corn is to increase it, and his faith is rewarded by a manifold return. If in stupid, short-sighted carelessness, he had hoarded the precious seed, the hoarding would most certainly have "tended to poverty."

To distribute portions of our wealth in acts of wise philanthropy is like casting into the ground, as seed, a portion of the last year's harvest. It goes out of your sight for the moment, but it will spring in secret and come back to your own bosom again.

An unwise man may indeed scatter his corn on barren ground; and though he sow bountifully, he will reap sparingly there. So when a man lays out large sums on unworthy objects to feed his own vanity or gratify his own whims he neither does nor gets good. The outlay is necessarily unprofitable.

To give money, for example, indiscriminately to beggars who tell a whining tale and cunningly enact distress, is worse than to sow precious seed on the sand of the seashore. The seed cast on the sand is lost, but money given to the profligate is worse than lost. It is not barren; it multiplies and replenishes the earth with vice.

The law that judicious liberality enriches, while selfish niggardliness impoverishes, may be seen in its effects by any intelligent observer. If one should demand how this can be, it would be sufficient answer simply to repeat that it is, and appeal to the history for proof. But, farther, we may answer by another question: How does the scattered grain increase? In point of fact it does increase, and that is about all we know regarding it. Shall we refuse to sow it until we understand the process of growth fully. Both as to our money and ourselves, it is better to wear out than to rust out. This is an earnest time. Seek a good investment, but lay it out. Sometimes investments are not secure, we hear of many a heavy crash, and pity the victims as they crawl from the ruins. Might we not expect that, after these disappointments, men would be seen hastening to invest in God's hands. This lending to the Lord affords the best security and gives the largest rate of interest. Remember, "he that hath pity upon the poor lendeth unto the Lord; and that which he hath given will He pay him again." Is not that a safe investment? And think of the rate of interest—"shall receive an hundred-fold, and shall inherit everlasting life."

We think ourselves a practical generation, let us prove ourselves so by scattering with a wise and liberal hand our time, money and opportunities of good. Men cannot get forward even in things temporal unless they believe that God is, and that He is the rewarder of them that diligently seek Him. W. A.

The Lord's Portion.

A man, trading in the market, happened to pay to the huckster-woman a battered and very questionable-looking penny. She examined, and was about to return it, but suddenly dropped it into her pocket, saying, "It will do to put on the plate!"

The incident is a most painful evidence of the utter disregard of fair dealings with the Lord which so generally prevails in Christian lands. The poorest we have and the very smallest sum which will save us from being set down as penurious, is about the average rule of our offerings.

Why is it that men so soon wax weary in labor? How is it that there have come amongst us such low standards of giving? How comes it that we think it enough, if out of the abundance that is given to many of us we give but the paring and and off-scouring of our abundance to Him? How is it we give the day to our work and the night to our pleasure, and think it much if we remember Him in a hurried prayer that we feel rather glad to have said? Because His presence is not by us; because we do not realize that His eye—the discriminating eye which saw the poor widow offer her mite and the rich man cast his unwarded gift into the treasury—that discriminating eye is beside us now. It is that that makes our labor so little and our gifts so poor. If you and I can get

into His presence, go as she did who brought the alabaster box and knelt at His feet in the house of Simon the leper, hear His voice, see the brow that thorns have bound, mark the hands the nails have pierced—if we did but thus see Him beside us, should we not love to offer our very hearts to Him? —Bishop Wilberforce.

Puzzles.

1—SQUARE WORDS.

One fill up very tight, Two scold with all your might, Three a river in Scotland you'll see, Four if you're a man With some others you can Plural possessive be. A. P. HAMPTON.

2—CHARADE (PARTLY BY SOUND).

The' none, the TOTAL would refuse, If under the burning sun; And ONE is never out of use By Austrian, Turk or Hun.

The' TWO is used in many ways, In country, town and city, On ONE 'tis put to mock not praise By the extremely witty. CLARA ROBINSON.

3—CHARADE.

The victor was crowned with my FIRST, but exclaimed my SECOND, as he found himself caught in my THIRD, and thrust through with my WHOLE. ADDA WHETSTONE.

4—RIDDLE.

I am the terror of mankind, My breath is flame, and by its power I urge my messenger to find A footing in the strongest tower. JENNIE STEWART.

5—RIDDLE.

A beautiful maid In the garden was laid, She was dead before she was born, She was made a wife The first day of her life, She departs from earth every morn. J. S. CREERAR.

6—CROSS-WORD ENIGMA.

My FIRST is in quess, but not in sneer; My SECOND is in rub, and also in scrub; My THIRD is in winter, but not in autumn; My FOURTH is in brought, and also in bought; My FIFTH is in village, but not in city; My SIXTH is in country, but not in town; My WHOLE is a city in Canada. JENNIE STEPHENS.

7—DROP-VOWEL PUZZLE.

C - nt th-t d-- 1-st W-h-e l-w d-o-o-d-n-g s-n V--ws fr-m th-h-a-d N--n-hl--ct-n d-n. MAY MCNIE.

8—DIAMOND.

1. A letter; 2. Malt liquor; 3. To make ashamed; 4. Is used to tighten; 5. To bar; 6. Fruit of the briar; 7. A consonant. ADDISON M. SNIDER.

9—LADDER PUZZLE.

Diagram. 1. 2. 3. 4. 5. 6. 7. Rung 1 means the lower part of the face; " 2 " not far away; " 3 " a vessel used to serve food; " 4 " a girl's name; " 5 " a brave man; " 6 " Eastern philosophers; " 7 " a long stuffed seat; Initials form what we all love and are ready to defend; Finals one of the United States in the Eastern division. ETHEL MCCREA.

Answers to April 15th Puzzles.

- 1.—Chamels. Truth crushed to earth shall rise again, The eternal years of God are here; But error wounded writhes in pain And dies among his worshippers. 2.—Be-cause. Gulf Stream, Pyramids (peer amidst). Wet-shod. 6.—De-sign-ed. 7.—7 turkeys. 8.—Alas! how easy things go wrong, A sigh too much, a hint too strong, Then follows a mess and no end of pain, And life is never the same again.

SOLVERS TO APRIL 15TH PUZZLES.

John S. Creerar, Ethel McCrea, Clara Robinson, A. P. Hampton, Catherine L. Koch, A. M. Snider, May McNie; also Chris. McKennie, Jennie Stephens, Maggie Scott, D. W. Campbell, for April 1st.

The puzzle corner is open to all who desire to contribute, the only restrictions being that the work must be original and written with pen and ink on one side only of paper. When sending puzzles always enclose answers on another sheet and sign name legibly after each puzzle. For prizes offered, see April 1st issue. More solvers wanted. U. T.

The Way it Happened.

Said Toddlekine to Woddlekine, A very homely pup, "See, there's a sleeping pussy cat; Suppose we eat her up." They ne'er had seen the like, I ween, But, then, they thought, you see, That such a soft and sleepy thing No fearful foe could be. But something strange, an awful change Came o'er that furry ball. And what it was that happened next They never knew at all. Ah! how they flew, those noble two, That most heroic pair. Said Toddlekine to Woddlekine, "It must have been a bear."

The Ugly Duckling.

Hans Christian Andersen—dear old Hans, beloved alike by child and adult—has celebrated the trials and tribulations of an unfortunate under the title of "The Ugly Duckling," and mothers read the story to their little ones and sigh over the imaginary sufferings of the unknown, utterly unconscious of the fact that they themselves are committing the very error that the little story is intended to show up. The Lord created nothing without a purpose, and the spark of vanity which he has placed in the bosom of every created being has over and over again been a means of saving grace when admonition and reproof have failed. Beware how you kill this out in a child. When that is dead, life is not living but merely existence. To treat a child only with reproof for wrongdoing is to crush her beyond hope. To lead her to think that there is nothing about her worthy of praise, no good point in looks, behavior or manner, which may be commended, is cruelty. "Mamma," queried a broken-hearted little girl (aye! children's hearts do break), "is there one thing about me that is good or pleasant?" The child had never been praised for good, she had merely been reproofed for evil, until she believed that there was nothing in her to praise. Suppose you, grown woman that you are, should be daily and hourly subject to reproof from your husband, brother or father? How do you think you would bear the strain? "Oh, that's different," you say. Pardon me, it is not different. I dare say that if those nearest and dearest to you were questioned and were to answer truly, they would say you were far from perfect. In fact, angels have gone out of fashion at the present date. At least there have been none seen on the streets for a number of years, nor can I find anyone who has conversed with one recently. And yet with all your failings, after years of experience and discretion, you expect perfection from a little unformed mind and character that is buffeted by twice the temptations that you are daily subjected to. You can never know, because you never were a child (at least so one might imagine to hear you talk), the actual heroism it takes for your little daughter to pass the sugar bowl without extracting the lumps she has been forbidden to take. It seems like a small thing to you, but it is great to her, for her longing and temptation are great. Set yourself to correct one of your own smallest but most persistent faults and see how hard it is to keep your word to yourself. It sounds like a ridiculous thing, perhaps, but have you a habit of frowning or biting your nails, or pursing up your lips in an unbecoming manner? Just try correcting it and you will find out how weak you are, and you will possibly appreciate to a greater degree the strong hold a childish temptation may possess.

Whenever there is a good point of appearance, don't hesitate to speak of it at times. I do not hesitate to assert that it is want of appreciation in this line, at home, which has been the ruin of many a girl. Never having heard a word of praise, her appearance having been rather depreciated than otherwise, when she came into contact with the world it was so new that she believed everything, false as well as true. Had she possessed the shield of her mother's admiration and approval she would have known how to value that of others. She could tell whether it was sincere or not. What wonder that, being denied all this in her own home, she preferred surroundings where she could be fed upon the sweets of flattery which another would have known enough to rate at their true value? If a child has pretty hair, a good nose, or a small mouth, it is right for her mother to tell her so sometimes. It will do her no harm. On the contrary, it will do her an immense amount of good. If the reverse is the case and her bad points are constantly alluded to, the mother need not be in any way surprised to have her daughter grow up to an awkward, ungainly womanhood, silent, reserved, and even disagreeable.—Emma Churchman Hewitt.

Twenty Times a Day.

Twenty times a day, dear, Twenty times a day, Your mother thinks about you, At school or else at play.

She's busy in the kitchen, Or she's busy up the stair, But like a song her heart within Her love for you is there.

There's just a little thing, dear, She wishes you would do, I'll whisper 'tis a secret, Now mind, I'll tell it you.

Twenty times a day, dear, And more, I've heard you say, "I'm coming in a minute," When you should at once obey.

At once, as soldiers, instant At the motion of command; At once, as sailors seeing The captain's warning hand.

You could make the mother happy By minding in this way, Twenty times a day, dear, Twenty times a day. —Sel.

A Dentist and the Cats.

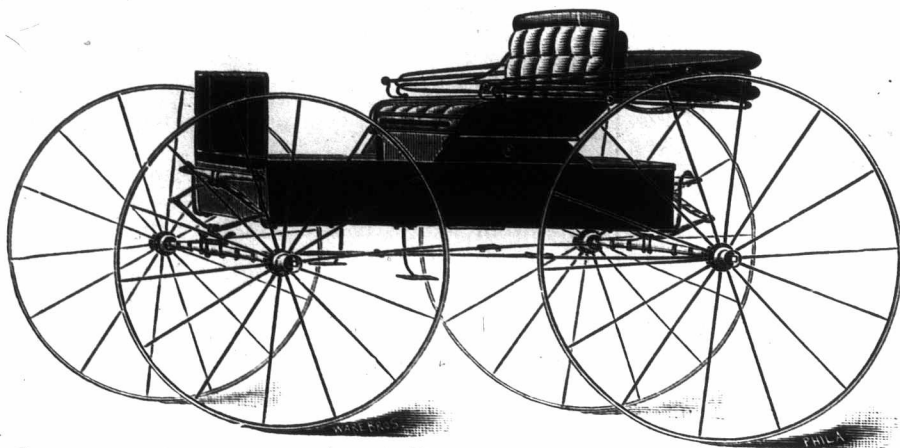
I think you will laugh at reading the following anecdote about cats that I met with the other day. A famous German dentist had a very valuable tortoiseshell cat, that for days did nothing but moan. Guessing the cause, he looked into his mouth, and seeing a decayed tooth, soon relieved it of its pain. The following day there were at least ten cats at his door, the day after twenty, and they went on increasing at such a rate that he was obliged to keep a bulldog to drive them away. But nothing would stop them. A cat that had the toothache would come any number of miles to him. It would come down the chimney even, and not leave the room till he had taken its tooth out. It grew such a nuisance at last that he was never free from one of these feline patients. However, being one morning very nervous, he accidentally broke the jaw of an old tabby. The news of this spread like wildfire. Not a single cat ever came to him afterwards.

Equal to It.

An Irishman was hauling water in barrels from a small river to supply the inhabitants of the village, which was not provided with waterworks. As he halted at the top of the bank to give his team a rest before proceeding to make his round with the water, a gentleman of the inquisitive type rode up and, after passing the time of day, asked: "How long have you been hauling water for the village, my good man?" "Tin years or more, sor," was the simple reply. "Ah! And how many loads do you make a day?" "From ten to fifteen, accardin' to the weather, sor?" "Yes. Now, I have one for you, Pat," said the gentleman, laughing. "How much water have you hauled altogether?" The Irishman jerked his thumb in the direction of the river, at the same time giving his team the hint to start, and replied: "All the water that yez don't see there now, sor."—Scottish Nights.

Our Lives are Songs.

Our lives are songs; God writes the words And we set them to music at pleasure; And the song grows glad or sweet or sad, As we choose to fasten the measure. We must write the music, whatever the song, Whatever its rhyme or meter; And if it is sad, we can make it glad, Or if sweet, we can make it sweeter.



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Bee-Keeping

On March 8th, 1897, PETER BECKER, Hills Green, Ontario, writes:
 The Good, Shapley & Muir Co., Ltd., Brantford, Ont.:
 The bees you sent me last spring are at present in good shape, and they did first-class last summer. They swarmed twice, having three good swarms now, and I received just an even hundred pounds of comb honey. I must say I was highly pleased with your bees. Have you any more for sale?
 We have a limited number of first-class colonies for sale. Pure Italian, \$7.50; partly Italian, \$6.50 per colony, including hives. Five per cent. discount for cash with order. Also full line of best grade BEE-KEEPERS' SUPPLIES. Price list and sample copy "Canadian Bee Journal" free on application.
 Address:
Good, Shapley & Muir Co., Limited,
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 Beeswax wanted.

Aged Heavy Draft Mares
 FOR SALE OR EXCHANGE for sound workable stock. These mares are from 1,600 to 1,800 lbs.; good bone; well bred, and most suitable to work a farm and breed from. Apply to
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Three Clydesdale Mares
 Weighing from 1,650 to 1,800 pounds, and their colts from 1 to 3 years old. Choice young Ayrshires of both sexes.
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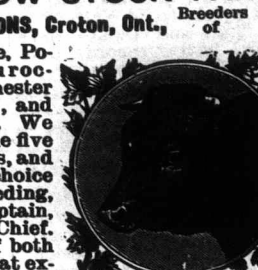
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 Short-horn Cattle, Poland-China, Duroc-Jersey, and Chester White Swine, and Leicester Sheep. We now offer for sale five good young bulls, and also heifers of choice quality and breeding, sired by Chief Captain, a son of Indian Chief. Young pigs of both sexes & all ages at exceedingly low prices.




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Hawthorn Herd
 of deep-milking SHORTHORNS for sale. Heifers and cows of the very best milking strain. Inspection invited. 13-y-om
WM. GRAINGER & SON, Londesboro, Ont.

4 Scotch Shorthorn Bulls for Sale
 Ten to thirteen months old, from Duchess of Gloster, Lovely, and Nonpareil dams, and sired by imported King James. Also a few Partridge Cochon Cockerels for sale, \$1.50.
 15-1-y-o H. I. ELLIOTT, Danville, P. Q.

FOR SALE. A few choice SHORTHORN HEIFERS, also two BERKSHIRE BOARS fit for service, sired by J. G. Snell's Enterprise. Prices right. Correspondence solicited.
F. A. Gardner
 BRITANNIA, PEEL COUNTY, ONT.

H. K. Fairbairn, Theford, Ont.,
 Breeder of pure bred Shorthorns. I now have for sale two good young bulls, 11 and 13 months old, of choice breeding. Will sell cheap, considering quality. 22-2-y-o

Shorthorn Bull.
 I have one good young Shorthorn Bull of choice breeding which I will sell cheap, considering quality. S. B. CORWILL, Fanshawe, Ont.
 om

ADVERTISE IN THE ADVOCATE

In **BELVEDERE STABLES** are still
6 of my Best Jersey Cows
 Kept for use of my own and daughter's families, but I do not wish to increase the number, hence I can usually offer something uncommonly choice. Just now I have
1 BULL, NEARLY 2 YEARS OLD,
 1st prize winner, and fit for any herd.
1 SPLENDID BULL CALF, 7 MOS. OLD
 The best, I think, I ever raised.
1 EXTRA BULL CALF, 3 MOS. OLD.
MRS. E. M. JONES,
 Box 324, BROCKVILLE, ONT., CANADA.

WILLOW GROVE HERD OF JERSEYS.
 Sweepstakes herd of 1893, 1894, 1895 and 1896.
J. H. Smith & Son, Highfield, Ont.,
 are offering 13 females to calve shortly: one first prize bull, dam Elena of Oakdale (11 lbs. 4 oz. of butter in seven days), grand dam Mencia 3, A. J. C. C., best 30 lbs. 1 oz. in seven days. Dam of bull won 1st prize in dairy test, Guelph, 1896, and he is half-brother to King of Highfield. om

FOR SALE....
Ten Cows in calf, - \$400.
Four Bulls, - \$100.
 All solid color, and all except two are St. Lambert strain. Address—
JONATHAN CARPENTER,
 12-2-y-om WINONA, ONT.

LEE FARM REGISTERED JERSEYS.
 Bulls fit for service, \$50 each
 Heifers in calf, 50 "
 Young cows in calf, 75 "
 Heifer calves, 30 "
 Solid colors. None better bred in Canada for dairy purposes. Come and personally select or write for description and pedigree.
H. PHELPS BALL,
 Lee Farm, Rock Island, P. Q.
 17-y-o


FOR SALE!
2 FINE YOUNG REGISTERED JERSEY BULLS,
 about 17 months old; heifer and bull calves, and a choice lot of young Berkshire pigs. Prices right.
D. H. Ketcheson, MENIE P. O.

The Don Herd of Jerseys
 Comprises the choicest strains obtainable, including St. Lambert, Tennessee and combination blood. Am now offering a choice yearling Bull of superior quality and strong breeding, from imported stock. Also a choice bull calf.
 Address: **DAVID DUNCAN,**
 9-1-y-o DON P. O., ONT.

JOHN PULFER, BRAMPTON, ONT.
 Breeder of choice **Jerseys** reg. and high-grade of fine quality. Also TAMWORTH SWINE. Young stock always for sale at prices that should sell them. 12-2-y-o

GLEN ROUGE JERSEYS.
WILLIAM ROLPH, Markham, Ont., offers twelve Jersey Bulls and Heifers (pure St. Lambert), out of tested cows. Grand individuals. Prices right. 22-y-om

Prize-Winning AYRSHIRES FOR SALE.
 I have at present one of the largest and best herds in Ontario, which has been very successful in the prize ring. They are of a large size. Bulls, cows and heifers for sale always on hand.
JAS. McCORMICK & SON,
 ROCKTON, ONT. 20-2-y-o




AYRSHIRES FOR SALE. Six choice young Bulls, one and two years old, by Earl of Percy. My spring calves are by Douglas of London 1381, bred by D. Morton & Son. Prices right. F. W. TAYLOR,
 Hoard's St., G.T.R. o Wellman's Cor., Ont.

OAK POINT STOCK FARM
Ayrshires FOR SALE.
 I have now for sale a choice lot of young bulls and heifers of fine quality, and bred from best milking strains. Particulars on application.
J. B. CARRUTHERS,
 17-y-o Kingston, Ont.




Maple Cliff Dairy & Stock Farm
 Ayrshire Cattle, Berkshire and Tamworth Pigs.
 Special offers for this month—Bull calf, Jock of Maple Cliff, 7 months old, by Gold King, and from Myrie Carrick (a very deep milker), \$25. Berkshire pigs, 1 month old, \$5.00 each; Tamworths, 2 months old, \$7.00 each.
R. REID & CO., Hintonburg, Ont.
 20-1-y-o One mile from Ottawa.

GLENGARY STOCK FARM.
 My herd comprises the best strains procurable. Am now offering young bulls and heifers descended from the importation of the late Thos. Brown. PRICES RIGHT.
JNO. A. McDONALD, JR., Williamstown, Ont.
 1-2-y-o



Maple Cliff HERD OF... Ayrshires
 Are noted for their successful show-yard career. Choice quality and heavy milking families. A few exceptionally choice young animals of both sex now for sale. Prices in keeping with the times. For particulars address
ROBERT ROBERTSON, Prop.,
 16-2-y-om COMPTON, QUE.

BROOK HILL AYRSHIRES....
 are still to the front. One young bull 18 months old for sale. Orders taken for young stock. Speciality in bull calves. Correspondence solicited.
W. F. & J. A. STEPHEN,
 Trout River, Que.



JNO. SANDILANDS, Williamstown, Ontario,
 BREEDER OF CHOICE **Ayrshire Cattle.**
 Young stock of both sexes now for sale at farmers' prices. om

NOTICES.

Great Britain is our market, and thanks to the Dominion Steamship Line our produce can be taken at regular, weekly intervals, in safe and fresh form. The cold storage equipment will be much and advantageously taken advantage of the coming season. See Elder, Dempster & Co.'s advertisement which shows the times of sailing.

A big sale of high-class horses was made in Chicago on May 4th, by Splan & Newgas. The chief attraction of the sale was the noted black pacing stallion, Joe Patchen 238, who sold for \$15,000 to C. H. Marks, of Chicago. In all sixty-nine head were sold, the top price after Joe Patchen being \$650 for Marble 214, bay mare by King Clay.

The Allan Line of Royal Mail Steamships is too well established and favorably known to require further notice than to point to their advertisement in this issue. Favorable freight, including all dairy and farm produce, will be hastily transferred to Liverpool, Glasgow, and London. H. A. Allan, Manager, Montreal, will supply schedule of sailings, rates of passage, and other information upon application.

Now that abundant grass has come the addition of a few animals to the herd will not be noticed on the feed. An opportunity to add animals of the correct type and quality of one of the most useful breeds of cattle to the herd will be offered as per the "dispersion sale" advertisement in this issue of "Glen" Stock Farm herd of Ayrshires, on Thursday, June 10th. Besides a grand lot of females, a number of bulls will be sold. This is a rare chance.

The Locked Wire Fence Co., of London, Ont., has secured the contract for erecting two and a-half miles of their famous fence on Mr. W. E. H. Massey's model farm at Little York, near Toronto. Though many other cheaper fences were submitted to Mr. Massey, he considered the Locked Wire Fence the most permanent as well as ornamental. The reduction in tariff has considerably benefited this company, as the duty being lowered they can put up a cheaper fence.

The American Aberdeen-Angus Herd Book, Vol. VII., includes the entries made from March, 1895, till October, 1896, which numbers are 21,501 to 24,500. Besides the pedigrees of animals, list of members, constitution, by-laws, etc., usually found in such works, it also contains a table of gestation of cows, standard of excellence, and other valuable additional matter. The volume is splendidly compiled, printed and bound. The President of the Association is Wallace Estill, and Secretary-Treasurer, Thos. McFarlane, the compiler and editor, Harvey, Ill., U. S. A.

GOSSIP.

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

A sheep owner of Wellington Co., Ont., has 14 ewes, 6 of them shearlings, which have given birth to 34 lambs this season; 6 had triplets and 8 had twins.

The statement is published in an American daily paper that a Mr. Hatt, of Hartford City, Ind., has a contract with the British Government to furnish 6,000 horses for army purposes.

H. Bennett & Sons, St. Williams, Ont., writes under date May 4th: "Kindly omit from our advertisement 'young sows in pig' as we have disposed of all we had to spare, thanks to the ADVOCATE. We will now make a special offering of spring pigs."

A prominent fruit grower who has examined many orchards from Niagara westward finds the prospect excellent for a large crop of apples, peaches, pears, plums and small fruits. Wheat and clover have wintered well, and the outlook for good returns is promising.

Geo. F. Powell, of Cornell University, has been inspecting the orchards in Columbia County, and has discovered at Germantown the San Jose scale, one of the most dangerous pests known. He said that unless vigorous steps are taken to eradicate it the entire orchard interests of the Hudson Valley will be endangered.

Mr. Theo. Guy, Sydenham Farm, Oshawa, Ont., reports the sale of a young Ayrshire bull to W. H. Evey & Son, Bar River, Muskoka, Ont. He also claims to have for sale three bulls, coming two years old, of very nice quality and breeding and in good condition. The Sydenham herd is of long-standing and reputable character. We are sorry to learn that Mr. Guy continues in very poor health.

A general circular from the Superintendent of Farmers' Institutes for Ontario, Mr. F. W. Hodson, has been issued, announcing that the annual meetings of the local Institutes throughout the Province will be held on Tuesday, June 1st, at 1 p. m., for the reception of the annual reports, election of officers, and other business. Reports of the annual meetings are to be sent to the Superintendent not later than June 30th in order to obtain the usual Government grant.

The Canadian House of Commons has authorized the printing of 40,000 copies of the evidence of Prof. Robertson, Agricultural Commissioner, in relation to the arrangement made by the Department of Agriculture for the export in cold storage to Great Britain of perishable food products. Arrangements are practically completed with the G. P. R. and G. T. R. for train service, in addition to ample steamship accommodation. A fruit-collecting depot and warehouse is to be established for the Niagara peninsula.

H. K. Fairbairn, Rose Cottage Stock Farm, Theford, Ont., writes:—"Our herd of Short-horns are out of winter quarters in good shape. We have sold the grand young bull, Little Lad 3rd, we showed at London and Toronto last fall to Mr. Johnson, Cowan, of Brooke Township. This bull's dam is by Prince Albert -3069-, owned by R. & S. Nicholson, Sylvan, Ont., and later by H. & W. Smith, Hay. We are fitting some grand young things for the industrial and Western Fairs. The stock bull, Dainty Davis, is growing into a fine animal, and promises to be a hard one to pass next fall. We are fitting a sweet pair of heifers which we think will be heard from next fall. We have a Berkshire boar and sow of Duncan Graham's very best breeding, and they are as good as their breeding. Some choice heifers for sale at up-to-date prices."

The following new regulations have been adopted by order-in-council governing the shipment of cattle from Canada to the English market:—Fat cattle carried on the upper or spar deck, or any other deck, must be given a space of two feet eight inches clear in width by eight feet clear in length each, and not less than six feet three inches in height. As regards space for sheep, not more than eight or ten sheep will be counted equal to one fat ox, according to the discretion of the inspector. United States cattle shipped from any port in Canada carried on the upper or spar deck must be allowed a space of two feet six inches in width and eight feet in depth per head, but such United States cattle when so shipped between decks must be allowed a space of two feet eight in width by eight feet in depth.

Vol. VIII. of Hampshire Down Flock Book contains the pedigrees of rams Nos. 2054 to 2411, and about 200 flocks. Among the amendments by-laws we notice the following: "A flock may be considered eligible for entry if it be proved conclusively that no rams other than those from registered flocks have been used during the five years immediately preceding the date of entry, but in such and all other cases applications for the registration of sheep are received only on the understanding that the applicant agrees to the inspection of his flock, if considered necessary by the Council, as to the eligibility of his flock for entry, and that he agrees to pay half the expenses of such inspection." The Secretary of the Association is J. E. Rawlence, The Canal, Salisbury, England. The book is substantially gotten up.

HEREFORDS AGAIN SELL WELL.

At the auction sale of Messrs. Scott & Marsh, Belton, Mo., held on April 29th, seventy-two animals sold for the splendid average of \$158.50. The animals were all young, ranging from eleven to fourteen months old. An immense crowd of buyers was present from the States of Nebraska, Kansas, Wyoming, Colorado and Missouri. The cattle were a very uniform, smooth lot, and was perhaps the youngest offering throughout that has been sold in many years. None of the animals was of outstanding merit over all the others, and no extreme prices were paid. No animal sold for less than \$100, and the top price for a female was \$250, and \$290 was the highest price for a male. Although time payments were permitted, the \$11,390 worth of cattle were paid for in cash except \$130.

GALLOWAYS BRING GOOD PRICES.

Mr. S. P. Clark, Dover, Illinois, dispersed his forty head of Galloways at auction, on April 28th, at the good round average of \$100. Eight bulls averaged \$124 and thirty-two females \$77.50; \$210 was reached for a bull and \$205 for a female.

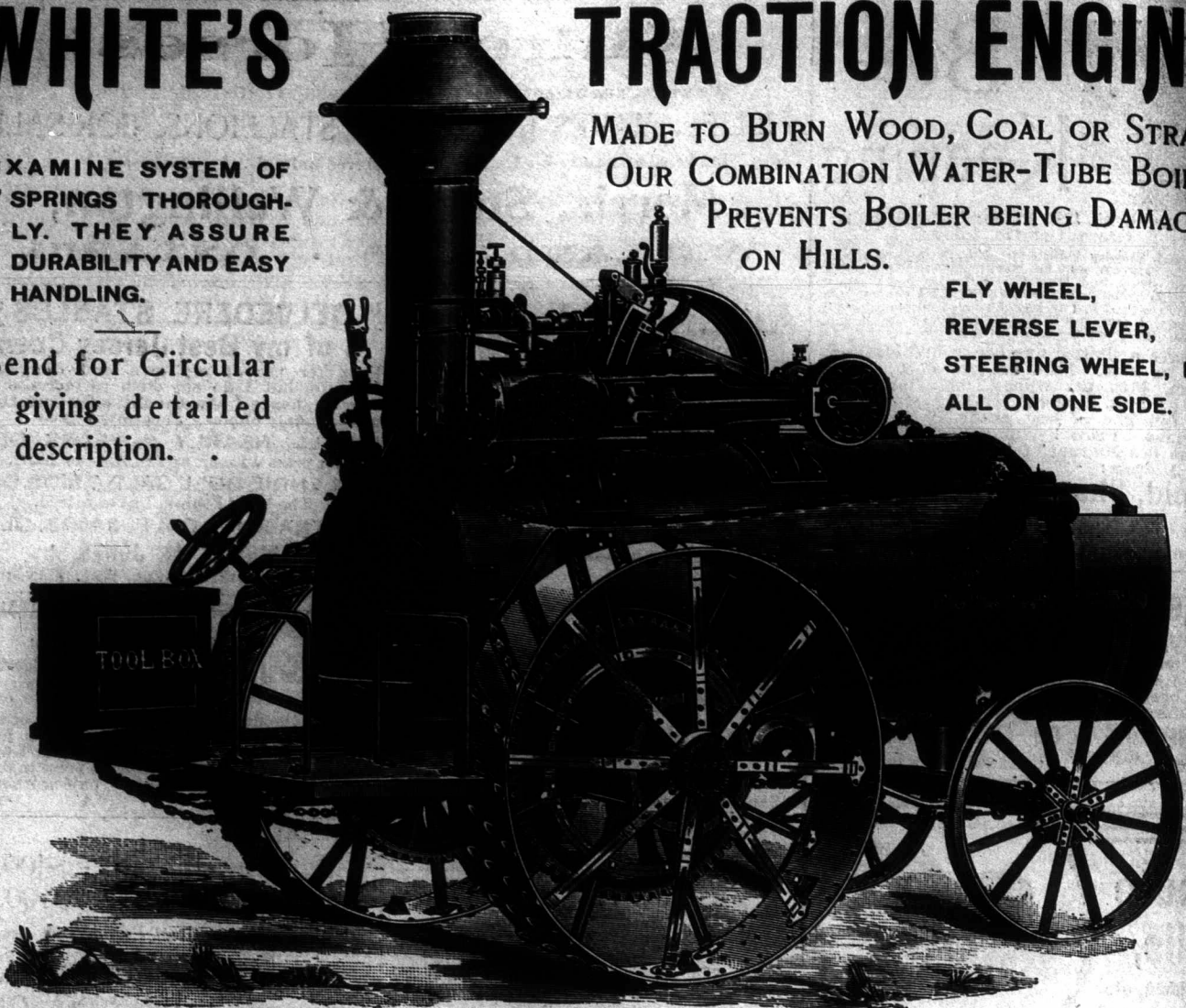
WHITE'S TRACTION ENGINE

EXAMINE SYSTEM OF SPRINGS THOROUGHLY. THEY ASSURE DURABILITY AND EASY HANDLING.

Send for Circular giving detailed description.

MADE TO BURN WOOD, COAL OR STRAW. OUR COMBINATION WATER-TUBE BOILER PREVENTS BOILER BEING DAMAGED ON HILLS.

FLY WHEEL, REVERSE LEVER, STEERING WHEEL, Etc., ALL ON ONE SIDE.



GEO. WHITE & SONS, - London, Canada.

Hobbs Hardware Co., LONDON, CANADA.

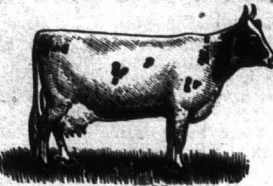
Binder Twine

OF EVERY DESCRIPTION.

We make a specialty of high-grade goods:

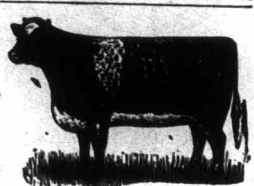
PLYMOUTH GOLD MEDAL, PLYMOUTH ABSOLUTELY PURE, PLYMOUTH AMERICAN SHEAF, AND PLYMOUTH SPECIAL.

We are the largest dealers in BINDER TWINE in Canada. If interested, write for prices, stating quantities you can handle.



W. C. EDWARDS AND COMPANY, IMPORTERS AND BREEDERS

Laurentian Stock and Dairy Farm, NORTH NATION MILLS, P. Q.



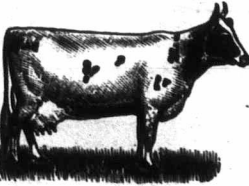
Pine Grove Stock Farm, ROCKLAND, ONT.

Ayrshires, Jerseys, Shropshires, Berkshires.

Our excellent aged herd of Ayrshires is headed by our noted imported bull Cyclone. Tam Glen heads the young herd, and Lisgar Pogie of St. Anne's heads the Jerseys. The young stock are all from time-tried dams. ED. McLEAN, Manager.

The imported Cruickshank bulls Knight of St. John and Scottish Sportsman are at the head of this herd of imported and Home-bred Cows and Heifers of the most approved Scotch families. 7-7 JOS. W. BARNETT, Manager.

Isaleigh Grange Stock Farm.



Special May Sale!

Consisting of five choice young AYRSHIRE BULLS fit for service, TWO GUERNSEY BULL CALVES, and the best lot of young IMP. LARGE YORKSHIRE PIGS ever offered.

PRICES LOW IF TAKEN THIS MONTH.

J. N. GREENSHIELDS, Prop., DANVILLE, QUEBEC.

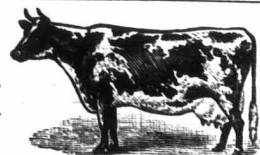
T. D. McCALLUM, Mgr., 9-y-on

AYRSHIRE

Bull and Heifer Calves.

ALL ARE ELIGIBLE FOR REGISTRATION.

Springfield, M.C.R. Aylmer Sta., Putnam Sta., C.P.R. G.T.R.



Holstein Bull and Heifer Calves.

Will sell at hard-times prices.

Barred P. Rock Cocks, \$1 each. Eggs from imported stock, \$1 per 15.

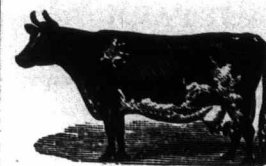
ALEXANDER WOOLLEY, Springfield, Ont.

ADVERTISE IN THE FARMER'S ADVOCATE.

Ayrshire Bulls... for sale by Tender

Two about 18 months old, get imported sire and dam; two about 8 months old, get imported sire and dam; two imported in dam. My imported herd all have noted individual champion records awarded them in Scotland. Leading gold-medal herd in Canada. For milk and butter records they have no equal.

R. G. STEACY, Importer and Breeder, Line G. T. R. om- LYN, ONT.



Choice Ayrshires of deepest milking strains. Largest and oldest herd in Ontario. We have choice young stock of both sexes sired by Leonard Meadows, a sweepstakes bull at Ottawa. Also choice Shropshires, and a fine lot of Berkshire pigs for sale. Visitors met at Queen's Hotel. Give us a call. J. YULL & SONS, CARLETON PLACE, ONT.

"Gem Holstein Herd." STOCK FOR SALE!

We only keep and breed registered Holstein-Friesians. We have now some choice young bulls and heifers, also some older animals, all of the very best dairy quality, that we will sell, one or more at a time, on reasonable terms. Correspondence solicited.

ELLIS BROTHERS, BEDFORD PARK P.O., ONT. Shipping Station, Toronto. 7-y-on

MAPLE HILL Holstein-Friesians. For rich breeding, heavy production, and uniformity of type, the Maple Hill Herd is not excelled by any in America. My cattle have won over \$1,000 in prizes in the last three years, and I never had as many crack show animals as at present. Many are closely related to Netherland Hengerveld, De Kol 2nd, and DeKol 2nd's Pauline, whose official butter records have never been equaled. Write or visit— 11-y-on G. W. CLEMONS, St. George, Ont.

HOLSTEINS

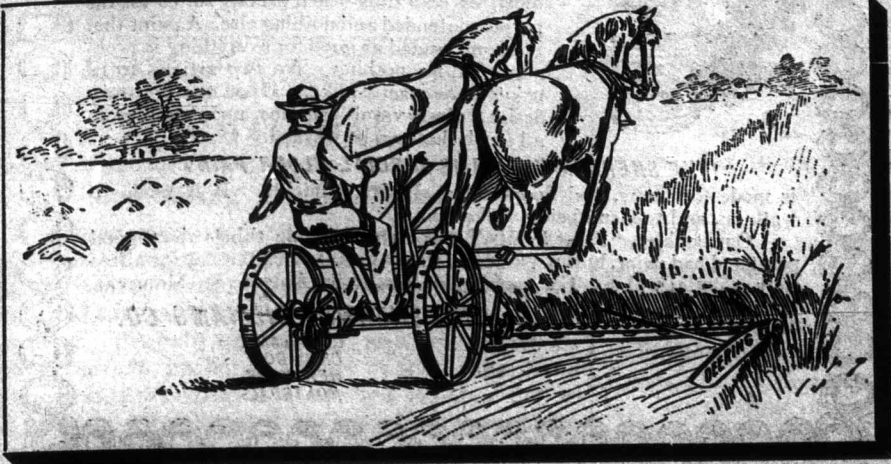
None but the best are kept at BROCKHOLME FARM, ANCASTER, ONT. Write me for prices if you want first-class stock at moderate figures. Holsteins in the advanced registry. Yorkshires all recorded. 12-y-on R. S. STEVENSON, Prop.

HOLSTEIN BULLS FOR SALE.

Two 2-year-olds and a yearling; also some young females; all bred in the purple, as their pedigrees will show. Prices right. A. C. HALLMAN, New Dundee P. O. Springbrook Stock Farm.

Deering Ideal Mowers

Lightest in draft; easiest to operate; do the cleanest, most economical work. The only Mowers with successful ROLLER AND BALL BEARINGS.



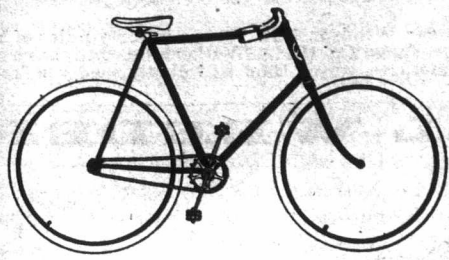
In the World's Fair official field trials, the DEERING 5 ft. Ideal registered or cutting draft of 85½ lbs., against 152 lbs. for its lightest competitor.

DEERING BINDERS, Mowers, Reapers, Corn Harvesters, and Hay Rakes are modern, up-to-date, efficient machines. Send for illustrated catalogue and testimonial circular, telling opinions of scores of Canada's most successful farmers.

DEERING HARVESTER Co.,

Factory and Main Offices, CHICAGO, U. S. A. Permanent Branch House, LONDON, ONT.

If you want a Bicycle



You want the BEST there is.

It doesn't pay to buy a bicycle whose guarantee is unidentified with responsibility simply because it is cheap. There is wise economy in every dollar that the Columbia costs.

Columbia Bicycles

STANDARD OF THE WORLD. \$100 TO ALL ALIKE.

HARTFORD BICYCLES, \$85 and \$65. SECOND ONLY TO COLUMBIAS.

POPE MFG. CO., Hartford, Conn.

Catalogue free from dealers, or by mail for one 2-cent stamp. COMPLETE MODEL OF THE GREAT COLUMBIA FACTORIES, lithographed in colors, ready to be cut out and built up, affording unlimited amusement and instruction to old and young, sent by mail on receipt of five 2-cent stamps.

AGENTS:

Wm. Gurd & Co., London, Ont.

GOSSIP.

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

There is a rapidly increasing sheep industry in the Southern States.

At the dispersion of the herd of Aberdeen-Angus cattle owned by Samuel Kimmel, Falls City, Neb., on April 22, an average of \$110 was secured despite the fact that many young calves sold separate from their dams. The top price was \$250.

Mr. Sharpe Butterfield, the expert poultry judge, has removed from Windsor to London, Ont., where he is now living. Mr. Butterfield has a continental reputation as an all-round judge of poultry, and makes the circuit of the principal poultry shows in America annually.

We are indebted to Superintendent McKerron for a copy of the 1896 report of the Farmers' Institutes of the State of Wisconsin. It contains some 275 closely printed pages of carefully selected matter, the addresses of Institute workers, and discussions following on a great variety of subjects.

A Shorthorn sale was held by T. J. Ryan & Son, Selby Co., Iowa, on the 27th April. The cattle were of Cruickshank and Bates families, and sold for the following averages: 9 bulls, \$121; 22 females, \$101; total average, \$107. The top price received was \$28 for 1684 Marchioness of Harrington—a red heifer thirteen months old.

Col. J. B. Thomas, Governor of the National Military Home, Dayton, O., was fined for using oleo in the home in violation of the law of Ohio. Judge Taft of the United States Supreme Court in a habeas corpus proceeding dismissed the case against Thomas on the ground that the State has no jurisdiction within the limits of the premises owned by the Government.

J. C. Lyons, of Lucknow Poultry Yards, writes us a short description of his poultry yards, in which he states that they were established in 1890, and since that time his birds have taken over 500 prizes at leading shows in Ontario. Besides orders being booked for shipment after September 1st, eggs are now being sold from the following pens: Light Brahmas, Buff Cochins, Red Caps, White and Brown Leghorns, and S. L. Wyandottes, Pyle Game, Bantam Rocks, Houdans, and Pekin Ducks. All the above eggs are from high scoring stock.

Vol. VII of the American Cotswold Record has been sent us by the Secretaries, Geo. Harding & Son, Waukesha, Wis. It contains the pedigree of 4,324 Cotswold sheep, numbering from 8581 to 12905. The President of the Association is Mr. John C. Snell, Snelgrove, Ont., and its two Canadian Vice-Presidents are Messrs. Jas. Russell, Richmond Hill, Ont., and David McCrae, Guelph, Ont. A large number of the registered sheep are owned by Canadians. The book is of first-class paper and binding, and the pedigrees are very conveniently arranged. Each pedigree takes up one line across two opposite pages, ruled off into columns headed as follows: Record No., sex, private ear mark, by whom bred, date of birth, present owner, sire and record number, dam and record number. This is a plan which any breeder could easily adopt for his private records.

J. Yull & Sons, Carleton Place, Ont.,—"Our stock wintered remarkably well, and the demand for Ayrshires has been better than for the last few years. In the month of April we sold the young bull Ely Meadowside—2064—to Mr. Wm. Burdon, Quyon, Quebec; heifer calf, Minnie Ha Ha, to Mr. T. G. Robinson, Saint St. Marie, Ont.; resting bull, Hector Meadowside—2116—to J. A. Harris, Tramore, Ont.; Robert Meadowside 2151 sold to Mr. Thomas Kidd, Lanark, Ont.; Dalkeith Meadowside—2174—to Mr. A. D. Stewart, Dalkeith, Ont.; one bull calf and one heifer calf to Mr. Robert Burgess, Norwood, Ont.; one bull calf to John Brooknridge, Westwood, Ont.; one aged bull, Farmer's Boy—1706, and one young cow, Minnie M. We have a fine lot of Berkshires ready to ship, just waiting for orders, and a nice lot of Shropshire lambs should suit the trade well this fall."

The May Report Ontario Bureau of Industry has the following on Live Stock:—"Taking a general survey of the field live stock may be said to have come through the winter in good condition. Horses are perhaps a little thin, but apart from odd cases of 'distemper' they have been almost completely free from disease. Cattle have also done well, although in the desire to husband fodder some of the animals were allowed to get too lean. Two or three cases of disease were complained of, but these were evidently due to local conditions. Sheep generally are in excellent condition, and lambs are abundant. Some cases of scab, however, were reported from York and Victoria, and elsewhere one or two complaints of a different ailment. Swine have not done as well as usual. Many litters have been lost. In Essex and other Lake Erie counties there was an outbreak of hog cholera, and importations from that district led to other cases appearing in parts of Lambton, Middlesex, Oxford and York. Prompt measures were taken to stamp out the disease."

Mr. James Dorrance, Seaford, Ont., when remitting for his advertisement, expresses great satisfaction with the business done as a result of advertising in the FARMER'S ADVOCATE. He reports having sold since last fall 21 Berkshire sows and 10 Berkshire boars for breeding purposes. He has also added to his herd two sows and a boar from the World's Fair winning herd of James Riley, Thorn- town, Ind. Mr. Dorrance's herd is headed by the grand stock boar, King Lee 4141, by Baron Lee 4th, bred by N. H. Gentry, Sedalia, Mo. He is now to be assisted by the new importation from Indiana. The brood sows are Cherry Blossom, winner of second prize at Toronto in 1896 under two years; Honey Belle, from imported Shapely, owned by Geo. Green, Lady Rosehill; and the sow that won second place in Toronto, Montreal, Ottawa and Stratford under six months old. Mr. Dorrance writes also that his herd won last autumn the pen prize at the Great Northwestern Fair, against very strong competition, over all breeds and sweepstakes for best sow on the ground, and that since 1894 his herd has won over eighty prizes.

SHORTHAND

Bookkeeping; Mechanical and Architectural Drawing; Machine Design; Stationary, Marine and Locomotive Engineering; Architecture; Railroad, Municipal, Hydraulic and Bridge Engineering; Surveying and Mapping; Sheet Metal Pattern Cutting; Plumbing; Electricity; Mining; Metal Prospecting; English Branches. All who study **GUARANTEED SUCCESS.** Fees Moderate, Advance or Installments. Circular Free. State subject you wish to study. International Correspondence Schools, Box 300, Scranton, Pa.



Ingleside Herefords.

UP-TO-DATE HERD OF CANADA! Bull Calves OF THE RIGHT SORT

For Sale.

Address: E. D. SMITH, Compton, Que.

GUERNSEYS

This is the Dairy breed for ordinary farmers. Large, vigorous and hardy, giving plenty of rich milk. Several fine young bulls for sale at very reasonable prices. A few heifers can be spared.

Address: SYDNEY FISHER, Alva Farm, Knowlton, P.Q.



THE ORIGINAL Non-Poisonous Fluid Dip.

Still the favorite dip, as proved by the testimony of our Minister of Agriculture and other large stockmen.

FOR SHEEP: Kills ticks, maggots; cures scab, heals old sores, wounds, etc.; and greatly increases and improves growth of wool.

CATTLE, HORSES, PIGS, ETC.: Cleanses the skin from all insects, and makes the coat beautifully soft and glossy. PREVENTS the attack of warble fly. HEALS saddle galls, sore shoulders, ulcers, etc. Keeps animals free from infection. NO DANGER; SAFE, CHEAP, and EFFECTIVE.

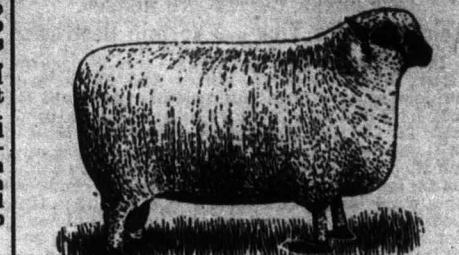
Beware of Imitations. Sold in large 75c. from 25 to 40 gallons of wash, according to strength required. Special terms to breeders, ranchmen, and others requiring large quantities.

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