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# THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE  
AND  
SUCCEED  
FOUNDED 1845

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

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VOL. XXIX.

LONDON, ONT., AND WINNIPEG, MAN., APRIL 15, 1894.

No. 356



A PAIR OF GERMAN COACH HORSES.  
THE PROPERTY OF J. CROUCH & SON, LA FAYETTE, IND.

## EDITORIAL.

## A Pair of German Coachers.

The cut on first page of this issue represents two of the famous imported German Coach stallions, Ludwig, No. 1452 and Picador, No. 1611, the property of the La Fayette Stock Farm, La Fayette, Ind., J. Crouch & Son, Proprietors. These gentlemen bought the entire lot of the German Government World's Fair exhibit of German Coach stallions and mares. They are magnificent animals of the greatest possible style, knee-action and finish. They are solid colors, mostly bays, with a few browns, 16 to 16½ hands high, and weigh 1,400 to 1,500 lbs. These horses have been carefully bred by the German Government in one line for several hundred years, and it is said they breed like themselves, from all kinds of mares, with most remarkable certainty, and sire the finest of coach and carriage teams—the tippy 16-hand horse that always sells. These horses show speed, are active roadsters, and are counted the long distance horse of Germany. They are growing in favor every day as their superior qualities become known. They are remarkably handsome, and smoothly built, possessing well muscled limbs, clean, stout, flat bone below the knee, and the best of feet. They have the finish, the vim, and the appearance of the thoroughbred, from which they have descended. J. Crouch & Sons also handle trotting and pacing stock, particulars of which may be gleaned from the interesting catalogue which they issue.

Chief Buchanan, who so distinguished himself as head of the live stock department at the Western Fair, has left the United States for Buenos Ayres, S. A., where he has assumed the duties of United States Minister to the Argentine Republic.

The popular feeling against the Dominion Senate appears to be on the increase in all parts of Canada, for from one exchange we learn that the Manitoba Legislature unanimously adopted a resolution condemning the institution as a costly farce, and advising its abolition.

In the spring, before the ground dries, stock will do much damage to pasture land by tramping it into holes, and if the land is at all of a clayey nature, it will be puddled so that when dry weather comes it will bake so hard that nothing will grow. It may take years to undo the harm thus occasioned.

The Dominion Winter Dairy Station, at Wellman's Corners, has just closed after a very satisfactory season. The total amount of butter made was over seven tons. The patrons received a fraction under twenty-two cents per pound after all expenses had been paid, and in addition received their skim milk back.

That the Australian fruit growers are alive to the importance of securing government aid is shown by the action of the Coburne Fruit Growers' Association in endeavoring to induce the Agricultural Department to send an expert to that district for the purpose of instructing the orchardists in the art of fruit drying and canning.

A good grafting wax may be made by melting over a slow fire, 1 pound resin, ½ pound beeswax and ¼ pound beef tallow. When all melted stir well and pour into a bucket of water at about the temperature of 70°. When cool enough pull like taffy, roll in balls of about half a pound each and lay away in a cool place.

In a recent letter the Hon. McKenzie Bowell calls attention of the fruit growers of Ontario to the possibility of opening up a profitable export trade in apples with Australia during the months of October, November and December, the season when there are no native apples. At present apples are shipped from San Francisco to Sidney, N.S.W., during these months.

We are pleased to state that the Hon. A. R. Angers, Dominion Minister of Agriculture, has established an experimental apiary at the Central Experimental Farm, Ottawa. The apiary will be directly under the supervision of Prof. Jas. Fletcher, the Dominion botanist and entomologist. This is a step in the right direction, and bee-keepers and farmers will appreciate this move in their behalf.

Among the questions which are most frequently asked is, "What Luck?" This is applied to the lamb crop, the spring litters of pigs and the general well-doing of foals and calves. But good luck is often merely another name for care and attention. Without carefully laid plans things are apt to go astray. It is prompt attention to details that prevents the losses from creeping in and destroying the bright prospects for the season's success, whether it be in stock breeding and feeding or in grain production.

The slaughter of tuberculous cattle still continues in New York State. During the past week 130 cows were killed, and claims were made against the State for \$6,352. The Attorney-General thinks that these claims should not be paid when a post-mortem examination proves the cows to be diseased, the value of such cows being nothing or less than nothing. The courts have not as yet decided this interesting question.

"The Phylloxera to be Stamped Out" is the heading of a long article in the Australasian on this subject. A Board of Management has been appointed by the government to investigate and take measures for the extermination of this pest. It is not known to what extent the disease has already spread, but it is thought that it can be easily kept under control, though there are rumors that a much larger portion of the vineyards of Australia are effected than was at first supposed to be the case.

A number of cattle have died in the vicinity of Markdale and Flesherton from the effect of eating ergotised hay and fodder. Professor Andrew Smith has reported at length to the Minister of Agriculture in regard to the disease, and has also advised the farmers as to the best means to be adopted to cause the disappearance of the disease and to prevent its recurrence. It is recommended that grasses that are readily ergotised should be cut early in the season before the ergotised condition comes on. The disease is non-contagious, and due entirely to local causes.

Now is the time to cut black knot from the cherry and plum trees. Directly the warm weather begins, the spores which propagate this fungus disease are ripening and spreading the evil. The branches should be burned as soon as they are cut to prevent the spores from ripening and spreading the disease. Wherever orchards are isolated there will be but little trouble in keeping trees free from this scourge. If the knot is on a large limb of a valuable tree, kerosene or linseed oil may be tried and will usually give good results if persistently applied, but as a general rule there is nothing so satisfactory as the knife and the saw.

The Manitoba Patrons of Industry have organized on a wider basis than their brethren in Ontario, for we notice that at their last annual meeting it was decided that all farm organizations other than Patrons shall have a right to send delegates to any convention called for the purpose of nominating a candidate. Such delegate must be in sympathy with the Patron platform and represent the number of votes in his organization the same as Patron delegates. At the same meeting the committee on legislation, in their report on the Exemption Act, gave it as their opinion that mortgages on real estate should cover only the property mentioned, and liens should only have effect on the articles or animals which they may cover.

Every breeder, whether of cattle, horses, sheep or pigs, will sometimes be called upon to assist at the birth of the young, although generally speaking all animals get along better when left to themselves, unless something is radically wrong. When it is deemed necessary to assist in these cases, the operator should exercise the greatest care to have the hands and arms perfectly clean and well smeared with carbolized oil, which can be procured at any drug store at a small cost. The floor should be covered with clean, fresh bedding. Many seemingly unaccountable deaths occur from blood-poisoning, carried into the system of the dam from the dirty hand of the careless operator, or absorbed into the system of the young animal through the naval cord coming in contact with the same hand or the foul stable floor.

The Russian thistle is increasing in a most alarming manner in the Western States. The damage last year by this pest is estimated at \$5,000,000, and if repressive measures are not adopted, the annual damage in the near future will probably amount to \$25,000,000 annually. The separate States are unable to cope with this pest single handed, and have petitioned the Federal Government for aid in the extermination of this great enemy of the Western States. The Orange Judd Farmer has the following on the subject:—"It seems to us that there is just as much ground for the government to assist in the eradication of this evil, which will, if not checked, become national in character, as there is for the legislation now on our books with reference to any animal diseases, or for the contemplated legislation on roads. If, however, this aid is refused, the States should do their level best to carry on the work, and the sooner this is done the better it will be."

## Canada's Columbian Victors.

Our handsome plate picture of prize-winning Ayrshires at the World's Columbian Exhibition, Chicago, 1893, has been completed, and is now being mailed to all purchasers and persons who have sent us the name of one new subscriber. We feel sure that the friends of the FARMER'S ADVOCATE will appreciate this work of art, as it has been pronounced by competent judges to surpass anything in the line of live stock portraiture hitherto attempted in America. We can heartily congratulate our artist and the engravers upon the way in which the work has been executed. In order to bring it within the reach of as many as possible, we will forward it to every reader sending us one new subscriber, accompanied with \$1. To non-subscribers the price of the picture is put down at \$1. The large number of our readers who have been so long expecting "Canada's Columbian Victors," will doubtless overlook the delay that has occurred in completing the work as soon as it reaches their hands.

A copy of this beautiful engraving should adorn the home of every farmer in Canada.

## Ontario Veterinary College.

Begun in a humble way, the Ontario Veterinary College, Toronto, has, in a comparatively short period of time, under the able administration of Dr. Andrew Smith, developed into one of the largest and best equipped institutions of the kind on the continent. It now enjoys a widespread and enviable reputation. The session of 1893-4 was one of the most successful in its history. At the recent closing exercises the graduating class represented all parts of the Dominion, Great Britain and Ireland, and nearly every state in the Union. Of the one hundred and forty graduates, about two-thirds live in the United States. Dr. Andrew Smith, Principal of the College, presided, and after the long list of graduates and prize-winners had been read, Mayor Kennedy addressed the students. He congratulated the college on its flourishing condition. The best evidence of its wide popularity, he said, was the large number of students from other lands in attendance each year. The importance of veterinary science could hardly be exaggerated, and he was confident that the scores of young men who were now leaving with their diplomas were thoroughly competent to undertake the work. He pressed the importance of their still continuing to be students, and in endeavoring to maintain a proper walk in daily life, as well as in their professional character.

Principal Caven gave a few words of counsel to the departing students, and also spoke of the high standing the college occupies professionally in the United States and Great Britain.

Short and appropriate addresses were also delivered by Mr. J. L. Hughes, Dr. May and Dr. Thorburn. The prizes were then presented to the winners. Mr. Blackwell, on behalf of the graduating class, presented at the close of the meeting a large and beautifully framed picture containing the photographs of the class to Dr. Smith.

The gold medal for the best general examination was carried off by a Canadian, Mr. C. A. Sankey, of Boisvevain, Man.

Mr. A. W. Whitehouse, Laramie, Wyoming, won the special prize, a silver medal, for the greatest number of first prizes.

## New Jersey Road Improvement.

Owing to the widespread interest at the present time in the condition of our public roads, it will be interesting to know what others are doing along these lines. At a recent meeting of the State Road Improvement Association of New Jersey, it was shown that the opposition to the building of state roads was becoming weaker and weaker. The appointment of a State Supervisor of Roads was advocated as being an improvement on the present system of having the roads controlled by the State Board of Agriculture.

The following resolutions covering the method of taxation were then adopted:—1st. That the amount of money to be appropriated by the county in any one year for road building and repairs shall not exceed one-fourth of one per cent. on the ratables of the said county. 2nd. That the state shall pay forty per cent., the townships twenty-five per cent., the adjacent tax payers ten per cent., and the state the balance.

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**Fruit Growers' Association of Ontario.**

It is being frequently asked whether this Association is making any return proportionate to the \$1,800 which it receives annually from the Provincial treasury, and there seems to be some just ground for the inquiry, for the management have fallen into evident forgetfulness of the purpose for which the Association was created. "Its objects" (we quote from its constitution) "shall be the advancement of the science and art of fruit culture \* \* \* by collecting, arranging and disseminating useful information."

In pursuance of this a report is presented annually to the Minister of Agriculture, and printed at the expense of the province, which contains the discussions at the one only meeting now held during the year, and the papers presented thereat. Whatever may be the value of that report, its distribution is confined largely to the two thousand members, more or less, who annually pay a fee of one dollar into the treasury of the society. Our farmers and agriculturists number about 200,000, of whom only the small number referred to receive a copy of the proceedings, excepting, perhaps, a few favored ones who may be supplied by their local member with a copy of the Minister's report, which usually contains this also.

Of the report itself we would call the attention of the directors to the evident amount of irrelevant matter which it contains, imparting no information whatever on "the science or art of fruit culture." No pains are taken to eliminate such matter from notes of discussions, or from the papers presented, thereby condensing valuable information and enabling the reader to find what he is seeking without wading through useless verbiage.

Of late years, for some reason, the Association has dropped the New Fruit Committee, whose annual report used to be one of the most valuable documents presented, and the want of which is complained of now very generally. This should be resumed and placed in the hands of authorities that the country can fully depend upon, and not placed in the hands of irresponsible men who have neither the knowledge nor interest in compiling such a report as the subject demands.

It is also asked what benefit is the country deriving from the annual distribution of plants to the members of the Association. We do not see any reports of success or failure, hence we presume those who get them look upon them as a bonus for becoming or remaining members, quite overlooking the fact that the intention in instituting this distribution was to make each recipient an experimental station for testing the adaptation of the plant or tree to his locality.

Further complaint is made that while the statute requires that the directors shall reside in the agricultural district which they represent, by the system of nomination and election adopted the letter of the law may be complied with, but its spirit is manifestly violated. How can a director residing permanently in South Victoria, sitting year after year at the Board, be said to represent North Victoria, Haliburton, Durham, Northumberland; or residing in the South of Huron represent Bruce and Grey properly; or residing almost within a gun shot of each other represent Wellington, Waterloo, Wentworth, Halton, Dufferin, City of Hamilton, Lincoln, Welland, Haldimand and Monck; or residing in Toronto represent York, Ontario, Peel or Cardwell?

The evident intent of the law requiring such residence is thereby to diffuse more widely an interest in fruit growing. This has been lost sight of by the nominating committee, who are generally chosen from the Board, and thus form an annual mutual admiration committee, who proceed to nominate and elect themselves year after year. It is time that more attention be paid to the purpose of the residential requirement, and changes gradually effected in the directorate so as to bring all parts of the Province eventually into touch with the Association's work.

We know also that the Association has lost much in public estimation by adopting the rule of changing its President every year or two. It had better go back to the course formerly pursued of choosing its President from among its most capable and influential members and retaining him in office as long as he is willing to serve, thereby securing the benefit of his attention and influence to advance throughout the Province the objects of the Association. By continuing to follow the course adopted the past few years of advancing the Vice-President to the President's chair, we will find, if possible, even more poorer representatives in that position in future than many of them in the past few years. A president, besides possessing all the requirements to constitute him a good chairman, must be generally well versed in "the science or art of fruit culture," and not a mere novice or even a specialist in some one branch.

We have thus called attention to the present position of the Association, as we have found it in public opinion, in no spirit of fault-finding criticism, but in the hope that those interested in its usefulness will take steps to restore it to its proper position in public esteem, by giving more attention to the purposes of its creation, and scrutinizing more carefully the methods used, so that it shall accomplish all that the public have a right to expect in return for the support given it from the public purse.

**The Dominion Grange.**

At the nineteenth annual session of the Dominion Grange, in Toronto, Worthy Master Peter Hepinstall, in his annual address, laid it down that the Grange was in no sense a political or party organization, nor could it be used for that purpose. Its objects were to develop a higher and better manhood and womanhood, to enhance the attractions of farm homes, to strengthen attachment to the farming industry, to foster mutual understanding and co-operation, to systematise work, to discountenance the credit system, to oppose the spirit and management of any corporation or enterprise that tends to oppress the people and rob them of their just profits, to remove the antagonism between labor and capital, to oppose excessive salaries, high rates of interest and exorbitant percentages in trade, to carefully ponder all subjects of interest to farmers, to heed the drift of current movements, and throw influence always on the side of right. He noted with pleasure the recent vote in favor of prohibition. There was not only room for the Grange in this country, but a demand for it.

Bros. H. Glendenning and Jabel Robinson were appointed by the Master to strike standing committees. They reported the following:—

Committee on Officers' Reports—Bros. D. McTavish, Edwin Peart, Sylvanus Austin.

Legislation—Bros. Wm. Wallace, James Fallis, Alex. McKay, H. Glendenning and D. Kennedy.

Education—Bros. A. W. Peart, A. Brownridge, D. G. McKenzie and Geo. Brown.

Agriculture—Bros. D. McTavish, John Cuming, Michael Connell, Andrew Shore, Robt. Milliken, Chas. Cross.

Constitution and By-Laws—Bros. Jabel Robinson, C. J. Nesbitt, Lyman Henry and F. D. Quance.

Good of the Order—Peter Hepinstall, W. M. Baker, J. O. Smith, J. M. Kaiser, Mrs. Cuming and Matthias Schilz.

Finance—Edwin Peart, Sylvanus Austin, J. M. Syme and G. F. House.

The Executive Committee reported that during the year amendments had been passed (in the direction asked) to the Provincial Game Laws for the destruction of brown rabbits and the preservation of quail, for the exemption of horticulturists and agriculturists from the penalties of the Workman's Compensation for Injuries Act, and for the teaching of the rudiments of agriculture in schools and other school law changes. The committee recommended that organizers be put in the field to organize new granges, and that they be paid from the charter fee, which should be raised to \$13 at least. Referred to the Committee on Officers' Reports.

The report of the Overseer, Mr. D. Kennedy, very ably presented the necessity for individual independence on the part of farmers, and for the breaking of the party bondage that has so long held sway. He was glad to report that signs of independence were spreading. Politicians, too, were beginning to realize this.

The Committee on Agriculture reported that the indebtedness of farmers is now computed at an enormous sum, the interest of which entails heavy burdens upon them. Through the operation of fiscal laws the few are enriched at the expense of the many, and colossal fortunes are amassed from the sweat and toil of the working classes. The committee recommended economy and entrenchment, living within means, the wise and honest use of the ballot, the abandoning of unprofitable lines of industry, and the turning of attention to others.

The Committee on Education recommended, first, that no change be made in the public school act in regard to the length of summer holidays; the short term has been tried and found undesirable. Second, that we see no sufficient reason to recommend a change from the payment of teachers' salaries quarterly to half yearly. Third, that the public school course of instruction be extended to afford a better and more thorough education, and that it be made more practical and include more studies relating to the pursuit of agriculture. Fourth, we do not think there is any adequate reason shown why any person wishing a higher education should pay for it by fee. Fifth, with regard to rescinding county grants to public and high schools, we have not sufficient information to warrant us in recommending any amendment to the school law. Sixth, in regard to changing the basis of distributing the public money to schools, we consider that the present plan is preferable to that advocated on the basis of average attendance alone. Seventh, we are not prepared at present to advocate any change in regard to the superannuation fund of teachers in public and high schools. Adopted.

Committee on Constitution and By-laws:—With regard to the taking up political questions, as done by the Patrons of Industry, we recommend our members to support farmer candidates who are in favor of retrenchment and economy, but believe we have no right to control their individual votes. Adopted.

The Secretary, Mr. R. Wilkie, reported that subordinate granges that report directly to him are much more prompt than the division granges, many of which had not sent in their returns this year. Reports, too, were often incomplete. He was, therefore, unable to make an accurate statement of the standing of the Grange in Ontario.

RECEIPTS.	
Cash from Last Audit.....	\$25 29
Cash from Fees and Dues.....	244 96
	\$470 25
DISBURSEMENTS.	
Paid Treasurer.....	\$25 29
Stationery.....	3 35
Printers' Account.....	38 95
Executive Committee's Expenses.....	48 05
Postage and Express.....	11 15
Cash on Hand.....	143 46
	\$470 25

The Committee on Legislation reported, first, against cumulative voting, fearing that it would lead to corruption by political schemers who would be likely to control the votes of the various organizations, sects or societies. Second, that the initiative and referendum possesses many good features, but at the present time the people are not educated enough along that line for the Government to warrant its enactment as legislation; also, it may be found a slow and expensive way of securing legislation. Third, that the Ontario Government be asked for an act reducing the number of county councillors, to enact a law abolishing grand jurors, and to amend the game law by prohibiting the destruction of quail at any time. Fourth, that the Dominion Government be memorialized to reduce the tariff to a revenue basis, and also, subject to safe restrictions and conditions, to increase the currency of the country by the issue of treasury notes. Fifth, that pensioning civil servants be abolished, life assurance being now popular and safe, and can be recommended. Adopted.

A special committee reported that they had visited the Grange Wholesale Supply Company's store on King street, in which they found a large and varied stock. They also examined their mode of doing business, and heartily recommended them to the confidence of the people of Ontario. Adopted.

The Committee on the Good of the Order recommended that some general action be taken to increase the membership, and endorsed the proposition to put active deputies in the field for organizing purposes. Social gatherings of the local granges, with speeches, entertainment and the reading of the Grange declaration of principles, were recommended. Every member should make a personal effort to secure as large an attendance, especially of the young, as possible. They recommended that the seventh edition of the manual be used, and that all meetings be conducted in "form." Do business in a business-like way, and have accounts well kept and regularly audited. Take the FARMER'S ADVOCATE, and make it the Grange official paper. Meet regularly and promptly. Hold afternoon meetings. Write articles to the ADVOCATE. If circumstances permit, start a library. Have subjects for discussion well prepared beforehand, and have as many take part as possible. Adopted.

Officers were elected as follows: Master—Dawson Kennedy, Peterboro. Overseer—D. G. McKenzie, Lucknow. Secretary—R. Wilkie, Blenheim. Treasurer—Peter Hepinstall, Fordwich. Lecturer—George Brown, Gresham. Chaplain—Thos. Porter, Banda. Steward—Sylvanus Austin, Whitby. Assistant Steward—W. M. Baker, Littlewood. Gate-keeper—Lyman Henry, Sombra.

Lady Officers:—Ceres—Mrs. Cuming, Londesborough. Pomona—Mrs. Robinson, Middlemarch. Flora—Mrs. Austin, Whitby. Lady Steward—Mrs. Lethbridge, Glencoe.

Executive Committee:—Hy. Glendenning, Manilla, and Jabel Robinson, Middlemarch.

Auditors:—James Fallis, Newbridge, and J. M. Kaiser, Raper.

The Finance Committee's report was amended to the effect that in future auditors serve without compensation.

It was decided that the next meeting be held in Toronto at the call of the Executive Committee.

Arrangements have been made by which, at least once every month, a practical article furnished by the Grange will appear in the FARMER'S ADVOCATE.

**Test Your Seeds.**

It is a good plan to order your seeds early and then test their germinating power. A little time and trouble exercised at this time of the year will often save months of vexatious delay later on in the season, and perhaps make all the difference between a good crop and one that will not pay for cultivation. The following experience will illustrate this point:—Last spring one of our most progressive and painstaking farmers, after buying his seed corn, thought that it did not look altogether right, so he obtained a box of mould, set it in the kitchen window and planted twenty-five grains, when his suspicions were confirmed by finding that only about one-half the seed would grow. He therefore condemned the whole lot and bought fresh, which proved all right. His neighbors, who did not take the precaution to test their seed, sowed the first lot, with the result that their cornfields were patchy, only about one-half growing. In this way double the amount of labor in cultivating and keeping the land clean was required for only half the crop. Professor Saunders, in his report, states that the samples sent to him to be tested varied all the way from 100 per cent. of good seed to samples in which only 4 per cent. of the seeds would germinate. It will certainly pay to test the germinating power of all seeds before sowing.

### The Spring Stallion Show.

The Eighth Annual Spring Stallion Show, which opened in Toronto on Wednesday, March 28th, was, in point of the quality of the entries, more successful than any of its predecessors. Notwithstanding the fact that horse breeding as an industry is less remunerative than formerly, yet there were far more No. 1 animals in every class and a much better selection could have been made in almost any line of breeding than in any year since the inauguration of this show. Nothing can prove more emphatically the indomitable energy and enterprise of Canadian horse breeders than the fact that they continue to import and breed such a high class of animals. This feature was not only observable in one or two classes, but it was conceded by all present that never before had such a variety of grand representatives of each of the breeds been brought out for public examination. In fact, all that is required to make the show successful from every standpoint is a suitable building, which it is understood may be expected before another year.

#### CARRIAGE AND COACH STALLIONS.

As usual this class was comprised of horses of different breeds, and we earnestly hope that in the future those who have the management of our leading exhibitions will see their way clear to make a better classification. Heretofore this class has been the dumping ground for animals of any breeding that come within the pale of a horse over 16 hands, possessing clean legs and carriage type. This show was no exception to the rule, for this class comprised Yorkshire Coach, Cleveland Bay, German Coach, French Coach, and horses of mixed breeding.

In the section for horses foaled previous to January, 1891, fourteen out of the sixteen entered responded to the call for inspection before Messrs. Asa Choate, Port Hope, and W. S. Plank, V. S., Uxbridge, to whom the post of trying on the ribbons had been assigned. A lot of capital horses they were, and it was evident from the outset that the task of selecting the winners was anything but an easy one. However, after a thorough inspection, the prizes were awarded as follows:—The first was sent to Thos. Irving's (Winchester) imp. Prince Arthur, by Baron Rothsay 981, a horse which has won many sweepstake prizes at previous shows and exhibitions. Prince Arthur was in capital form; he has grand coaching conformation, carries himself well, and is decidedly one of the most handsome horses brought out in a Canadian show ring. The second ribbon was given to Picador, an imported German Coacher owned by the Milton German Coach Horse Co., Milton, Ont. This was an up-standing horse that moved equal to anything in the class, but he lacked middle. Mr. Robert Ness, Howick, showed a right useful one in the imported French Coacher Maltot. This horse carried himself with fine action and was very much admired. He went higher than anything in this class. He is a horse of good conformation, head and neck nicely placed, capital rib, and feet and legs that would stand any endurance. Mr. Ness had also another good French Coacher, named Busnel, that was in anything more than equal to his stable companion in appearance standing, but he did not move with quite as good action. The committee placed him fourth.

Thos. Irving was given the highly commended ribbon for imp. Ingmanthrepe Forester 2nd, a particularly smooth, nicely finished horse, but he lacked the bloom of those placed before him.

Mr. McMillan's (Erin) Shining Light was given 6th ribbon. This horse is rising 9, yet he retains much of the wonderful finish which has placed him at the top at so many previous meetings.

Messrs. Lowes Bros., Brampton, had forward a right good useful horse in Stanton King, by General Stanton—a sire, by the bye, which has left a lot of good ones throughout Ontario, that have gone to New York at remunerative figures. In the section for stallions foaled subsequent to January, 1891, Mr. C. N. Blanshard, V. S., Appleby, had the only entry in imp. Terrington Boy, a very nice horse, while Mr. Irving's Prince Arthur carried sweepstakes for the best coaching stallion at the show.

#### STANDARD-BRED HORSES

Were next on the list, and of horses of this breeding foaled previous to Jan. 1st, 1891, eleven came forward. Mr. F. Walker, Coldwater, Mich., was called to assist the two gentlemen who officiated in the coaching class.

Graham Bros., Claremont, were awarded first premium on the beautiful horse Deacon 17380, by Bishop 1688, the sire of a number of good ones in the 23rd list, while Deacon's dam, Sally Geaves, also contributed her share, she having produced two in the list. Deacon is a handsome horse that should breed exceedingly well, as he has size and conformation that would lead one to suppose that he should produce selling horses, even should they not develop exceptional speed.

Messrs. Kidd Bros. (Listowel) Oliver Wilkes 10647 was sent the blue ribbon. He is individually a good horse and showed a good gait on the line. Robert Porteous' (Simcoe) The Wasser 7733 was awarded the third premium, while Thomas Lee (Toronto) captured fourth place with Sim Watson, Jr. The highly commended went to William A. McBride's (Toronto) Willie Douglas, and the commended was sent to George E. Hughes' (Charlottetown, P. E. I.) Physician Boy. In the ring for standard-bred stallions foaled subsequent to January, 1891, four horses were forwarded, among which S. G. McCully's (Toronto) Altoner was awarded

first, Geo. Jackson & Sons' (Downsview) Sylviago won second, Fisher & Co.'s (Harriston) Karon won third, Morris, Stone & Wellington's (Font-hill) Pelman Boy carried fourth.

#### THOROUGH-BRED STALLIONS

Were next on the programme of the day, with Dr. Andrew Smith, V. S., Toronto, and Mr. Arch. Wilson, Paris, awarding the ribbons. Nineteen entries had been made in the section for stallions foaled previous to January, 1891, with two absentees, leaving 17 for the judges to choose the prize winners from. To Kidd Bros. (Listowel) Ten Broeck, Jr., by Ten Broeck, was sent the first premium. This is a good strong horse, which, if the staying qualities of his sire are taken into consideration, should be expected to prove a great hunter sire. Brown & Gilkinson's (Brampton) Woodburn, by King Alfonso, gained second place. To Peter & Alex. Holmes' (Beechville) imp. Pillarist, by Trappist, the third was given; Joseph Duggan's (Toronto) The Chicken, by Pheasant, the fourth, and J. W. Murray's (Toronto) June Day, by Falsetto, highly commended while the commended ribbon was given to Trick, from Percy & Young's (Bowmanville) stable.

#### THE HACKNEYS.

By far the most attractive department of the first day's show was that of the Hackneys, and the judges, Mr. J. T. Gibson, Denfield, and Dr. Quin, Brampton, found that they had no light task assigned them in choosing the winners. Nine stallions foaled previous to January 1st, 1891, had been entered, three of which were not forwarded. However, the remaining six made up by far the best class that has yet appeared in a Canadian show ring. These were:—Messrs. R. Beith & Co.'s (Bowmanville) Ottawa, sired by Lord Derwent 2nd (1034), dam May Flower (76), and from the same stable also came imp. Jubilee Chief (2122), sire Pilot, dam Queen of the Forest (297); Messrs. Graham Bros.' Kilwick Fireaway (imp.), sire Lord Swanland (1834), dam Trip, by Tripaway (2206); Messrs. D. & O. Sorby's imp. Square Shot (27), sire Great Shot 2nd (1490), dam Myrtle (256); H. N. Crossley's (Rosseau) imp. Fireworks (3002), by Wildfire (1224), and Crouch & Son's (Lafayette, Ind.) imp. The Duke (2639), by Highflyer (1006). With such a galaxy of notables it was evident that the judges would find no small difficulty in making a proper choice upon which to place the ribbons. There was Ottawa, already twice champion over all Canada, and Jubilee Chief, sweepstakes at the World's Fair, Chicago, in addition to one in Canada, both in the best form we have yet seen them, but to our minds Jubilee Chief was going the better of the two. There is precision about the all-round action of the latter that not only carries him well, but attracts the eye as he is coming and going, while it pleases equally well from the side. Kilwick Fireaway was also at his best and moved smoothly and attractively. He is a horse that has few faults, either going or standing. He not only attracts the crowd, but scales high from the judges' standpoint.

Square Shot had as many admirers as any in the ring; he may have been a trifle gross in condition, but his legs were of the finest, with such grandly muscled second thighs and forearms one seldom sees. His quarters are powerful yet beautifully moulded, his back, ribs and shoulders none can criticise, while his head and neck give a finish to the picture. There were some who faulted his action in that he did not pick up quick enough, yet all acknowledge that he went as high and as true as any in the party; he goes with a stride that carries him along, while he has such substance as will always find him friends, and there is a reality and quality in his make-up that had he been placed higher none could have faulted the decision.

Wonderfully improved is H. N. Crossley's imp. Fireworks; in fact there were many who hardly recognized in him the three-year-old colt that he exhibited at last fall's exhibition. Fireworks is sired by Wildfire (1224), dam Pretty Poll (4574), by Superior (1410), and bids fair to yet make a difficult competitor, while his breeding is such that he is a most desirable horse in the stud.

Crouch & Sons' (Lafayette, Ind.) imp. The Duke is a strong horse, but had not the finish or style of going of those previously mentioned.

The prizes were awarded as follows:—Ottawa, 1st; Kilwick Fireaway, 2nd; Jubilee Chief, 3rd; Square Shot, 4th; Fireworks, 5th.

Hackney stallions foaled in 1891.—S. H. Hastings was forward with the nicely formed horse imp. Star of Mepal 2nd, by Star of Mepal, dam Queen of Denmark (4610), by Telegraph (826). The same exhibitor also showed Black Nobleman, bred by himself and sired by imp. Young Nobleman (2228), dam imp. Norfolk Duchess.

Hackney stallions foaled subsequent to Jan., 1892.—Messrs. R. Beith & Co. had a right good one in Banquo, by Jubilee Chief (2122), dam imp. Mona. This colt has beautiful action, and has developed wonderfully since last fall. He was very much admired. Lord Rosebury, from the same stable, is also by Jubilee Chief, dam imp. Florence, and Mr. Hastings had another entry in a colt by imp. Nobleman, dam imp. Norfolk Duchess. The prizes were given in the order named, and to Ottawa was given the sweepstakes.

#### SHIRES.

Shire stallions foaled previous to January, 1891, was the first ring called the second day of the show, for which nine entries had been made, the only absentee being the excellent sweepstake horse Bravo, owned by Mr. H. N. Crossley, Rosseau.

Messrs. Morris, Stone & Wellington's Pride of Hatfield was placed first. This was a four-year-old horse by Lincolnshire Lad; the same parties also winning third with Prince Charles, bred by themselves. The second ribbon was given to Messrs. Jas. Gardhouse & Son's imp. Garfield 2, a horse that has worn well and is wonderfully fresh considering that he is 12 years old. Mr. H. N. Crossley's (Rosseau) six-year-old imp. horse Headon Bannaut was given fourth, while the fifth and sixth went to Mr. Garbutt's (Thistleton) imp. Blagdon Marquis and (imp.) Flydi King 2nd. In stallions foaled subsequent to January, 1892, Messrs. Jas. Gardhouse & Son won first place with imp. Duke of Blagdon, and Messrs. Morris, Stone & Wellington second with Frederick Williams, of their own breeding.

#### IN CANADIAN-BRED CLYDESDALES,

Stallions foaled previous to Jan., 1891, were a beautiful lot of horses. R. D. Dundas, Springville, scored a first with McLaws, sired by imp. General Wolfe (5800), dam imp. Forest Queen. This was a grand, good horse, possessing both substance and quality. Alex. Cameron's (Ashburn) The Tartar, by imp. Eastfield Chief, dam imp. Mildrum Meg, gained second. D. & O. Sorby's Prince of Eyre, bred by the exhibitors and sired by imp. Boydston Boy, dam imp. Jane Eyre, carried the third premium. James MacDonald's Richmond 2nd, by Richmond gained fourth place. A wonderfully useful ring of horses was that of Canadian-bred stallions foaled in 1891. Here Graham Bros.' The Cameron, by imp. Tannahill, dam imp. Ivy, was given first place. He is a horse with clean, flashy legs and good back, and moved particularly well. He was closely followed by John Vipond's Erskine Style, by imp. Erskine, dam imp. Brooklin Metal. Erskine Style is a capital horse, possessing thickness and quality, and moves extra well. Job White was third with a good upstanding horse named Ashburn Hero, by imp. Tannahill. The fourth ribbon was given to John Cowie's Brown John, by imp. Brown James; the very highly commended ribbon being sent to A. K. Tegart's (Tottenham) Peerage, by imp. Lord Wilton.

In colts foaled subsequent to 1892, Alex. Cameron was given first with Grand National, by Tannahill, and Robt. Davies' Corsock 2nd gained second.

The sweepstakes for Canadian-bred Clydesdales was given to Graham Bros.' The Cameron.

#### IMPORTED CLYDESDALES.

More than usual interest centred in the class for imp. Clydesdale stallions, as several new comers appeared on the scene for the first time. Seventeen entries had been catalogued, and fifteen of these faced Messrs. Robert Beith, Arthur Johnston and John Duff, who had been selected to tie the ribbons, a position that from the onset it was evident would prove no sinecure.

Messrs. D. & O. Sorby's Grandeur was evidently the favorite with the crowd outside, for he had already won sweepstakes at last spring's meeting, a position that he was entitled to hold, as he was clearly an outstanding first. He was in better bloom than ever. He has the best of feet and pasterns, and if possible he has improved at this point, while his top piece was in best form possible. Grandeur was also going his very best, and standing or moving was a clear first.

Graham Bros.' Queen's Own, the first horse drawn, was, if anything, carrying less flesh than when he was last seen, but none could discount his feet and legs, for they were as flash as a four-year-old's, while his grand Clydesdale character at once stamps him as a breeding horse of the first order.

Robert Ness, Howick, P. Q., being anxious to measure swords with Ontario horsemen, had entered Lawrence, by Prince Lawrence, dam Rose of Balhall, by Lord Lyon, and a strong competitor he proved. Lawrence is a wonderfully smooth finished horse, and he was going fully as well as the best in the ring. He lacked the scale of his more fortunate competitors, otherwise the decision might have terminated differently.

Mr. T. W. Evans' (Yelverton) Crackmore Darnley was placed fourth, and yet it seemed as though the judges were loath to place so good a horse so far down. Crackmore Darnley was sired by Darnley, and unmistakably follows the type of his illustrious sire. He stands on short, flash legs, with a top piece that has any amount of substance, while his grand character makes him a most desirable breeding horse.

Mr. Jno. Davidson carried fifth premium with the right good horse, Tofty, bred by Mr. S. Campbell, Jr., Toftshills. Tofty was sired by Botany, a horse almost identical in blood to Darnley. He is a horse of wonderful scale, capital feet and legs, grand style and action. He is only rising four, and will doubtless be heard from later.

Mr. Jas. H. Wilson's (Lifford) Lewie Gordon, by McCamon, came next. He was in grand form above, looking as fresh as ever.

It would be impossible to describe all the excellent horses that failed to be placed higher up. Among these was an excellent young horse, Lamvar, exhibited by T. W. Evans, and Tannahill, from the stables of Alex. Cameron, Ashburn. Through the unfortunate ruling by which the produce of imported mares had to be shown in the Canadian-bred class, and the absence of imported stallions in the younger classes, the prizes for three and two-year-olds went a begging, while the breeders of stallions from Canadian-bred mares, anticipating the strong show made in Canadian Clydesdales bred from imported mares, failed to appear.

**THE FARMER'S ADVOCATE & HOME MAGAZINE**

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**Progress of Tariff Reform.**

The last budget speech of the Finance Minister at Ottawa indicates that in Canada, as it was in Great Britain, the reformation of the fiscal system proceeds very slowly; but the Canadian, like his sturdy and indomitable British forefather, having put his hand to the plow, is not disposed to turn back until a clean, straight furrow is struck out. President Braithwaite, of the Manitoba Patrons of Industry, sums up the new Canadian Tariff as follows:

"The tariff is lowered on several articles of necessity to the farmer. We find also that it is lowered in a corresponding scale with regard to his products, and we figure out that one will nearly counterbalance the other. If so, then the farmer is where he was; but we find the manufacturer, wherever the duty on his manufactured article is lowered, has raw material made free or reduced correspondingly. The Government loses duty and will make it up by some other taxation, so that, while the Government may call it scientific protection, we farmers simply call it a case of 'as you were.'"

**The Nineteenth Annual Report of the Ontario Agricultural College.**

The nineteenth annual report of the Ontario Agricultural College has just been laid on our table. This volume is not, as many people consider, merely a report of the College proper, but it also contains a full account of all experiments conducted during the year, and a copy of all bulletins issued in that time. This material is all compiled in a book of about 300 pages, properly indexed so that subjects can be easily referred to at any moment.

In regard to the College proper, the year 1894 has been one of continual progress in the improvement of the equipment, the enlargement of the staff, and extension of the work. Progress has been shown in various lines: the completion of the greenhouses, the construction of a large farm piggery, the erection of a dairy building and two dairy cottages, the appointment of a lecturer on horticulture, the organization of a summer school for teachers, and the commencement of a home dairy course for farmers' sons and daughters.

The attendance of students has been quite satisfactory, all the rooms being occupied at the beginning of the year. Several changes have been made in the staff since the last report was issued, with all of which our readers are all doubtless quite familiar.

Many improvements have been completed on the farm during the past summer.

The experimental work has been carried on with vigor throughout the year, especially in the testing of grains, dates of seeding and methods of cultivation, to which were also added a number of experiments on live stock.

The dairy school, which was opened last February as an experiment, has proved a great success; there were more applications than the building could accommodate, and at the end of the session both teachers and students expressed themselves as being more than satisfied.

Another very successful experiment was the inauguration of the summer course in agriculture for teachers. Thirty-four teachers put in an appearance, seventeen of whom were ladies.

The Professor of Natural History and Geology, in his report, reprints his valuable bulletin on remedies for common plant and insect foes, and gives a large amount of valuable information on the weeds of Ontario.

In the report of the Professor of Chemistry are given a number of useful analyses of fodder corn.

The report of the Experimentalist is an interesting and a very valuable portion of the work. Some idea of the magnitude and importance of this work may be obtained, when we state, that during the past season there were used for experimental purposes upwards of 1600 small plots, covering an area of about fifty acres. These plots varied from the one hundred and sixteenth of an acre to one acre in size. On these plots, Mr. C. A. Zavitz, the experimentalist, tested 70 varieties of winter wheat, 73 of spring wheat, 73 of barley, 133 of oats, 81 of peas, 3 of buckwheat, 157 of potatoes, 54 of Swede turnips, 37 of fall turnips, 49 of mangolds, 10 of sugar beets, 33 of carrots, 93 of fodder corn, 10 of millet, 2 of sunflower, 12 of rape, 18 of clover, and 40 of grasses. He has also tried different dates of seeding on 16 plots, mixtures of grain on 107 plots, application of different fertilizers on 30 plots, different methods of cultivating fodder corn, potatoes and roots on 150 plots, methods of preparing potatoes for planting on 20 plots, and miscellaneous experiments on 161 plots.

The Professor of Dairying gives a full report of his work for the past year, which includes an account of the experiments conducted, the report of the travelling dairies, and a large amount of miscellaneous information which will be of great value to dairymen and farmers. The work concluded with a report of the test of the butter extractor and an exposure of dairy frauds.

The last seventy-five pages are devoted to a report of the Ontario Experimental Union, a very full account of which appeared in our columns.

Altogether this is one of the most valuable volumes ever issued by the Ontario Government. We advise every farmer who has not already obtained a copy, to send a card asking for same to the President of the College, Dr. Jas. Mills, or to the Hon. John Dryden, Minister of Agriculture. This publication is printed for gratuitous distribution.

**Rain Making a Failure.**

Secretary Morton has finally put the last nail in the coffin of the rain making scheme by issuing a circular, from which we take the following:—"I have to inform you that in no case did they pass the merely experimental stage, and that prospect of ultimate success is not such as to justify farmers or other citizens in rain making experimentation. In this determination, judgment and opinion I am supported by the scientists and other alleged experts in meteorology connected with the United States weather bureau. The bombardment of the skies for water, as carried on by this department, did not produce results calculated to inspire the hope that any method of concussion can be made commercially successful in precipitating the moisture from the clouds."

The Illinois State Veterinarian has discovered a number of cases of glanders in that state. Over fifty horses, including a number on one farm, have also been killed and cremated in Arizona on account of infection with this disease.

**STOCK.**

**The Outlook for Pork.**

Replying to your letter *re* price and prospects of hogs, we would say that the price having been almost unprecedentedly high all over the world, the natural effect has followed: Farmers have gone into the raising of them very freely. Our greatest competitors are the Danes. The industry there of hog raising and converting the same into bacon for the English market has increased enormously in the last few years. The bacon curers have killed as many as 15,000 in one week.

The aim of the agents of curers in Canada is to bring up the price of Canadian bacon to a level with the Danish. They have not yet succeeded in this. The large supply of the latter has brought down the price with a run, and at the price we are now paying for hogs we can barely get our own money back again, and some weeks there is a serious loss.

For years past we have paid the highest prices in the summer, say July and August, and while the prices current the last two years need not be looked for, we think that they will bring a fair price. Farmers should bear in mind that the price of grain is extremely low, therefore they can afford to sell their hogs at comparatively low prices. There is no doubt that in future packers, whether for local or export demand, will have to discriminate very severely between heavy fat hogs and lean sizeable.

Thousands of the hogs we have bought this winter have not only made no profit, but they have robbed the same number of lean hogs of the profit they have brought. The most desirable hog for the bacon curer is about 180 lbs., live weight, long and full of flesh. As we have often mentioned, the mere weight of a hog does not make it desirable or valuable, it is the condition. At the present time buyers in England discriminate between fat and lean bacon to the extent of at least one cent per pound of the live weight of the hog. To advise farmers to sell their hogs in the condition we have named is simply to urge them to the course that will be the most profitable, for not only will the animal bring a higher price per pound, but it will cost the farmer much less to dispose of them in that condition, as the experiments on government farms both in Canada and the United States abundantly prove.

We do not think that the new tariff on pork will affect the market at all seriously, and do not think it will be to the farmers' interest to go out of pork raising, or even to lessen it to any considerable extent.

We are much obliged to you for the interest you have shown in this matter, and if there is anything further on which you desire information or our opinion, command us. Yours truly,

WM. DAVIES.

[NOTE.—The above letter, from Mr. Wm. Davies, of Toronto, will be read with great interest by all who are raising hogs for breeding purposes or for feeding. However, unless the farmer can contrive some means whereby the cost of raising his grain can be reduced, it is not very comforting to tell him that he can afford to sell hogs at low prices because the price of grain is low.—Ed.]

**Leaner Hogs Again.**

Having read with considerable interest the remarks by Wm. Davies, of Toronto, in your issue of February 20th on "Leaner Hogs Wanted," we may say the wide experience of this extensive exporter of hog products to the Old Country markets should be of great assistance to our farmers, who will take precaution to prepare themselves with the class of hogs wanted for the export trade.

We have seen a letter written by Geo. Matthews, of Lindsay, Ont., also an exporter, which gives his experience, and it is practically the same as that of Wm. Davies.

There is no doubt on one point: It will not be long until hog products are exported from Manitoba to the Old Country markets, and it certainly would be a wise thing on the part of the farmers to prepare themselves, so they can supply the packers with the class of hogs that will be required for these markets. As near as we can learn, the kind of hogs required are long, lean hogs, weighing from 150 to 220 pounds live weight. A portion of Mr. Matthews' letter reads as follows:—

"I believe that our farmers can and will in course of time supply the packers with the right kind of hogs, and although it will take time to do this, still, when they find their pockets are touched and they cannot sell fat hogs for the same price as lean, the difficulty will soon be overcome."

I would repeat that by lean hogs we do not mean store hogs, but properly fattened hogs with small shoulders and a large proportion of lean in their sides.

The farmers should remember three things:—1st, The breed. A long lean hog—the Berkshire or Suffolk are not suitable, but by judiciously crossing them with the Tamworth and Yorkshire they will answer very well. 2nd, The feed. Any kind of grain, but not exclusively any one kind, along with some mangolds or turnips in winter and green feed in summer. 3rd, Let them have some room to move about. Feed them at a distance from where they sleep, so they will have to walk. They grow better and leaner by having exercise.

Yours truly,  
J. Y. GIFFEN & Co., Winnipeg, Man.

**A Regular Delivery Preferred.**

In reply to your letter of 2nd inst. we would say that in our opinion the right class of hogs for the English market would always have a steady demand and obtain a reasonable price. The English market requires the hogs long and not too fat, about 1 to 1½ inches fat on the back, with thick bellies and good plump hams. If the farmers would weigh their hogs frequently, and as soon as they weigh between 100 and 200 pounds live weight deliver them and avoid rushing in smaller and larger hogs, the supply would be more regular, and the prices would keep better. We find that the great fault is, that as soon as the hogs are dropping a little all classes are rushed in to the market.

THE CANADIAN PACKING CO., John H. Ginge.

**Chatty Stock Letter from the States.**

FROM OUR CHICAGO CORRESPONDENT.  
Top cattle, \$4.75; top hogs, \$5.10; top sheep, \$5.25; top lambs, \$6.00. This is a decided improvement over a month ago. As compared with a year ago prices are fully \$1.00 lower on cattle, \$2.00 and \$2.40 lower on hogs, and 25c. and 50c. lower on sheep and lambs. However, the prices for live stock show up very well indeed, considering all things.

The sheep market is fully \$1.50 higher than a month ago, and the sheep feeders who a few weeks ago thought there was no good in the outlook, and that they might as well "cut loose" one time as another and save feed, are feeling very much like kicking themselves. Even the cheap grades of sheep are selling better. One lot of 1,211 Oregon sheep, averaging 87 lbs., sold on feeding account at \$3.00 for 100 lbs.

The cattle situation has also mended in an astonishing degree, and feeders and shippers are not putting on such long faces. Cattle feeders, it is true, are not making any money, but people in other lines of business have not complained very loudly this past year if they could keep from losing much. It is said the owners of Texas cattle fattened on cottonseed meal have suffered losses of \$5 to \$15 per head on the season's work, but mainly on account of the sharp competition for meal and cottonseed hulls, which ran prices up to a point at which no profit could be made, unless bonanza prices were obtained for the beef. The marketing of cottonseed cattle is about over for the season, and there will be quite a gap between the last of them and good grass Texas heaves. The severe drouth in Southwestern Texas is doing great damage to the cattle interests down there. The cattle are too thin to stand moving to good pasture. The Wyoming and Montana ranchmen are not buying very freely of Texas cattle so far, but they will want a good many. The winter has been very severe in Colorado and Wyoming, but favorable in most parts of Montana.

Horsemen are feeling decidedly better, though the prices for plugs and common horses, which are so abundant, have not advanced much as yet. At a recent sale of good coach horses here a number of pairs sold at \$500 to \$1,350. Several foreign gentlemen have been buying horses on the Chicago market lately, and something like 100 head of coaches and drivers were sent forward one week destined for Dublin, Edinburgh and Havre. At the sale in question one hundred and nineteen head were disposed of at an average of \$277.96. The following were among the best prices realized:

Pair brown geldings, W. Osborne, city	\$ 900
Pair chestnut geldings, W. Randolph, city	550
Pair bay geldings, W. Peters, Manistia, Mich	1,250
Pair chestnut geldings, W. McDonald, city	700
Pair brown geldings, H. Peabody, city	725
Gray gelding, G. S. Gaynor, city	420
Black gelding, E. A. Hill, city	500
Pair chestnut geldings, J. Dupree, city	1,350
Pair brown geldings, J. R. Walker, city	650
Brown gelding, A. Stephen, Edinburgh, Scotland	1,175
Brown gelding, J. Arnheim, Pittsburg, Pa	725

The indications point to better conditions in the general live stock trade.

The first three months of 1894 (Chicago, Kansas City, Omaha and St. Louis received in round numbers 5,752,000 head of cattle, hogs and sheep. Cattle receipts at Kansas City, compared with a year ago, increased 60,000, while Chicago decreased 76,000, Omaha 44,000, and St. Louis about 12,000. Receipts of hogs at Chicago the first quarter of 1894, compared with a year ago, increased 570,000; Kansas City increased 170,000; Omaha, 88,000, and St. Louis 69,000. Chicago increased 110,000 sheep, and St. Louis 24,000, while Kansas City decreased 2,200 and Omaha 18,000, compared with a year ago. Of 5,752,000 head of cattle, hogs and sheep received at all four markets for the three months, Chicago had 3,150,000.

**A Lesson from Tuberculosis.**

The present tuberculosis scare will not have been wholly bad if it leads breeders and dairymen to provide better sanitary conditions for cows.—Hoard's Dairyman.

The scare will not be wholly bad if it leads to more rational methods of breeding on the part of some of the special purpose dairy cow breeders. They have sapped the constitutional foundations of their cattle by breeding too young and in-breeding. Animals have been mated without regard to relationship, and following that with an unnatural system of forcing, it is not to be wondered that a ruinous predisposition to this alarming disorder was developed.

**FARM.**

**Prof. Saunders' Report.**

The advance report of the Director of the Dominion Experimental Farms contains as usual a vast amount of valuable information for the farmer. This pamphlet comprises a short account of the workings of the different experimental farms, a report of Prof. Saunders' work at the Columbian Exhibition, together with the results of the different experiments carried on at the Central Experimental Farm at Ottawa. A very interesting and instructive table of the constituents which are taken from the soil by ordinary farm products is given. As far as possible these figures are compiled from analyses made by the chemist of the Experimental Farm, supplemented by information obtained from American Experimental Stations and German experimenters. As the figures will be of great use for reference, we give them in full:

	Nitrogen in lbs.	Phosphoric Acid in lbs.	Potash in lbs.
A wheat crop of 25 bushels per acre, with 2,200 lbs. of straw, takes—			
For the grain weighing 1,500 lbs.	28.50	12.68	8.54
" straw " 2,200 "	12.03	4.96	10.57
Total	40.53	17.64	19.11
A barley crop of 35 bushels per acre, with 2,000 lbs. of straw, takes—			
For the grain weighing 1,680 lbs.	33.26	13.28	8.86
" straw " 2,000 "	12.22	3.86	19.39
Total	45.48	17.14	28.25
A crop of oats of 50 bushels to the acre, with 2,200 lbs. of straw, takes—			
For the grain weighing 1,700 lbs.	32.13	10.48	8.05
" straw " 2,200 "	13.90	4.74	24.83
Total	46.03	15.22	32.88
A crop of Indian corn grown for fodder purposes to the period when the ears are in the late milk or glazing stage, takes from the soil for each ton—	5.80	2.96	6.54
A crop of turnips takes from the soil for each ton of roots grown—	3.30	1.86	5.50
A crop of mangels takes from the soil for each ton of roots grown—	3.07	1.84	7.66
A crop of carrots takes from the soil for each ton of roots grown—	2.35	2.22	6.53
A crop of sugar beets takes from the soil for each ton of roots grown—	4.79	1.92	9.06

By multiplying the above figures by their value per pound, which is given by a Cornell University Bulletin as follows:—Organic Nitrogen 15 cents, Phosphoric Acid 5 cents, and Potash 5 cents, each farmer can estimate for himself just how much of his capital which is invested in the fertility of his farm he is disposing of each year.

**EXPERIMENTS WITH MANURES.**

For the past six years Prof. Saunders has been quietly carrying on experiments in the testing of barnyard manure, different kinds of phosphatic manures, nitrate of soda, salt, land plaster, mixed manure, and no manure on wheat, barley, oats, potatoes and roots. In this report he gives the results of the past six years' labor, as follows:—

While a period of six years in the testing of the effects of manures on crops is altogether too short to permit of drawing positive conclusions on any point, yet when a considerable degree of uniformity is found in the results throughout the series they may justify an experimenter in calling special attention to them.

The results throughout the whole series in uniformly large average returns serve to confirm the correctness of the view generally held as to the beneficial action of barnyard manure. It is, however, worthy of note in this connection, that in its application to wheat, barley and oats, manure used fresh from the barn has produced a higher average of grain than an equal weight of manure which has been well rotted. In the barley plots the fresh manure also gives a heavier weight of straw, while in the oat and wheat plots the advantage, as far as the crop of straw is concerned, is slightly in favor of the rotted manure. In corn, roots and potatoes, there was practically no difference in the results obtained from fresh and rotted manure. These facts when carefully compared indicate a considerable advantage thus far in the use of fresh manure over that of rotted weight for weight, which is a most important point in the economy of manures, since during the process of rotting manure loses about 40 per cent. of its weight, and to this loss must be added the cost of twice handling, and usually that of turning once or twice during the process of fermentation. The explanation of this rather unlooked-for result probably lies in the fact that the liquid portions of the manure, the richest in nitrogen, have much of their most valuable constituent volatilized and lost during the process of rotting.

The unmanured plots show fairly uniform results throughout, the slight differences being easily explained by variation in soil. The results seem to show that mineral phosphate untreated, no matter how finely ground, has little or no effect as a fertilizer, and that the effects observable where nitrate of soda and wood ashes are used in conjunction with the untreated mineral phosphate are probably due entirely to the action of these added fertilizers. There is, however, no doubt that the mineral phosphate when treated with sulphuric acid and rendered soluble by being changed to the superphosphate is a most valuable addition to the fertilizing constituents of the soil.

It would appear that when the finely ground mineral phosphate is intimately mixed with barn-

yard manure in an active state of fermentation and composted for several days, better results are obtained than would be expected from the proportion of manure used, and it is probable that under these circumstances some portion of the mineral phosphate is rendered soluble by the action of the ferments in the decaying manure.

The addition of highly nitrogenous fertilizers, such as nitrate of soda and sulphate of ammonia, while usually producing a fair increase in the weight of grain, has a more marked effect on the weight of straw, which is increased very considerably. It is somewhat singular that the inferior quality of superphosphate of lime has given in nearly all the tests better average results than have been obtained from the use of the more costly quality: no explanation can yet be offered for this unlooked-for result.

The experiments with the use of common salt alone, and land plaster or gypsum alone, have resulted in better average yields than was expected. These results are most probably due in large measure to the influence which both these substances exert in liberating potash in the soil, by reducing insoluble potash compounds to soluble forms, and also of influencing the texture of the soil so as to enable it to retain more moisture. The use of salt alone seems to be specially beneficial to the barley crop. The tests made with sulphate of iron on grain crops have also given better results on the average than was looked for. Some of the less favorable results obtained from the use of artificial fertilizers, which from the nature of their constituents are known as complete fertilizers, are unexpected and disappointing and cannot at present be explained. In all probability the experience of a few more years will throw further light on the subject.

**SEED TESTING.**

During the past season the vitality of some 1957 samples of seed grain and seeds have been tested, the samples varying all the way from 100 to as low as 4 per cent. of good seed. Samples to be tested should weigh not less than an ounce, and may be forwarded to the Experimental Farm by mail, free of postage.

**TESTS OF DIFFERENT VARIETIES.**

In the tests of different varieties the following varieties came out ahead:—

Wheat—Thirty varieties; Herison's Bearded, Preston, Dions, Pringle's Champlain and Wellman's Fife.

Barley—Two-rowed, 12 varieties; Thanet, Swedish female with Baxter's Six-rowed male, and Improved Chevalier. Six-rowed, twelve varieties; Swedish female with Baxter's six-rowed male, and common six-rowed.

Peas—Twelve varieties; Canadian Beauty, Prussian Blue and Prince Albert.

Turnips—Fourteen varieties; Marquis of Lorne, Prize Purple-top and Carter's Elephant Swede.

Mangels—Ten varieties; Champion Yellow Globe, Giant Yellow Intermediate, Mammoth Long Red.

Carrots—Eleven varieties; Mammoth White Intermediate, Improved White Short, Giant Short White, White Belgian and White Vosges.

Sugar Beets—Eight varieties; White Green-top Brabant and French.

Potatoes—Sixty-one varieties; Burnaby Seedling, Geo. McKinzie, Seattle, White Beauty, Crown Jewel and Holburn Abundance.

**SPRAYING FOR RUST.**

The spraying of plots of oats and wheat with copper carbonate as a preventative of rust was unsuccessful.

**SMUT.**

Experiments both in Ontario and the Northwest emphasized the importance of the treatment of seed grain with copper sulphate as a remedy against smut. For further particulars, see page 132 last issue.

A report of the plantations of forest trees and analysis of water is also given. Altogether it is an exceedingly valuable report, and we would advise every farmer to write for a copy.

**A Practical Farmer's Experience with Phosphates.**

I see on page 112 of the ADVOCATE, an inquiry from Mr. Thos. Beckton, for the experience of any of your readers with bone phosphate on corn.

As long ago as 1867, I bought several barrels of Coe's make, Montreal, and sowed it on oats and spring wheat, from which I received a paying increase. This was especially noticeable in regard to the wheat, where a part of the field which was left untreated was one week later in heading out and gave a third less crop. In planting the corn, I put a heaping tablespoonful in each hill, covered with half an inch of soil, and then dropped in the corn. Three rows were left untreated. The difference was so apparent that passers-by would stop and ask what was the matter with the three rows of corn. When husking time came, there was as great a difference as in the case of the wheat. I have used several brands since then, but none of them gave as good satisfaction. They may have had the proper elements, combined in the right proportion, but not sufficiently decomposed to give immediate results. Right here I would say to my brother farmers, who intend sowing spring wheat, sow as early as you can work the land, and apply at least 200 pounds of salt per acre. To raise good crops, the land must be in good heart, and well cultivated, to make it clean, fine and firm. Last year my White Russian wheat averaged 25 bushels to the acre, and weighed 62 pounds to the measured bushel.

JOSHUA BOBER, Ingersoll.

A subject of the present time is the knowledge of the English market would always have a steady demand and obtain a reasonable price. The English market requires the hogs long and not too fat, about 1 to 1½ inches fat on the back, with thick bellies and good plump hams. If the farmers would weigh their hogs frequently, and as soon as they weigh between 100 and 200 pounds live weight deliver them and avoid rushing in smaller and larger hogs, the supply would be more regular, and the prices would keep better. We find that the great fault is, that as soon as the hogs are dropping a little all classes are rushed in to the market.



Men are on the great value of the water is brought protected from water.

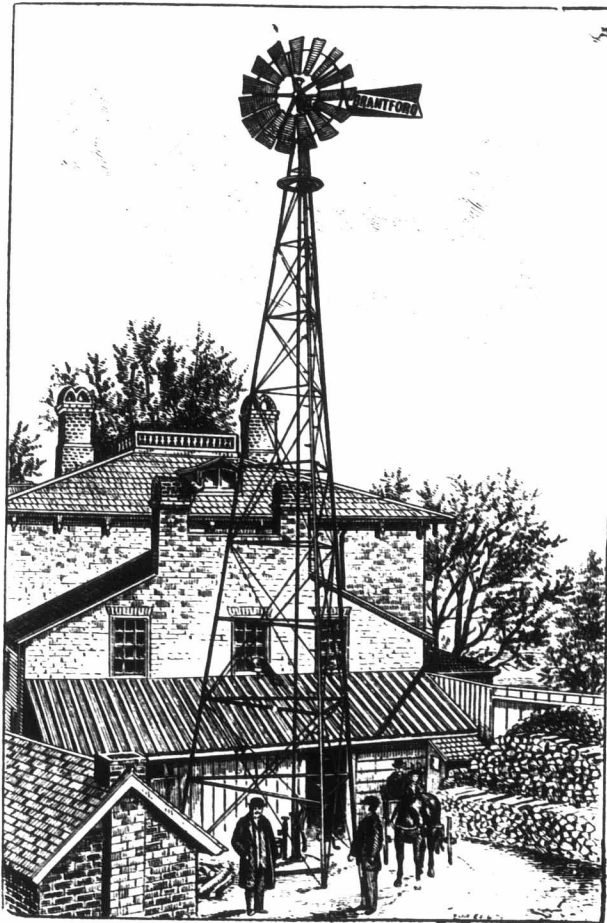
Mr. William of the outfit and he is only one testimony.

Our engraving and steel derrick Woodstock, an outfit for pump

Last year the crops, such as the early maturing variety. But, the stalk and leaf, ears, in order to be increased. Mr. the Agriculture mends a few ac grass mixed to growth is secure during the seas

**The Wind in Harness.**

A subject occupying much attention at the present time is that of utilizing wind power for ordinary purposes. This universal power is being harnessed to produce electricity, which is stored and used for lighting suburban and farm houses. The expense, however, is yet too great to allow of its extended use. Our purpose now is to direct attention to one feature of this important question, which is being demonstrated by actual use as eminently practical and within the reach of most farmers and market gardeners, and, in fact, of every class who use much water or require power to run light machinery. This is the use of wind mills for pumping water and also for power purposes. Our American cousins have recognized their great value and the land is dotted with them in every direction, and the rapidly increasing number in use in Canada indicates clearly that Canadians are awakening to the knowledge of their merits. We have not space at this time to go into a full description of wind mills and the wide range of work they will do, but our attention has been specially called to an outfit owned by Mr. Henry W. Williams, an intelligent and enterprising farmer, whose farm is about four miles north-west of Brantford. The wheel is a steel one, 12 feet in diameter, and governs on the sectional principle. The fans being of sheet steel are wide and well curved, giving it great power, and it governs itself admirably in varying winds. Mr. Williams says he considered it a great experiment at first, but is more than satisfied with the result, and has no hesitation in recommending this style of power wind mill as reliable and effective. The mill drives a large sized cutting-box and a special grinder called the "Ideal," which grinds from 5 to 8 bushels per hour in a 15 to 20-mile wind. He has ground over 700 bushels of grain this winter and has no difficulty in supplying all his stock with cut feed or chop or pulped roots by keeping a day's supply always in reserve. In addition, the mill pumps the water from his well 80 feet distant and forces it into a large tank in his barn cellar.



Men are only beginning to fully appreciate the great value of plenty of pure water for their horses and cattle, or the gain in flesh and milk when water is brought into the stable and the stock are protected from exposure and from drinking ice cold water.

Mr. Williams is very decided in his appreciation of the outfit and the labor and money it saves, and he is only one of the many who can bear similar testimony.

Our engraving shows a steel pumping wind mill and steel derrick owned by Lieut.-Col. Skinner, of Woodstock, and gives a good idea of the ordinary outfit for pumping water only.

**Supplementary Crops.**

Last year taught dairy farmers a severe lesson as to the necessity of providing a succession of green crops, such as peas and oats, etc., following by an early maturing variety of corn, such as Compton's Early, to feed cows in case of drought. Other standard varieties will answer for later feeding and the silo. But, whenever used, corn should be well matured. The ideal crop combines abundance of stalk and leaf, coupled with plenty of well-developed ears, in order that the richness of the food may be increased. Mr. Wm. Rennie, Superintendent of the Agricultural College farm at Guelph, recommends a few acres of lucerne clover and orchard grass mixed to supplement pastures. If a good growth is secured it will stand cutting several times during the season and last for years.

**Popular Geology.—No. 4.**

BY PROF. J. HOYES PANTON, M. A., F. G. S.

We shall now account for how the rocks after deposition in water become hardened:

1. By the action of substances in them, such as lime, silica, or iron. We see this illustrated in the case of using lime in mortar, and plaster of Paris in forming ornaments upon the ceiling of rooms, and lately the material used in making pavements. At first these materials are soft, but on exposure to the air they harden.
2. By heat. This is shown in the manufacture of brick from clay.
3. By pressure. 4. By drying.
5. By substances derived from the decomposition of shells, corals, etc.
6. By the presence of springs, containing iron, lime or silica in solution in the deposits. These conditions present, where soft material was collecting, would soon tend to consolidate it.

In giving the characteristics of Aqueous rocks the term fossil was used. This requires more than passing notice, because fossils become of great importance in identifying the age of a rock formation. Fossils may be defined as relics of animals or plants imbedded in rocks, and is as equally applicable to any trace of the entombed object as to the whole.

How formed:—1. Where only partial change has taken place in the object after it has been imbedded. This is probably the simplest form of fossil we find.

2. Moulds.—In this case the plant or animal has been buried in the deposits, and afterwards entirely decomposed, leaving nothing but an empty space, its shape, to indicate where it was imbedded. When these deposits harden, it may be ages after, the rock in splitting will show a mould.

3. Casts.—These occur where some infiltrating material, such as lime, iron or silica in solution, has gained access to the mould and completely filled it; so that when the whole is hardened rock and comes under the examination of geologists, casts are readily knocked out of the rock. This is a very common form of fossil in the rocks around Guelph, Elora and Galt.

4. Replacement.—In this form you find the most complete fossils of all. The entombed object in this case does not at first entirely decay and the empty space fill up, but the filling up, or better, replacement, takes place the moment a particle decays; and thus you have the object replaced, particle by particle, with so much exactness that the very structure of the eye is retained. Many fossils of this kind consist of silica.

5. Impressions.—These appear in the form of ripple marks, footprints, and raindrop markings. We can see how this could have taken place, if we visit some shore where the tide passes out, leaving bare a muddy bottom for hours before it returns. Birds may walk over this and leave their footprints in the mud, which hardens by exposure to the sun long before the return of the water. When the tide returns it covers these tracks over with mud, etc., and the impressions are thus imbedded. Had a brief rainstorm occurred while the water was out, the markings of the raindrops would be entombed and not revealed until the whole, as hardened rock, is split open, when the impressions made upon it while soft mud would show themselves upon the stone.

What we can learn from fossils:—

1. The relative age of the rocks which contain them. Some animals long ago only flourished for a few periods; some did not appear till nearly all the rocks were made. Among the most interesting fossils in this connection are some crablike creatures called trilobites. They flourished during four periods, and then passed out of existence. The mastodon did not appear till twelve periods had passed, so that, geologically speaking, the mastodon is a much more recent animal than the trilobite, that died out in the seventh period.

2. The nature of the deposits in which the remains were buried. Animals have particular conditions in which they flourish, consequently we can infer the surroundings when we find the fossils; that is, whether the deposits were laid down in shallow or deep water, salt or fresh, warm or cold, river or lake.

3. Climate.—This can be inferred to some extent by a study of such fossils as the corals. Corals cannot exist in water that falls to a lower temperature than 68°; they live in clear salt water, not deeper than 120 feet. On the shores of Lake Erie we find 75 species of fossil coral. When these creatures flourished in Ontario it must have been a climate such as that where we see corals now, and thus vastly different from the climate of to-day. We find mastodon and mammoth remains in parts of our province. The remains of these huge, elephant-like creatures indicate another climate in our province, when they thundered along through our forests, than what we now have. Wherever coal of the carboniferous period is found, its composition shows that it has been formed from the same species of plants. Now we find coal in Greenland, the Arctic regions, United States, Australia, Britain; this indicates a similar climate in all these places at the time when the coal beds were forming.

The preceding facts illustrate how stones by the wayside can become a great source of interest to us, by revealing some of the strange conditions of our beautiful province in the years long receded into the past, when corals flourished in the sea in

which the rocks of our country were being deposited, and a more tropical climate prevailed than that which we see to-day.

Rocks after their formation are subject to more or less change, so that the earth's crust is not always the same. Some of these are illustrated as follows:—

1. Elevation.—In modern times the west coast of South America has been raised, and a similar change has been observed in Norway and Sweden.

2. Subsidence.—Greenland is sinking. Cape Breton and some parts of Nova Scotia are also being submerged. We are safe in saying every place has been below the sea at one time or the other.

3. Denudation.—This takes place when any portion of the earth's crust is bared, so as to expose a fresh surface and thus come under influences that have a tendency to disintegrate and decompose the rock. We are indebted to these agencies for soil, and as they are of great importance in the explanation of the origin and formation of soil we shall leave their consideration for our next communication.

**The Ontario Agricultural and Experimental Union.**

A SEEDSMAN'S COMPLAINT.

To the Editor of the FARMER'S ADVOCATE:

My attention has been called to a circular letter (\*) that has appeared in a number of leading journals with regard to the work of the above Union. As there are some things in this letter that are misleading and thus have a tendency to unsettle and give farmers a wrong impression, I write you in order to put matters right. Now, I want your readers to distinctly understand that I do not wish to be understood as writing with any desire or intention to antagonize or do injury to the work that is being carried on at Guelph by the Director, Mr. Zavitz, but simply to put the seedsmen of Ontario right in the eyes of the farmers and dairymen.

One very bad feature of this work is that the authorities at Guelph in this Experimental Union work have entirely ignored the seedsmen and apparently wish to keep them in the dark. I do not say this is intentional, but it looks very much like it. As the question of ensilage corn is brought out very prominently, I will only touch on that part of the question in this short letter. On looking through the Directors' report for 1893, page 101, I find that they have had sown 83 varieties of fodder and ensilage corns under test, and out of this maze of sorts he has recommended some three or four varieties that are entirely foreign to the seed trade in Ontario and unknown to the seedsmen. It is very questionable if they are any better, if as good, as those now introduced and being handled by leading seedsmen. Why ignore the seedsmen and the varieties they are handling by recommending varieties that neither they nor any one else know anything about? Why does not Mr. Zavitz take the seedsmen into his confidence and endeavor to co-operate with them and keep them posted along the line of his work? This is what he should do, and what I would naturally suppose he was paid for doing. It is very annoying to have people come into your store or write you asking about some new fangled sort they have heard about from the college and not be able to give them the information nor be in a position to express an opinion on the matter. Why don't Mr. Zavitz send the seedsmen samples for testing the same as he is supplying the farmers and others, in order that they may know something about these varieties as well as himself, and be in a position to express an opinion, and, if favorable, supply themselves with stock in order to fill orders. This Experimental Union professes to be co-operative, but where is the co-operation when the seedsmen are kept in the dark? Now, I know that we have and are handling just as good and reliable varieties of corn as any that Mr. Zavitz has made prominent. Some of his sorts may be what he represents, but I for one won't handle what I have not tried myself on my own trial grounds, and know to be all right and worthy of introduction. I want the public to understand that my firm is quite as much interested in testing and introducing the best sorts of corn or anything else as Mr. Zavitz and the Agricultural College. We were engaged in introducing and handling ensilage and fodder corns long before Mr. Zavitz even thought of such things. There are a number of other matters touched on in Mr. Zavitz's circular letter, but neither time nor space will permit my referring to them in this issue of your valuable paper.

JOHN S. PEARCE, London, Ont.

[NOTE.—(\*) The contents of the circular letter referred to appeared in the ADVOCATE on January 15th last.]

[With regard to the five or six corns specially recommended by the Union, some of which are designated in the above letter as new-fangled, we notice that they were all reported on at least as far back as 1891, and recommended either in 1891 or 1892. However, there certainly should be some system whereby sorts found worthy and highly recommended by the Union would be within reach of farmers generally for seed.—ED.]

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.]

Veterinary.

ANSWERED BY DR. MOLE, M. B. C. V. S., 260 ADELAIDE STREET, TORONTO.

PARASITES IN SHEEP.

HENRY PAGET, Norva:—"We have had four ewes die this winter. 1st. Had no gall, only the empty bag. 2nd. The lungs were considerably under the normal size and grown to the sides of the chest. 3rd. The lungs were much inflamed. 4th. The liver was quite rotten, it also had a grub in its head. Three out of the four were very bad with ticks, besides being covered with small white lice, not unlike the hen louse. What are the symptoms of grub in head, and how should they be treated?"

There is no doubt that the death of these sheep was due to parasites or worms. 1st. Probably due to the Fashiola Hepatica, whose habitation is situated within the ducts of the liver. This disease often breaks out upon low-lying cultivated lands, especially if the summer has been backward. 2nd, and 3rd. Died from pleurisy, due to exposure and low condition of the animal induced by the parasites. 4th. Not only suffered from the attack on the liver by the fluke, but also from another form of parasite known as the Cœnurus Cerebralis, more frequently met with in autumn and winter. The lice are the Tanea Cœnurus of the dog, so to prevent the disease you must attend the dog by giving two or three doses of vermifuge or worm medicine.

This hydatæa of the sheep is contained within a sac and developed in the brain, surrounded by a watery fluid. The symptoms are well described as to the general conditions, and it only remains to say the disease is known in the Old Country as turnside, and gets its name from the animal turning round, according to the side affected. For example, if the worm is situated on the left side of the brain, the animal will turn to the right, and vice versa.

For treatment. It is almost a hopeless task to treat the sheep, as they are so badly affected. When the symptoms evince themselves, remove the whole flock at once from the pasture they are in up to high dry lands; give a liberal supply of salt and sulphate of iron. This may be found a suitable purge: Epsom salts, two ounces; Ginger, one drachm; gentian, two drachms; chloride of lime, half a drachm. To be given in a pint of warm water or gruel, and an entire change of food.

Legal.

FARM ON SHARES.

REGRET:—"Rented my farm on shares, giving horses and machinery to work it, said horses and machinery to be returned in as good state as when received, ordinary wear and tear excepted. Now the lessee wants to use my horses for his private interests, such as working on another farm, jobbing, etc. Can he do so?"

If the horses and machinery were, under the terms of the agreement, to be used only on the farm rented, they cannot be used elsewhere or for other purposes.

FARM LEASE.

A MANITOBA SUBSCRIBER:—"A leased a farm off B, and B assigned the lease to C, the mortgagee. If B be back in his interest, can C seize any of A's crop, over above the rent, for any interest that may be due to him?"

It is very probable that the mortgagee can, but it depends wholly upon the terms of the mortgage. It would be necessary to see the lease, the assignment and the mortgage before answering with certainty.

REMEDIES FOR PEA WEEVIL.

F. SEHIBASS:—"Kindly let me know if there is any way in which bugs in peas may be killed without injuring the seed."

The better plan is to obtain seed which is free of bugs. If this is impossible, or if the peas are of a special variety, the bugs may be killed by soaking the seed in hot water for twelve hours. The water should be made sufficiently hot to be made uncomfortable to the hand, but it should not be scalding. The vapor of bi-sulphide of carbon is an effective remedy, but owing to the very inflammable and poisonous nature of the gas, it can hardly be recommended for general use. An article from the pen of Prof. J. Fletcher, Ottawa, giving a very full history of the pest, together with remedies, will appear in an early issue of the ADVOCATE.

Miscellaneous.

IS RAPE AN ENSILAGE CROP?

THOS. H. INGRAM, Duhamel:—"Can you or any of your subscribers tell us through your paper if rape is of any value as an ensilage crop? Will so soft a vegetable keep in a silo? If so does it retain sufficient of its natural flavor for stock of all kinds to relish it?"

All experience up to this date indicates that corn is the most desirable crop for ensilage purposes. In Manitoba and the Northwest an early maturing sort is necessary. Without being able to speak from actual trial, we would not recommend anyone to put rape in a silo. Even if it did not rot it would sink into a soft, pulpy mass. Like turnip tops, its flavor would condemn it for dairy cows. We might add that an attempt to ensile turnips at the Vermont Experiment Station resulted disastrously.

SALTING BEEF.

A subscriber enquires for the best way of pickling beef for summer use, and asks if a water barrel would answer for pickling it in.

If possible get a molasses barrel, but if you have to use a barrel that has been used for water, be very particular to thoroughly rinse out with boiling water. Now select good, fat, juicy beef, cut in pieces not too large, and after putting a layer of salt in the bottom of the barrel, pack in the beef closely, applying plenty of salt to each layer (do not be afraid of salt). Then make a strong brine that will float an egg, and when cold pour into the barrel till the meat is covered; put weights on to keep the beef down. Add to brine an ounce of saltpetre to barrel of beef, and a quart of molasses or pound or two of sugar, if any other than a molasses barrel is used.

If after a time the brine looks bloody, drain off and add new or re-boil, skimming off all impurities. Keep in a cool place and you will find you have a fine quality of corned beef, which makes an agreeable change from salt pork.

RATION FOR A MILK COW.

SUBSCRIBER:—"I have a fresh calved cow that was making nine pounds of butter, but now she is not making more than four pounds, the quantity of milk remaining about the same. I am feeding about eight pounds wheat meal, four pounds bran, ten pounds sugar beets and sixteen pounds of oat hay per day. The cow has plenty of salt and water each day, and is kept in a warm, well-ventilated stable. The cow eats well but is very thin, and seems stiff when let out to drink. Kindly let me know if I have been feeding a properly balanced food. I have had the idea that the food had no effect upon the per cent. of butterfat, but only upon the quantity of milk."

The digestible matter in your ration is as follows:—

Table with 5 columns: Item, Dry matter, Albuminoids, Carbo-hydrates, Fat. Rows include 4 lbs. bran, 8 lbs. wheat, 10 lbs. sugar beets, 16 lbs. oat fodder, Total, and Nutritive ratio 1:6.9.

This is a very fair ration upon which your cow should do well, though we would prefer one a little higher in albuminoids and with less of the carbo-hydrates, which would give a narrower nutritive ratio. The German standard calls for 24 pounds dry matter, 2.5 albuminoids, 12.50 carbo-hydrates and .40 of fat. Nutritive ratio, 1:5.4.

This standard could be attained by increasing the amount of bran and diminishing the wheat, or by feeding one or two pounds of cottonseed or linseed cake instead of wheat. The same object could be obtained by feeding clover hay instead of about one-half of the oat fodder.

We cannot suggest anything further in regard to the treatment of the cow, except that you would have a better mixture for the production of milk if it contained a larger proportion of succulent food, as roots or ensilage, but it is not probable that either of these foods can be obtained in larger quantities at Calgary.

There is much difference of opinion at present in regard to the effect of the food upon milk. The general idea is, however, that each cow has a certain limit of butterfat to which her milk may be increased by good feeding and care, but beyond this point it is impossible to go, at least in a limited period of time. What this limit is can only be determined by experimenting with each individual cow. Both practice and science go to show that it is the man who feeds his cows generously who has the richest milk and in the largest quantity.

In any case your cow should show no such sudden decrease in the per cent. of butterfat as a result of feeding, and for this reason we would be led to suppose that it was due to ill-health, for it is generally held that sickness, cruel usage or other shock to the nervous system of the cow will have the effect of seriously reducing the amount of butterfat in the milk.

We would advise you to give the cow special care in regard to shelter, feed and attendance. See that the oat hay is clean, sweet and free from must. Keep her bowels open by means of laxative food, as bran mash, roots, linseed meal, etc., or if necessary, a dose of salts. If you do not see an improvement in a few weeks write again, describing the symptoms fully; but if the cow should become worse, it would be well to consult a veterinary surgeon.

FERTILIZERS ON CORN.

J. B. WEBSTER, Florence:—"After reading the experience of J. H. S. in the last ADVOCATE, I thought I would give my experience with homemade fertilizers. I cleaned out the privy and put the contents in a box and mixed with leached ashes and hen manure. I put it on a piece of corn just as the corn was pointing through the ground, about a teacupful on each hill close by the corn, and covered it as fast as put down with a little earth. I also applied hen manure alone on some rows, while others were left untreated as a test. I could see no difference in the rows so treated—the corn appeared neither better nor worse for the manure. The manure was put on the next day after it was mixed, and the ground kept clean and free from weeds. I was greatly disappointed at the result of my experiment, and would like if you or some correspondent would kindly let me know through the ADVOCATE the cause of failure."

ANSWERED BY PROF. A. E. SHUTTLEWORTH, CHEMIST, AGRICULTURAL COLLEGE, GUELPH.

In my opinion Mr. W. made at least two mistakes in handling and applying the manure. First, ashes contain a good deal of lime, and for this reason should not be mixed with manures rich in nitrogen, as that from privies and hen manure; secondly, the mode of application on the hill—just covered by a little soil, and after the plants were up—was wrong. Thus treated and applied, much of the nitrogen may have escaped through the action of the lime liberating ammonia. By being applied over the roots, close to the stem, it was not readily available. Roots grow out from the base of the stalk in all directions, and collect food through the extremities of the rootlets. Had the mixed hen and privy manures, without previously mixing with ashes, been spread upon the surface and worked into the surface soil before planting, good results should have followed.

GRADING UP TO PURE-BRED.

JOHN MILNE, Sec. Upper Kintore Dairy Association, reports that in discussing the different breeds of cattle, the members were not very sure as to what constitutes a pure-bred animal, or how many crosses of pure-bred blood on common stock would be necessary to produce a pure-bred animal. He further states—"As the members are all subscribers of your valuable paper, the Advocate, would you kindly answer through the columns of the ADVOCATE?"

In answer to the above, we think it probable that this association has confused the terms pure-bred (registered animal) and practically pure-bred as they are used by many agricultural writers and speakers. Four or five crosses of a pure-bred bull on grade cows, if care and judgment has been used in the selection, will produce a herd of cattle which for all practical purposes are pure-bred, but they will not be entitled to registration as such. To become eligible for registration in the herd books, cattle must be bred from registered dams and sires.

SUPERPHOSPHATES, CRIB-BITING, GUANO AND DRAIN OUTLETS.

SUBSCRIBER, Bridgeville, N. S.:—"1. How can I prove good superphosphate, and how much should be applied per acre? 2. What remedy would you advise for cattle hooking horses and other stock; also give remedy for crib-biting horses? 3. How much guano is allowed per acre on gravelly soil? 4. What is the cost of the Pedlar roofing material? 5. How can I close a ditch or drain, made in low places where there is quicksand, so that it will not choke up?"

1. There is no way in which a farmer can test superphosphates, except by practical experiments on small plots. The wisest plan is to buy only upon a guaranteed chemical analysis. The amount applied per acre will vary with the purity of the superphosphate and the nature of the soil and the crop to be grown. Best results will doubtless be obtained from an application of 200 or 300 pounds per acre. 2. Cut off the horns with a fine saw, or if hopelessly vicious, cut its throat. To cure a crib-biter, smear the front of the manger with aloes or other bitters. Cover all exposed woodwork with sheeting. Place a small revolving roller above the front of the manger, so that the teeth may at once slide off, or apply a metal muzzle bent over the horse's nose, so that he cannot take the edge of the manger between his teeth, but sufficiently open that it will not interfere with his feeding. 3. Guano, from its great variation in composition, should only be purchased upon a guaranteed analysis. About 300 pounds is usually applied per acre. 4. We have sent your name to the Pedlar Roofing Co., who will send you price list and full particulars. 5. The outlet to a tile drain is the most important part, for, if it becomes choked up, the whole drain is useless, and is just so much money thrown away. In the first place there should be plenty of fall, so that the water will drop clear of the tile. A strong floor of plank or stone should be placed below to receive the flow and to prevent undermining. A plank box may be made to fit around the tile, or stone or brick may be built around the tile, both at the outlet and a short distance up the drain.

In cases where it is not possible to get sufficient fall to prevent the backing up of the water at some seasons of the year, it would be a good plan to build a plank box for the drain to discharge into. In this box any quicksand or silt from the drain would collect and could be cleaned out as often as necessary, and in this way prevent the choking up of the drain.

SPRING RYE FOR PASTURE.

D. S. SMITH, Petitediac:—"What do you think of sowing rye on poor land for pasturing in the summer, as I will be short of pasture land?"

Spring rye, which is a modification of fall rye, would be as good a crop as you could try under the circumstances, though it is idle to expect good results from poor land. Work the land thoroughly, and sow as early as the weather will permit at the rate of three bushels per acre.

On the above subject Mr. Wm. Rennie, Farm Supt., Agricultural College Farm, Guelph, says:—"I do not consider rye a profitable crop to grow for pasture. We have a few acres on the farm that I am seeding down, mostly with red clover and Alsike. The rye is intended to be cut for green feed. As a rule farmers do not value clover sufficiently high. I consider it superior to any grain for either pasture or for soiling purposes. When plowed under it restores fertility to the soil."

BY JAMES F.

As the war in the yearly come back to their cheerful flowers open Springtime is ness. None care fortunate matter of imp his year's work many insect greater or less are certain borne in mind severely attac manifestly un land the foll special enemie attack plants Hessian Fly, v will not attac jure grain cro injurious to pe This points ou tematic rotati

Another ge in mind is th of two ways: they bite off a they live on th they suck up t which eat the by the applica the second clas of a preventa merely coming insects. Such propiate for t ed from time series of artic each month.

The insects are the follow THE EYE-SPOT



much harm. Remedy.—S open with Pari This is one of trees should b flowers drop. S should never be of poisoning be



THE PEAR-LEAF An insect w injurious in Ca The attack is thickening on red at first, frequently attri sitic fungus. small size of the minute mite w larged.

Its size is so sn be detected with home of large n centre a minut nates escape an



ENTOMOLOGY.

Injurious Insects.

BY JAMES FLETCHER, DOMINION ENTOMOLOGIST, OTTAWA.

As the warm days of spring come round again, in the yearly circle, all nature revives; the birds come back to enliven the woods and waysides with their cheerful songs, the buds burst and leaves and flowers open out to make all nature beautiful. Springtime is a season of activity, hope and happiness. None can appreciate this so well as those who are fortunate enough to live in the country. A matter of importance for a farmer when planning his year's work in the spring is to prepare for the many insect enemies which annually reduce to a greater or lesser degree every crop he grows. There are certain common sense rules which must be borne in mind. If a crop of any kind has been severely attacked one year by injurious insects, it is manifestly unwise to grow that crop on the same land the following season. Every crop has its special enemies, and it is seldom that these pests attack plants of a different order; for instance, the Hessian Fly, which attacks wheat, barley and rye, will not attack roots; the Turnip Flea will not injure grain crops, and the Pea Weevil, although so injurious to peas, does not attack any other crop. This points out the wisdom and advantage of a systematic rotation of crops.

Another general principle which must be borne in mind is that all insects take their food in one of two ways: they either have jaws with which they bite off and masticate pieces of the plant, or they live on the juices of plants and animals which they suck up through a hollow tube or beak. Those which eat the foliage of plants may be kept in check by the application of poisons to the foliage. For the second class, remedies must be used which are of a preventative nature, or which will kill by merely coming in contact with the bodies of the insects. Such remedies we have, and the most appropriate for the various crop pests will be described from time to time during the summer in this series of articles, when treating of the insects of each month.

The insects which will demand attention first are the following:—

THE EYE-SPOTTED BUD-MOTH (*Tmetocera ocellana*, Schiff.)



This insect passes the winter as a half-grown caterpillar, protected by a silken covering which it spins over itself in the autumn. It emerges from its shelter in spring and attacks the opening buds, and frequently does

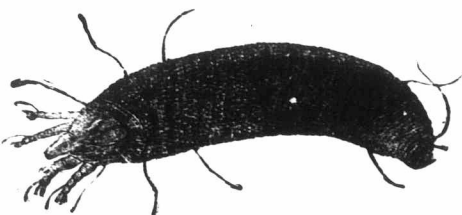
much harm.

**Remedy.**—Spray in spring before the flower buds open with Paris Green, 1 lb. in 200 gallons of water. This is one of the few insects which demand that trees should be sprayed with poison before the flowers drop. Spraying fruit trees when in blossom should never be practiced on account of the danger of poisoning bees.



THE PEAR-LEAF BLISTER (*Phytoptus piri*, Nalepa.)

An insect which is becoming widespread and injurious in Canada is the Pear-leaf Blister-mite. The attack is recognizable by corky, blister-like thickenings on the leaves of pear trees. These are red at first, but turn brown later. They are frequently attributed to the attacks of some parasitic fungus. This is owing to the exceedingly small size of the insect which causes them. It is a minute mite which is here shown enormously enlarged.



Its size is so small that it can only with difficulty be detected with the naked eye. Each blister is the home of large numbers of the mites, and has in the centre a minute hole through which the young mites escape and start new galls, so that they soon

increase rapidly in numbers. The mites live within the galls until the drying of the leaves in autumn, they then migrate to the buds at the ends of the twigs, where after working their way beneath the bud scales they pass the winter, and on the bursting of the buds in spring attack the young expanding leaves.

**Remedy.**—Spray with Kerosene emulsion just at the time the buds burst.

[Readers who find a weed or plant with which they are not familiar can have it identified and obtain advice in regard to its injurious qualities by sending a sample either to this office or to Prof. Jas. Fletcher, Experimental Farm, Ottawa, who will be pleased to furnish such information.—ED.]

GARDEN AND ORCHARD.

Varieties of Apples—What to Select.

BY G. C. CASTON.

The Province of Ontario may well be proud of its fruit exhibit at Chicago. This, along with the other agricultural exhibits, has no doubt done more to show to outsiders the capabilities of our country, and drawn more attention to it than all the money spent on immigration agents and immigration literature during a whole decade. The fruits of Ontario, more especially, were a great surprise to many, and go to emphasize the statement often made that in many lines of fruit Ontario cannot be surpassed or even equalled, and in no line is this more noticeable than in our apples. The Chicago exhibit proved that while some of the States of the far west, especially where irrigation is practised, as well as the Province of British Columbia, can produce larger and finer looking specimens of some varieties, yet when it comes to the question of quality Ontario is far and away ahead of any of them. Our apples excel in firmness of texture, fine, crisp flavor, and good keeping qualities, and which are so notably deficient in those grown west or south in a warmer climate. In short we may sum up by the statement that Ontario produces the best apples in the world to-day.

In connection with this the question arises, Will it pay to increase the area of our orchards, and improve the condition of those already planted? and in answer I would say, yes, I believe it will. But we must proceed along proper lines. We must consider what varieties are likely to be most profitable in the future, and how to grow them, and this includes the whole subject of care and cultivation.

First, a few words as to varieties. We should not make the mistake of having too many. This is the great mistake made by too many people in planting. I would not advise planting early varieties, unless sure of a market for them. But if assured of a good market, there is more profit in them or some of them, even at a less price, than in some of the later and longer keeping kinds. And first among the early kinds I would place the Duchess, and, from my own experience, I would plant nothing else for an early or summer variety. Its early and abundant bearing, extreme hardiness, freedom from blemish, even size, fine color, and unequalled cooking qualities place it easily at the head of the list of early varieties.

Following this would be the Wealthy, and the same remark would apply to it in a great measure as applies to the Duchess, viz., that it will pay well if a ready market can be found for it at the proper season. I find by experience that it is not as good a keeper as it was claimed to be when introduced; in fact it can not fairly be classed as a winter apple, but should be picked and marketed by the end of September. But possessing all the good qualities of the Duchess, early bearing, hardiness, etc., and its clean skin, fine quality and handsome appearance make it a valuable fall apple.

Two other valuable fall varieties I would mention are the Alexander and the Gideon—clean, fancy apples both of them. And I would like to add the St. Lawrence, if it were not for its spotting so badly as to make it entirely worthless in some seasons. But the whole question of growing early or fall apples will depend on getting a market for them, and where they can be shipped to at the proper season. And there is no doubt that there is a market for immense quantities of them within our own Dominion, as well as in the North Western States and cities of America. This market will increase in the future, and besides there is the foreign market, which is more a question of quick and cheap transportation than anything else.

Among the new and very hardy varieties of winter apples I believe none is more worthy of cultivation than the Pewaukee. Grown in the northern parts of Ontario it comes very close to the Spy as a winter apple, and will prove valuable both for export and home market.

I will here give a list of winter apples that I think likely to prove profitable in the future. Some of these I would plant from the nursery, and some can be grown most certainly and profitably by top grafting on some hardy variety or native seedling. For planting, then, I would name Pewaukee, Ben. Davis, Baxter, and American

Golden Russet; and for top grafting King, Northern Spy, Greening, Baldwin, Blenheim Orange and Ribston Pippin. All of these are clean skinned, and with one or two exceptions of finest flavor, and all valuable market varieties.

As no variety of apple is entirely perfect, I would here point out a few of the faults, as well as the good qualities of the varieties mentioned:—

The Pewaukee has a fault in being inclined to drop before the usual picking time during windy weather. The remedy for this is to pick early; in fact we do not, as a rule, pick our apples soon enough. Apples will handle better and keep better if picked just at the right time—that is, when full grown and full colored and the seeds have turned black, and before the mellowing process has set in.

The Wealthy has the same fault, but it should always be picked by the end of September. The chief fault of the Spy is the length of time it takes to come into full bearing. But by top grafting it onto some hardy, healthy stock it will bear much earlier than if grown in the usual way, and when it does begin to bear it bears regularly good crops. I regard this apple as one of the most valuable and desirable we can produce. It is always saleable, there is always a demand for it, and, according to the statement of the gentlemen who were connected with the fruit exhibit at Chicago, there is likely to be a great demand for it in Chicago and the other cities of the North Western States, for the reason that only in Ontario can this apple be grown to its fullest flavor and perfection.

The King is my own favorite as a winter dessert apple, and it has few equals. Its chief fault or faults are a disposition to drop prematurely and is rather a shy bearer, but these faults are largely corrected, especially the latter, by top working it on to a hardy, healthy stock.

The Blenheim Orange Pippin is a fine, clean, well-colored apple of good flavor, and a good market variety, but a little shy in bearing in some localities. But it is reported in some places as bearing immense crops.

The Ben. Davis is the poorest in quality of any in the list I have mentioned, but it is such a long keeper, an early and abundant bearer, and for shipping long distances, as to foreign markets, it stands the handling better and gets there in the best shape of any variety. So that its many good qualities more than make up for its lack of flavor.

The other varieties mentioned are all good market sorts, and likely to be always in demand.

There is one old, well-known and highly-prized apple that cannot be omitted from the list, viz., the "Famuse" or Snow. No list would be complete without it. As a Christmas dessert apple it is a great favorite, and although it spots so badly in some seasons as to be almost worthless, yet we can hardly discard it yet, it is such an old favorite.

To grow all these varieties to the greatest point of perfection the question of manure, cultivation and pruning comes in, and these matters I will discuss in a future article, as this one is already long enough.

A Few Hints Regarding Tomatoes.

BY BOB BARCLAY, BALMORAL.

Nearly every nurseryman and seedsman have what they call their leader, and I think it would not be a bad plan for every gardener or farmer owning a garden to follow their example as regards their vegetables, and have for their leader the tomato; I especially recommend this variety, as it may be said to be a combination of fruit and vegetable, and can be used as such in many different ways. In the green state you can make them into the finest pickles of different descriptions, and also produce from them the most magnificent preserves, either as jelly or in the whole state, while in the ripe there is nothing makes finer catsup or is more delicious in the raw state with pepper and salt, along with a good steak, or indeed with any other piece of meat. While this vegetable can be adapted so, and is a favorite with almost everyone, it is also one of the best under cultivation (notwithstanding the would-be-medical-scare of producing cancer) for the entire human system, and is far superior to stoned fruits, either green or dry, for our rising generation on account of its easy digestion. There is no end of varieties of this most estimable eatable, but there are only a few of them that will succeed in Manitoba, and give thorough satisfaction to the growers. I have grown and cultivated this class more or less for over a dozen years in different localities throughout the province, and am prepared to give advice with every confidence, having derived it myself from personal experimenting on many different kinds.

Out of the multitude of sorts advertised there are only a few which I can safely recommend, which are, in order of merit, Dwarf Champion, Ruby, Stone, Steele's Earliest of All and Atlantic Prize in the larger varieties, and Yellow Plum, Red Cherry and Winter Cherry or Strawberry in the smaller sorts.

I would take this opportunity of warning the readers of the ADVOCATE against being carried away by clap-trap advertisement and prizes offered for large tomatoes by many really unknown and unreliable seedsmen in the east and across the border. My experience, as well as that of many others, teaches me that it is much safer and more satisfying to deal with respectable merchants at home, and there are plenty of them.

Spray Calendar.

The farmers and fruit growers are in need of short, concise directions for applying sprays to cultivated plants. Although much has been written on the subject the information is so scattered that it cannot readily be brought together. The following calendar, which was prepared by Mr. E. G. Lodeman, Assistant Horticulturist, of Cornell University Experiment Station, will be found of much benefit in supplying full, and, at the same time, concise directions for the preparation and application of all the important compositions used in spraying fruit trees. The more important insect and fungous enemies are also mentioned, so that a fairly clear understanding of the work can be obtained by examining the table below. When making the applications advised, other enemies than those mentioned are also kept under control, for only the most serious ones could be named in so brief an outline. In this calendar it will be seen that some applications are italicized and these are the ones which are most important. The number of applications given in each case has particular reference to localities in which fungous and insect enemies are most abundant. If your crops are not troubled when some applications are advised, it is unnecessary to make any.

PLANT.	First Application.	Sec'd Application.	Third Application.	Fourth Applicat'n.	Fifth Application.	Sixth Application.
APPLE (Scab, codlin moth, bud moth.)	When buds are swelling, copper sulphate solution.	Just before blossoms open, Bordeaux. For bud decay. For bud decay when leaf buds open.	When blossoms have fallen, Bordeaux and Arsenites.	8-12 days later, Bordeaux and Arsenites.	10-14 days later, Bordeaux.	10-14 days later, Bordeaux.
BEAN (Anthracnose.)	When third leaf expands, Bordeaux.	10 days later, Bordeaux.	14 days later, Bordeaux.	14 days later, Bordeaux.		
CABBAGE (Worms, aphids.)	When worms or aphids are first seen, Kerosene emulsion.	7-10 days later, if not heading, renew emulsion.	7-10 days later, if heading, hot water 130° F.	Repeat third in 10-14 days if necessary.		
CHERRY (Rot, aphids, slug.)	As buds are breaking, Bordeaux; when aphids appear, Kerosene emulsion.	When fruit has set, Bordeaux. If slugs appear, dust leaves with air slaked lime. Hellebore.	10-14 days if rot appears, Bordeaux.	10-14 days later, Ammoniacal copper carbonate.		
CURRENT (Mildew, worms.)	At first sign of worms, Arsenites.	10 days later, Hellebore. If larvae mildew, Bordeaux.	If worms persist, Hellebore.			
GOOSEBERRY (Mildew.)	When leaves expand, Bordeaux.	10-14 days later, Bordeaux.	10-14 days later, Ammoniacal copper carbonate.	10-14 days later, repeat third.		
GRAPE (Fungous diseases.)	In Spring when buds swell, copper sulphate solution.	When leaves are 1-1 1/2 inches in diameter, Bordeaux.	When flowers are open, Bordeaux.	10-14 days later, Bordeaux.	10-14 days later, if any disease appears, Bordeaux.	10-14 days, Ammoniacal copper carbonate. Make later applications of this if necessary.
NURSERY STOCK (Fungous diseases.)	When first leaves appear, Bordeaux.	10-14 days, repeat first.	10-14 days repeat first.	10-14 days repeat first.	10-14 days repeat first.	10-14 days, repeat first.
PEACH, NECTARINE (Rot, mildew.)	Before buds swell, copper sulphate solution.	Before flowers open, Bordeaux.	When fruit is nearly grown, Bordeaux.	5-7 days later, Ammoniacal copper carbonate.	5-7 days later, repeat fourth.	5-7 days later, repeat fourth, if necessary.
PEAR (Leaf blight, scab, psylla, codlin moth.)	As buds are swelling, copper sulphate solution.	Just before blossoms open, Bordeaux. Kerosene emulsion when leaves open for psylla.	After blossoms have fallen, Bordeaux and Arsenites. Kerosene emulsion if necessary.	8-12 days later, repeat third.	10-14 days later, Bordeaux.	10-14 days later, Bordeaux if necessary.
PLUM (Fungous diseases, curculio.)	When buds are swelling, copper sulphate solution.	When blossoms have fallen, Bordeaux. Begin to jar trees & spray with Arsenites for curculio.	10-14 days later, Bordeaux and Arsenites.	10-20 days later, Bordeaux and Arsenites.	10-20 days later, Ammoniacal copper carbonate.	2-3 weeks before plums ripen, Bordeaux or Ammoniacal copper carbonate.
POTATO (Blight beetles.)	When beetles first appear, Arsenites.	When vines are two-thirds grown, Bordeaux and Arsenites.	5-15 days later, Bordeaux.			
QUINCE (Leaf and fruit spot.)	When blossom buds appear, Bordeaux.	When fruit has set, Bordeaux.	10-20 days later, Bordeaux.	10-20 days later, Bordeaux.	10-20 days later, Bordeaux.	
RASPBERRY, BLACKBERRY, DEWBERRY (Anthracnose.)	Before buds break, copper sulphate solution.	During summer, if rust appears on leaves, Bordeaux.	(Orange or red rust is treated best by destroying the plants.)			
STRAWBERRY (Rust.)	As first fruits are setting, Bordeaux.	As first fruits are ripening, Ammoniacal copper carbonate.	When last fruits are harvested, Bordeaux.	Repeat third if foliage rusts.		
TOMATO (Rot, blight.)	At first appearance of blight or rot, Bordeaux.	Repeat first if diseases are not checked.	Repeat first if necessary.			

For plant lice use kerosene emulsion on all plants. Black knots on plums or cherries should be cut out and burned as soon as discovered.

FORMULAS.

**Bordeaux Mixture.**  
Copper sulphate..... 6 pounds  
Quicklime..... 4  
Water..... 25 to 40 gallons  
Dissolve the copper sulphate by putting it in a bag of coarse cloth and hanging this in a vessel holding at least 4 gallons, so that it is just covered by the water. Use an earthen or wooden vessel. Slake the lime in an equal amount of water. Then mix the two and add enough water to make 25 or 40 gallons. It is then ready for immediate use. For rots, moulds, mildews, and all fungous diseases.

**Ammoniacal Copper Carbonate.**  
Copper carbonate..... 1 ounce  
Ammonia..... enough to dissolve the copper  
Water..... 9 gallons  
The copper carbonate is best dissolved in large bottles, where it will keep indefinitely, and it should be diluted with water as required. For same purpose as Bordeaux.

**Copper Sulphate Solution.**  
Copper Sulphate..... 1 pound  
Water..... 15 to 20 gallons  
Dissolve the copper sulphate in the water, when it is ready for use. This should never be applied to foliage, but must be used before the buds break. For peaches and nectarines use 25 gallons of water. For fungous diseases.

Keep the Paris green thoroughly stirred, for if this is not done it will settle in the bottom of the barrel, and the last half of the mixture will be so strong that it will burn the foliage of the trees. Many of the pumps have automatic agitators, which do the work very well, but still it is wise to make sure by occasionally giving the mixture a stir with an old broom.

Pumps may be purchased from leading seedsmen and hardware dealers. One which can be fitted to a barrel and mounted on a stone boat, or wagon, is the most convenient form if the orchard is of any size.

**Paris Green.**  
Paris green..... 1 pound  
Water..... 250 to 300 gallons  
If this mixture is to be used upon peach trees, 1 pound quicklime should be added. Repeated applications will injure most foliage, unless lime is added. Paris green and Bordeaux can be applied together with perfect safety in the proportions as for Paris green and water. The action of neither is weakened, and the Paris green loses all caustic properties. For insects which chew.

**London Purple.**  
This is used in the same proportion as Paris green, but as it is more caustic it should be applied with the lime, or with the Bordeaux mixture. Do not use it on peach or plum trees. For insects which chew.

**Hellebore.**  
Fresh white hellebore..... 1 ounce  
Water..... 3 gallons  
Apply when thoroughly mixed. For insects which chew.

**Kerosene Emulsion.**  
Hard soap..... 1 pound  
Boiling water..... 1 gallon  
Kerosene..... 2 gallons  
Dissolve the soap in hot water, or by boiling, add the kerosene, and churn with a pump for 5-10 minutes. Dilute 10 to 15 times before applying. For insects which suck, cabbage worms, and all insects which have soft bodies.

Professor Fletcher advises the use of the following formula for the preparation of kerosene emulsion:—Coal oil, two quarts; rain water, one quart; common hard soap, two ounces; mix as above and dilute with nine times its bulk of water. This preparation gives good results in destroying lice on cattle and hogs, and in spraying the inside of hen houses for the same purpose. If sprayed on cattle at intervals of three days it will prevent the attacks of the horn-fly. At the Iowa Experiment Station, this emulsion when used on sheep was very successful in ridding them of ticks.

The chemicals recommended for use may be obtained in any drug store.

Raspberry Culture.

BY ELLIS F. AUGUSTINE.

Raspberry culture is receiving a great deal of attention of late years, yet there is still a large number of farmers who, after purchasing choice plants from reliable nurserymen, fail in obtaining satisfactory results, through their lack of knowledge as to their proper care and cultivation. In this article I shall endeavor to give instructions as to how they should be grown so as to obtain a large annual yield, and have the plantation in good bearing condition for a long term of years.

To give the best results, raspberries should have a rich, warm soil that is thoroughly drained, either naturally or artificially, as it is impossible for them to thrive upon a soil that is cold or wet. Any land that will grow a heavy crop of wheat will answer the purpose, although a dark sandy loam is preferable to a heavier soil. The fall before planting, the soil should be plowed to as great a depth as possible, and if it can be subsoiled, so much the better. This should be done by following in the furrow after the first plowing with a common plow, so as to loosen up the subsoil to a greater depth but not to throw it to the surface. The following spring the land should be thoroughly cultivated as soon as it is in fit condition for working, and the plants should then be set out as soon as possible, the earlier the better, as there is then less danger of the young shoots being broken off, which begin to grow very early in the season. In transplanting never allow the roots to become dried by exposure to wind or sunshine, but keep them constantly covered with a damp cloth, or immersed in a pail of water.

In marking out the rows endeavor to get them as straight as possible.

One of the mistakes that is commonly made in planting is in setting the plants too close together. For black caps the rows should be seven feet apart, and the plants four feet apart in the rows. This gives ample room for horse cultivation after the bushes have reached their full size. As soon as the young canes have reached the height of two or three feet the top should be cut off. This causes them to throw out side branches or laterals, thus greatly increasing the number of branches which are to produce the fruit-bearing stems the following season. In the fall, as soon as all growth is over, cut off the laterals to within about ten or twelve inches of the main canes; this gives more room for cultivation and gathering the fruit, lessens the danger of winter-killing, increases the yield, and prevents the berries from drooping to the ground and becoming soiled from dirt washing over them during heavy rains.

Never cut off the laterals while the canes are still growing, or they will throw out the shoots which are to bear next year's fruit and these will become winter-killed, thus ruining the entire season's crop.

The second season the main canes may be allowed to grow to the height of two and a-half or three feet before cutting back.

For cutting off the main canes, a sharp, heavy knife is an excellent article; but for trimming in the laterals, a hedge shears will be required.

A row of vegetables, such as potatoes or beans, may be grown to good advantage between the rows of berry bushes the first season, but corn should not be planted, as it will cause the young plants to be too much shaded. After the vegetables have been harvested, or about the 1st of September, the ground should be lightly ridged up to the bushes, leaving a furrow between each row. This protects the roots during winter, and allows the surface water to flow rapidly away. Never cultivate after the 1st of September, as it will cause a late, rank growth, which is very easily winter-killed. But up to that time, the cultivator and hoe should be kept almost constantly at work, as it is only in loose porous soil that raspberries will thrive to the greatest perfection. The second season the cultivator should be set to work as soon as the ground is in fit condition, cultivating the ridges back to a level again. Keep the soil constantly stirred until just before the fruit begins to ripen, after which time cultivation will do more harm than good. As soon as all the fruit has been gathered, cut out and burn all the old canes; then ridge up again as before described. If it is desired to raise young plants to set out a new plantation, about the 1st of September, or immediately after the ground has been ridged up, bend the ends of the canes down to the ground and throw a little earth over the tips, which will then take root, and the following spring will be ready for transplanting.

If berry bushes are treated in the above manner they will continue to bear large crops for eight or ten years, after which they should be cut out and burned. Of late years there is a fungous disease, commonly known as raspberry rust, which is doing much damage in many berry-growing districts. The symptoms of this disease and the means for its prevention I may perhaps discuss in a future issue.

The second connection with closed. Our have returned work.

The term in attendance ladies took the Dairy. Too but a short time one of which have been w separator, b times they h and it is of n think time things on ear kind, dairy stu Any business ways have fa and can secur \$1.25 per day, wages and wh who spend so make the fine pared for an c passable butt right, but it i man's skill c points occur our work, an by them are students find other cause o that some rec write saying i on their h home to atten lose his patro without recei to me that t factory is abo engaged in—1 yard looking

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## DAIRY.

## The Dairy School of 1894.

The second session of the Dairy School in connection with the Ontario Agricultural College has closed. Our students have come, and most of them have returned to their factories and some to farm work.

The term has been successful, with 103 students in attendance, of whom seven were ladies. Four ladies took the full course and three took the Home Dairy. Too many of the dairy students stop for but a short time. There are many causes for this, one of which is that some imagine that after they have been working in each department (cheese, separator, butter and milk-testing) about three times they have learned all there is to be learned, and it is of no use to stay longer, wasting as they think time and money, the two most precious things on earth in the eyes of the majority of mankind, dairy students included. This is a great mistake. Any business that can be learned in two weeks will always have far more applicants than there is room for, and can secure all the help needed at from \$1.00 to \$1.25 per day, but the men who will command high wages and who are wanted in the trade are those who spend some time in learning the business, who make the finest goods all the time, and who are prepared for an emergency. Almost anyone can make passable butter and cheese if everything goes all right, but it is when something goes wrong that a man's skill comes into play. These troublesome points occur nearly every day in connection with our work, and the students who are there to profit by them are those who will succeed. Our best students find the two-month term too short. Another cause of students leaving too soon is the fact that some receive letters from friends at home who write saying a neighboring factoryman is encroaching on their territory, and they had better come home to attend to this matter at once. Rather than lose his patrons the student bids farewell and leaves without receiving the benefit he should. It seems to me that this trying to take patrons from another factory is about the meanest business a man can be engaged in—next to prying around a man's barnyard looking for watered or skimmed milk.

A man who does this in the absence of his neighbor should be prosecuted for stealing, as it is nothing more or less. I hope the time will come when this shall be done away with.

Lack of funds is another cause of short stops. During the term we have had a number of special lists in judging cheese and butter come to the school and give those in attendance lessons on this most important branch of the dairy business, viz., knowing good cheese and butter and scoring them by points.

Discussions in the afternoons on Dairy topics, led by the Instructors and in the Live Stock class-room, where animals were brought before the class, formed a valuable feature of the course. During the two months the field of dairying was fairly well covered, and in addition lectures, all bearing more or less on the subject of dairying, were given by nearly all the members of the college staff.

Habits of cleanliness, tidiness, order, thoroughness and doing good work we tried to instill into every student.

I am glad to be able to say that most of those who come to us have more or less of these qualities, and if more makers had a two-months drill on these points, would wear clean white suits every day during the term and could see that it is not necessary to get on the very worst clothes that can be found to work in a factory, it would do good to the dairy industry of the Province.

Thirty-nine students wrote on the final examinations, all of whom passed and will be granted certificates. This is not a very large number out of 100, but it is better to grant certificates to those only who merit them. This year we intend granting special certificates to those who pass, after they have proven their competency to manage a cheese or butter factory for two years, one of which must be after taking the course. During this time they must send monthly reports of their work to the Department at the college. The time will soon come when men and women holding these certificates can command higher wages than those who do not.

We want 100 students for the dairy course of 1895, and would like those who will stay the full term. A preference will be given those who will agree to stay the full term.

## THE HOME DAIRY.

We intend making this branch a specialty in connection with the Dairy School. There are a number of young men and young women on the farms of Ontario who could profitably spend a couple of months with us at dairy work, and we hope to see the attendance increase.

There should be at least 25 young ladies take the dairy course next year. We have every accommodation to make them comfortable and give good instruction. Girls, do without a new dress or a new hat and save the money to take the dairy course. It will be money well saved.

H. H. DEAN, Ont. Ag. College, Guelph.

## Butter and Butter Making.

BY MRS. JOSEPH YULL, MEADOWSIDE FARM, CARLETON PLACE.

We are of the opinion that Canadian butter will not take the place in the British market that our cheese does, until it is made in creameries and made in winter. We strongly recommend fitting up cheese factories for the manufacture of cheese in summer and butter in winter. If patrons would have their cows calve in the months of November and December, their milk may be made into cheese in the summer and butter in winter. If the right breed of cows are kept and fed properly, they will milk well all winter and pretty well all summer.

There are only four points necessary for the manufacture of good butter. Two of these belong to the men and two to the women. The two that belong to the men are:—1st, The right breed of cattle for the purpose intended. 2nd, The feed.

The two points that belong to the women are attention and cleanliness. First select the best breed of cattle best suited for your purpose. This being done, next comes the feed. When I speak of feed, I mean water as well as food. When cows are milking, feed nothing but sweet and wholesome food: do not allow cows to eat at the stable door. I do not mean to say that horses' bedding is bad for young cattle, or for cows that are not milking, but it is not fit for cows that are giving milk. Allow your cows to get nothing but the purest water, and of that as much as they will drink, at least twice a day.

The milk from our common Canadian cows, when grass fed, contains 87 per cent. water. The cow has no inside filter to purify water. Therefore, if the water is impure, the impurity goes straight into the milk. If a cow drinks 100 pounds of impure water, 87 per cent. of the impurities of that water will be found in the milk. Never allow your cows to drink water that you would not drink yourself.

We will take it for granted that the man has done his part, that is he has fed and watered his cows properly. Next comes the woman's part. First is the milking. Now I do not wish to be understood as saying that the women should do the milking, but I think the women should see that it is properly done, for I am afraid if it is left to the men, sometimes it will be done in a very slovenly manner. The milking should be done with clean hands. The cow's udder should be rubbed clean with a cloth before commencing to milk. Strain the milk as soon as possible after milking. I consider the separator is the proper way to take the cream out of the milk, but if you have no separator, strain the milk into cans 8 inches in diameter and 20 inches deep, add enough water, heated to 130 degrees Fah., to bring it up to 98 degrees Fah., the temperature of the milk when taken from the cow. Place it in water sufficiently cold to bring it rapidly down to 40 degrees Fah. In summer the cream will be all at the top in twelve hours. In winter it requires 24 hours. Skim with a tin cup. Put the cream into a crock or tin can. Keep it below 55 degrees Fah., until you have enough cream to churn. Twenty-four hours before you have enough cream to make a churning, take half a gallon of cream, heat it to 60 degrees Fah., keep it in a warm place to ripen. Warm all the cream you intend to churn to 60 degrees Fah., then add the half gallon of ripened cream, stir thoroughly, put on the cover until it is ripe enough for churning, which should be in about 24 hours. Churn as soon as the cream is slightly acid. Never allow it to rise above 64 deg. Fah. in winter and 58 degrees Fah. in summer.

If your cream has been taken off without any milk—we always skim some milk with the cream so as to float the butter in the churn—but if there is no milk in your cream add one-quarter part as much water as you have cream, to float the butter.

## THE KIND OF CHURN TO USE.

Use a churn without any breakers in it. The smoother and plainer the inside of the churn is the better. This holds good with all milk dishes and dairy utensils. The plainer they are, the easier it is to keep them clean. We use a No. 5 Daisy churn, which churns ten gallons of cream. All our instructions, such as the amount of cream to ripen, the quantity of water to use, are based on ten gallons of cream. The quantity can be changed to suit the amount of cream churned.

## HOW TO PREPARE THE CHURN.

Scald with hot water, and in summer rinse with cold water after scalding. Take one yard of best cheese cloth, run a wide hem across each end and three plaits in each side so as to form a bag; run a wooden rod through each hem; hang it in the churn and strain the cream through it.

If butter color is to be used, this is the stage at which it should be put into the churn. It depends a good deal on the kind of food that is being fed whether you require to use butter color or not. If cows are fed well-matured ensilage, very little butter color will be required, but if your customers want it colored, color it for them. There is a very close connection between the eye and the appetite, therefore always put up your butter in the most pleasing form possible. We have used Wells-Richardson's and Hanson's butter color, and found them both to give good satisfaction. One teaspoonful is enough for ten gallons of cream.

If your churn requires a higher temperature,

raise it either by placing some cream in a tin dish and set it into a pot of hot water, keeping it thoroughly stirred. The fault of this method is that the butter made from the part of the cream which it heated, if it has been raised above churning heat, will be soft. If you prefer heating the cream, heat all the cream to the required temperature. We raise the temperature by adding water at 130 degrees Fah. There can be no rule laid down for the temperature at which to churn. That depends to some extent on the temperature of the room in which you churn, the time of the year and the churn you use. In summer we churn at from 58 to 60 degrees, and in winter at from 62 to 64 degrees Fah. Churning should be done in from 30 to 35 minutes. When the particles of butter are the size of flaxseed, put half a pail of cold water into the churn to separate the butter from the buttermilk. Turn the churn round half a dozen times, draw off the buttermilk; allow it to pass through a fine strainer to catch any particles of butter that would otherwise escape. Then put the pin in and put three pails of cold water, at from 40 to 45 degrees Fah., into the churn; then put on the cover and churn for half a minute at the rate of 100 revolutions per minute, so as to break up the butter into small particles. Draw off the water and repeat the water process, then put in two pails of water, at 52 degrees Fah. in winter and 45 degrees Fah. in summer, with two teacupfuls of salt in them. Turn the churn a few rounds and draw off the pickle. By this time the butter granules will be as fine as hayseed.

Salt to whatever degree your customers desire. We use best Liverpool salt, one ounce to every pound of butter. The salt should be sifted into the churn through a fine hair sieve; put on the cover, turn the churn half round for a few times slowly, to allow the salt to mix thoroughly with the granulated butter. Turn the churn around slowly, removing the pin occasionally to allow any pickle to drain off that may gather in the churn. Turn until the butter is formed into rolls, by that time the butter and salt will be thoroughly mixed. Lift the butter into a butter bowl with a wooden ladle. Let it stand for eight hours. The hand should never be allowed to touch the butter. Cut the butter down through with a butter ladle. If white specks appear in the butter, work them out with pressure, but if the cream has been strained and has not been cooked in heating, or the water has not been put into the churn hot enough to cook the cream, and the churning stopped when the particles of butter were no larger than flax seed, there can be no white specks in the butter. If no white specks appear, the butter is worked enough. Put up your butter into whatever kind of packages your customers require it. We find that half pound prints suit our customers best. We print the butter as it comes from the churn, without any more working, in half-pound prints, and wrap in parchment paper with our name and address on it. We have two boxes fitted up with wooden trays like egg boxes, which hold 30 pounds each. While one of these boxes is away being emptied, we are filling the other. We get 25 cents per pound the year round for our butter.

For the benefit of those who wish to pack their butter, I will tell you how we used to pack ours.

## HOW TO PREPARE THE TUB.

Fill it with fresh buttermilk. Let it stand for twelve hours. Empty out the buttermilk and wash with cold water, using a brush. I would say here that butter-makers would find it a great advantage if they would use a brush instead of a cloth when washing dairy utensils. Fill with boiling pickle, and let it stand for twelve hours. Scour with coarse salt, rinse with cold water, put in a half teacup of salt, two tablespoonfuls of white sugar, and one of saltpetre; cover with a piece of cloth, then it is ready for the butter.

When filling the tub, keep the butter high in the centre, so as to run the pickle to the outside of the tub, as that is where butter spoils first. After the first churning is put in, cover with a cloth with an inch of salt over it to exclude the air. When adding each churning remove the cloth, and put it on again until the tub is filled. Fill to within one-quarter of an inch of the top; cover with two-ply cloth, press the cloth well down around the edge; cover with the following mixture:—One pound salt, 2 ounces white sugar, and 1 ounce saltpetre. Wet with boiling water, allow it to cool before you use it, then spread it over the top of your tub. This will become perfectly hard and air-tight. Have a rough box in your milk room, large enough to hold all the butter you will make in the season. As soon as the tub is filled, put it into the rough box and cover with coarse salt to keep it from the air. Although we tell you how we packed and kept our butter, we do not recommend packing. We make butter as already described, and have shipped it to Ottawa for three years, a distance of 30 miles, without using ice when shipping.

[NOTE.—We would suggest instead of ripening a fresh "starter" every time, that the buttermaker set aside in the cool milk room, in a glass sealer or other clean vessel, a small quantity of the ripened cream taken out just before churning. A quantity of buttermilk drawn off just after the churn stops has been found by many to give equally good results as sour cream for a "starter." More convenient than skimming off the cream with a tin cup is to draw off the skim milk through a tap at the bottom of deep setting can, and finally the cream.—ED.]

**Early Cheese—Can the Quality be Improved?**

BY J. A. RUDDICK, SUPT. EXPERIMENTAL DAIRY, WOODSTOCK, ONT.

The early make of Canadian cheese has, generally speaking, been an unsatisfactory product, inasmuch as the quality is almost invariably inferior to that of the later made goods. Were it not for the fact that the stock of cheese is lower at this time of the year than at any other, consequently the demand keener, there would be more difficulty experienced in disposing of these cheese than is now the case. But I think there are good reasons for supposing that this extra demand is likely to fall off considerably in the future. There is a growing preference for old cheese noticeable among consumers, and since we have succeeded in making cheese having better keeping qualities, along with improved facilities for keeping them, there is nothing to prevent this demand from being filled. Hence, the maker of early cheese will find his troubles on the increase unless something is done to improve the quality.

Doubtless there is something in the character of the milk at this season of the year which unfits it for the making of strictly fancy cheese. Yet it seems to me that a great deal of the trouble may be overcome, and improvement made in the quality, if the patrons only exercised greater care in handling the milk and some cheesemakers understood better what modifications it is necessary to introduce into the process of cheesemaking in order to produce certain desirable qualities in the cheese.

To the patron we must first look for improvement in the quality of the milk as delivered at the factory. Let him bear in mind the fact that during the warm, moist weather of spring we have in the atmosphere the condition most favorable for the growth and development of those organisms and germs of ferment which are the cause of all changes that milk undergoes after it is drawn from the cow—even the common souring. While cows are being milked in the stable there is always some danger of "stable odors" being imparted to the milk, if proper precautions are not taken to ensure good ventilation, with cleanliness in milking, etc. Where ensilage is fed from a silo in or near the stable there is always more or less smell from it, which, although not at all disagreeable in itself, is not a desirable flavor in milk; yet if exposed to this odor any length of time there is great risk of it being affected and tainted by it. Look out for decaying animal or vegetable matter that may have accumulated during the winter, and keep the milk away from any appearance of this kind of thing. There is more danger of milk souring in the spring than in the summer or fall, the temperature being the same, or in other words, it will sour quicker in a given length of time during spring weather than it will later on.

There are also flavors due directly to the food eaten by the cow which are injurious, such as musty hay or corn fodder, decaying roots, or potatoes, even if perfectly sound. The latter should never be fed to milch cows without being cooked. When the cows are first turned out on the fields after being fed on dry feed all winter, they are so eager for something green and fresh that they will eat weeds and herbs of rank flavor which they will not touch at all when the pastures become better. It is evident, therefore, that it is more difficult to produce good milk in the spring than it is later in the year. The best remedy is greater care and vigilance in every detail of the work. It will pay to see that everything is attended to in the best possible manner, because it means better cheese and more money.

The cheesemaker finds in the spring that if he would suit the demands of the market he must make a mild flavored cheese that will cure quickly and be ready for the buyer as early as possible. These requirements of the market being somewhat different from those existing at other seasons of the year, it is obvious that some modifications of the process of making are necessary in order to meet them. It is here that many of our makers fail, owing to a lack of a proper understanding of the particular effect that certain changes in the process of making will have on the resulting product. The careful maker is always on his guard against a surprise by the rapid development of lactic acid in the milk or curd so common at this season. He is also very watchful of the milk as it is received, and the temperature being rather low, objectionable taints or odors are not always easily detected. There are two kinds of taints and odors; first, those due directly to the food eaten by the cow, and second, those due to contamination after the milk has been drawn. They may be distinguished, it is said, in the following way:—The first, or "feed flavors," are most noticeable immediately after the milk is drawn from the cow and never get any worse, while the other kind are not present at all at first, but only appear after the germs have had time to grow and develop in the milk.

It is necessary to draw the whey with less acid on the curd than for summer cheese; not because it requires less acid, but on account of the faster rate at which it develops it is necessary to keep it in check to a certain extent in order to secure a result uniform with the summer practice. The ripening of cheese depends very largely upon three things, viz.: Moisture, temperature and salt. Moisture is an essential condition for the growth of these ferments which constitute the curing process. A high temperature is also a more favorable condition than a low one, while salt, owing to its antiseptic qualities, has the effect of retarding the

curing in proportion to the amount used. This ripening process commences in the vat or sink, and, in fact, it proceeds very rapidly at this stage on account of the extra moisture in the curd, the high temperature and absence of salt. Since we want a quick curing cheese in the spring we can always secure the same by leaving slightly more moisture in it, using less salt and keeping up the temperature in the curing room. The curd should be allowed to "mature" fully as much, if not more, than at other seasons of the year. In this way a close, solid, yet "meaty," cheese can be made, a cheese which will break down quickly. Of course it will not take so long for the spring curd to mature, owing to the more rapid development of the process, and the absence of that class of fermentation known to cheesemakers as "gas" in the milk at this time of the year.

To sum up I would say, use enough rennet to produce coagulation fit for cutting in 15 to 20 minutes; this will help to retain a little extra moisture. Keep the curd warm, over 92° Fah., until time arrives for milling. Use about 1½ to 2 lbs. of salt per 1,000 lbs. of milk, varying the amount according to the amount of moisture in the curd. Allow the curd to cool down after salting and before putting to press to 80° or 85° Fah. Keep temperature in curing room about 70°. Be careful and not carry these modifications too far into summer, but gradually make the cheese firmer, increase the salt and lower the temperature in the curing room almost from the start.

NOTE.—Just after calving milk should not be used till in good condition.—ED.

**Fighting Counterfeit Dairy Products—A Note of Warning.**

"Skimmed cheese" and "filled cheese" have done the United States dairy industry very serious and lasting damage, but with the development of those colossal dressed meat establishments has sprung into existence a far more deadly menace. Bogus butter (butterine or oleomargarine as it is called) has at last roused the American butter dairymen into action. Everywhere it meets the honest product, and threatens the life of the honest business. In self-defence the dairymen are now forced to struggle against this gigantic fraud, which has behind it all the millions and all the power of the dressed beef magnates, whose "original packages" of fraudulent butter flood the Republic in every direction. Two organizations have lately been organized to fight the common enemy. One of these, "The National Dairy Union," was born at Chicago and declares war along the line of legislation. Stringent laws will be sought and enforced. The second organization sprang into existence at Cleveland, and is called "The National Dairy Congress," which proposes to awaken the country by a campaign of education mainly through existing dairy associations and the like. The one attacks the fraud through the legislator by the power of the voter; the other has in view the betterment of the practical dairyman by education, as well as his protection.

Now that Canadian butter dairying has begun the march of progress in real earnest, the FARMER'S ADVOCATE would warn those engaged therein to be on the constant watch against a repetition here of what has occurred in the United States. Especially it is necessary to guard against the first, insidious encroachments of the enemy. From the Dairy Commissioner all along the line let there be unceasing vigilance. Bogus dairy products must be rigidly kept out of this country, and any attempt, whether as an adjunct of a dressed meat enterprise or otherwise, to develop the bogus trade here be stamped out at the very outset. Let legislation and whatever might in the future have a possible bearing upon this business be closely watched. Canadian cheese has won a world-wide reputation as an honest, high class product. So let it be with Canadian butter. Forewarned is forearmed.

**Is the Good Feeder Encouraged?**

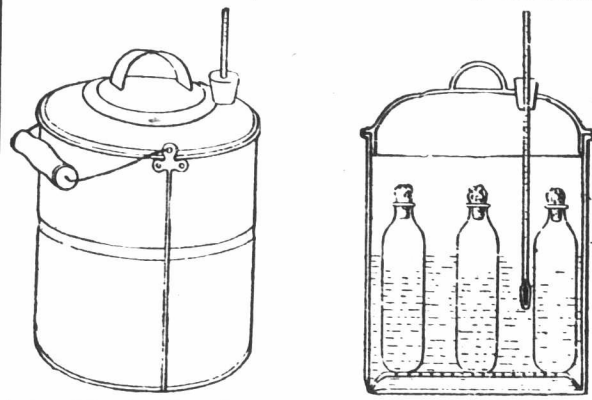
At a Farmers' Institute meeting, held in Dorchester Township, it was raised as an objection to the Babcock Test that it did not do justice to the man who furnished his cows a generous supply of good food. In support of this contention it was cited that a patron of a certain cheese factory who let his cows pick their subsistence from the roadside last summer sent in the richest milk. Possibly so. It was observed during the drought in more than one place that as the milk supply from certain herds dwindled down it showed a rather higher fat percentage. An abnormal case was mentioned by a speaker at the same meeting where four cows gave a mess of milk at one milking that tested a phenomenally high per cent. of fat, but there were only 15 lbs. of it from the whole four cows! At the next milking the quantity increased, but the fat percentage dropped down one-half. At one factory where the Babcock was used last season to divide the proceeds, there were two patrons with the same number of cows each, living near neighbors. One herd furnished milk testing from one-half to three-quarters of one per cent. higher than the other the season through, but the man with the lower testing milk received by far the more money. On account of the greater quantity of milk furnished he far outstripped his neighbor in the number of pounds of fat sent in to the factory. It is not the percentage of fat, but the pounds of fat produced that tell the tale. The Babcock Test without the scales is

not an adequate test of a cow's performance as a milker. Hence the careful dairyman who selects and feeds his cows generously and judiciously will most certainly be rewarded over and above the man whose cows pick the bare, brown herbage of the roadside or of his own fields if dry weather has put them in that condition. Moreover, if his drop of rich milk, providing it is rich, is well cared for he is certainly entitled to be paid for it at its full cheese-making value. If, however, he continues to starve his cows their usefulness in keeping him from starvation will soon be gone, while his more generous neighbor and his herd will continue to thrive. One careful factoryman reports that not only was a good flow of milk maintained in the Fall, but the fat percentage was improved when the cows were given a run on second growth clover and the fat percentage lowered when they were put on other feed. On being returned to the clover the quality again improved. Once and for all, farmers may make up their minds that if a cow is to elaborate a generous supply of good milk she must have the raw material—plenty of good feed to do it with.

**Sterilization of Milk.**

At the request of the Secretary of Agriculture, the Chief of the Bureau of Animal Industry has furnished the following simple directions for the sterilization of milk:—

The sterilization of milk for children, now quite extensively practiced in order to destroy the injurious germs which it may contain, can be satisfactorily accomplished with very simple apparatus. The vessel containing the milk, which may be the bottle from which it is to be used, or any other suitable vessel, is placed inside of a larger vessel of metal, which contains the water. If a bottle, it is plugged with absorbent cotton, if this is at hand, or in its absence other clean cotton will answer. A small fruit jar, loosely covered, may be used instead of a bottle. The requirements are simply that the interior vessel shall be raised about half an inch above the bottom of the other, and that the water shall reach nearly or quite as high as the milk. The apparatus is then heated on a range or stove until the water reaches a temperature of 155 degrees Fahrenheit, when it is removed from the heat and kept tightly covered for half an hour. The milk bottles are then taken out and kept in a cool place. The milk may be used any time within twenty-four hours. A temperature of 150 degrees main-



tained for half an hour is sufficient to destroy any germs likely to be present in the milk, and it is found in practice that raising the temperature to 155 degrees and then allowing it to stand in the heated water for half an hour insures the proper temperature for the required time. The temperature should not be raised above 155 degrees, otherwise the taste and quality of the milk will be impaired.

The simplest plan is to take a tin pail and invert a perforated tin pie-plate in the bottom, or have made for it a removable false bottom perforated with holes and having legs half an inch high, to allow circulation of the water. The milk-bottle is set on this false bottom, and sufficient water is put into the pail to reach the level of the surface of the milk in the bottle. A hole may be punched in the cover of the pail, a cork inserted, and a chemical thermometer put through the cork, so that the bulb dips into the water. The temperature can thus be watched without removing the cover. If preferred, an ordinary dairy thermometer may be used and the temperature tested from time to time by removing the lid. This is very easily arranged, and is just as satisfactory as the patented apparatus sold for the same purpose. The accompanying illustrations show the form of apparatus described.

Everyone interested in dairying should not only read, but study that instructive little book, "Dairying for Profit, or the Poor Man's Cow," which may be obtained from the authoress, Mrs. E. M. Jones, Brockville, Ont. Price, 30 cents. Over 62,000 copies have been sold, and in order to further stimulate its circulation, we will give two copies to every old subscriber sending in his own name (renewal), and that of one new yearly subscriber, accompanied by two dollars.

BY MRS. J. A. RUDDICK  
An ancient conversation nowadays is and in ever the things poulterers, symposium Being ask too warm i too close." tried tubula house heart confused ab formerly sai off warm, v many anima again that when cooled stratum in a foul caves an alive. Some tube to shu times. One which made shut off too top, thus n been trying lator, with a cap too. feared the l found the ou displace an stant ventila ly, as they f enough to c was sheeted, side, with st between two few inches a away on w rafters, and t also boarded the ridge wa preventing t but conveyi which tube, roof and wa wall. In Ne are either pl house with two studdin thus getting already exist near eaves. ventilating separate tul and resembl I consider v regulated by of your thre ever not eno lator above like them, fa poultry roof floor and fo house, in wh attic; in wh about rats o ing could be Wire netting either way. thousand ye she was wor chicken, she afterwards l If there ev everything t for I believ house which surpasses th ventilators among poult disease we h four or five s suitable dim reckon by c compensation makes more means little ted gradual easiest warr winter healt was even a between the eggs" and "p to tolerate a are made as

A gentlen he called, in jumper," con or cabbage, v tried to peck experience w hens would r mon thing. better succes hog's head.

## POULTRY.

## Poultry on the Farm.

BY MRS. IDA E. TILSON, WEST SALEM, WIS.

An ancient symposium meant a conference or conversation of philosophers at a banquet, but nowadays there are symposiums on every subject and in every place imaginable. Perhaps some of the things said at recent Institutes by different poulterers, myself included, might form a sort of symposium and interest many others.

Being asked whether a hen-house could be made too warm in winter, I said: "Not too warm, but too close." In the discussion following, all who had tried tubular ventilation from the lower part of house heartily endorsed it. People are sometimes confused about the location of foul air, which was formerly said to rise, and indeed does rise as thrown off warm, which is why man's nose and that of many animals point downward, so as not to breathe again that just exhaled. But carbonic acid gas when cooled is very heavy and becomes the lowest stratum in any room or house. Dogs have died in foul caves and rooms where upright men remained alive. Some poulterers have a slide at bottom of tube to shut up the latter during severe windy times. One recommended for top a whirling vane, which made to turn broadside toward wind would shut off too direct a draught. Others had caps on top, thus modifying the force. I, myself, have been trying one capped and one uncapped ventilator, with the result that the latter now wears a cap too. "Go thou and do likewise." Some who feared the heavy, foul gases would not rise, had found the outside, cold, condensed air did come in, displace and force them up. With such constant ventilation, those gases are carried off promptly, as they first descend and collect, before "thick enough to cut with a knife." A stable mentioned was sheeted, papered and boarded, all on the outside, with studding left exposed inside. The space between two studdings was boarded over, except a few inches at bottom, next a part of the plate cut away on which rested the two corresponding rafters, and then the space between these two rafters also boarded over, till mouth of a ventilator in the ridge was reached, covered and inclosed, thus preventing the cold air from falling directly down, but conveying it by a continuous tube to the floor, which tube, as you have seen, followed outline of roof and wall, with only one turn, where roof met wall. In New Jersey, the paradise of poultry, they are either plastering or ceiling up hen-houses. A house with ceiled walls could have, between any two studdings, a few inches left open down low, thus getting the same tube, and if no ventilator already existed in roof, put one directly overhead, near eaves. I think this utilization of wall spaces in ventilating takes more time than to nail up a separate tube, but is neat looking, out of the way, and resembles plans employed in houses for people. I consider very ingenious the stove-pipe ventilator, regulated by damper, just come to my notice in one of your three "prize essays," all admirable. Whenever not enough draught, increase height of ventilator above roof, like the big mill chimneys, and, like them, fasten or anchor securely. Two or three poultry rooms were described as each on the lower floor and forming a part of the barn or carriage-house, in which cases tubes carried up into the open attics seemed sufficient. I heard nothing said about rats or mice running down, but an iron grating could be used at bottom, as in dwelling-houses. Wire netting is too fine for much passage of air either way. Biddy is far more valuable now than a thousand years ago, when, according to an old book, she was worth one penny; "a cock, two pence; a chicken, sheaf of oats, or one farthing, till it roosts, afterwards half a penny until it shall lay or crow." If there ever should come overproduction in quantity, there never can be of quality. So do everything possible to make your hens comfortable, for I believe that will prove the most expensive house which is the most uncomfortable. Nothing surpasses the old-fashioned side draughts and top ventilators in making swelled heads and eyes among poultry, and in sowing the seeds of a crop of disease we have no granary or market for. Giving four or five square feet of standing room per hen as suitable dimensions for house, I was asked why not reckon by cubic feet, and consider extra height a compensation for lack of floor space. Extra height makes more air to warm at a time; less ground room means little chance for exercise: Fresh air admitted gradually through a proper ventilator is easiest warmed, and exercise is the condition of winter health and egg production. By the way, I was even asked whether there is any difference between the expressions "winter production of eggs" and "production of winter eggs," but I decline to tolerate any such term as "winter eggs." Mine are made as nearly like summer ones as possible.

A gentleman said his little nephew had a device he called, in imitation of baby jumpers, a "chicken jumper," consisting of a string suspending a turnip or cabbage, which easily whirled and each biddy tried to peck as it came round her way. Then my experience was called for. Now, it is a true fact my hens would rather loaf than run after such a common thing. I never could make it work, but have better success with a sheaf of oats or wheat, or a hog's head. Upon remarking to a witty friend that

a certain paper was very soothing, she inquired whether I took it stewed or fried. So an eastern poultry writer who gave chopped straw as the secret of winter egg production drew out considerable discussion on how he used or fed it, till he explained the straw merely covered his grain ration, and made biddy scratch for a living.

As there is an annual crop of beginners in the poultry business, so the old question of breeds has a sort of perennial, evergreen interest. Being asked whether I would use Cochins or Brahmas as sitters, I replied that their fluff kept early settings warm, but later I should employ nothing with such dirty, clumsy, crushing feet. A cross of White Leghorns and Brahmas, and another of Brown Games and Buff Cochins, made me excellent sitters in days gone by. When yellow skin *versus* a pinkish or bluish hue came up, I did not find an opportunity to say that although northern and western markets still demand the former, I am reading that Philadelphia and Baltimore now prefer the latter. Whoever has not eaten a Langshan or Houdan, or even a Poland's fairly greyish flesh, better do so, proving the paler skin as acceptable to his mouth, and yellow effects somewhat "in his eye."

## Poultry Keeping.

BY JNO. J. LENTON, PARK FARM, OSHAWA, ONT.

Some take up poultry keeping as a source of pleasure regardless of expense, and thus go in for exhibition birds, which when the necessary time can be given, will prove a very interesting pursuit. But whilst there are tens who take up exhibition poultry, hundreds care nothing for the merely show points, yet take quite as great an interest in their birds as if they were winners at the principal shows. They like pure-bred stock as a rule, and are diligent students of the habits of their fowls. Such persons generally make the most successful poultry keepers.

There is yet another class who take up poultry keeping in the pursuit of health. Comparatively these form but a small section, but they must not be left out. To many a one poultry has been the best doctor they ever found. The fowls gave an object which was sufficient to induce regular out-of-door exercise, and this proved the remedy most needed.

Two things may be regarded as absolutely requisite for the profitable keeping of fowls; first, a suitable place to keep them in, and secondly, plenty of time to give them proper attention. With these requirements satisfied, anyone can maintain fowls with profit and obtain from them an amount of pleasure which, were there no profit at all, would be well worth the taking up of the enterprise.

There are two ways in which poultry keeping may be commenced. The simplest way is to buy a pen of say a cock and six or eight hens, and breed from these. But at the present season of the year this is the more expensive plan, for, as a rule, good fowls are scarce in the spring. Another plan is to purchase a "setting" of eggs from some breeder and hatch these out, for which purpose a broody hen can be bought. This can very easily be done a little later on in the season. If the breeder from which the eggs are obtained can be relied upon this plan may be adopted, but it is a risky thing to purchase eggs from an unknown person living hundreds of miles away. The better plan is to try and buy from some one near at hand, whose stock can be seen, and who is known. The question of pure *versus* cross-breeds is too long to be entered into at present, but we are strongly of the opinion that for the small breeder it is much better to keep pure stock. There is an unlimited number of breeds to select from, and the ideas of the poultry keeper can be very easily met.

We do not advocate what have been known as poultry farms. They have never been made to pay, and we do not think that, solely devoted to fowls, they will ever be made profitable. As a part of the farm work there is little doubt that poultry can be made to help in making a success, if that be possible in these days of adversity. But to do even this much there must be some thought and care given to the fowls; they must be well housed, carefully looked after, and fed in the manner most likely to secure the best results. The hocus-pocus system must be given up, and both in the selection of stock and its management common sense will have to be brought to bear.

## Poultry House Ventilation and Feeding Lime.

Mr. B. H. Garner, Maxville, sends a long criticism on the poultry prize essays, in which he says:—"I advise all readers to beware of that death-trap, the ventilator, for this one device will do more harm than all the rest of the essay will do good." He considers the ventilator as utterly useless and in all cases the cause of draught. He then questions the use of oyster shells as follows:—"Yes, it may fill the bill of fare, but otherwise it is of no use, for fowls receive all the lime they need for the production of egg shells from vegetable matter in a soluble state."

If Mr. Garner will look up the analysis of vegetable matter and eggs, he will see that the large amount of lime in the egg shell must be provided

by some material which contains more lime in its composition than vegetable matter, such as limestone grit, oyster shells, ground bone, etc. An experiment conducted at the New York Experimental Station proved that lime in some form was necessary for the production of eggs, that oyster shells are a convenient and in most cases a cheap source of this material, and that if broken limestone was used as grit it would not be necessary to feed oyster shells or other material containing lime. To keep fowls plentifully supplied with sand or gravel of a limestone nature amounts to the same thing.

Buildings are about to be erected at the Ontario Agricultural College, Guelph, for poultry. One will be 136 x 15 feet, the other 115 x 15, one story high. The office will be in the centre of the larger building, and will be two stories high.

## APIARY.

## Spring Management.

BY JOHN MYERS, STRATFORD, ONT.

(Continued from page 131.)

In our last we gave our methods of the management of our bees in the early part of the spring; in this we desire to give our views of the work needed to be done in the latter part of the spring, or say from the middle of April until the honey flow, which generally begins in Ontario about the 15th of June. Our aim should be to get our hives overflowing with bees by the time white clover blossoms, as this is about the first flower to yield nectar in quantities large enough for the bees to lay up any surplus from. In order then to get our bees in this shape we should see to it that they have plenty of stores on hand, as a colony with a scant supply of honey will not raise nearly as much brood as one that has plenty, and the brood that is raised in May and the fore part of June will be the bees that will gather the honey when the flow comes. I always place a feeder on top of my hives when overlooking them in the spring, as I can get better results from colonies that have been fed than I can from those that have not (others to the contrary nevertheless.) Mr. F. A. Gemmill, ex-President of the Ontario Beekeepers' Association, and one of the most successful beekeepers in Canada, credits his success largely to stimulative feeding in spring. I have several times taken a number of colonies and fed half, leaving the other half with plenty of stores but no feeding, and in nearly every case the ones that have been fed are the strongest colonies and gave the most surplus. There is one point I wish to call special attention to, that is, don't commence feeding too early in the season unless they are short of stores, and when you do commence keep it up regularly and not much at a time, say about 1/4 lb. per day or a little less. When fruit bloom opens and they commence gathering from it I stop feeding and start again when it closes.

Now then, having decided that it is best to feed, what kind of feeder shall we use? There are several kinds of feeders on the market, all having more or less good qualities. The most convenient feeder I have yet seen is one called the Stimulator, invented by Mr. Taylor, of Minnesota. It is a small wooden box with cover, containing a tin feeder inside. You place the wooden box over a hole cut in the quilt immediately over the cluster, now place the packing all around this box, take off the cover and put in tin feeder, and all you have to do when you wish to refill the feeder is simply to raise cover of box and pour in the feed. It is so arranged that no bees can get out to molest the operator. This feeder holds a quart of syrup, but it can be regulated so the bees can only get a little at a time. Whatever feeder may be used I would have one that can be placed on top of hive directly over the cluster, so the bees can then get at the feed if the weather become cold.

The next question is, what shall we feed for spring feeding? I always keep any poor honey, such as is gathered in the fall or any that may have become spoiled for sale by over-heating. If I have no such honey, then I buy granulated sugar and make it into a syrup. Make it thick for early spring and thinner for later feeding when the weather gets warmer. If the above directions are followed and you have a good queen your bees will be booming when the harvest comes.

To be effective on apple trees, the Paris green must be applied in such a fine spray that a portion will fall into the calyx, where the eggs are laid, and before it closes with the growth of the fruit. For plum, cherry and pear trees, it is well to use a weaker solution—solution of one pound to 250 or 300 gallons of water.

Seeing in ADVOCATE that W. A. Dunbar, V. S., recommends liquid mixture for destroying lice on animals, I may say "Persian Insect Powder" is sure death, and may be applied in the open air at 50 below zero or 120 in the shade. Dunbar's mixture cannot be used when the weather is cold. I have used this for ten years on cattle, horses, sheep and poultry. —R. MUCKLE, West Selkirk.



The Adventure of the Engineer's Thumb.

By A. CONAN DOYLE

(Continued from page 137.)

"Then the matter stands thus. You are probably aware that fuller's earth is a valuable product, and that it is only found in one or two places in England?"

"I have heard so."

"Some little time ago I bought a small place—a very small place—within ten miles of Reading. I was fortunate enough to discover that there was a deposit of fuller's earth in one of my fields. On examining it, however, I found that this deposit was a comparatively small one, and that it formed a link between two very much larger ones upon the right and the left—both of them, however, in the grounds of my neighbours. These good people were absolutely ignorant that their land contained that which was quite as valuable as a gold mine. Naturally, it was to my interest to buy their land before they discovered its true value; but, unfortunately, I had no capital by which I could do this. I took a few of my friends into the secret, however, and they suggested that we should quietly and secretly work our own little deposit, and that in this way we should earn the money which would enable us to buy the neighbouring fields. This we have now been doing for some time, and in order to help us in our operations we erected a hydraulic press. This press, as I have already explained, has got out of order, and we wish your advice upon the subject. We guard our secret very jealously, however, and if it once became known that we had hydraulic engineers coming to our little house, it would soon raise inquiry, and then, if the facts came out, it would be good-bye to any chance of getting these fields and carrying out our plans. That is why I have made you promise me that you will not tell a human being that you are going to Exford to-night. I hope that I make it all plain?"

"I quite follow you," said I. "The only point which I could not quite understand, was what use you could make of a hydraulic press in excavating fuller's earth, which, as I understand, is dug out like gravel from a pit."

"Ah!" said he carelessly, "we have our own process. We compress the earth into bricks, so as to remove them without revealing what they are. But that is a mere detail. I have taken you fully into my confidence now, Mr. Hatherley, and I have shown you how I trust you. He rose as he spoke. 'I shall expect you, then, in Exford at 11.15.'"

"I shall certainly be there."

"And not a word to a soul." He looked at me with a last long, questioning gaze, and then, pressing my hand in a cold, dank grasp, he hurried from the room.

"Well, when I came to think it all over in cool blood I was very much astonished, as you may both think, at this sudden commission which had been entrusted to me. On the one hand, of course, I was glad, for the fee was at least tenfold what I should have asked had I set a price upon my own services, and it was possible that this order might lead to other ones. On the other hand, the face and manner of my patron had made an unpleasant impression upon me, and I could not think that his explanation of the fuller's earth was sufficient to explain the necessity for my coming there, and his extreme anxiety lest I should tell anyone of my errand. However, I threw all fears to the winds, ate a hearty supper, drove to Paddington, and started off, having obeyed to the letter the injunction as to holding my tongue."

"At Reading I had to change not only my carriage but my station. However, I was in time for the last train to Exford, and I reached the little dim lit station after eleven, and there was the only passenger who got out there, and there was no one upon the platform save a single sleepy porter with a lantern. As I passed out through the wicket gate, however, I found my acquaintance of the morning waiting in the shadow upon the other side. Without a word he grasped my arm and hurried me into a carriage, the door of which was standing open. He drew up the windows on either side, tapped at the woodwork, and away we went as hard as the horse could go."

"One horse!" interjected Holmes.

"Yes, only one."

"Did you observe the colour?"

"Yes, I saw it by the sidelights when I was stepping into the carriage. It was a chestnut."

"Tired-looking or fresh?"

"Oh, fresh and glossy."

"Thank you, I am sorry to have interrupted you. Pray continue your most interesting statement."

"Away we went, then, and we drove for at least an hour. Colonel Lysander Stark had said that it was only seven miles, but I should think, from the rate that we seemed to go, and from the time that we took, that it must have been nearer twelve. He sat at my side in silence all the time, and I was aware, more than once when I glanced in his direction, that he was looking at me with great intensity. The country roads seemed to be not very good in that part of the world, for we lurched and jolted terribly. I tried to look out of the windows to see something of where we were, but they were made of frosted glass, and I could make out nothing save the occasional bright blur of a passing light. Now and then I hazarded some remark to break the monotony of the journey, but the Colonel answered only in monosyllables, and the conversation soon flagged. At last, however, the bumping of the road was exchanged for the crisp smoothness of a gravel drive, and the carriage came to a stand. Colonel Lysander Stark sprang out, and, as I followed after him, pulled me swiftly into a porch which gaped in front of us. We stepped, as it were, right out of the carriage and into the hall, so that I failed to catch the most fleeting glance of the front of the house. The instant that I had crossed the threshold the door slammed heavily behind us, and I heard faintly the rattle of the wheels as the carriage drove away."

"It was pitch dark inside the house, and the Colonel fumbled about looking for matches, and muttering under his breath. Suddenly a door opened at the other end of the passage, and a long, golden bar of light shot out in our direction. It grew broader, and a woman appeared with a lamp in her hand, which she held above her head, pushing her face forward and peering at us. I could see that she was pretty, and from the gloss with which the light shone upon her dark dress I knew it was a rich material. She spoke a few words in a foreign tongue in a tone as though asking a question, and when my companion answered in a gruff monosyllable she gave such a start that the lamp nearly fell from her hand. Colonel Stark went up to her, whispered something in her ear, and then, pushing her back into the room from whence she had come, he walked towards me again with the lamp in his hand."

"Perhaps you will have the kindness to wait in this room for a few minutes," said he, throwing open another door. It was a quiet little, plainly furnished room, with a round table in the centre, on which several German books were scattered. Colonel Stark laid down the lamp on the top of a harmonium beside the door. "I shall not keep you waiting an instant," said he, and vanished into the darkness."

"I glanced at the books upon the table, and in spite of my ignorance of German I could see that two of them were treatises on silviculture, the others being volumes of poetry. Then I walked across to the window, hoping that I might catch some glimpse of the country side, but an oak shutter, heavily

barred, was folded across it. It was a wonderfully silent house. There was an old clock ticking loudly somewhere in the passage, but otherwise everything was deadly still. A vague feeling of uneasiness began to steal over me. Who were these German people, and what were they doing, living in this strange, out-of-the-way place? And where was the place? I was ten miles or so from Exford, that was all I knew, but whether north, south, east or west I had no idea. For that matter, Reading, and possibly other large towns, were within that radius, so the place might not be secluded after all. Yet it was quite certain from the absolute stillness that we were in the country. I paced up and down the room, humming a tune under my breath to keep up my spirits, and feeling that I was thoroughly earning my fifty-guinea fee."

"Suddenly, without any preliminary sound in the midst of the utter stillness, the door of my room swung slowly open. The woman was standing in the aperture, the darkness of the hall behind her, the yellow light of my lamp beating upon her eager and beautiful face. I could see at a glance that she was sick with fear, and the sight sent a chill to my own heart. She held up one shaking finger to warn me to be silent, and she shot a few whispered words of broken English at me, her eyes glancing back, like those of a frightened horse, into the gloom behind her."

"I would go," said she, trying hard, as it seemed to me, to speak calmly; "I would go. I should not stay here. There is no good for you to do."

"But, madam," said I, "I have not yet done what I came for. I cannot possibly leave until I have seen the machine."

"It is not worth your while to wait," she went on. "You can pass through the door; no one hinders. And then, seeing that I smiled and shook my head, she suddenly threw aside her constraint, and made a step forward, with her hands wrung together. "For the love of Heaven!" she whispered, "get away from here before it is too late!"

"But I am somewhat headstrong by nature, and the more ready to engage in an affair when there is some obstacle in the way. I thought of my fifty-guinea fee, of my wearisome journey, and of the unpleasant night which seemed to be before me. Was it all to go for nothing? Why should I slink away without having carried out my commission, and without the payment which was my due? This woman might, for all I knew, be a mere madwoman. With a stout bearing, therefore, though her manner had shaken me more than I cared to confess, I still shook my head, and declared my intention of remaining where I was. She was about to renew her entreaties when a door slammed overhead, and the sound of several footsteps were heard upon the stairs. She listened for an instant, threw up her hands with a despairing gesture, and vanished as suddenly and as noiselessly as she had come."

"The newcomers were Colonel Lysander Stark, and a short, thick man with a chinchilla beard growing out of the creases of his double chin, who was introduced to me as Mr. Ferguson."

"This is my secretary and manager," said the Colonel. "By the way, I was under the impression that I left this door shut just now. I fear that you have felt the draught."

"On the contrary," said I, "I opened the door myself, because I felt the room to be a little close."

"He shot one of his suspicious glances at me. "Perhaps we had better proceed to business, then," said he. "Mr. Ferguson and I will take you up to see the machine."

"I had better put my hat on, I suppose."

"What, do you dig fuller's earth in the house?"

"No, no. This is only where we compress it. But never mind that! All we wish you to do is to examine the machine, and to let us know what is wrong with it."

"We went upstairs together, the Colonel first with the lamp, the fat manager, and I behind him. It was a labyrinth of an old house, with corridors, passages, narrow winding staircases, and little low doors, the thresholds of which were hollowed out by the generations who had crossed them. There were no carpets, and no signs of any furniture above the ground floor, while the plaster was peeling off the walls, and the damp was breaking through in green, unhealthy blotches. I tried to put on as unconcerned an air as possible, but I had not forgotten that the lady, even though I disregarded her, and I kept a keen eye upon my two companions. Ferguson appeared to be a morose and silent man, but I could see from the little that he said that he was at least a fellow-countryman."

"Colonel Lysander Stark stopped at last before a low door, which he unlocked. Within was a small square room, in which the three of us entered. Ferguson remained outside, and the Colonel ushered me in."

"We are now," said he, "actually within the hydraulic press, and it would be a particularly unpleasant thing for us if anyone were to turn it on. The ceiling of this small chamber is really the end of the descending piston, and it comes down with the force of many tons upon this metal floor. There are small lateral columns of water outside which receive the force, and which transmit and multiply it in the manner which is familiar to you. The machine goes readily enough, but there is some stiffness in the working of it, and it has lost a little of its force. Perhaps you will have the goodness to look it over, and to show us how we can set it right."

"I took the lamp from him, and I examined the machine very thoroughly. It was indeed a gigantic one, and capable of exerting enormous pressure. When I passed outside, however, and pressed down the levers which controlled it, I knew at once by the wishing sound that there was a slight leakage, which allowed a regurgitation of water through one of the side cylinders. An examination showed that one of the India-rubber bands which were used to fill the socket along which it worked. This was clearly the cause of the loss of power, and I pointed it out to my companions, who followed my remarks very carefully, and asked several practical questions as to how they should proceed to set it right. When I had made it clear to them, I returned to the main chamber of the machine, and took a good look at it to satisfy my own curiosity. It was obvious at a glance that the story of the fuller's earth was the merest fabrication, for it would be absurd to suppose that so powerful an engine could be designed for so inadequate a purpose. The walls were of wood, but the floor consisted of a large iron trough, and when I came to examine it I could see a crust of metallic deposit all over it. I had stooped and was scraping at this to see exactly what it was, when I heard a muttered exclamation in German, and saw the cadaverous face of the Colonel looking down at me."

"What are you doing there?" he asked.

"I felt angry at having been tricked by so elaborate a story as that which he had told me. 'I was admiring your fuller's earth,' said I; 'I think that I should be better able to advise you as to your machine if I knew what the exact purpose was for which it was used.'"

"The instant that I uttered the words I regretted the rashness of my speech. His face set hard, and a baleful light sprang up in his grey eyes."

"Very well," said he, "you shall know all about the machine." He took a step backward, slammed the little door, and turned the key in the lock. I rushed towards it and pulled at the handle, but it was quite secure, and I did not give the least to my kicks and shoves. "Hallo!" I yelled. "Hallo! Colonel! Let me out!"

"And then suddenly in the silence I heard a sound which sent my heart into my mouth. It was the clank of the levers, and the wish of the leaking cylinder. He had set the engine at work. The lamp still stood upon the floor where I had placed it when examining the trough. By its light I saw that the black ceiling was coming down upon me, slowly, jerkily, but, as none knew better than myself, with a force which must within a minute grind me to a shapeless pulp. I threw myself, screaming against the door, and dragged with my nails at the lock. I implored the Colonel to let me out, but the remorseless clanking of the levers drowned my cries. The ceiling was only a foot or two above my head, and with my hand upraised I could feel its hard, rough surface. Then it flashed through my mind that the pain of my death would depend

very much upon the position in which I met it. If I lay on my face the weight would come upon my spine, and I shuddered to think of that dreadful snap. Easier the other way, perhaps, and yet had I the nerve to lie and look up at that deadly black shadow wavering down upon me? Already I was unable to stand erect, when my eye caught something which brought a gush of hope back to my heart."

"I have said that the floor and ceiling were of iron, the walls were of wood. As I gave a last hurried glance around, I saw a thin line of yellow light between two of the boards, which broadened and broadened as a small panel was pushed backwards. For an instant I could hardly believe that here was indeed a door which led away from death. The next I threw myself through, and lay half-fainting upon the other side. The panel had closed again behind me, but the crash of the lamp, and a few moments afterwards the clang of the two slabs of metal, told me how narrow had been my escape."

"I was recalled to myself by a frantic plucking at my wrist, and I found myself lying upon the stone floor of a narrow corridor, while a woman bent over me and tugged at me with her left hand, while she held a candle in her right. It was the same good friend whose warning I had so foolishly rejected. "Come! come!" she cried, breathlessly. "The door will be here in a moment. They will see that you are not there. Oh, do not waste the so precious time, but come!"

"This time, at least, I did not scorn her advice. I staggered to my feet, and ran with her along the corridor and down a winding stair. The latter led to another broad passage, and, just as we reached it, we heard the sound of running feet, and the shouting of two voices—one answering the other—from the floor on which we were, and from the one beneath. My guide stopped, and looked about her like one who is at her wits' end. Then she threw open a door which led into a bedroom, through the window of which the moon was shining brightly."

"It is your only chance," said she. "It is high, but it may be that you can jump it."

"As she spoke, a light sprang into view at the further end of the passage, and I saw the lean figure of Colonel Lysander Stark rushing forward with a lantern in one hand, and a weapon like a butcher's cleaver in the other. I rushed across the bedroom, flung open the window, and looked out. How quiet and sweet and wholesome the garden looked in the moonlight, and it could not be more than thirty feet down. I had let myself go, and was hanging by the hands to the sill, when the ruffian who pursued me, if she were ill-used, then at any risks I was determined to go back to her assistance. The thought had hardly flashed through my mind before he was at the door, pushing his way past her; but she threw her arms round him, and tried to hold him back."

"Fritz! Fritz!" she cried in English, "remember your promise after the last time. You said it should not be again. He will be silent! Oh, he will be silent!"

"You are mad, Elise!" he shouted, struggling to break away from her. "You will be the ruin of us. He has seen too much. Let me pass, I say!" He dashed her to one side, and, rushing to the window, cut at me with his heavy weapon. I clambered out upon the sill, but I hesitated to jump, until I should have heard what passed between them. My guide, however, had pushed me, and I was conscious of a dull pain, my grip loosened, and I fell into the garden below."

"I was shaken, but not hurt by the fall; so I picked myself up, and rushed off among the bushes as hard as I could run, for I understood that I was far from being out of danger yet. Suddenly, however, as I ran, a deadly dizziness and sickness came over me. I glanced down at my hand, which was throbbing painfully, and then, for the first time, I saw that my thumb had been cut off, and that the blood was pouring from the wound. I endeavored to tie my handkerchief round it, but there came a sudden buzzing in my ears, and next moment I fell in a dead faint among the rose bushes."

"How long I remained unconscious I cannot tell. It must have been a very long time, for the moon had sunk, and a bright morning was breaking when I came to myself. My clothes were all sodden with dew, and my coat sleeve was drenched with blood from my wounded thumb. The smarting of it recalled in an instant all the particulars of my night's adventure, and I sprang to my feet with the feeling that I might hardly yet be safe from my pursuers. But, to my astonishment, when I looked round me, neither house nor garden were to be seen. I had been lying in an angle of the hedge close by the high road, and just a little lower down was a long building, which proved, upon my approaching it, to be the very station at which I had arrived upon the previous night. Were it not for the ugly wound upon my hand, all that had passed during those dreadful hours might have been an evil dream."

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"There would be one about three miles off. I determined to wait until I got back to town before telling my story to the police. It was a little past six when I arrived, so I went first to have my wound dressed, and then the doctor was kind enough to bring me along here. I put the case into your hands, and shall do exactly what you advise."

"We both sat in silence for some little time after, listening to this extraordinary narrative. Then Sherlock Holmes pulled down from the shelf one of the ponderous commonplace books in which he placed his cuttings."

"Here is an advertisement which will interest you," said he. "It appeared in all the papers about a year ago. Listen to this: 'Lost on the 9th inst., Mr. Jeremiah Hayling, aged 26, and has not been heard of since. Was dressed in, &c., &c. Ha! That represents the last time that the Colonel needed to have his machine overhauled, I fancy.'"

"Good heavens!" cried my patient. "Then that explains what the girl said."

"Undoubtedly. It is quite clear that the Colonel was a cool and desperate man, who was absolutely determined that nothing should stand in the way of his little game, like those out-and-out pirates who will leave no survivor from a captured ship. Well, every moment now is precious, so, if you feel equal to it, we shall go down to Scotland Yard at once as a preliminary to starting for Exford."

"Some three hours or so afterwards we were all in the train together, bound from Reading to the little Berkshire village. There were Sherlock Holmes, the hydraulic engineer, Inspector Bradstreet, of Scotland Yard, a plain-clothes man, and myself. Bradstreet had spread an ordnance map of the country out upon the seat, and was busy with his compasses drawing a circle with Exford for its centre."

"There you are," said he. "That circle is drawn at a radius of ten miles from the village. The place we want must be somewhere near that line. You said ten miles, I think, sir?"

"It was an hour's good drive."

"And you think that they brought you back all that way when you were unconscious?"

"They must have done so. I have a confused memory, too, of having been lifted and conveyed somewhere."

"What I cannot understand," said I, "is why they should have spared you when they found you lying fainting in the garden. Perhaps the villain was softened by the woman's entreaties."

"I hardly think that likely. I never saw a more inexorable face in my life."

"Oh, we shall soon clear up all that," said Bradstreet. "Well, I have drawn my circle, and I only wish we knew at what point upon it the folk that we are in search of are to be found."

"I think I could lay my finger on it," said Holmes, quietly.

"Really, now!" cried the Inspector, "you have formed your opinion?" "Come now, we shall see who agrees with you. I say it is south, for the country is more deserted there."

"And I say east," said my patient.

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"I am for west," remarked the plain-clothes man. "There are several quiet little villages up there."

"And I am for north," said I; "because there are no hills there, and our friend says that he did not notice the carriage go up any."

"Come at all," said the Inspector, laughing; "it's a very pretty diversity of opinion. We have boxed the compass among us. Who do you give your casting vote to?"

"You are all wrong."

"But we can't all be."

"Oh yes, you can. This is my point," he placed his finger in the centre of the circle. "This is where we shall find them."

"But the twelve-mile drive!" gasped Hatherley.

"Six out and six back. Nothing simpler. You say yourself that the horse was fresh and glossy when you got in. How could it be that, if it had gone twelve miles over heavy roads?"

"Indeed it is a likely ruse enough," observed Bradstreet, thoughtfully. "Of course there can be no doubt as to the nature of this gang."

"None at all," said Holmes. "They are coiners on a large scale, and have used the machine to form the amalgam which has taken the place of silver."

"We have known for some time that a clever gang was at work," said the Inspector. "They have been turning out half-crowns by the thousand. We even traced them as far as Reading, but could get no further; for they had covered their traces in a way that showed that they were very old hands. But now, thanks to this lucky chance, I think that we have got them right enough."

But the Inspector was mistaken, for those criminals were not destined to fall into the hands of justice. As we rolled into Exford Station we saw a gigantic column of smoke which streamed up from behind a small clump of trees in the neighborhood, and hung like an immense ostrich feather over the landscape.

"A house on fire?" asked Bradstreet, as the train steamed off again on its way.

"Yes, sir!" said the stationmaster.

"When did it break out?"

"I hear that it was during the night, sir, but it has got worse, and the whole place is in a blaze."

"Whose house is it?"

"Dr. Becher's."

"Tell me," broke in the engineer, "is Dr. Becher a German, very thin, with a long, sharp nose?"

The stationmaster laughed heartily. "No, sir, Dr. Becher is an Englishman, and there isn't a man in the parish who has a better-lined waistcoat. But he has a gentleman staying with him, a patient, as I understand, who is a foreigner, and he looks as if a little good Berkshire beef would do him no harm."

The stationmaster had not finished his speech before we were all hastening in the direction of the fire. The road topped a low hill, and there was a great wide-spread white-washed building in front of us, spouting fire at every clink and window, while in the garden in front three fire engines were vainly striving to keep the flames under.

"That's it!" cried Hatherley, in intense excitement.

There is the gravel drive, and there are the rose bushes where I lay. That second window is the one that I jumped from.

"Well, at least," said Holmes, "you have had your revenge upon them. There can be no question that it was your oil lamp which, when it was crushed in the press, set fire to the wooden walls, though no doubt they were too excited in the chase after you to observe it at the time. Now keep your eyes open in this crowd for your friends of last night, though I very much fear that they are a good hundred miles off by now."

And Holmes' fears came to be realized, for from that day to this no word has ever been heard either of the beautiful woman, the sinister German, or the morose Englishman. Early that morning a peasant had met a cart containing several people and some very bulky boxes driving rapidly in the direction of Reading, but there all traces of the fugitives disappeared, and even Holmes' ingenuity failed ever to discover the least clue as to their whereabouts.

The firemen had been much perturbed at the strange arrangements which they had found within, and still more so by discovering a newly severed human thumb upon a window-sill of the second floor. About sunset, however, their efforts were at last successful, and they subdued the flames, but not before the roof had fallen in, and the whole place been reduced to such absolute ruin that, save some twisted cylinders and iron piping, not a trace remained of the machinery which had cost our unfortunate acquaintance so dearly. Large masses of nickel and tin were discovered stored in an outhouse, but no coins were to be found, which may have explained the presence of those bulky boxes which have been already referred to.

How our hydraulic engineer had been conveyed from the garden to the spot where he recovered his senses might have remained forever a mystery were it not for the soft mould, which told us a very plain tale. He had evidently been carried down by two persons, one of whom had remarkably small feet and the other unusually large ones. On the whole, it was most probable that the silent Englishman, being less bold or less murderous than his companion, had assisted the woman to bear the unconscious man out of the way of danger.

"Well," said our engineer ruefully, "as we took our seats to return once more to London, 'it has been a pretty business for me! I have lost my thumb, and I have lost a fifty-guinea fee, and what have I gained?"

"Experience," said Holmes laughing. "Indirectly it may be of value, you know; you have only to put it into words to gain the reputation of being excellent company for the remainder of your existence."

**The Science of Home.**

If it is desirable that a woman should develop not only every talent that she has, but every fine and pleasant taste, by all means let her do it, only she must remember that her first talent of all is that of being a woman, and that the domestic arts, through the events of her life that keep her much at home, are primarily woman's arts. It does not follow that she must make bread all the time because she knows how to do it, or that she must sweep a floor, or dust a room, or sew a straight seam, because she can tell from experience how it should be done. But if she does not know how to do these things, and to direct others how to do them, if need be, she is by so much less a woman.

The science of home is the first of all sciences: it makes all other sciences possible, and it is something that every woman should make her own, for, until we live without bodies, it is to be confessed that the arts which make the body comfortable have also much to do with the growth of the soul.—*Harper's Bazar.*

Just after the war, a gentleman was stopping at the house in which Col. Ellsworth was shot. Upon coming to the stairway down which Ellsworth came with the captured flag in his hand, he, like many before him, cut off a piece of the stairs as a souvenir. The landlady happened to be near and saw him do it, whereupon she angrily exclaimed, "I do wish the people would let my stairs alone! That is the third pair that has been put up since Ellsworth was killed."

**THE QUIET HOUR.**

**"The Watered Lilies"**

The Master stood in his garden,  
Among the lilies fair,  
Which His own right hand had planted,  
And trained with tenderest care.  
He looked at their snowy blossoms,  
And marked with observant eye  
That His flowers were sadly drooping,  
And their leaves were parched and dry.  
"My lilies need to be watered,"  
The Heavenly Master said;  
"Wherein shall I draw it for them,  
And revive each drooping head."

Close to His feet on the pathway,  
Empty and frail and small,  
An earthen vessel was lying,  
Which seemed no use at all.  
But the Master saw, and raised it  
From the dust in which it lay,  
And smiled as He gently whispered,  
"This shall do My work to-day.  
It is but an earthen vessel,  
But it lay so close to Me.  
It is small, but it is empty,  
That is all it needs to be."  
So to the fountain He took it,  
And filled it full to the brim;  
How glad was the earthen vessel,  
To be of some use to him.  
He poured forth the living water,  
Over His lilies fair,  
Until the vessel was empty,  
And again he filled it there.  
And so the lilies were watered,  
Until they revived again,  
And the Master saw with pleasure,  
His labor had not been vain.  
His own hand had drawn the water  
Which refreshed the thirsty flowers;  
But He used the earthen vessel,  
To convey the living showers.  
And unto itself it whispered,  
As he laid it down once more,  
"Still will I lie in his pathway,  
Just where I lay before;  
Close would I keep to the Master,  
Still empty would I remain,  
And perhaps some day He may use me  
To water His flowers again."

**Faithfulness in Small Things.**

"Life affords but few opportunities of doing great services for others; but there is scarcely an hour in the day that does not afford us an opportunity of performing some little, it may be unnoticed, service."

O Lord, at Joseph's humble bench,  
Thy hands did handle saw and plane;  
Thy hammer nails did drive and clinch,  
Avoiding knot, and humouring grain.  
Lord, might I be but as a saw,  
A plane, a chisel, in Thy hand!  
No, Lord! I take it back in awe;  
Such prayer for me is far too grand.  
I pray, O Master, let me lie  
As on Thy bench the flavored wood;  
Thy saw, Thy plane, Thy chisel, ply,  
And work me into something good.

—G. Macdonald.

What matters where your feet stand, or wherein your hands are busy, so that it is the spot where God has put you, and the work He has given you to do? Your real life is within—hid in God with Christ—ripening and strengthening, and waiting.—*Whitney.*

"Despise not thou small things:  
The soul that longs for wings  
To soar to some great height of sacrifice, too oft  
Forgets the daily round  
Where little cares abound,  
And shakes off little duties while she looks aloft."

It is for Life—not so much, even, for Death—that we are to be "ready." Ready for God's call, that comes to us in an hour when we think not, and demands all the strength we should have grown to, to enable us to decide and act. Ah! the many foolish ones, who, with lamps untrimmed, are in no plight to meet the exigence of circumstances, or the flash of opportunity, but are swayed hither or thither into ways that were never planned for them in God's projection of their lives, but wherein they stumble, or are left, darkly, while His golden moment goes by.—*Whitney.*

"God sets some souls in shade, alone,  
They have no daylight of their own.  
Only in lives of happier ones  
They see the shrine of distant suns.  
God knows. Content thee with thy night,  
Thy greater heaven hath grander light.  
To-day is close. The hours are small.  
Thou sit'st afar, and hast them all.  
Lose the less joy that doth but blind:  
Reach forth a larger bliss to find,  
To-day is brief: the inclusive spheres  
Rain raptures of a thousand years."

"The highest duties oft are found,  
Lying upon the lowest ground,  
In hidden and unwonted ways,  
In household work, on common days,  
Whate'er is done for God alone,  
Thy God acceptable will own."

**The Hearth Fire.**

If the world seems cold to you,  
Kindle fires to warm it;  
Let their comfort hide from view  
Winters that deform it.  
Hearts as frozen as your own  
To that radiance gather.  
You will soon forget to moan,  
"Ah, the cheerless weather!"  
—*Lucy Larcom.*

**MINNIE MAY'S DEPARTMENT.**

Minnie May offers a prize, "The World's Fair Cook Book," referred to in 1st April *ADVOCATE*, for the best essay on "How to Keep Friends." All communications to be in our office by the 21st of May.

**How to Cook Husbands.**

A good many husbands are utterly spoiled by mismanagement in cooking, and so are not tender and good.

Some women go about it as though their husbands were bubbles, and blow them up. Others keep them constantly in hot water. Others let them freeze by their carelessness and indifference. Some keep them in a stew by irritating ways. Others roast them, and some keep them in pickle all their lives.

It cannot be supposed that any husband will be tender and good, managed in this way, but they are really delicious when cooked properly.

In selecting your husband you should not be guided by the silvery appearance, as in mackerel, nor by the golden tint, as in salmon.

Be sure and select him yourself. Do not go to market for him, as the best are always brought to the door, and it is far better to have none unless you know how to cook him. Get a preserving kettle of the finest porcelain, or if you have nothing but earthen ware it will do with care.

See that the linen in which you wrap him is nicely laundered and well mended, with the required number of buttons tightly sewed on. Tie him in the kettle with a strong silken cord called comfort, as the one called duty is apt to be weak and they are likely to fly out and be burned and crusty on the edges, for husbands, like crabs, must be cooked when alive.

Make a steady fire of love, neatness and cheerfulness. Set him as near this as agrees with him. If he should smoke or fizz, do not be anxious; some husbands do this until they are quite done.

Add a little sugar in the form of what confectioners call kisses, but no vinegar or pepper on any account.

A little spice improves them, but it must be used with judgment.

Do not stick him with any sharp instruments to see if he is tender. Stir gently, watching all the while, lest he should lie too flat and close to the kettle, and so become useless.

You cannot fail to know when he is done, if thus treated you will find him very digestible, and will keep long, unless you become careless and put him in a cool place.

"We may live without music and art,  
We may live without conscience and live without heart,  
We may live without friends, and live without books,  
But civilized men cannot live without cooks."

**If Mother Would Listen.**

If mother would listen to me, dears,  
She would fressen that faded gown,  
She would sometimes take an hour's rest,  
And sometimes a trip to town,  
And it shouldn't be all for the children,  
The fun, and the cheer, and the play;  
With the patient droop on the tired mouth,  
And the "Mother has had her day!"

True, mother has had her day, dears,  
When you were babies three,  
And she stepped about the farm and the house  
As busy as a bee,  
When she rocked you all to sleep, dears,  
And sent you all to school,  
And wore herself out, and did without,  
And lived by the Golden Rule.

And so your turn has come, dears,  
Her hair is growing white,  
And her eyes are gaining the far-away look  
That peers beyond the night,  
One of these days in the morning  
Mother will not be here,  
She will fade away into silence—  
The mother so true and dear.

Then, what will you do in the daylight,  
And what in the gloaming dim?  
And father, tired and lonesome then,  
Pray, what will you do for him?  
If you want to keep your mother,  
You must make her rest to-day;  
Must give her a share in the frolic,  
And draw her into the play.

And if mother would listen to me, dears,  
She'd buy her a gown of silk,  
With buttons of royal velvet,  
And ruffles as white as milk,  
And she'd let you do the trotting,  
While she sat still in her chair,  
That mother should have it hard all through,  
It strikes me isn't fair.

MARGARET E. SANGSTER.

**Prize List of Subjects for Essays.**

HELEN M'DONALD, THAMESVILLE.

- (1) Neglected Opportunities.
- (2) Importance of Accuracy.
- (3) How to Keep Friends.
- (4) Women in the Light of History.
- (5) Trifles.
- (6) Self Improvement.
- (7) The Ideal Home.
- (8) Power of Habit.
- (9) The Elements of Success in Life.
- (10) Economy in Dress.
- (11) Power of Conversation.
- (12) Duty.

UNCLE TOM'S DEPARTMENT.

Parliament Buildings, Ottawa.

The Government buildings at Ottawa are situated on a high cliff overlooking the Ottawa River. They were begun in 1880, the corner stone being laid by H. R. H. the Prince of Wales in that year. There are three buildings, viz.,—The House of Commons and the Eastern and Western blocks. The House of Commons, the largest of the three, stands in the centre, but further back from Wellington street than the other two. In it the members of Parliament and the Senators meet for the dispatch of business. Where the members meet (the lower chamber it is called) is a very large place with galleries extending all around. These galleries are divided into five parts, viz.:—The Speakers' Senators', civil servants', ladies' and public galleries. Tickets of admission may be procured for the asking from any of the members or officials. Immediately back of this chamber is the reading-room, where almost all of the newspapers printed in Canada are on file, another attraction being the beautiful paintings, conspicuous among which is one of Lord Dufferin. Passing through a corridor we reach the Senate or Upper Chamber, where the Governor-General opens and prorogues Parliament. This apartment is beautifully furnished, but wears a very sombre look as compared with the Lower Chamber. From here another corridor, adorned with life-sized paintings of former Speakers of the Senate, leads to the library, which is one of the greatest attractions in all the buildings. It contains over 500,000 volumes and is considered the most unique building on the continent. Besides the places already mentioned in the House of Commons, there are also the speakers' housekeepers' and members' rooms and numerous offices.

The Eastern and Western blocks are used for offices for the ministers, deputy-ministers and civil servants in the different departments.

The grounds comprise twenty-five acres and slope gently from the House of Commons to Wellington street. They are beautifully terraced, having well-kept drives and walks, also beds of the choicest flowers. North of the House of Commons is a summer house, from which the river can be seen for miles, the Chaudiere Falls, Suspension and C. P. R. bridges, Rideau Canal and locks. Below the summer house and about quarter way down the cliff is the far-famed Lovers' Walk, part of it hewn out of the solid rock. It is a beautiful place, and well may Canadians be proud of the Dominion buildings at Ottawa.

The estimated cost of the buildings and grounds, exclusive of Langevin block on south side of Wellington street, is \$7,000,000.

The Old Story.

[LIFE'S CALENDAR.]

Client—"Your fee is exorbitant. It didn't take you a day to do the work."

Lawyer—"It is my regular fee. I am not charging you for time, but for the cost of my legal education."

Client—"Well, give me a receipt for the cost of your legal education, so the next fellow won't have to pay for it, too."

A Chance Shot.

"Brother Gotrox," said the Rev. Mr. Wilgus, "did you ever reflect that your wealth is not really your own—that it is but committed to your hands as a trust yet to be accounted for?"

"That is the way I got hold of most of it," answered the great man, surprised into sudden candor, "but I don't see how you discovered it." Indianapolis Journal.

Puzzles.

PRIZE PUZZLE.

1—MALTESE CROSS.

01	02	03	04	05
34	09			40
35	36	10	11	41
13	14	15	16	17
18	19	20	21	
37	38	22	23	24
39		25		45
		26	27	28
		29	30	31
		32	33	

From 1 to 5, a kind of type; 6 to 8, a beverage; 10 to 12, an exclamation; 35, 36, a verb; 41, 42, a useful article; 43, 44, 5 of 10 and 1 of 20; 37, 38, a preposition; 29 to 33, foul; 26 to 28, a verb; 34 to 39, an Indian chief; 36 to 38, encountered; 10 to 22, Bible name; 16 to 18, 22 to 24, nicknames; 12 to 24, part of a name; 41 to 43, a busy insect; 40 to 45, parts of the body; 3 to 17, the first; 23 to 31, wagers; 13 to 16, one of Haggard's novels; 18 to 21, what this puzzle is. Centrals—From 3 to 31, things that once learned are rarely forgotten; from 13 to 21, a flower.

HARRY A. WOODWORTH, Parrsboro, N. S.

2—RIDDLE.

In heaven and also on earth I dwell,  
With the heathen Chinese and the Christian as well,  
Yet I never linger with mortal man,  
Though where there's a child my face you may scan.  
No height is so great that I cannot climb,  
Yet down in the depths I spend my time;  
I dwell in a monarchy, live on a throne,  
But to kings or to queens no allegiance I own;  
Thought of horror and hatred I form a part,  
Yet people e'er wear me near their hearts;  
And though of death I am a share,  
No home is complete till my presence is there.

ADA ARMAND.

A Short Sermon on Gifts.

Do not wait for holidays. Give birthday gifts to those you love or trifling anniversary gifts.

Give by all means out of the plentitude of your heart and purse. Give wise gifts. In your own home circle some little thing, fashioned and designed by your own hands, and worked with joyous secrecy, will give more pleasure than anything bought in a shop. To the poor give money, if you do it wisely and know the recipient; to the rich send a card or a bunch of chrysanthemums. To the children—this is a very sweet point—give what you think each individual boy or girl most desires. The gun-desiring boy may not hanker after the symbol of the diluvian navy that anchored on Ararat, and the proud possessor of many dolls may possibly yearn for a growling mechanical bear or a live white mouse. Study the children's wants. Find out what they most wish for, and then play fairy godmother to your heart's content.

Gifts should not be too costly. Expensive gifts upset the equilibrium of things generally, for they necessitate a return in kind, and so degenerate into commerce, even as our system of "wedding presents" shows signs of doing. It is a curious fact that the first "gift" of man to woman was probably a flower—there were no jewelers in Eden.

Names in ornament, especially pet names, are valuable, pretty, and poetical. Meditate on this. Let your gift have the high value of being purely personal; not a thing merely bought in a shop, but something "thought out." First, what does he or she most want? Secondly, how shall I make that gift recall me to him or to her? A birthday or anniversary gift should be a token of affection of some sort. Not cost, but love, should be the inspiration that prompts you in the thoughtful selection of your outward and visible sign of your inward and spiritual friendship.

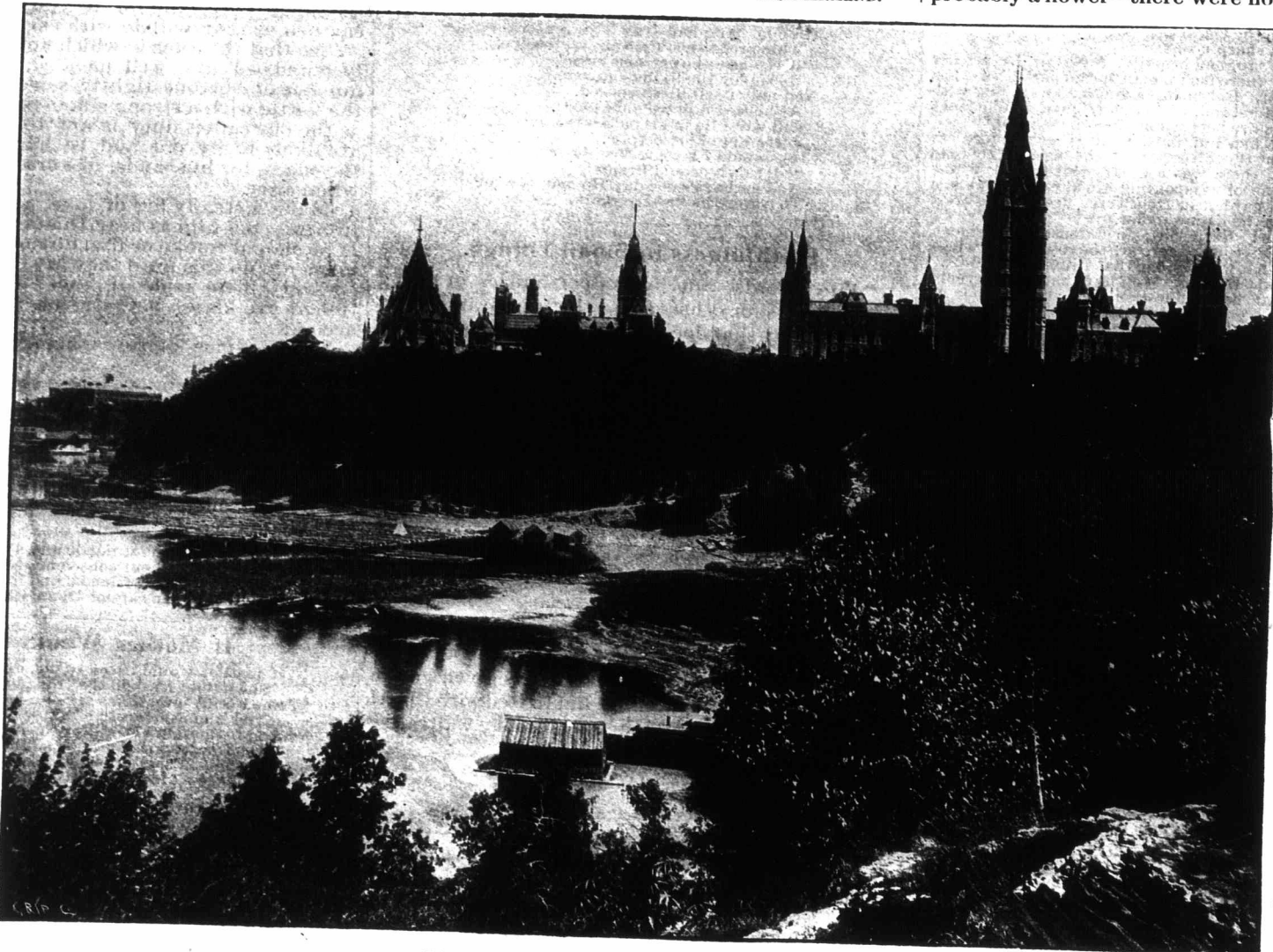
If, for example, a rich friend condoles with you on your "financial worries," sympathizes with your sadness and hopes that to relieve or assist you, that is an example of hypocrisy. Condolence and comfortable advice of the common-sense order is too often a vicious gift. Better a check or a turkey. Better a sausage than sentiment. So then you will bear this in your gentle minds, that a gift or present is a bond, a tie, for all time—a true love-link—and that its value is never intrinsic, but spiritual. The great man who saw far down into the depths of human thought said nothing wiser than this:

"Rich gifts wax poor when givers prove unkind."

Shared.

I said it in the meadow path,  
I say it on the mountain stairs,—  
The best things any mortal hath  
Are those which every mortal shares.  
The air we breathe, the sky, the breeze,  
The light without us and within,  
Life with its unlooked treasures,  
God's riches,—are for all to win.  
The grass is softer to my tread,  
For rest it yields unnumbered feet;  
Sweeter to me the wild rose red,  
Because she makes the whole world sweet.  
Into your heavenly loneliness  
Ye welcome me, O solemn peaks!  
And me in every guest you bless,  
Who reverently your mystery seeks.  
And up the radiant peopled way  
That opens into worlds unknown,  
How life's delight to say,  
"Heaven is not heaven for me alone.  
Even though my brethren's poverty,—  
Such wealth were hideous! I am blest  
To share with all the rest."  
LUCY LARCOM.

PARLIAMENT BUILDINGS, OTTAWA.



3—CHARADE (Phonetic).

Two the evening sky when the sun seeks the west,  
With what glooming ONES are the cloudlets dressed,  
If I only could, I'd like to THREE one.  
To make a robe, wouldn't FOUR like to see one?  
But such foolish notions we'd better SIX,  
And not be trying impossible tricks.  
I hear the COMPLETE of the curfew bell,  
So I'll end this FIVE and say farewell.

ADA ARMAND.

4—CURTAILMENT.

My FIRST is a king, long years now dead,  
By whom much innocent blood was shed;  
My SECOND appears a man of fame,  
THIRD and FOURTH would stand for a person's name;  
My LAST is so small it is never in view,  
Yet you carry it around every day in your shoe.

CHARLES S. EDWARDS.

Answers to March 15th Puzzles.

1. A Well. 2. Recondite, Once Tried. 1. A Riddle. 5. Also.

Names of Those Who Have Sent Correct Answers to March 15th Puzzles.

Thos. W. Banks, Geo. W. Blyth, A. R. Borrowman, James Speers.

The prize-winners for best answers to puzzles for the last three months are: 1st, Josie Sheehan; and 2nd, Joshua Umbach.

Husband—"What stuff this pudding is! Where did you get the recipe?"

Cultured Wife (calmly) "When speaking of directions for preparing foods, you should say receipt. When referring to medical prescriptions, you may, if you choose, use the term recipe, from the Latin *recipere*—take."

Husband—"I used the word correctly. This pudding was a dose."



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Sterling silver stick pins, 15c. each. Solid gold stick pins, 50c. each. Rolled gold stick pins, 25c. each. A rolled gold brooch with pearl setting, only 25c.

For only \$7.50 we will mail, to any post office in Canada, one of the best Silver Watches ever produced. They are made by the Famous Waltham Watch Co., which is in itself a guarantee of its being first-class. If you require a watch, here is an excellent chance to secure a good one for only \$7.50. White metal watch chains, only 25c. each.

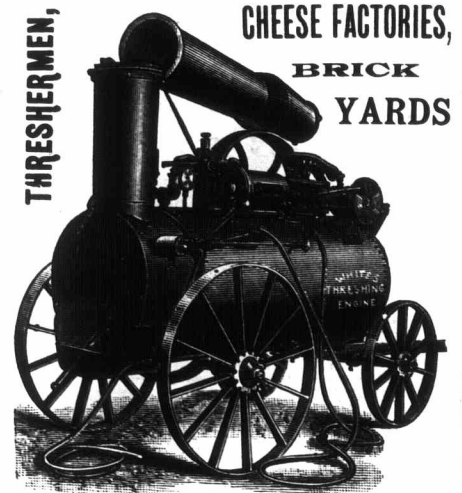
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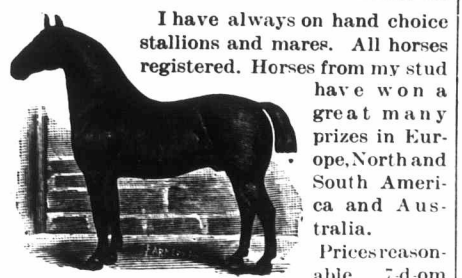


STOCKMEN!

USE:— Denovitt's Denorning Clipper

It makes perfect mulies; cuts all around the horn; can be used by anyone and on any aged animal. It is positively the BEST! Endorsed by every V. S. and S. P. C. A. that have seen it. For circulars giving testimonials, price, etc., address S. S. KIMBALL, Manager for the Dominion, 577 Craig St., MONTREAL, P.Q. 7-f-o

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I have always on hand choice stallions and mares. All horses registered. Horses from my stud have won a great many prizes in Europe, North and South America and Australia. Prices reasonable. 7-d-om

ED. LÜBBEN, Surwürden, Granddukedom of Oldenburg, Germany.

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GREAT CLOSING-OUT SALE OF SHORTHORNS

From the Bow Park Herd, WEDNESDAY, APRIL 25

This sale, which will be held at Bow Park, BRANTFORD, ONT., will include all the animals now on the farm, which, with the exception of four cows, are all young. The heifers, a beautiful lot, are in calf to Lord Outhwaite (a son of the celebrated cow Lady Isabel) and one of the best show bulls on the continent. The young bulls are very promising, being thick, low down and full of hair. Sale will commence at 1 o'clock p. m. Conveyances for intending purchasers will meet trains at Brantford on morning of the sale. Catalogues may be had after April 10th on application to the undersigned, and at the Globe office, Toronto.

TERMS—3 and 6 months' credit on approved endorsed notes, or cash with discount at 6 per cent. per annum.

JAMES SMITH, Manager Bow Park, BRANTFORD, ONT. 7-a-om MOWAT, DOWNEY & LANGTON, Solicitors for Vendors, TORONTO.

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We have added to our stables the entire lot of the German Government World's Fair exhibit of German Coach Stallions and Mares, and now have the greatest show in America or Europe. These stallions will sire the grandest Coach and Carriage Teams ever seen. We have the only horse that sires the 16 to 16 1/2 hand sellers. We also handle Trotting and Pacing stock. Send for Catalogue.

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SOLD AGAIN! Three of the four Guernsey bulls advertised by us are sold and delivered. We still have one more, the 3rd prize calf at the World's Fair, now fourteen months old—a dandy. Lowest price, \$200.

IMPROVED YORKSHIRES.—We claim to have the longest, deepest and most typical LARGE YORKSHIRES in AMERICA, and the reason is we have paid more money and imported more pigs from the best herds in England than any two Yorkshire breeders on the continent. Orders booked now for spring pigs. Two very handsome COLLIE BITCHES, seven months old, \$10 each. Address, 9-y-om

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JERSEY CATTLE FOR SALE

Bred for butter. G. sons and g. daughters of "Massena," the greatest cow of her age in the world, — 3,000 lbs. milk and 654 lbs. butter in her 16th year; also stock from "Signal of Belvedere," whose dam made 20 lbs. 6 ozs. butter in one week on second calf. Also stock from the greatest living prize bull, Canada's Sir George, whose dam made 26 1/2 lbs. butter a week and 57 lbs. milk a day. Splendid bulls, six months old and registered, \$100 each.

MRS. E. M. JONES, Brookville, Ont., Can. Mrs. Jones' great book, Dairying for Profit, 30c. by mail. Address, ROBT. Y. BROWN, Agent, Box 324, Brookville, Ontario, Canada. 8-y-om

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FOR SALE—Sons and double g. sons of Jolie of St. Lambert and Jolie of St. Lambert 3rd and 4th, winners of the sweepstake dairy tests at Toronto, Kingston and Quebec; also the Advocate special silver service prize for the three best dairy cows of any breed, beating the cows that won these prizes before and breaking all previous records. Jolie of St. Lambert has shown 8.89% and 2.22 lbs. butterfat in 24 hours, and Jolie 3rd 8.91% fat. Some of these bulls are sired by Jolie of St. Lambert 3rd's Son 26731, the sire of the four calves that swept everything before them at Toronto, London and Ottawa last fall. Also grand sons of Lady Fawn of St. Annes (Victor Hugo's best daughter), 16 lbs. 12 ozs. butter in seven days, 2,715 lbs. milk in 88 days when 15 years old. The dams of some of these bulls are giving now four to five gallons of milk per day. Prices from \$80 to \$125. Please state just what you want—age, etc. Apply to W. A. REABURN, STE. ANNE DE BELLEVUE, P.Q. 6-2-c-om

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We always have on hand a large number of imported and home-bred Clydesdales (male and female) of good breeding & quality, which we will sell at honest prices. Our specialties are good & well-bred horses and square dealing. Come and see us or write for particulars. 6-2-y-om

ROBERT NESS, WOODSIDE FARM,

Importer & Breeder of Yorkshire Coachers, French Coachers, Clydesdales, Shetlands and Ayrshire Cattle. Prices to suit the times. ROBERT NESS, Woodside Farm, Howick P.O., P.Q. 5-y-om

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SHORTHORNS. Two imported bulls are now at the head of our herd. Stock of both sexes and different ages from the best imported and home-bred cows now for sale. 11-tf-om

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record 2.30, will stand for service at Ingersoll, London, Stratroy, Iona, St. Thomas, Aylmer and Brownsville. See route bill. Morelight 9337, record 2.30, was sired by Twilight 313, sire of Shawan, 2.16; Mat T., three-year-old, 2.23; Dr. Tilton, 2.25; Northlight, 2.28; Morelight, 2.30; Eva, 2.33. Lady Carr, dam of Morelight, dam of Ambassador, 2.21 (sire of 31 from 2.15 to .30); Alcandre, 2.20; Mary S., 2.28; Morelight, 2.30; Strathbane, trial 2.30; to wagon over Maud Granger, 2.31; Alar Clay, trial 2.29 (sire of Alar Clay, jr., 2.29); Sally Dudly, dam of Markland, 2.21; Juno, dam of Milant, 2.26; Fommore, sire of Crete, 2.29). Service fee \$25 to insure. A. DUNN, Box 451, Ingersoll. 7-c-o

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GUERNSEYS

This is the Dairy breed for ordinary farmers. Large, vigorous and hardy, giving plenty of rich milk. Imported Bull Benefit, son of Vice-Pres. Morton's famous butter cow Bienfaitrice 4th, heads the herd.

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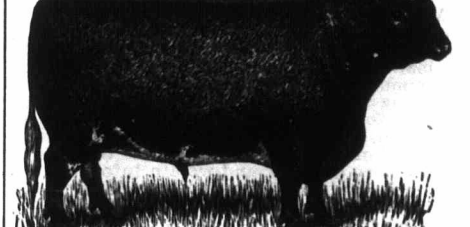
SHORTHORNS. I have FOR SALE two Shorthorn heifers and two bull calves of fine breeding, fine colors, fine form and carriage, in fine condition, at fine cut prices. Also one or two cows. D. ALEXANDER, BRIGDEN, Lambton Co., Ont. 11-f-o

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Imported stock from the herds of Wm. Duthie and W. S. Marr for sale; also Canadian-bred from imported bulls and out of imported dams. Farm one mile from G. T. R. station. 7-f-om

IMPORTING.



I have left for England, and expect to return the first week of June with a carefully selected lot of Oxford and Suffolk sheep, having decided to breed those two breeds, kept on different rams. I also expect to visit several noted Shorthorn herds, and, if not brought with this shipment, will shortly import a few Scotch Shorthorns of the best families. W. B. COOKBURN, Greenhouse Farm, ABERFOYLE, ONT. 3-l-om

STOCK GOSSIP.

R. H. Harding, Thorndale, Ont., writing concerning Chester White swine and Dorset Horned sheep, says:—"My stock are doing well; the young are coming good and strong; two sows farrowed a few days ago twenty-seven fine healthy pigs, from the imported boars Lincoln 306 and Cleveland 320, who-o sire won first and sweepstakes at the World's Columbian Exposition. I have several sows yet to farrow, including the sweepstakes winner of 1892, against all-comers, at the Provincial Fat Stock Show, held at Guelph. The Dorsets are doing what is claimed for the breed—breeding twice a year. One ewe has produced eight living lambs in two years and thirteen days, and suckled them; another ewe lambed since the last exhibition and raised her lamb, and is now suckling a fine pair, dropped just six months and six days after the first one; others are following along the same lines."

ONE THOUSAND DOLLARS OFFERED.

Although the statement made a few weeks ago that certain notes given in payment for notes had been raised, was promptly contradicted by us, the correction has not travelled as fast as the original statement, a number of newspapers having copied the latter, and failed to give publicity to the amending article. The Wrought Iron Range Company, of Toronto, now offer a thousand dollars for the slightest proof that any notes given to them in payment for ranges have been raised or altered in any shape or form. As a result of our investigations we became satisfied that it would be impossible to raise this Company's notes, from the fact that the selling price is printed across the face, and the words spelled out. We are also informed that the Company holds all its own notes until due, and does not discount them under any circumstances. It is unjust to a reputable firm that every newspaper which copied the original statement should promptly publish the correction as well as this offer, and we have no doubt all such papers will do so as soon as their attention is directed to the case. —St. Thomas, Ont., Evening Journal.

**Does Your Dairy Pay?**

Hundreds of farmers are keeping unprofitable dairy cows, and hundreds are wasting butterfat by defective methods of creaming and churning.

They are losing many dollars annually at both ends of the process, but do not know it.

Why not test the cows, test the skim milk and test the buttermilk, and "know where you are?"

Every patron of creamery or factory paying by test should have a Babcock to verify factory tests. The Farmer's Favorite Babcock Milk Tester will do this.

The cash price of this new four bottle machine is \$6.00, but it will be sent (freight or express paid by receiver) to anyone sending us eight new paid subscribers for one year to the Farmer's Advocate.

**STOCK GOSSIP.**

**MONTREAL, Sept. 4th.**  
To THE PUBLIC:—In my practice, and in the capacity of Veterinary Editor of the "Family Herald and Weekly Star," I have had occasion to test the merits of "Dick's Horse and Cattle Medicines." I have found them so thoroughly reliable that I have prescribed them in hundreds of cases, in all of which they proved highly satisfactory. R. W. GRAHAM.

We have just received a copy of the catalogue of the entire herd of Bow Park Shorthorns, which will be offered for sale by auction at Bow Park Farm, Brantford, on April 25th. The dispersion of this well-known herd, which has won such phenomenal success at the various exhibitions in this province and the United States, will afford farmers an opportunity of purchasing choice animals that should not be neglected. Send for catalogues. See advertisement in this paper.

Mr. T. W. Evans, of Yelverton, Ont., reports the sale of several horses lately, among them being the following:—1st. Royal Signet, Vol. VII, C. C. S. B., a grand two-year-old colt, resembling his sire very much, Royal Salute. His dam was Elsie Ward, Vol. XIII, B. C. S. B., sired by Evadale (5740), a g. son of Toppallant. This horse went to W. W. Shearer, of Keene, 2nd. Hlyth Prince (2128) (8478), whose breeding was given in the March Advocate. This horse has been doing extra well lately, and weighed, when delivered, over 1,300. His breeding is A. I. He went to Mr. John Bell, of Amber, 3rd. The trotting-bred horse Starlight, secured in Illinois two years ago. He was bred by Mr. Dubbs, Lexington, Kentucky; is an inbred Morgan, a great looker, and sires the kind of stock that are always ready sellers.

**NOTICES.**

Messrs. Stanley Mills & Co., wholesale merchants, Hamilton, Ont., are making a special offer in this issue of various articles to be sent by mail. The prices quoted are low. We can recommend our patrons to give them a trial.

Among the new advertisements in this issue will be found that of Mr. W. F. Vilas, East Farnham, Que., who advertises a corn-planter. The need of such an implement has been long felt by corn growers, and we are informed by those who have used the planter manufactured by Mr. Vilas, that it is all that can be desired, planting either in drills or hills, as desired. It is made in two styles, one being made to sow phosphates or other fertilizers with the corn, the other to plant the corn alone. Those who grow corn should write for particulars.

BRIDGETON, NEWAYGO CO., MICH.  
February 1st, 1894.

**Buchanan Fence Co., Smithville, Ohio.**  
I have had 200 rods of fence built, and received the congratulations of stockmen and others, saying that it is the best wire fence they ever saw. I have just closed a contract to have four miles put up before the middle of April next. Besides being a good, durable fence, it is the cheapest fence ever built.

J. M. STOW, M. D., MANAGER,  
Squires' Stock Farm.

AGRICULTURAL COLLEGE, MICH., Nov. 21, 1893.

**DEAR SIR:**—We are very much pleased with the Buchanan Fence. Its efficiency and low cost cannot fail to commend it to all stock farmers. We are preparing to build more next year. Your fence combines more good qualities, with fewer bad ones, than any fence with which I am acquainted. I am very truly yours, F. B. MUMFORD.

ANSWERS TO CORRESPONDENTS.

**FARMER.**—Yes, South Dakota furnishes an excellent field for diversified farming. Wheat, Corn, Barley and Flax are produced in abundant quantities and find a ready market at good prices, while the cost of production is much less than in the Eastern States. Stock raising and wool growing have become successful industries in South Dakota, where thousands of acres of the finest land in the United States can be secured at reasonable figures and upon long time for deferred payments. Further information will be cheerfully furnished free of expense by addressing A. J. TAYLOR, Canadian Passenger Agent, 87 York St., Toronto, Ontario.

**POULTRY MEN! GREEN CUT BONES**

Warranted to double the egg production. Our BONE CUTTER reduces green bones fine enough for little chicks.

**MEDAL AND DIPLOMA AT WORLD'S FAIR.**

and, as far as we know, the only one worthy of mention. Get our circulars also of HAND STONE CRUSHER for making grit out of stone, hills, broken crockery, etc. Pure Limestone Grit, in sacks, \$1 per 100 lbs. Our CLOVER CLEVER finest made. Write for circulars.

**Wazener & Hannum**  
Cazenovia, N. Y. 66-2-c-om

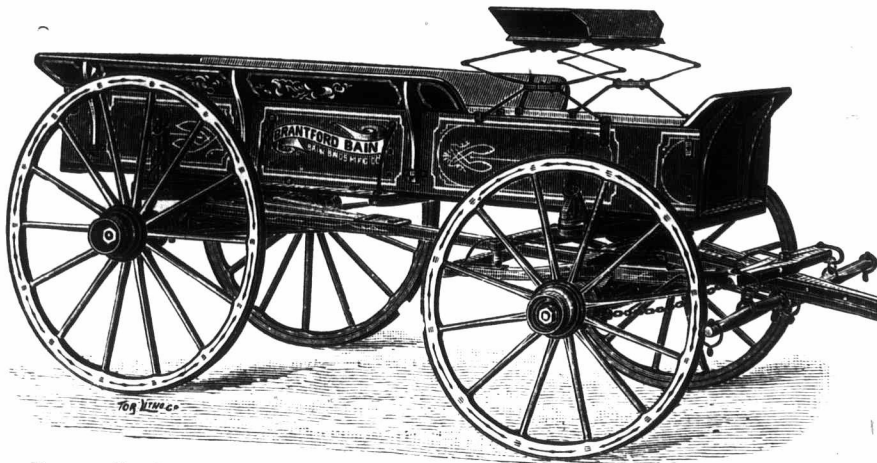


**HOW IS YOUR HORSE?  
IF HE'S SICK AND YOU CAN'T TELL WHAT'S THE MATTER  
He surely Needs  
"MAUD S" CONDITION POWDER**

PRICE, 25c. AND 35c. PER PACKAGE.  
We offer to mail for 10c. a regular 25c. package to anyone who wishes to try them before purchasing a supply.

DAVIS & LAWRENCE CO. (Ltd.), - MONTREAL.

**WE INVITE YOU TO INSPECT THE  
"BRANTFORD BAIN"**

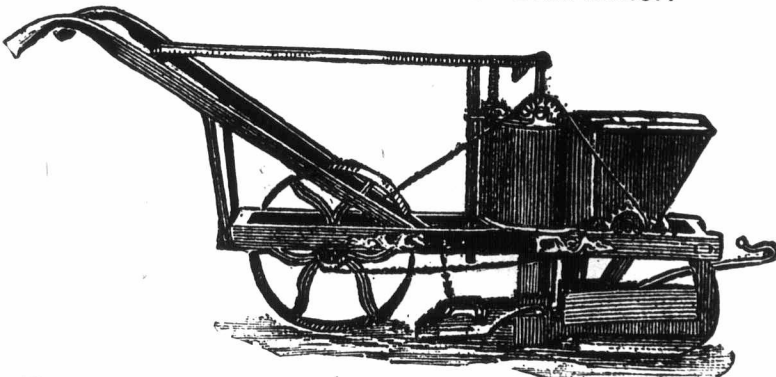


Because it will pay you to buy it. It is finely finished, well-proportioned, light-running, durable, superior quality. There are thousands of farmers who are well pleased with their BRANTFORD BAIN WAGON. Write us for prices, or call on our agents.

BAIN BROS.' MANUFACTURING CO., - 7-a-om - BRANTFORD.

**QUEEN :: CORN :: PLANTER.**

With or Without Fertilizer Distributor.



For Planting Field and Ensilage Corn, Beans, Peas, Beet, and Turnip Seeds in Hills, Drills or Checks. Weight, 150 lbs. Every Machine Guaranteed. Steel and Wood Frame Cultivators, the finest made. Steel Plows. Write for Catalogue.

W. F. VILAS, 8-c-o East Farnham, Que.

**WESTRUTHER PARK** Herd of Bates Shorthorns, consisting of Oxford, Barrington, and other families, has outgrown the place and must be reduced in numbers. Four yearling bulls and a number of females for sale, at lowest prices and on liberal terms. Farm a mile from the station.

Waterloo, Gwynne, Darlington, and other families, has outgrown the place and must be reduced in numbers. Four yearling bulls and a number of females for sale, at lowest prices and on liberal terms. Farm a mile from the station.

24-y-om JOHN IDINGTON, Stratford.

**FOR SALE** Daisy Chief = 13674—, a son of noted Indian Chief = 11108—, and one of his best; a first prize-taker wherever shown. Having to soon make a change, on account of his own get coming on, we will sell reasonably, although regret having to do so. A few young cows, heifers and bull calves for sale, and a choice lot of Berkshire sows and pigs for sale. Also a Cleveland Bay mare, five years old, a good specimen of that class; two crosses from (imp.) horses, and out of half-bred carriage mare; just the kind to breed from. Write for prices or come and see stock. Visitors welcome. No sale no harm. A. J. C. SHAW & SONS, Camden View Farm, Thamesville. 12-2-y-om

**Deep Milking Shorthorns**

Mr. GRAINGER, Londeshoro, Ont., offers for sale some exceedingly good cows and heifers. (Fair Maid of Hullett 2nd, now at test at Chicago, is only a fair specimen.) Dams made thirty pounds of butter in seven days. Come and see them; they are good ones. 14-2-y-om

**SCOTCH-BRED SHORTHORNS FOR SALE**

6 Choice Young Bulls

And the Imported Cruickshank Bull

ABERDEEN HERO,

Their sire. Also some nice

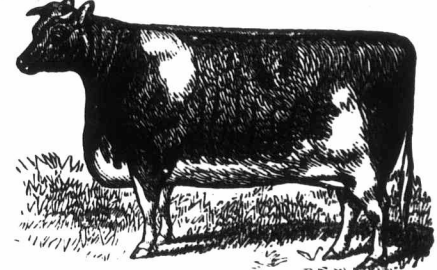
Young Heifers,

From one year old up. Prices to suit times. 20-2-y-om

SHORE BROS., White Oak.



**ARTHUR JOHNSTON, Greenwood, Ont.**



(SEVENTEEN GRAND BULL CALVES)  
Offers seventeen grand bull calves, now ready for service, besides two exceedingly good imported yearling bulls and an excellent lot of young cows and heifers, all of which will be sold at moderate prices. Send for Catalogue. Greenwood P. O. and Telegraph Office, Claremont Station on the C. P. R., or Pickering Station on the G. T. R. Parties met at either station on shortest notice. Come and see my cattle. 8-2-y-om

Craigieburn Stock Farm (25 miles N. E. of Toronto, G. T. R.) FOR SALE.—Two splendid rooms and one red bull fit for service this spring. Got by imp. Guardsman and good Scotch-bred cows. A few choice heifers, grand daughters of the celebrated American hero Abbotsburn. Prices right and correspondence promptly answered. 2-2-y-om

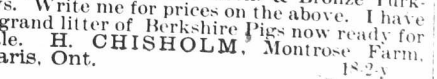
GEO. A. BRODIE, Bethesda, Ont.

**CRUICKSHANK SHORTHORNS**

of the Duchess of Gloster family. A few straight-bred young bulls and heifers by imp. Duke of Lavender. THOS. ALLEN & BROS., ONTARIO, 8-2-y-om

**SHORTHORNS, BERKSHIRES,**

Shropshires, Plymouth Rocks & Bronze Turkeys. Write me for prices on the above. I have a grand litter of Berkshire Pigs now ready for sale. H. CHISHOLM, Montrose Farm, Paris, Ont. 18-2-y



**SHORTHORN BULLS**

Sired by imp. Prince Royal, and from dams with all imported crosses, also cows and heifers. J. & G. TAYLOR, Rockwood P.O. & Station. 6-2-y-om Farm close to station.

**SHORTHORNS**

We have seven bulls from twelve to fourteen months old, from our best sires and dams, of choicest Scotch breeding, that, for hair, color, size, feeding qualities, constitution, general style and character, cannot be equalled, and we will sell them low. Also some show heifers for sale.

JOHN MILLER & SONS, Brougham, 12-2-y Ontario.

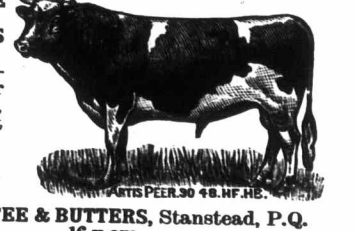
**BULLS.**

A few grand Shorthorn bulls for sale at Maple Lodge Stock Farm; 12 to 15 months old. Thick, sappy fellows. Dams are first-class milkers.

JAS. S. SMITH, 5-2-y-om Maple Lodge P. O., Ont.

**SUNNYSIDE HOLSTEIN-FRIESIANS**

Choice animals, either sex, all ages, for sale at any time. Correspondence solicited. Address MEDUFFEE & BUTTERS, Stanstead, P. Q. 16-y-om



**CHOICE HOLSTEINS FOR SALE**

My stock bull Amsterdam, by Netherland Statesman Cornelius, dam imp. Verassina, also a nice yearling dam, imp. Breezy 236, sire Amsterdam. 6-2-y-om JOHN A. LINE, Sherwood.

**I WILL SELL HOLSTEIN BULL CALVES**

Dropped in February and March, if taken before three weeks old,

AT \$15 EACH.

If required to register them, purchaser to pay registration fee.

**F. A. FOLGER,**

Box 578, Rideau Stock Farm, KINGSTON, 4-2-f-om ONTARIO.

**HOLSTEIN-FRIESIANS AND TAMWORTH PIGS.**

Our herd of Holsteins was never so complete as now. Bargains in all ages and both sexes. We have young bulls fit to head the best herds in Canada. We have a choice lot of young Tamworth Pigs ready to book orders. Write at once for prices and catalogue.

A. C. HALLMAN & CO., New Dundas, Waterloo Co., Ont. Shippery, St. Petersburg, G.T.R., and Ayr, C. P. R. 12-2-y-om

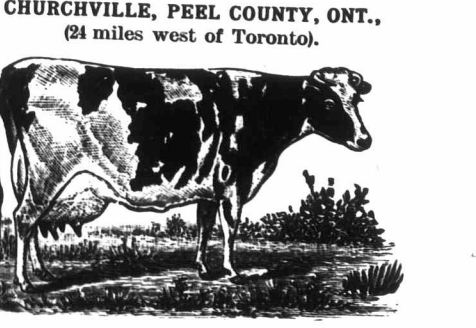
**HOLSTEIN-FRIESIAN CATTLE**

Netherland, Aagie and Atris blood, along with others all of the best strains of producing blood. Write for particulars. Young Bulls and Heifers of the above tribes on hand. A grandson of Netherland Prince now for sale.

G. W. CLEMONS, 10-2-y-om St. George, Ont.

**THE GREAT MILK AND BUTTER HERD OF HOLSTEIN-FRIESIANS.**

SMITH BROS., Credit Valley Stock Farm, CHURCHVILLE, PEEL COUNTY, ONT., (24 miles west of Toronto).



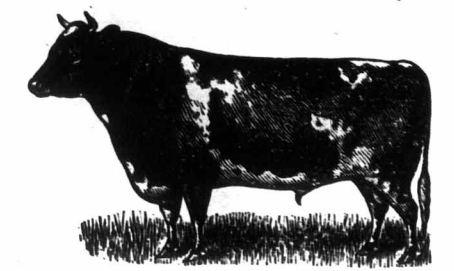
This is the place to get stock of best quality at reasonable prices. We have seventy-five head, including prize-takers; best strains, cows and heifers, with large milk and butter records young bulls of superior quality. Send for catalogue. 8-2-y-om

**PURE-BRED AYRSHIRES**

NICOL & SON, Cataraqui, - - - Ontario. 6-4-om Some young bulls for sale.

**ADVERTISE IN THE ADVOCATE**

**DOMINION PRIZE HERD OF AYRSHIRES**



We have the oldest established, largest and best herd of Ayrshires in Canada. Choice young stock for sale at liberal prices. Satisfaction guaranteed. **JAMES DRUMMOND & SONS**, Petite Cote, Montreal, P.Q. 8-2-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 deep milkers and of a large size. Bulls, cows and heifers for sale always on hand.



**JAS. McCORMICK & SON,** ROCKTON, ONT. 20-2-y-om

**A. McCALLUM & SON,** Sprucehill Farm, Danville, Que.

**Pure-Bred Ayrshires & 6-f-om Berkshire Pigs.**

**WOODROFFE STOCK AND DAIRY FARM.** Ayrshire Cattle. A choice lot of young Bulls and Heifers of the richest milking strain now on hand. Correspondence solicited. Ad dress, **J. G. CLARK**, Ottawa, Ont. 19-1-om



Champion Dairy Herd of Ayrshires at various government tests. Prize winners at the World's Columbian Exposition, Chicago. Write **MESSRS. ROBERTSON & NESS**, Howick, Que. 19-y-om

**W. M. & J. C. SMITH,** Fairfield Plains, Ontario.

**First and Second Prize Ayrshires AT THE WORLD'S FAIR.**

Merino Sheep, Poland China Pigs and Poultry. Stock for sale at reasonable prices. 2-2-y-om

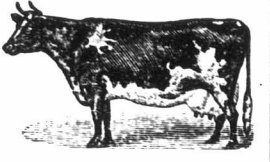
**AYRSHIRES FOR SALE**

One two-year-old bull, one yearling bull, and a number of calves. All eligible to pedigree. Write for prices or come and see stock. Hoard's Station, G. T. R.

**F. W. Taylor,** 8-a-om Wellman's Corners, Ont.

**THE GLEN STOCK FARM**

**AYRSHIRES**—AND—**BERKSHIRES.** A few good Ayrshire bull calves and heifers, Berkshire boars and sows. For particulars write



**Whiteside Bros.,** 7-y-om INNERKIP, ONT.

**JERSEY BULLS.**

Brocton 29177, three years old. First prize at one year old, and 1st and diploma last year at Western Fair.

Also three bull calves from four to seven months old, eligible for registration in American Jersey Cattle Club.

Parties calling at London House will get full particulars.

**W. C. LAIDLAW,** 8-a-o Wilton Grove, Ont.

**HANDSOME JERSEY BULL CALF FIT FOR SERVICE FOR SALE CHEAP.**

Grandson of One Hundred Per Cent. Register A. J. C. C.

**F. BIRDSALL & SON,** 8-a-o-m BIRDSALL, Ont.

**GLEN ROUGE JERSEYS**

**WILLIAM ROLPH,** Markham, Ont., offers Twelve Jersey Bulls and Heifers (pure St. Lamberts), out of tested cows. Grand individuals. Prices right. 19-y-om

**JERSEY-CATTLE**

Of the heaviest milking strains. One of the largest herds in Canada; bred closely to the great dairy cow at Chicago, also the famous two-year-old. Sires of both were sold from this herd. Also Welsh Blood Ponies for ladies' and children's driving. Stock for sale always on hand. **GEO. SMITH & SON,** Grimsby, Ontario. y-om

**JERSEYHURST FARM, LOCUST HILL,** Ont. **ROBERT REESOR,** importer and breeder of A. J. C. C. Jerseys of the choicest breeding, with the bull Jay St. Lambert 32813 at the head of the herd. Stock of all ages on hand and for sale. 16-2-y-om

**FOR : : HEREFORDS**

WRITE TO : : **F. A. FLEMING,** 5-y-om Weston, Ont.

**Ingleside :-: Herefords.**

**ANXIETY 4th, and THE GROVE 3rd Strains.**

**Prize Winners for '94!**

**SPECIAL OFFERING OF CHOICE YOUNG BULLS,** Registered calves of 94, \$40 to \$60 a piece. Also a very promising bull 21 months old.

Address:— **H. D. SMITH,** Farm, 2 1/2 miles, Ingleside Farm, G.T.R. Station. 18-2-y-om **COMPTON, Que.**

**SHROPSHIRE.**

Foreign buyers are invited to visit the Wolf's Head Flock, as there is always a good selection of ewes and rams for sale, and we handle none but the best, and can supply select specimens for breeding or exhibition purposes, and residing in the centre of the Shropshire Sheep Breeding District buyers are assisted in selecting from other flocks. Write for prices or visit us before going elsewhere. Visitors met by appointment at Baschurch Station, G. W. R. Address—**J. & T. THONGER,** Wolf's Head Farm, Nesscliff, Baschurch, Shrewsbury, Eng. Telegram: 2-2-y-om



**BEAM - HOUSE - SHROPSHIRE**

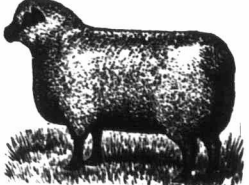
This is the Home of the Blue Bloods.

**WM. THOMAS** offers for sale Rams and Ewes from his famous flock, which has sent so many winners to our leading shows, and here also was bred Mr. A. O. Fox's noted ram "Blue Blood Yet," which so ably piloted Mr. Fox's flock of Shropshires at the World's Fair. Wm. Thomas will have several grand shearing rams for sale this next season, sired by his grand old sheep "Blue Blood," and also a grand lot of shearing rams by other noted sires; also about 150 splendid shearing ewes to select from. Foreign buyers always welcome. If not able to come and select for yourselves, write and obtain prices from **WM. THOMAS,** The Beam House, Montford Bridge, Salop. Railway Station: Baschurch, G. W. R. 2-2-y-om



**SHROPSHIRE - FOR - SALE**

My whole flock of 60 head of Imported Rams and Ewes, a few home-bred Shearing Rams, and a choice lot of lambs of both sexes. Also a choice lot of young Yorkshire Pigs.



**T. H. MEDCRAFT,** Sparta, Ont. 19-y-om

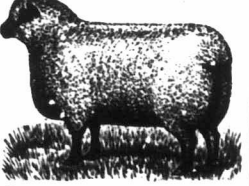
**1881—SHROPSHIRE—1881**

My flock is established since 1881. All my ewes are imported and selected in person from the most noted English flocks. A choice lot of shearings and lambs sired by a Bradburn ram. Write for prices to

**JAMES COOPER,** 14-2-y-om **Kippen, Ont.**

**IMPORTED SHROPSHIRE EWES**

And their lambs for sale by car lots; also a very choice Short-horn Bull calf, ten months old.



**W. S. HAWKSHAW,** Glanworth P.O., Ont. 7 miles south of London. 7-1-f-om

**SHORTHORNS AND SHROPSHIRE.**

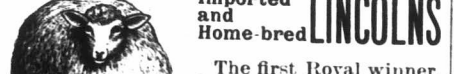
For sale, seven young Shorthorn bulls, from 8 to 12 months old, got by Grand Fashion =15404-; also a choice lot of Yearling Ewes due to lamb in March. All Stock Registered.

**W. G. PETTIT,** 13-y-om **Freeman P.O., Burlington Stn., G.T.R.**

**Imported and Home-bred LINCOLNS**

The first Royal winner, Royal Chester, at the head of the flock. Ewes from the best English flocks, such as those of Dudding, Bailes, Wright and Clark. Rams to head flocks a specialty.

**R. W. STEVENS,** LAMBETH, ONT. 5-y-om **London Station.** 3-y-om



Queens, and Bee-keepers Supplies. **4 AWARDS at the WORLD'S FAIR, Chicago.** Buy the Best. Circular and Price List and sample copy Canadian Bee Journal, Free. Address—

**GOULD, SHAPLEY & MUIR CO.** (LIMITED), 8-d-o **BRANTFORD, ONT.**

**ALL PRIZE STOCK.**

**Colden Wyandottes (McKeen's), White Pl. mouth Rocks (Knapp's), White Leghorns (Rice's).**

I have some fine young birds for sale. Eggs, \$2.00 for 15. I have carefully bred for utility as well as other points. Write me, I will answer.

**W. J. STEVENSON,** 7-c-o **Box 204, Oshawa, Ont.**

**EGGS** from grand yards of Black Minorcas, Light Brahmas, Brown Leghorns and Barred Plymouth Rocks, \$1 per setting. Some choice Minorcas for sale. **W. L. BROWN,** London West, Ontario. 5-1-d-om

**MUNGER'S AMERICAN STRAIN.**

Great Golden Eggs, 1887 to 1893. 25 Years Experience in Breeding Turkeys, Ducks and White Plymouth Rocks, White and Silver Wyandottes, Brown and White Leghorns. 25 Years Experience in Mating and Breeding. 40 Grand Breeding Pans for 1894.

Fools and Eggs For Sale at all Times. Pairs, Trios and Breeding Pens Mated for Best Results. Address **F. M. MUNGER,** DeKalb, Illinois

SEND for Catalogue of CHAMPION EVAPORATOR. **THE G. H. GRIMM CO.,** Montreal. 7-1-o

**MAY WE SEND YOU FREE**

OUR CATALOGUE OF **HARNESS & SADDLES**

It contains cuts, descriptions and prices. We have a larger trade in these goods than any other firm in Canada. We sell them in every Province and Territory. We guarantee prices lower than any local dealer can possibly give. We ship them with privilege of examination before paying for them. We have every style of harness, from dog, goat or pony to heavy and extra heavy, double and single; also gents', boys' and ladies' saddles. Address **THE SUPPLY CO.,** NIAGARA FALLS, ONTARIO

**AYER'S Sarsaparilla**

Has cured others will cure you

When I was one year old, my mamma died of consumption. The doctor said that I, too, would soon die, and all our neighbors thought that even if I did not die, I would never be able to walk, because I was so weak and puny. A gathering formed and broke under my arm. I hurt my finger and it gathered and threw out pieces of bone. If I hurt myself so as to break the skin, it was sure to become a running sore. I had to take lots of medicine, but nothing has done me so much good as Ayer's Sarsaparilla. It has made me well and strong. T. D. M., Norcaur, Kans.

**AYER'S Sarsaparilla** Prepared by Dr. J. C. Ayer & Co., Lowell, Mass. Cures others, will cure you

**IMPROVED : LARGE : YORKSHIRES**

The largest herd and the most profitable type of Yorkshires from the feeder's standpoint in America. Over fifty sows bred to seven different stock boars for the spring trade. Pigs for exhibitors purposes a specialty. Stock shipped to order are guaranteed to be as described. Personal inspection solicited. **J. E. BRETHOUR,** Burford, Brant Co., Ont. 3-y-om



**STOCK GOSSIP.**

In writing to advertisers please mention the Farmer's Advocate.

**SHEEP AND SWINE BREEDERS.**

A well attended joint meeting of the Executive Committees of the Dominion Sheep and Swine Breeders' Associations was held in the Tecumseh House, London, on April 3rd. Mr. Richard Gibson in the chair; Mr. F. W. Hodson, Secretary.

Financial Report Swine Breeders' Association from April 1st, 1893, to April 1st, 1894:—

**RECEIPTS.**  
Balance in Treasurer's hands \$ 117.26  
Members' fees 424.00  
Legislative grant 700.00  
1,241.26

**EXPENDITURES.**  
Prizes awarded Guelph Winter Show \$ 381.58  
Directors' Expenses, etc. 83.32  
Postage, \$30.03; printing and stationery, \$38.00 68.93  
Reporting annual meeting 10.00  
Affidavit sent Government 50  
284 volumes record supplied members 307.58  
Sundries 8.00  
Papers read before annual meeting and published in annual report 105.00

Balance in Treasurer's hands \$974.91  
286.35  
1,241.26

We have carefully examined the Treasurer's books and find them correct.

**J. S. Pearce** and **Richard Gibson,** Auditors. Financial report Dominion Sheep Breeders' Association from April 10th, 1893, to April 1st, 1894.

**RECEIPTS.**  
Members' fees \$ 68.00  
Government grant 700.00  
\$768.00

**EXPENDITURES.**  
Prizes awarded at Guelph Fat Stock Show 480.00  
Paid for papers read at annual meeting 153.00  
Directors' expenses, etc. 83.23  
Postage, \$32.19; printing and stationery, 73.30 105.49  
Reporting annual meeting 10.00  
Miscellaneous 16.00  
Affidavit sent Government 50  
Balance due Treasurer April 10th, 1893, as shown in last yearly statement 48.18

Balance due Treasurer \$896.40  
\$128.40

We have carefully examined the Treasurer's books and find them correct.

**J. S. Pearce** and **Graham Walker,** Auditors. Mr. Hodson stated that nearly 500 letters were written in the interest of the Association last year; over 1,000 circular letters and copies of articles were in 1893 sent to members and to newspapers in Canada and adjoining States. The Government printed and distributed 15,000 copies of the annual report, but this was not enough to supply the demand. Forty essays have been contributed by practical men and will appear in the annual report which will be printed at an early date. It will be by far the best yet issued by our Association. On motion the reports were adopted.

After full discussion it was resolved, on motion of Messrs. Hodson and Jackson (the Ontario swine breeders concurring) to ask the Ontario Government to increase the yearly grant to the Sheep Breeders' Association by \$300. Assistance from the Dominion Government will also be sought.

The Secretary suggested that in the future expenses should be curtailed by appointing smaller committees, by doing association business more largely by correspondence, and by having fewer papers prepared for the annual reports. At the present meeting it was proposed to appoint sub-committees with special duties to perform, and who are expected to report at the next annual meeting. It was also proposed to prepare a scale of points and pen pictures of the various breeds. A scale of points might be of some value to the novice in determining in his mind the relative value of such points, yet to farmers generally a carefully written pen picture (or description) of each breed would be of infinitely greater value. An individual animal should be taken up and each point carefully described, first giving desired qualifications minutely and clearly, then the undesirable conditions, in other words, the disqualifications. If this work is carefully done, and the results widely published, it will have the effect of bringing about greater uniformity in the different classes of sheep and swine, and the judging at Canadian shows will grow more uniform.

This plan would develop expert judges. Judges would be guided by these descriptions rather than by individual notions. Young men founding herds or flocks would be better able to start with a correct ideal. The public mind would become settled upon an ideal. As the requirements of the age or breed demand the authorized description can be changed. The "Standard of Excellence," published in book form from time to time, has done more than all other agencies put together to establish, improve and make uniform the various breeds of poultry.

Messrs. John Jackson, John Kelly, J. F. Brethour and S. Coxworth were appointed an Exhibition Committee, the two former representing the sheep breeders and the two latter the swine breeders, and were authorized to offer as prizes at Guelph, or some other winter show, a sum not exceeding \$500 from each Association.

Messrs. J. I. Hodson, R. Gibson, Joseph Featherstone, M. P., and F. W. Hodson were appointed a committee to confer jointly with delegates appointed by other associations to devise means whereby influence may be brought to bear upon the government at Washington toward the repeal of the present American Custom Law as it affects animals registered in Canadian records.

Messrs. John Jackson, D. G. Hamner, R. Gibson and J. C. Snell were appointed the Programme Committee for 1894, the first two representing the sheep breeders and the last two the swine breeders. It shall be the duty of these gentlemen to assist and advise the Secretary, so that the annual meetings and reports for 1894 shall be even better than those heretofore held and issued.

Messrs. Jas. Tolton, Henry Arkell, J. Coxworth and R. H. Harding were appointed a committee to draft a model set of rules and prize lists to govern the sheep and swine departments of the larger Canadian shows; also rules and classifications suitable for county, township and other exhibitions. The first two represent the sheep breeders, the latter the swine breeders, and they are expected to report at the next annual meeting of the association they represent.

Mr. D. McCrae spoke in support of a movement to hold an annual stock sale at Guelph, where one was conducted last fall.

The majority of those present expressed themselves unfavorably to stock sales under the auspices of this Association. It was thought the conditions were not similar to those that made the ram sales, etc., so successful in England.

Finally Messrs. J. C. Snell, J. I. Hobson, H. Wright and W. S. Hawkshaw were appointed a Stock Sale Committee.

It was decided to procure suitable badges for the members.

It was resolved that each member of a committee be instructed to carry out the expressed wishes of this meeting, his own opinions to the contrary notwithstanding; also, that the first named person on a committee be chairman, but when a committee is divided, one or more acting for the Sheep Breeders' Association, and one or more for the swine breeders, then the first named in each division shall be its chairman. The duty of the chairman shall be to take the initiative in all work undertaken by his committee, and to report at the next annual meeting of the association he represents. The Secretary by virtue of his office shall be a member of each committee, and this principle will be hereafter observed.

Mr. J. C. Snell was appointed to review the papers on swine breeding which were prepared, but not read before the Association, but which were ordered to be printed in the report of 1893, and Mr. Richard Gibson those on sheep breeding, their productions to be read at the next annual meeting.

The delegates to Ottawa (Messrs. Hobson and Featherstone, M. P.) were also authorized to be a deputation to wait on the railway authorities, asking that certain grievances that breeders and exhibitors have to contend with in shipping stock be removed.

The salary of the Secretary for 1893 was fixed at \$100 for the Sheep Breeders' Association and \$100 for the Swine Breeders' Association.

It was resolved to ask the Dominion Government to pay in full for all hogs (the property of exhibitors at the World's Fair) which died or were slaughtered while in quarantine at Point Edward, said exhibit being one of national importance and benefit to the swine trade of Canada generally.

Sheep Judges—Messrs. Jas. Russell, of Richmond Hill, and Alex. Smith, of Maple Lodge, were selected for classes 8 and 11, and William Thompson, of Uxbridge, reserve judge; H. Arkell, of Teeswater, and W. S. Hawkshaw, of Glenworth, for class 9 and 10, with S. Lemon, of Kettleby, reserve judge. The judges of classes 8, 9, 10 and 11 will be a committee to award the sweepstake prize.

Swine Judges—Messrs. J. E. Brethour and Joseph Featherstone were selected to judge Tamworths and Chester Whites; James Main, of Milton, and Thos. Teasdale, of Concord, for Berkshires, Yorkshires and Poland Chinas, with Mr. S. Coxworth, of Claremont, as alternate judge.

The rules and prize list governing the winter's show were revised.

A motion was discussed as to length to the effect that the Board of Agriculture and Arts be requested to hand over to this Association all pedigrees of sheep and swine in their possession, it being considered in the interest of the sheep and swine industries of this country that the records be conducted and controlled by the associations directly interested. This was finally left as a notice of motion to be brought up at the annual meeting.

A standard of excellence for the following breeds of sheep was passed upon:—Cotswolds, Southdown, Leicesters, Oxford and Hampshire, and for the following breeds of swine:—Berkshire, Poland China, Chester White, Tamworth, Yorkshire, Duroc Jersey, Victoria, Suffolk and Essex. These will be published in the annual report for 1904.

A WORD TO SHEEP AND CATTLE MEN REGARDING "LITTLE'S NON-POISONOUS LIQUID SHEEP AND CATTLE WASH."

This Dip is non-poisonous; is of uniform strength, never varies. It is perfectly safe, as being non-poisonous. It does not stain the wool, but, on the contrary, improves it and adds to its value. It destroys ticks and all insects instantly. A sure cure for scab; a most valuable remedy in outbreaks of "Foot and Mouth Diseases," "Pneumo-Pneumonia," and infectious diseases among cattle. In these cases the Wash will be found most valuable as a disinfectant and germicide, at once preventing the spread of the malady if liberally used. It is cheap, convenient and effective, as certified to by the thousands of stockmen who use the Wash in all parts of the world, and by the enormous increase in sales; in fact, no farmer, let alone stock-breeder, can afford to be without it. Read what some of our Canadian stockmen say about "Little's Sheep and Cattle Wash."

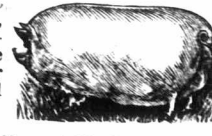
FROM A. TELFER & SONS, PARIS, ONTARIO.  
Having used "Little's Sheep Dip and Cattle Wash" on both Sheep and Cattle, we take great pleasure in recommending it to others, as it is the best we have ever used. We also find it a most excellent wash for wounds and sores on Horses, Cattle and Sheep.

FROM J. V. ORMSBY, V. S.  
Mer, Isleigh Grange Farm, Danville, P. Q.  
I have now been using "Little's Sheep and Cattle Wash" for some four years, and I can truthfully say that it is by far the best preparation I have ever used for destroying lice on Horses, Cattle and Dogs, or any animals. Its special advantages in my eyes are, that while it not only cures but sudden death to all kinds of worms and parasites, it is also clean and easy to use, and so cheap when we consider how long it will last, that no farmer, not to speak of a stock-breeder, should be without it.

**LARGE IMPROVED YORKSHIRE PIGS and Holstein Cattle.**

We breed nothing but the best, and sell cheap, and guarantee satisfaction or ask no pay. Come and see us, or write for prices and be convinced.

**FLETCHER BROTHERS,**  
Oxford Mills P. O., Ont., Kemptville S't'n, C. P. R.  
6-2-y-om



**J. G. MAIR, Howick, P. O.**  
BREEDER AND IMPORTER OF IMPROVED LARGE YORKSHIRES.

I am breeding from nothing but stock imported from the well-known herd of Sanders Spencer, at Montreal Exhibition, young stock of my breeding look all the highest honors. Orders now booked for fall litters.



**THE MARKHAM HERD**  
Farm at Locust Hill Station, C. P. R. Registered Improved Large Yorkshire and Berkshire pigs. As we do not intend to exhibit, we will now sell a choice lot of show pigs of each breed.

17-y-om **JOHN PIKE & SONS.**

**YORKSHIRE PIGS**  
Of the best type and breeding. Pairs not skinned for sale at all seasons.

**J. M. HURLEY & SON**  
Belleville, Ont. Box 442.  
17-y-om



**C. J. GILROY & SON**  
Glen Buel, Ont.

Have for sale some Holstein Cows, one good young Bull, also a number of Improved Large Yorkshire and Berkshire Pigs.

7-y-0

**Registered Improved Chester White Swine & Dorset Horned Sheep**  
are my specialties. Cleveland (Imp.) No. 329, whose sire won sweepstakes at the World's Columbian Exposition, heads the herd. Young stock ready to ship, and guaranteed as described. Write for particulars, etc., to R. H. HARDING, Mapleview Farm, Thorndale, Ont., Middlesex Co.

19-1-y-om

**TAMWORTH PIGS.**

We are now prepared to furnish pigs from imported sows and boars not akin of the best strains obtainable. Reduced rates by express.

Write for particulars to **H. George & Sons,**  
7-y-om **CRAMPTON P. O., Middlesex Co.**

**IMPROVED SUFFOLK SWINE, THOROUGH-BRED HORSES, DURHAM CATTLE AND SOUTHDOWN SHEEP.**

A grand lot of Suffolk Pigs, all ages, for sale at prices to suit the times. A. FRANK & SONS, The Grange, four miles from Cheltenham Stn., C. P. R. & G. T. R.

24-2-y-om

**T. TEASDALE, CONCORD, ONT.,** breeder of high class Berkshires. Some fine pigs October litters, both sexes, for sale. Also fine lot young pigs farrowed in March. Come and see my stock, or write for prices and description.

6-y-om

**Gold Medal Berkshires.**



Spring pigs from 3 first-class imported boars, and from imported sows and their daughters. Young boars and sows of October litters ready to breed. Large English Berkshires. Also Jersey cows, heifers and calves. Address

**J. C. SNELL,**  
S. Y. om **EDMONTON, ONT.**

C. T. Garbutt, box 18, Claremont, Ont., imp. and breeder of Berkshire Pigs and Cotswold Sheep. Promising young pigs of October and January litters. Sows in farrow. Imp. boars in use. Write your wants. Stock all recorded and guaranteed as described. Special rates by express.

6-2-y-om

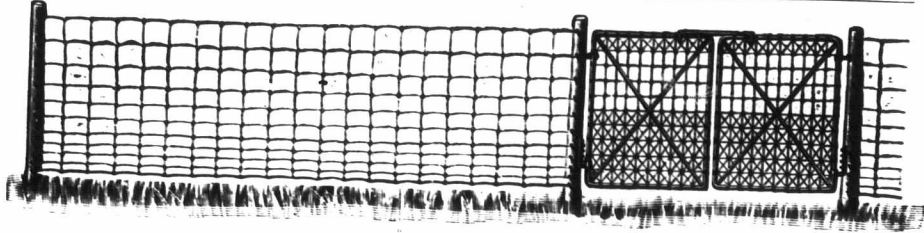
**BERKSHIRES AND YORKSHIRES.**

Choice stock for sale at reasonable prices. Orders filled in rotation. Inspection invited. Write for prices.

**THOMAS WATSON, Springvale, Ont.**  
S. 2-y-om

**ISRAEL CRESSMAN, New Dundee,**  
IMPORTER OF Large - English - Berkshires

4-y-om



**RETIRED FARMERS.**

We often read of retired merchants, retired lawyers, retired clergymen and men retired from pretty much all of the vocations of life, but how often do we hear of retired farmers? And yet there are more retired farmers in our country than all others who have retired with a competence. For this there are good reasons, among which we may notice, first, a competence for farmers does not mean so large a fortune as it does for most people in other walks of life. Their wants are less, at least to start with. They usually retire with less family to live upon accumulated property, as often one great reason they retire is really to

GIVE THE BOY A CHANCE,

and in that case they are pretty sure of some income from the property, and if they still reside upon the farm their wants are still kept within their income.

Now all over our country in nearly every town are representatives of this class, who, having secured what to them looks like a competence, have retired from what they think the hardest of work. They do not comprehend that to men of active habits, who all along through life to mature years have had control of property and were thoroughly interested in something worthy of their closest attention, that to retire from all this there could be other than rest. But such men often find themselves disappointed and are really forced to look for something to keep themselves busy. They learn to hate having nothing to do. Oftentimes they go into the grocery business and later on wish they hadn't. Sometimes into implement or hardware business. Now the agricultural implement business is probably the thing nearest akin to their line of thinking of anything offered. But look at the failures in that line. What is the matter? Fierce competition by old houses which once controlled trade, and lack of acquaintance with and experience in modern methods, have proven too much for many of these novices.

Many such men in county seats were first

ELECTED TO SOME COUNTY OFFICE

and often filled that office very acceptably to their constituents. And they should—they have natural ability, pluck and endurance, and the salaries are sure. But with all such the time comes when they have to decide which they will do—go back to the farm or find something in the city to do. American tenure of office, and especially county offices, is short lived. Too many want them, and they have to be passed around.

Now to all this class of men, who, for above reasons, have retired from the farm, there is a natural field—a field that is constantly becoming more accessible and easier of work.

WE REFER TO THE BUILDING OF FENCES.

Carpenters build barns, blacksmiths do the smithing, clergymen preaching, and so on through the whole list. Time was when leading men in many communities did the preaching; when log cabins were in style and ox teams the swiftest means of transportation, there was but little demand for carpenters and smiths. But all this is changed, and now in the progress of American civilization the modern

FENCE SALESMAN

is evolved. And he has come to stay. Look at the growth of the Page Woven Wire Fence business. Five years ago this business was almost unknown, except near its birthplace. And there it was thought to be a rich subject for local jokers, and lots of fun, too, they had. But to-day how is it? Why, it is discovered that there is a legitimate field for this enterprise. That the fence has merits peculiarly its own, and when in the hands of the right man, is wanted in almost every section where grass grows and domestic stock is kept. Further, that the more it is sold the more it is wanted. That there is almost a boundless demand for a good fence at a reasonable price. Men may talk about a boy and dog or barbed wire to guard their stock; but hearers know that is bosh when an efficient and durable, neat Page fence can be put up for so little money.

We have but just begun. A year ago this company were running fifteen looms. To-day twenty-four are doing their best day and night, and ten more are nearly completed. Now what does this mean? What can it mean except that the demand is growing for the product?

Here is a chance for this class of retired farmers to get in on the ground floor of a business, for which they of all men are qualified by a life-long experience. They have had to do with fencing all their life, and are consequently good judges of almost any question pertaining to it. They can urge that fence from a practical standpoint which must serve a customer best for his wants, and thus be able to do such customer a double service. They know how posts should be set and can urge good work, and if need be, take the shovel and show just how to do it. Experience has taught them in the past something how taut to stretch the fence, and their acquaintance with tools enables them to quickly use such as are furnished by this company. Sunshine don't hurt them nor dirt scare them. And to all these natural advantages they may add that of personal acquaintance with many of their intended customers. Honorable acquaintance means respected confidence, and confidence means comparatively easy selling. If a little time is wanted they know whom to trust.

Many such men have tried it and are building a growing trade, and interested parties can write us for names. This business is growing and growing rapidly when most other business is stagnant.

Three times as much already contracted in Ontario for '04 as was sold during the whole of '03. Do these retired farmers or such farmers' sons see anything in this business for them? If they do and want to do anything this year they must get at it soon, for now is the time. Right now, before posts are cut too short or other plans laid or other wire bought. To put off till later will be like planting corn in July or August, too late for a crop this year.

Many have written us and have commenced canvassing with flattering results already this year. Why don't you?

Address **THE PAGE WIRE FENCE COMPANY (Limited), WALKERVILLE, ONT.**

THE HOME OF THE BERKSHIRES. J. G. SNELL & BRO., Edmonton, Ontario.

Now is a good time to order pigs from litters farrowed this year. We never had so many fine sows to breed from as at present. Can supply a few pigs from litters farrowed in January and February. These will be right for the fall exhibitions where prizes are given for pigs of this year. We have also for sale some young boars fit for service. Write for descriptions and prices. 2-3-om

C. R. DECKER, Chesterfield, Ont. A number of young boars fit for service; also some six weeks old (choice) and some choice sows in farrow mostly from imported boar. Prices reasonable. Call and see stock, or write for prices. G. T. H. Station, Bright, Ont. 15-2-y-om

H. J. DAVIS, Woodstock, Ont. Breeder of High-class Large Berkshire and Imp. Large White Yorkshire Swine, Short-horn Cattle. - A grand lot of young pigs ready for shipment of both breeds; also boars fit for service from prize-winning stock. Stock shipped to order. Satisfaction guaranteed. Young Bulls generally on hand. 8-y-om

S. COXWORTH, CLAREMONT, ONT., Breeder and Importer of Berkshire Hogs. Twenty young sows for sale, bred to my three stock boars, Highclere Prince, King Lee, and Champion Duke, Imp. Write for prices or come and see my stock. Station and Telegraph Office - CLAREMONT, C. P. R. 8-y-om

The Oxford Herd of Registered Poland Chinas Our herd of Improved Poland-Chinas won 36 first, 18 second and 6 third prizes in 1893, including the Herd prize at Montreal and Toronto, for best boar and two sows any age. Stock, both sexes and all ages. Pairs and trios not akin for sale at all times. Correspondence solicited or inspection of herd invited. 15-y-om W. & H. JONES, Mount Elgin, Ont.

Duroc-Jersey Swine Are the best all-round hog known. Nosquealing; quiet disposition; good grazers; defeated the Berks and P. C. on all points at Mich. Agri. Coll. test. Pigs for sale. Address, PETER LAMARSH, Wheatley, Ont. 4-2-y-om

TO FARMERS, STOCK DEALERS & WOOL CROWER FOR SHEEP, CATTLE AND HORSES. LEICESTERSHIRE TICK & VERMIN DESTROYER It effectually destroys Ticks, Lice, Worms or Grub, to which sheep, horses and cattle are subject, and enables the animal to thrive. It will be found far superior to other preparations used for the similar purpose. The proprietors will guarantee perfect success when used according to directions, as will be found on each box. It prevents scurf and scab, and renders the wool bright & clear. It is put up in tin boxes, price 30 cents each. One box is sufficient for twenty ordinary sized sheep. It only requires to be tried to prove itself all that is claimed for it. Sold by Druggists and Grocers. Manufactured by G. C. BRIGGS & SONS, 31 King St. West, Hamilton, Ont. 5-7-0

DO YOU WANT Fruit Trees, Plants, Ornamental Roses, Etc. We can make it to your advantage to deal with us. Our stock is well grown, and will please you. Send postal to-day for our NEW FREE Catalogue and see what we will do. You save agents and other expenses by dealing with us at the Central Nursery. 21-0 A. C. HULL & SON, St. Catharines, Ont.

Seeds WM. EWING & CO Seed Merchants, 142 McGill St. MONTREAL Garden and Farm Seeds of every description. Illustrated Catalogue mailed free to all applicants. Choice Lower Canada grown Timothy specially. The greatest assortment of English Corn in the trade, and a full stock of Imported Horse Beans and Russian Sunflower, used in growing Professor Robertson's Ensilage combination; besides everything necessary in the way of seeds for the flower garden, vegetable garden, or farm. We offer special quotations on application. Ground Oil Cake, Cotton Seed Meal, Myers' Royal Horse and Cattle Feed, and Ewing's Calf Meal, which is a complete substitute for milk, and on which calves can be reared as well as on whole milk, and at very great deal less cost. Send for pamphlets as well as seed catalogues. Mailed free. 6-0-0

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WORLD'S COLUMBIAN EXPOSITION, BY THE WROUGHT IRON RANGE CO., ON

HOME COMFORT

STEEL HOTEL AND FAMILY RANGES. CARVING AND STEAM TABLES, BROILERS, MALLEABLE WATERBACKS, ETC., ETC.



This Style Family Range is sold only by our Traveling Salesmen from our own wagons at one uniform price throughout Canada and the United States. Made of MALLEABLE IRON and WROUGHT STEEL and will LAST A LIFETIME if properly used. SALES TO JANUARY 1st, 1894, 277,188. MADE ONLY BY WROUGHT IRON RANGE CO., MANUFACTURERS OF Hotel Steel Ranges, Kitchen Outfittings and "Home Comfort" Hot-Air Steel Furnaces. OFFICE, SALESROOM AND FACTORY, 70 to 76 PEARL STREET, TORONTO, ONTARIO, and Washington Avenue, 19th to 20th Streets, ST. LOUIS, MO., U. S. A. Founded 1864. Paid up Capital, \$1,000,000. 7-y-om

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STEAM AND HAND-POWER. For Catalogues, Circulars and Testimonials, address FRANK WILSON, SOLE CANADIAN AGENT, 33 St. Peter Street, MONTREAL, P. Q. 7-1-0

FIFTY YEARS' EXPERIENCE



THE McCLARY MFG. CO. LONDON, TORONTO, MONTREAL, WINNIPEG, VANCOUVER.

SOUTH SASKATCHEWAN LANDS. CRAWLING CATERpillARS must go

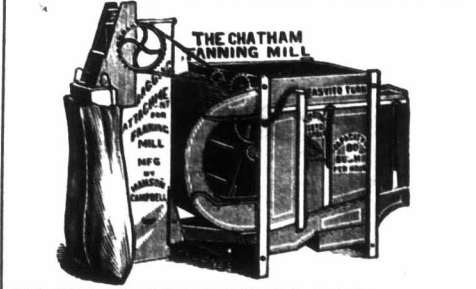
USE THE IDEAL SPRAYING PUMPS. SIMPLE. RELIABLE. EFFECTIVE. Reasonable in Price. AGENTS WANTED. GOULD, SHAPLEY & MUIR COMPANY, LTD. BRANTFORD, ONTARIO. Steel Wind Mills. Bee Supplies. Mention this paper. 2-2-0

ADVERTISE IN THE ADVOCATE

400 - Helderleigh Fruit Farms Nurseries - 400 (Four Hundred Acres in Extent.) Established 1882.

There is no place in Canada where the season is longer than here. Hence we get trees brought to the fullest maturity, capable of withstanding the severest cold. Having one hundred acres in fruit, from which cuttings, buds, scions, etc., are taken, I can safely guarantee the purity of my stock to be equal, if not superior, to any other nursery. The soil is specially adapted to produce vigorous, hardy trees, a grand lot of which are now growing and for sale. All the leading sorts of both old and new varieties deemed worthy of propagation. Catalogues free on application. Agents wanted in every township. 13-y-om E. D. SMITH, Winona, Ontario.

SEND 10 cents to J. T. LOVETT CO., LITTLE SILVER, N. J., for their GUIDE TO FRUIT CULTURE. Several Colored Plates. Richly illustrated. 7-0-0



NOTICE TO THE FARMERS OF CANADA!

Chatham, Ont., March 15, 1894. Although the Orange Wholesale Supply Co., of Toronto, are advertising Chatham Fanning Mills for sale, they are doing so without any authority from me, and have no arrangement with me to supply them, and I have never sold them a mill since I have been in business. MANSON CAMPBELL.

MONITOR INCUBATOR. Two Medals at World's Fair.

Illustrated Catalogue for stamp. A. F. WILLIAMS, Box 1, Bristol, Ct. FOR SALE, CHEAP. Incubator, Brooder, Two Clover Cutters, Poultry House Spray, Mortar for crushing old dishes for chicks, Breech-loading Shot Gun, Sewing Machine, Exhibition Coops, Light Brahmas, Red Caps, Rose Comb Brown Leghorns, Single Comb Brown Leghorns, Aylesbury Ducks, Pekin Ducks, White Guineas, Poland-China Pigs. L. W. EDSELL, SELKIRK, ONTARIO. 8-4-om



PRICE LIST OF EGGS. - L. B., 15, \$2.; Golden W., \$3.; Silver W., \$2.; Blk. Lang., \$2.; Houdans, \$1.50; Blk. Hamburg, \$1.50; B. P. Rock, \$1.; Brown and White Leg., \$1.; Silver Gray Dorkings, \$1.50. CULLODEN POULTRY YARD, Mount Brydges, Ont.

WHITE LECHORNS A SPECIALTY

My matings for 1894 are unsurpassed. Pons headed by two of the best male birds in Canada. A few cockerels for sale. 5-0-0 GEORGE E. LEE, Highgate, Ont.

PRIZE PLYMOUTH ROCKS

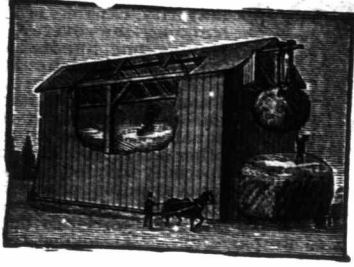
Our Eggs Hatch. FROM GRAND PRIZE MATINGS, \$2 PER 13 FROM CHOICE SELECTED STOCK, \$1 PER 13. Customers report from Quebec "13 chicks from 13 eggs"; Toronto, "14 chicks from 14 eggs"; Victoria, B. C., "10 chicks from 12 eggs." New circular and catalogue free. C. W. ECKARDT, Ridgville, Ont. 3-y-om

Indian Games; White, Silver and Golden Wyandottes America's best breeds. The ideal fowls for fanciers and farmers. A fresh addition of extra fine BRONZE TURKEYS. My yards contain birds that have won at the greatest shows in the United States and Canada. I can please the most exacting breeders with exhibition and breeding stock, which I always have for sale. I can also supply BARRED PLYMOUTH Rock and WHITE P. Rock eggs from grand birds. Eggs, except turkeys, \$1 per 11. Turkey eggs, 25c. each. JOHN J. FENTON, PARK FARM, OSHAWA, ONT. 19-y-om

WANTED One Cock and six Pullets, Colored Dorkings; one Cock and six Pullets, Partridge Cochins; both best stock. 7-0-om E. H. KLOCK & Co., Klock's Mills, Ont.

**BUCHANAN'S**  
(Malleable Improved)  
**PITCHING MACHINE**

For unloading hay and all kinds of loose grain.



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



**The Common-Sense Sheaf-Lifter**

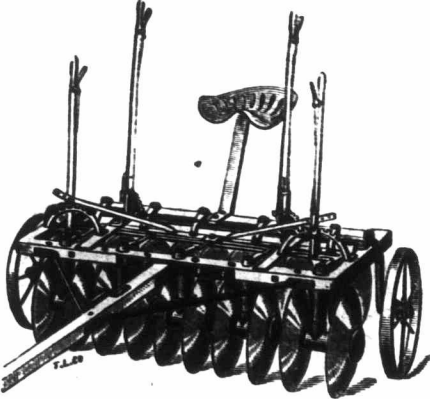
Works in connection with Pitching Machine, and is the most complete apparatus ever offered to the public for pitching sheaves. Sheaves left in the mow just as they come from the load.

**RESPONSIBLE AGENTS WANTED**

Circulars, Prices and Terms on application to  
**M. T. BUCHANAN,** Ingersoll.

8-f-o

**PATENT IMPROVED DOUBLE DISC HARROW**  
Patented Oct. 17, 1893.



Manufactured at Beamsville Agricultural Implement, Engine and Boiler Works. Write for Prices, Circulars, etc., to  
**H. TALLMAN,** 4-f-om Beamsville.



**CRADLE CHURN.**  
PAT. NOV. 28, 1892.

Address: CHAS. BOEKH & SONS, Toronto, or to the WATSON MANUFACTURING CO., Avv. Ont. 12-y-om

**100 Rods BUCHANAN FENCE CO.**  
SMITHVILLE, O. \$35-  
S.L-om

**DRS. ANDERSON & BATES,** Surgeons of the Eye, Ear, Throat & Nose, 34 North James St., Hamilton, and 5 Col lege St., Toronto. Sole agents for Prof. North's Earphone for the incurable deaf. A large assortment of artificial eyes on hand. 16-2-y

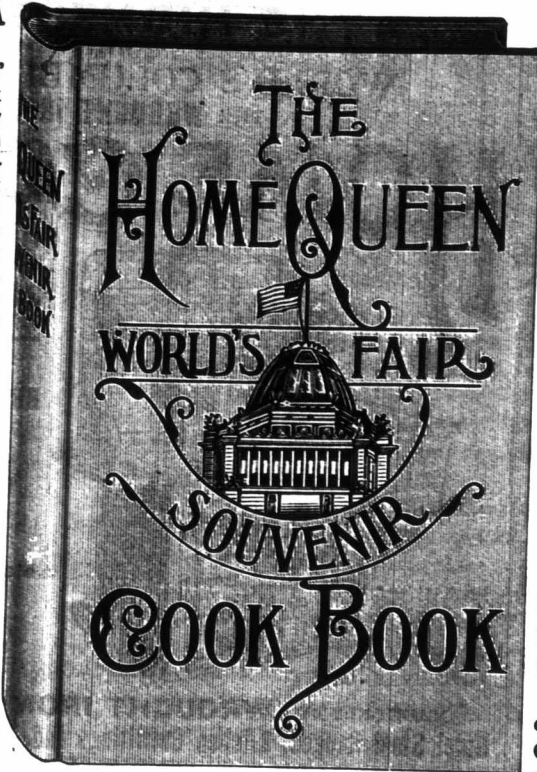
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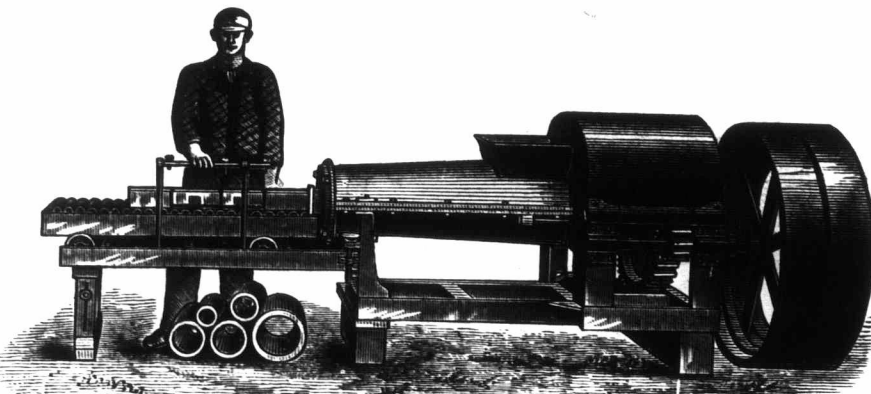


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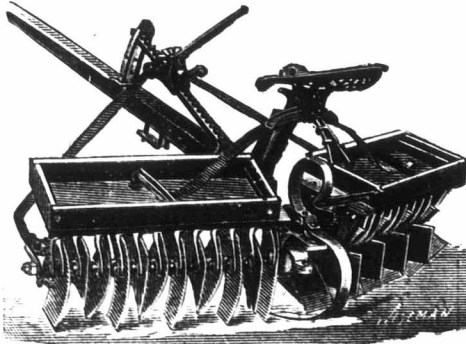
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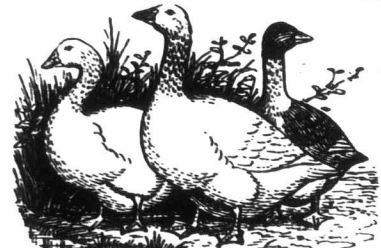
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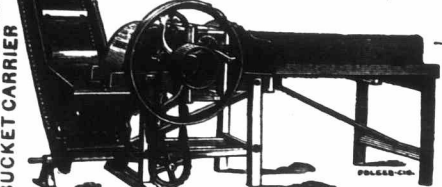
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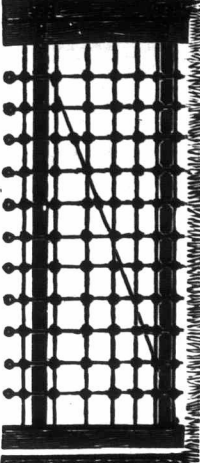
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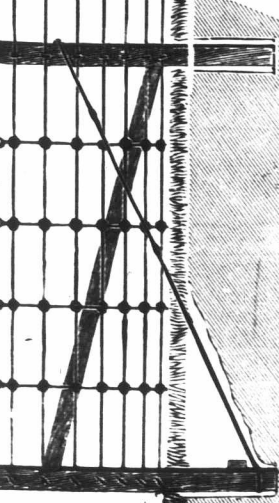
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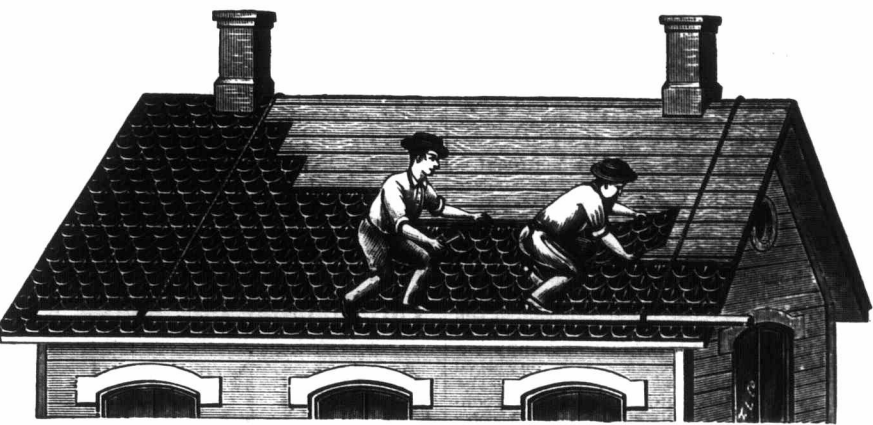
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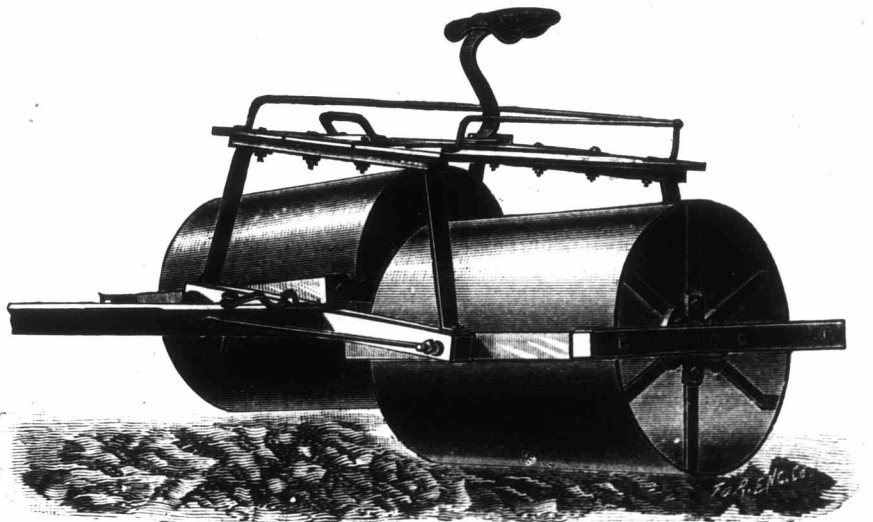
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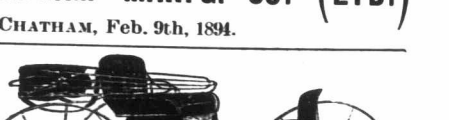
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