

The FARMER'S ADVOCATE

AND HOME MAGAZINE

FOUNDED 1886.

VOL. XXIV.

LONDON, ONT., MAY, 1889.

Whole No. 281.

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THE FARMER'S ADVOCATE & HOME MAGAZINE

WILLIAM WELD, EDITOR AND PROPRIETOR

THE LEADING AGRICULTURAL JOURNAL PUBLISHED IN THE DOMINION.

The FARMER'S ADVOCATE is published on or about the 1st of each month. It is impartial and independent of all classes of parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairymen, gardeners and stockmen, of any publication in Canada.

Terms of Subscription—\$1.00 per year in advance; \$1.25 if in arrears; single copies, 12c. each. New subscriptions can commence with any month.

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Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

- 1.—No award will be made unless one essay at least comes up to the standard for publication.
- 2.—The essays will be judged by the ideas, arguments, conciseness and conformity with the subject, and not by the grammar, punctuation or spelling, our object being to encourage farmers who have enjoyed few educational advantages.
- 3.—Should one or more essays, in addition to the one receiving the first prize, present a different view of the question, a second prize will be awarded, but the payment will be in agricultural books. First prize essayists may choose books or money, or part of both. Selections of books from our advertised list must be sent in not later than the 15th of the month in which the essays appear. Second prize essayists may order books for any amount not exceeding \$3.00, but no balance will be remitted in cash. When first prize essayists mention nothing about books, we will remit the money.

Our prize of \$5 has been awarded to David Garvey, Ingersoll, for the best essay on *Potato Culture*.

A prize of \$5 will be given for the best essay on *The Cheapest and Most Profitable Manner of Keeping Cattle during the Summer Months on High-priced Land*. Essay to be in this office by the 10th of June.

A prize of \$5 will be given for the best essay on *Summer and Fall Care of Pastures, giving the results of useful experiments with pasture lands*. Essay to be in this office by the 10th of July.

We have had to hold over a great deal of valuable matter until next issue, one article from an English writer, in which he gives the English system of making Stilton, Cheddar and Gorgonzola cheese.

Notice Your Label.

We are again obliged to call our readers' attention to the printed label which appears on each paper.

We find on referring to our books that a few are still in arrears. The price of the FARMER'S ADVOCATE is \$1.00 in advance or \$1.25 if in arrears. If those who are in arrears will send their indebtedness at once, together with their subscription for 1889, we will not charge the extra 25c. per annum.

A label marked "Jan. '89" means the subscription is paid up to 31st Dec. 1888. All delinquents will please give this matter their prompt attention.

Editorial Notes.

From very extensive experiments made in various parts of the U. S. A., we find that by carefully selecting seed from the earliest-ripening fruit, we can supply our tables with ripe tomatoes fully ten days earlier than we otherwise could. In some cases the Early Advance has proved the most prolific, while in other parts, Buists' Beauty, Livingston's Beauty, Cardinal and Mikado have excelled it as yielders. The Acme is a moderate yielder, and the earliest ripening sort.

Do not forget to sow plenty of peas and oats and other crops for soiling purposes. Cattle should always be well fed and kept in good flesh. Every farm of one hundred acres should have at least five acres of Lucerne to cut for soiling purposes. Soiling, if properly done, will be found much more profitable than grazing, where the land is fertile and high-priced. Do not depend alone on your corn for this purpose; it should not be fed until nearly mature, or at least well grown. Sow some early-maturing kinds for early feed—feed rye, peas and oats, clover and lucerne—before the corn is ready. A small field of rape will be found of great value, especially to sheep owners.

It may be well to remind farmers again, that if smut appears in their wheat or oats next harvest, it is because they have sown the spores of the smut adhering to the seed grain, or that the field contained smutty grain last year, and the spores were lying in the ground ready to attack the crop. Smut, unlike rust in this respect, is supposed to enter the host only during the early stage or the growth of wheat or oats, hence the value of washing the seed grain in a solution of blue vitriol (1 lb. of vitriol or bluestone to every five quarts of water at boiling heat to dissolve), or in strong brine, drying it with lime dust. It is advisable not to sow wheat or oats in a field that produced a smutty crop last year.

Editorial.

Some Hints on Potato Growing.

Do not allow the potatoes you intend for seed to sprout before planting. After they are cut sprinkle plentifully with land plaster, and do not put them together in heaps, or they will heat, which injures or totally ruins the seed according to the amount of heat developed. Stable manure should not be put in the drills; it is safer and produces a better quality of potatoes to apply it broadcast. Clover stubble plowed in the fall and properly worked in the spring, produces fine potatoes. If planted on old sod, wire worms sometimes injure the crop. After the potatoes have been planted, and the small weeds have commenced to grow, harrow well with a light harrow, and continue to do this at intervals until the crops are an inch or two high, this will save much hard labor. Professor Samuel Johnston, of the Michigan Agricultural College, has been making experiments with the different amounts of seeds, and reports as follows:—The experiments with the different amounts of seed have been repeated by us for three successive years with about the same results. Last year being so very dry was a critical test for the one eye set, many of the pieces dried up and failed to grow, others sent up a very feeble growth, which was not vigorous enough to withstand the drouth. There was a gradual improvement in vigor and yield from the one eye set up to the whole potato, the former produced the largest percentage of small potatoes, the two eye sets were a little better in this respect, and the number of small potatoes reached the minimum in the three eye and half potato plats. The whole potato gave the largest yield. The following table will help our readers to better understand the Professor's experiment:—

| Amount of seed in each hill. | No. of hills planted. | No. that grew. | Per cent. that failed. | Yield. | Quality—10 percent. |
|------------------------------|-----------------------|----------------|------------------------|---------|---------------------|
| From 1 eye | 85 | 77 | 9 | 50 | 4 |
| " 2 " | " | 81 | 5 | 71 | 5 |
| " 3 " | " | 82 | 4 | 86 | 7 |
| " 1/2 potato | " | 83 | 2 | 90 1/2 | 8 |
| " whole potato | " | 85 | 0 | 117 1/4 | 9 |

Mr. John Adams, Port Perry, writes us: "My experience in potato culture has been quite extensive, having tried various sorts of this the best of vegetables, and so far, for general use, quality and quantity taken into consideration, the White Star is my favorite."

Never too old to learn is very applicable to the farmer; in no other calling is there such opportunities to learn from nature, the best educator of all.

A Wise Measure.

Our Fair system has done a great work in stimulating the live stock interests of this Province; our flock, herds and studs are superior to those found in any other part of America. From here the stock animals are obtained that give character and vigor to the herds belonging to Uncle Sam. Our soil and climate is the best suited on the continent for the production of beasts, dairy products, and fruit of the highest quality. The agricultural societies, notably the "Provincial," has so fostered and encouraged these interests that to-day there is not one county in this province where fine herds, flocks and studs do not exist and continue to improve. Too much credit cannot be given to our breeders and importers, who have done a noble work, which has greatly benefitted the entire country. Yet while great attention has been given to our live stock; the cultivation of the land, and the improvement in the condition of the farmers has not received an equal amount of attention. A few years ago the Provincial Agricultural and Arts Association divided the Electoral Districts of this province into groups; in some one of these they offer prizes for the best managed farm each year. This was a wise step, calculated to do much good in the vicinity where a prize was awarded; for every well-conducted farm has a great influence over the surrounding farmers; it also stirs up a healthy spirit of rivalry among them. We have contended for some time that in order to benefit the country to the greatest extent, we must in some way reach the rank and file of our yeomanry; to do this a prize should be given in each township for the best conducted farm. The prize-winning township farms should compete for the Electoral District Silver Medal. The Electoral Districts should be grouped as now and a gold medal given at stated periods to the best conducted farm in each group; only farms which had won a silver medal being allowed to compete. The township and county prizes should be awarded each year in each county subject to certain conditions. A farm which wins a silver medal should not be allowed to compete again until the time arrives for awarding the gold medal, after which it should be allowed to compete as before. This system would reach all classes of farmers, and bring the benefits of the competition to the door of every landowner. It would also stimulate the farmers to constant improvement, which is not the case where a farm can only compete once in four or five years. It would also bring more farms into the field as competitors for the gold medal. In all probability the groups would have to be made smaller than at present, and more than one group judged in each year. In case such a system as the above were arranged, the Electoral District and township prizes should be awarded by the Electoral District Association, the group prizes only being controlled by the "Provincial Association" or the Agricultural Department. The present need is to stimulate a better and more profitable system of farming. This year the Agricultural and Arts Association have wisely concluded to offer prizes for the best managed farms in Group No. 3, comprising the Electoral Districts in the following counties:—Bruce, Dufferin, Grey, Huron, Perth and Wellington, and in each township of the above Electoral Districts.

Any farmer who desires to compete should make his application in writing to the Secretary of his Township Agricultural Society, on or before May first, upon which said Society shall

call a meeting for the purpose of deciding which of the applicants shall be returned as competitors to the Agricultural and Arts Association. No township is allowed to return more than three competitors, and their names and addresses must be sent to the Secretary of the Agricultural and Arts Association, on or before the 15th of May. Full particulars may be had by writing to Mr. H. Wade, Toronto. We hope every township included will be fully represented, and that before another year that this system will be simplified and enlarged so as to include at least all the older counties.

The Desirability of Discontinuing Township Shows.

BY JOHN DRYDEN, M. P. P.

I suppose it will be an acknowledged principle, that if the public funds are applied to any object the people have a right to enquire whether such object is in their interest, and whether a corresponding benefit is being received. On this plea it may be admissible to ask what is at present being accomplished by the township shows. Most of us are conservative in dealing with matters of this kind. We are so accustomed to the annual gathering, so accustomed to the regular awarding of prizes, that we expect as a matter of course it will still go on, and do not trouble to enquire whether any special good is the result.

Without at present attempting to decide whether these shows should continue to receive the fostering care and encouragement of government or not, I will say that in the Province of Ontario we have at present far too many competing exhibitions. For the masses of the people these smaller shows have degenerated into merely holiday seasons, affording the young people a means of recreation without the slightest evidence that they have any educative influence whatever. Indeed I shall not be speaking aside from truth when I say that all our exhibitions of these days partake largely of this nature. I do not know that we ought altogether to object to this feature provided it be not carried to excess, and that too much time be consumed which should be directed to other more important matters. These shows are held at the season of year when in our climate time is precious; when the wasting or frittering away of two or three weeks means an actual loss in the next season's crop.

Doubtless these exhibitions are important, but not of sufficient importance to warrant any unnecessary waste of time. Some of us go to one place, and some to another, and still others try to go to all held within reasonable distance.

Would not better results be reached by all agreeing to attend the same place; by concentrating our efforts, and massing our forces more than at present. One or two days only would be consumed in this work instead of several as at present. Better prizes could be given, attracting larger exhibits, affording more minute, and thorough comparison of products, and in every sense producing, so far as the general public is concerned, a better result. The larger town and city exhibitions, while catering to this demand for a place of recreation, do also furnish an opportunity for those who may wish to investigate certain lines of exhibits with the special view of acquiring information. At the smaller shows this opportunity cannot be afforded because of the meagre display to be found there.

One difficulty experienced in dealing with this subject is found in the fact that the conditions in the different sections are so unlike.

Time was when absence of railways or graveled roads made it very difficult in all sections to reach places very far distant, so that call your show township or county it was after all merely local in character, and represented the production only of the locality where it was held. In some sections this is all changed. Twenty miles is now much more easily travelled than were five in that day. In other places nearly the same conditions described above now exist. If the country could be separated into two classes, and so grouped together as to be at all similar, then I should say in those sections where good roads and railways have brought the more remote portions together, the township show has served its purpose, and its usefulness is gone, but in the other sections to discontinue it, would leave large areas of country without any means of comparing their products whatever.

Again we find in some counties, owing perhaps to the peculiar location of the county town, where the county exhibition is held, or it may be to the exertion and enterprise shown in the management of the township show, that the latter exceeds in variety and extent of exhibits, and in educative influence, the show for the whole county. In fact it becomes in that case the show of the county, while the county show itself degenerates into a merely local exhibition. These are anomalies which cannot be prevented, but which make it difficult to say—that which is larger and better shall be dispensed with, and the lesser still continued. After all, the real point to be discussed and decided is, whether the public money shall be divided into small sums to be competed for in the small groups convened in the townships, or whether it may not be given in larger sums to be competed for by those representing larger areas, thus bringing together a greater and more comprehensive exhibit, and manifestly affording a better educative and stimulating influence to all concerned. There are those who argue for the continuance of the township show, because, as they allege, they cannot successfully compete at the larger exhibitions. Take away the annual township exhibit, and you deprive them of the hope of obtaining a prize at all. Many of these persons have never discovered that any other object is sought than the awarding of prizes to a few competitors in the locality. They overlook altogether that the object in granting the public money in the form of premiums is so to educate and stimulate that the general production of the whole shall be improved, and increased in value. If the granting by government of a small sum of money which may be expended so as in time to double the value of the annual product of a township or county, or increase the quantity and quality of the grain production, then the whole population must be interested in this expenditure, for it is adding material wealth in which all will ultimately share. Now let us ask ourselves, does the present system accomplish this end. Is it not true that in many parts of the country very little interest is taken in the township show. You may secure comparatively a good exhibit, but if because a larger is to be seen in an adjacent village, town or city, people refuse to attend, of what avail is your labor and expense. It may be that the bringing together even in the small township groups the different classes of animals is a factor in stimulating towards the production of better stock, but in most cases the prizes are so meagre that none are seen except those that happen to be found in the immediate neighborhood, and as is too often the case the same animals and articles presented by the same owners are seen year after year until the very sameness destroys all interest.

[TO BE CONTINUED.]

Annual Meeting of the Canadian Association of Fairs and Exhibitions.

The second annual convention of the above Association was recently held at the Queen's Hotel, Toronto. There was a good attendance of delegates present, nearly every fair of any importance being represented.

The objects of the Association are of a praiseworthy and laudable character, and as such deserve and should receive the hearty support and practical sympathy of every Fair Board in the country. By the discussion of plans and methods, and interchange of thought on matter pertaining to fair management, it is expected that many of the difficulties that beset Fair Managers will be wholly or partially removed, and bring about a more uniform classification in the prize lists of the different fairs so as to bring them in harmony with each other, and with the views of exhibitors. How to ascertain who are competent and honest judges; shall all judging be decided by points based on a standard of excellence recommended by the association; shall the territory be divided into districts, and dates fixed so as to prevent as far as possible the holding of two or more fairs on the same dates in the same district, and other important topics were brought before the convention for consideration. The Association does not claim or endeavor to exert any arbitrary powers over the Fair Boards represented in its membership. The results of all discussions and resolutions adopted are embodied in the annual report, which is sent to all the fairs in Canada, and simply recommended for adoption.

The first session of the convention took place Tuesday, February 26th, at 11.30 a.m. In the absence of President John Adams, Mr. H. J. Hill took the chair. By request, the chairman read a paper by Sydney Smith, Secretary of the Texas State Fair and Dallas Exposition, on "Gates and Tickets," which was received too late to be read at the International Convention held in Chicago last fall. The subject was treated in an exhaustive manner, some valuable suggestions were made on the arrangement of the entrance and exit gates, manner of handling tickets, etc. At its conclusion, the Secretary was instructed to write to Mr. Smith for permission to incorporate his paper in the proceedings of the convention.

Secretary McBroom read his annual report, showing a membership for the last year of fifteen Fair Associations. The amount of receipts from membership fees was \$65, and the expenditure left a balance due the Treasurer of \$9.67, and outstanding accounts \$6.25.

The best methods of judging elicited considerable discussion, also the desirability of giving prizes to grade cattle, the consensus of opinion being that if prizes were given for grade cattle they should not include grade bulls.

Prof. Shaw, of the Agricultural College, Guelph, read a paper on "The Duties of Exhibitors at our Exhibitions." He proceeded to show that although reform was necessary in certain matters connected with fair management, yet in many cases fair boards were doing all that was possible under the circumstances. Yet, because these evils were not remedied at once, many exhibitors were chronic in their fault finding, as if there were only one side to the subject. He then proceeded to show many of the faults and inconsistencies of unreasonable exhibitors.

D. McCrae, ex-President of the Clydesdale Association, read a paper on "The Need of Improvement and Classification of Horses at Fairs." He urged that better facilities be furnished for seeing the horses, and advocated that some order be followed in placing them in the stalls. It was decided to bring the matter of grants to Central Fairs again before the Local Legislature. Messrs. Moberly, Bruce, McBroom, McCuaig and McFarlane, were appointed a committee to draft a scheme and submit same to the convention. It was moved by Mr. Moberly, seconded by Mr. Wade, and carried, that as it would be a great benefit to the different Central Associations to know the name and residence of persons competent to be judges in the various departments of a fair, and as it is impossible for this information to be obtained by the officers of each of said fairs separately, it is recommended that the Secretary of each of the central fairs belonging to the Association, send a list of the different judges in his vicinity to the Secretary of this Association, stating such particulars as he can respecting the qualifications of such judges, and that a list of said names can be obtained by any of the Secretaries of the said Central Fairs from the Secretary of this Association.

Moved by Mr. Moberly, seconded by Mr. Tripp, and carried, that it being of the utmost importance, that each animal be judged with a view to the usefulness for the purpose for which it was intended, therefore this Association would recommend that as far as practicable such judging be made on the system of points, which is used to advantage in Great Britain and the United States. As this Association considers that by following said method, general satisfaction will be given, and the present practice of over fattening of animals, making them useless for any purpose whatever will be discouraged.

Wednesday morning's session opened with President John Adams in the chair.

Mr. Moberly read the report of the Special Committee appointed to prepare a scheme to present to the Minister of Agriculture. The substance of the report provides that grants be given to Central Fairs which pay \$1200 or more in prizes, and which own or control grounds and buildings valued at \$9,000 or \$10,000.

Mr. H. J. Hill read an excellent and well considered paper on "Fair Management," for which he received the hearty thanks of the convention.

Ottawa was chosen as the place for the next regular convention, on the invitation of Mr. McCuaig, of the Canada Central Fair, who offered to furnish all delegates with free passes by the C. P. R. to Ottawa.

A paper on "Exhibitions as an Educator of the Young Men and Women of the Country," was read by Mr. Henry Wade, Secretary of the Agricultural and Arts Association. It was well received and elicited the thanks of the convention.

Secretary McBroom gave the following notice of motion to be brought up at the next convention:—That this Association recommend that entrance fees be abolished, and as a substitute for the fees thus lost to the funds of the Exhibition, a percentage, to be fixed by each association, be deducted from the prize money paid, and that all exhibitors and attendants be furnished with tickets good for the term of the Exhibition at a nominal charge, said charge to be fixed by the associations adopting this arrangement.

The following officers were elected:—President, Mr. F. C. Bruce, Hamilton; first Vice-

President, Mr. Wm. Rutherford, Peterboro; second Vice, Charles Magee, Ottawa; Secretary and Treasurer, Mr. George McBroom, London. Executive Committee, George Moberly, Collingwood; Wm. Sweaton, Belleville; R. C. W. McCuaig, Ottawa; W. C. Martin, Kingston; Alex. McFarlane, Otterville.

We purpose giving in subsequent issues of the ADVOCATE, several of the principal papers read at the convention.

A Trip Among the Farmers.

A trip through the county of Huron and that northern district during the month of November, for the purpose of becoming more intimately acquainted with the agricultural resources, and also the progress farmers have made in those districts during the last twenty years, was rewarded by experiencing entire satisfaction with the great success which has attended the labors of the pioneer settlers who came to this district when the now beautiful farms were dense forests.

The first place at which we halted after leaving London, was the township of Wallace, in the county of Perth, but borders on Huron. Here surprise met us on every hand, owing to the fine houses and excellent barns everywhere to be seen. The settlers are principally Germans, who are largely possessed of frugal dispositions, and their well cultivated farms and general surroundings, indicate that their system of farming is progressive. Notably among the systems, we noticed the commendable one of fully preparing and cultivating the land in autumn. The soil, which is principally sandy loam, is plowed early in the fall, and receives very vigorous cultivation till winter sets in. The advantage of this system must be apparent to every intelligent farmer, as it puts the soil in better condition to receive the grain in the spring and also facilitates farm operations at a season of the year when the work of necessity is hurriedly executed.

We made a flying visit to Harriston, which is in Wellington county, and the centre of a rich agricultural district. Messrs. Collison & Lavan are energetic importers and breeders of Clydesdale horses, and at the present time have four fine imported stallions in their stables. Thus far they have been very successful in their operations, and their enterprise has been the means of introducing a class of fine horses in this section.

A few miles from Harriston, on the 9th concession of Howick, Mr. Samuel Johnston, who is Deputy Reeve of the township, resides. Mr. Johnston owns a beautiful farm of 630 acres, which is located in a very desirable part of the country, the soil being rich and productive. Mr. Johnston lives in a spacious mansion, surrounded with luxury and all the comforts of life. His barns and stables are erected on stone foundations, the basements being used to accommodate his large stock. He is a breeder of thoroughbred Durhams, and at the present time has several fine cows and a bull that would be difficult to surpass in the province. About 27 years ago Mr. Johnston entered the forest, and through his indomitable will and strong perseverance, he has made for himself and family the finest home in Howick. He attributes his success largely to stock-raising, and also to the fact that his operations in stock have been confined to the best bred animals procurable. During the last 15 years he has realized \$1000 annually from his stock, besides the profits accruing from the other departments of his farm. He has been the means of introducing good stock in this township

and few districts in this northern part are better supplied with a desirable class of stock.

Mr. W. Pritchard is another enterprising dairy farmer who lives in this neighborhood, and operates 300 acres. He has fine stock, and is considered one of the most advanced butter makers in the north. His entire make is shipped to Toronto, where he realizes fancy prices.

At St. Helen's, four miles from Lucknow, the renowned breeders, Mr. N. Gaunt & Sons, reside. This farm is beautifully situated and supplied with a living spring of water, which is conducted to various parts of the farm through pipes. They have made a specialty of Shorthorns and Leicester sheep, and at all the leading fairs in Canada they have been known as successful exhibitors. At the present time they have a fine herd, which is in excellent condition and shows careful breeding. Mr. Gaunt, like many other pioneer farmers, commenced operations on small resources, but his push, energy and integrity have raised him to his present opulent position as a breeder of more than ordinary ability. He and his sons have been close students of agriculture, and are capable of expressing their views on the subject in a thorough and conversant style. They gave large quantities of roots and also fodder corn. Mr. Gaunt places a very high value on corn as fodder, and intends next year to grow it extensively as a summer and winter feed. He sows his corn broadcast, and gang plows it in, and on the surface he sows millet and then rolls the land. He claims the corn grows equally as well, and the additional crop of millet enhances the quantity and value of the crop. The fodder is hauled to the barn and cut, the millet and corn making rich and wholesome diet for the cattle. He has pursued this course for some time, and is sanguine that the system is profitable. He and his sons are liberal in their views, and the deep interest they have taken in agriculture has been the means of disseminating useful knowledge in that locality, and instilling others to adopt progressive systems of farming. Throughout that northern district, the splendid stock everywhere to be seen is the result in most instances of Mr. Gaunt's untiring zeal and energy.

One of our Leading Canadian Farmers.

A study of the career of Mr. Arthur Johnston of Greenwood, the subject of our sketch for this month, will, perhaps, prove quite as instructive and encouraging to our young men as any that have preceded or that may follow it, in illustrating the possibilities of the business of a combination of farming and stock-raising in this country.

It is all the better adapted to general application from the fact that Mr. Johnston—as he expresses it himself—has never at any time done anything wonderful; has never made any considerable amount of money at any one time, and that he has never handled a dollar of any other person's money either by gift, bequest, or in trust; but by a steady, continuous and plodding business of twenty odd years, he has made a name among the breeders and farmers of this country, that may well be the ambition of any farmer in Ontario or America.

Mr. Johnston was born in 1840, in the County of Tyrone, in the north of Ireland, where he remained until five years of age, when his father—who was a small farmer—emigrated to this country, bringing his family with him and settling on a farm in the County of Peel. At that early date, and in that particular locality,

educational facilities were not all that could be desired. At the age of thirteen, Mr. Johnston had never handled writing-paper, pen, ink, slate, or pencil; nor had he ever seen the inside of a school-house. His sole scholastic acquirements at that advanced age consisted in his ability to read the New Testament—an accomplishment for which he was entirely indebted to his mother, who is still alive. It may be easily imagined how little time she had for educational training, when it is stated that Mr. Johnston was the eldest of a family of eleven. When of the above mentioned age, the first school within possible reach of the farm was started, and the future importer and breeder was duly placed in the second book of National Readers, and at the foot of the class.

His advancement was then considered phenomenal. He afterwards attended the Grammar School at Brampton; finishing up at the Normal School in Toronto, where he obtained a Provincial Certificate, and commenced teaching school, in which profession he continued for several years, and was considered an excellent teacher.

In 1865 he married the youngest daughter of the late Mr. Ebenezer Birrell, J. P., of Picker-



ARTHUR JOHNSTON, GREENWOOD, ONT.

ing Township, who was at that time Local Superintendent of public schools. In 1867 he commenced farming and stock-raising in company with his brother-in-law, Mr. David Birrell, and the firm continued actively and energetically to push the business for several years.

In 1874 Mr. Johnston made his first importation of Shorthorns from Scotland, importing only two heifers in that year; one of which afterwards became the property of the Messrs. Potts, of Jacksonville, Illinois, in whose famous show-herd she had a place for several years. When this heifer left Greenwood Farm she was in calf to 3rd Lord of Racine, and in due time she produced a heifer calf, whose winnings in the leading show-rings of the United States amounted to something over \$2,600 in cash premiums.

From 1874 to the present time his annual importations have been constant and extensive, but at the present time he devotes his whole energies to the importation and breeding of Shorthorn cattle and Clydesdale horses. He was at one time one of the best known and most extensive importers of Cotswold sheep in Ontario. Though he has long since ceased to show at the exhibitions, yet animals from the Greenwood herd have been numerous and successful at almost every lead-

ing exhibition in the Province of Ontario for many years.

The herd at Greenwood Farm at the present time is probably in as good form as it has ever been, numbering about seventy head in all. Of bulls, there still remain four first-class imported ones, besides a lot of extra good young ones bred on the farm. Of females, it may be said, where all are good, it would be invidious to particularise. Suffice it to say, that from a personal inspection recently made of the herd by a member of our staff, it would be difficult to find a more uniform lot of animals of the various ages. The Clydesdales are also in good shape for breeding purposes. For more particulars of the herd, we would advise our readers to apply for the new catalogue recently issued.

Farmers' Clubs.

Dominion Farmers' Council.

The Dominion Farmers' Council meets in the city of London, Ont., on the second Thursday of every month, at 1 o'clock p. m. All communications should be addressed to the Secretary, F. W. HOBSON, LONDON, ONT. This Council has now on hand pamphlets containing its Constitution and By-laws, with an account of its origin, objects, etc.; Constitution and By-laws suitable for Farmers' Clubs, and notes on how to organize a club. These will, on application to the Secretary, be sent free to all parties having in contemplation the organization of clubs.

The Dominion Farmers' Council assembled April 11th, as announced, President O'Brien in the chair.

After routine business, Mr. Frank Shore of White Oak, Ont., read a paper in which he showed the necessity of carefully saving and applying farm-yard manure. This paper was fully discussed; we will give it and a portion of the discussion in a future number.

The following resolution was then introduced: "That this Council appoint a Committee to revise the constitution, and devise means whereby we can make the Council of greater value to the farmers generally, and especially to those of Western Ontario. That we consider the advisability of hereafter holding a spring stallion show in London, and if such should prove successful to supplement the same with a bull and dairy show."

In moving this resolution the Secretary said he deplored the fact that all our live stock associations have their head quarters in Toronto, though liberally supported by western men. The Shorthorn, Clydesdale, Hereford, Ayrshire and even the Sheep Breeders' Association all hold their annual meetings in Toronto. The people of London and the farmers of Western Ontario are entirely to blame for this. Whatever is proposed in the way of an agricultural association, leading citizens of Toronto are ready to assist and encourage, the result is several thousand farmers meet in that city annually and do a good deal of trading there. The Clydesdale Association's Show never could have attained the success it has had not the citizens and the farmers of the vicinity given Mr. Wade the hearty support they did. It is true Mr. Wade and his executive, though most of the credit belongs to him, were the real promoters of this grand show, yet success would not have been attained if they had not had enthusiastic support. It is also true that Messrs. R. Beith & Co., and Graham Bros., live near Toronto, who could themselves make a fine display of horses, and who favored and supported the show, yet while we might not be able to have quite as fine a display of horses as lately met in Toronto, I think we could hold a show of a high order, which would be a benefit to western farmers and the city, and bring the western breeders more directly to the notice of American buyers. The show in Toronto has had a very beneficial effect on the counties which surround the city in this respect, there all the Canadian-bred animals which are for sale are readily sold at better prices than are obtained in the western counties. London is the centre of a rich agricultural district, and here a good spring show could and should be held. The Council proposes to assist the breeders in this matter, which can and will be made a success if the breeders in the vicinity will assist.

Mr. Richard Gibson followed with a very able speech in which he fully endorsed the project, and showed with what success similar fairs were conducted in England, and of what great value they were to the farmers and breeders. After further debate, in which nearly all the members joined, the following members were appointed a committee to consider the subject, and report at the next meeting: Messrs. R. Gibson, Frank Shore, R. McEwen, J. R. Little, Thos. E. Robson and Geo. McBroom.

The members who last year composed the deputation sent by the Council to visit the Ontario Agricultural College, were appointed a committee to consider the advisability of holding a farmer's picnic some time in June next.

The Council then adjourned to meet on the 9th of May, when every member is requested to be present.

Stock.**Oakdale Farm.**

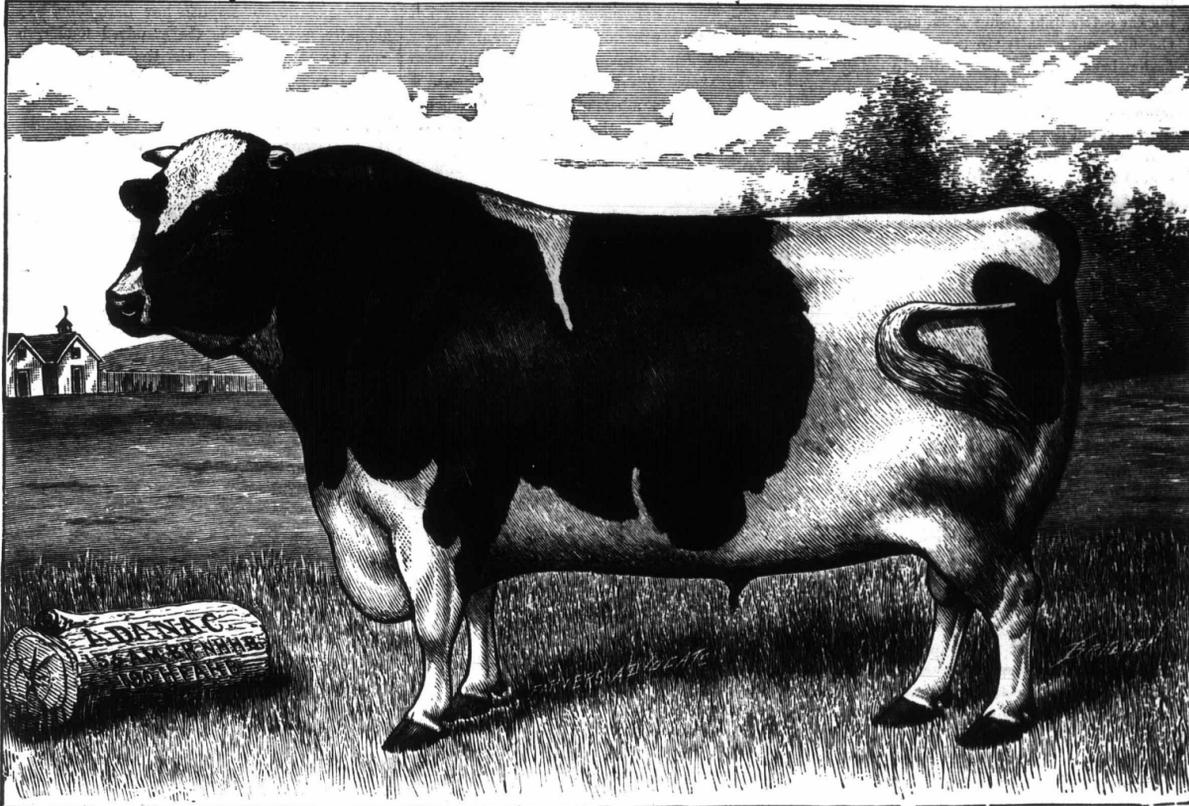
Oakdale Farm, near the village of Pickering, in Ontario county, was started in 1886, and the success in the show rings in 1887 and 1888 was phenomenal. The Holstein herd winning more gold and silver medals, more diplomas and more money prizes that were ever won at the same number of exhibitions by any herd in Canada. The breeding animals with two exceptions, were all imported from Holland. Presto, the bull hitherto in use at Oakdale was a first prize winner at the great fair at Alkman, in the Northlands, and is the only bull in Canada winner of a first prize at any of the great fairs in Holland.

The sales for the year have been large. There have been sold from the farm the following: Imported Yorkshire coach stallion "Nobleman," to J. W. Horton, Shedden; J. W. Moore, for his ranch, the steeplechaser thorough-bred stallion "Oakdale;" Charles Smith, Tarrytown, the clear grit trotting stallion "Ben Hur;" Peter McLaren, Carleton Place, the pure-bred Cleveland Bay mare "Lady Bird;" Thomas Moodie, Liverpool Market, the Cleveland Bay mare Lady Newell with foal by "Ben Hur;" Dr. Warren, Brooklin, Ont., the trotting mare "Stella;" various parties, fifty-one Cotswold ewes. Sales of Holstein cattle have been large. J. W. Phillips, Ashdown, the bull "Presto," third imported from Holland; Archibald Heron, Scarborough, the bull "Willem," imported from

cow; Robert Secker, Dumbarton, a cow; R. B. Varden, a yearling heifer; J. W. Smith, Toronto, a cow; Dr. Wagner, a young cow; Mrs. Otter, a heifer calf; John Moodie & Sons, Ridgetown, a young bull; W. R. Warner, a young cow; J. E. Steggell, Streetsville, and Geo. Laidlaw, each a young bull.

Welsh Ponies and Jerseys.

The prettiest sight in the stock line that we have been favored with for some time is a pair of Welsh ponies, the property of Mr. George Smith of Grimsby. Not the dwarf Clydesdale, but the miniature blood horse. Wiry, active, and graceful, they are a beautiful sight as they prance along with all the importance of an English hunter. Mr. S. informs us he has about



ONE OF THE WELL-KNOWN OAKDALE HERD, OWNED BY MR. JOHN LEYS, M. P. P., TORONTO, ONTARIO.

Not being able to visit this farm personally, the proprietor, Mr. John Leys, M. P. P., Toronto, Ont., has kindly forwarded us the following details of the stock kept here:—

Adanac, No. 153, Am. Br. H. H. B., was bred in Holland, and imported by Geo. E. Brown & Co., Illinois. He was never exhibited until 1888, when he won first prize at Toronto, beating Presto, and the stock bulls belonging to other leading firms. He also won the sweepstakes silver medal for best bull any age, and was at head of the herd which took the first herd prize. He was again first at London, and was again at head of first prize herd. At the West Durham Fair, he was again first in his class, first for sweepstakes, and was at head of first prize herd. His record, like that of our young bull "Banker," is an unbroken one, both having been first prize winners wherever shown.

Holland, also heifer "Dagman," calved in quarantine at Halifax; D. Robertson, Kincardine, a fine yearling bull; John Barbour, St. Helens, a bull and heifer calf, splendid breeding and individual merit; Capt. Bunbury, Oakville, the grand two-year-old heifer "Gerritke," sired by Gerritt, said to be the best bull in Holland, "Gerritke" was a great prize-winner as a calf and yearling, and I think her the best heifer of her age in Canada; Wesley Pound, Cornith, the two-year-old bull "Oakdale," calved in quarantine at Halifax, he was sired by Gerritt; Geo. Goldworthy, Kent County, a yearling bull and heifer, one sired by "Presto," the other by "Oakdale," and a choice pair of youngsters; Isaac Gardiner, Morpeth, a very choice yearling bull; Anthony Barkey, Grand River, a young bull. In Jerseys the following sales have been made. William Hodgson, Brooklin, a young

forty of these little animals at his farm on the mountain, that overlooks his home a short distance west of Grimsby. In an adjoining stable was a large herd of magnificent Jerseys, all in A. J. C. C., and chiefly of the St. Lambert strain, most of them are fine dairy cows. Allie of St. Lambert especially drew our attention. On enquiry we learned that she had at a private test made 26 lbs. 12 ounces of butter in seven days, and her sister Ida of St. Lambert, had made 30 lbs. 24 ounces at an official test by the A. J. C. C. Since these tests Mr. Smith has thought it best to use stock bulls, exclusively of this superior family.

An overproduction of grade draught horses is not probable—scarcely possible—in ten years to come.

In the horse, the pulse should beat 40 times; in an ox, from 40 to 55 times; in sheep and pigs 70 to 80 times per minute.

Chatty Letter from the States.

[From our Chicago Correspondent.]

Cattle feeders have been on the anxious seat for several months. Recently there was a spurt of 50@75c. in prices in ten days, and this brought in many cattle averaging 1,500 to 1,600 lbs. that should have been marketed two months previous.

In one week recently, the receipts were 62,000 cattle, or 22,500 more than arrived during the corresponding week last year. The extra heavy weight of the cattle made the supply equal to 75,000 cattle per week in the grass season. The cattle might all have been very fat this spring, as the winter was phenomenally mild and feed very plenty. As many men felt that they were throwing away their feed, they did not take much pains, and seemed only desirous of keeping the cattle from losing flesh, and waiting for the first opportunity to get to market. Had feeders been a little more faithful in doing their work well, there would not have been so many unfinished cattle crowded forward when the market could not handle them.

A lot of 1,308-lb. Hereford steers recently sold at \$4.65. Some 1,610-lb. Shorthorn grades sold at \$4.75. During the latter part of April the bulk of the beef cattle sold at \$4.00@4.25, or 50 cents higher than during the previous month.

The following advice is sent to the shippers of a Chicago commission firm:—"Ship in the face of a bad report to meet a good demand with better prices is a good rule to go by. For the future, to the first of July next, very much indeed will depend upon the foreign demand. There are many large, able feeders, who have all their crop yet in hand, as well as smaller ones who have proportionate means to carry their stock to a later period of the season. The domestic consumption alone would not nearly be sufficient for the current offerings, therefore the vital importance to all of a continued good export trade. To insure the continuance of the good conditions prevailing for the last two weeks, large and small feeders will do well to top their droves and realize in smaller numbers and oftener. It seems to us there are too many resolving to feed for June. An even distribution will tend much to the maintenance of the market on a paying basis. In view of the conditions of the market during the past three or four months we are convinced that to this time a much smaller number of cattle have been put on grain for summer feeding than usual; therefore, would suggest that we will want grain-fatted, ripe steers all through the year, and that after June to December, inclusive, better values will be realized than at any time earlier."

The live cattle exporters have been very active buyers in Chicago for weeks past, and have evidently made plenty of money. Margins have been very wide, and even losses have been small. The recent advance in prices here, however, have curtailed the demand somewhat, as prices abroad have not advanced to correspond.

There has been considerable talk lately about the organization of the "American Meat Company," which proposed to raise cattle, slaughter them at convenient abattoirs and send the beef direct to their own retail markets throughout the east. Flagler and Moss, of the Standard Oil and Cotton Seed Trusts, were elected President and Treasurer, and for a while the concern seemed to be taking a strong position. The resig-

nation of the two officers and the recent withdrawal of the stock from the market put a damper on the enterprise. The capital stock of the concern was largely made up of western ranch property, turned in at high figures; and this was thought to be one cause of the disruption, though another theory is that it was influenced by the large dressed beef concerns with whom it proposed to compete.

The hog market has lately kept the even tenor of its way, sales ranging at \$4.60@5.00. The supplies have been smaller lately than expected, which accounts for the fact that prices have kept up so well. The weight of the hogs is also decreasing, which indicates a shortage of old hogs. The average weight of hogs marketed in March was 239 lbs., or 20 lbs. heavier than for several years past, and probably 15 lbs. heavier than for April. The fact that hogs can be made to weigh 300 lbs or more in nine months, and the fact that very few 300-lb. hogs have lately been coming, shows that the crop coming forward is young. Large numbers of hogs usually come in May and June, and the packers are looking for no exception this year.

Sheep during the past month advanced sharply. Corn-fed westerns sold at \$4.90@5.50. The latter price was paid for some 140@150-lb. mill-screenings-fed western sheep, which were of very fine quality. Last spring, Texas was sending in the bulk of the mutton sheep, but this spring the supplies have come mainly from the far west. Texas sheep men have been holding for better prices, and for the wool. It used to be that the Texas wool-grower paid no attention whatever to the mutton qualities of their sheep; and since the last election, which seemed to endorse the protection hobby, they have been inclined to return to their first love—wool raising. The chances are, however, that they will be glad enough after awhile to give more attention to mutton raising.

The Science and Practice of Stock Feeding.

(Continued from last issue.)

HOW TO USE THE TABLES.

The first difficulty that must be met is that of determining the live weight of the animal to be fed. The following rule, though by no means accurate, is of some value in determining this: Ordinary cattle, girthing five feet, will weigh from 650 to 750 pounds, according to form and fatness; for each additional inch in girth, add 25 pounds, up to six feet, and for each inch after six feet, add 50 pounds.

Thus an animal whose girth is five feet, weighs 650 pounds, suppose the girth to be five feet nine inches, add to this nine times 25=225, which gives us 875. Again, suppose the girth to be six feet nine inches:

| | |
|----------------------------------|------|
| Weight for five feet | 650 |
| For the next twelve inches 25x12 | 300 |
| 50x9 | 450 |
| Total weight | 1400 |

This is for store cattle in fair condition; if of good quality, add fifty pounds, thus allowing 700 pounds for five feet; if medium fat, of good quality, add 100 pounds.

Take a cow giving milk, and weighing 900 pounds, turn to table B, and we see that a cow giving milk, and weighing one thousand pounds requires to be furnished daily with food enough to contain 2½ pounds of digestible albuminoids, and 13½ pounds of carbo-hydrate equivalence, but the case we have taken does not call for so much, as the cow only weighs 900 pounds, the

following proportion is capable of giving the exact amount required:

1000 : 900 :: 2.5 : albuminoids required, and
1000 : 900 :: 13.5 : carbo-hydrate equivalence required.

The first proportion works out as follows:
2.5 + 900 = 2250 ÷ 1000 = 2.25 pounds.

The second proportion works out as follows:
13.5 + 900 = 12150 ÷ 1000 = 12.15 pounds.

That is, a 900-pound cow requires daily, albuminoids, 2.25 pounds; carbo-hydrate equivalence, 12.15 pounds.

How shall we get this amount most economically? Almost every farmer has one or more of the following coarse fodders, straw, corn fodder, bog meadow hay, also English hay, either herds-grass, red top, or mixed hay, and corn meal; many have ensilage, and on the coast salt hay.

The quantity of English hay that should be fed daily, when hay is the standard fodder, is from 1 to 1½ per cent. of the live weight of the animal, and with it from ½ to ¾ as much of some coarse fodder, like straw, or corn fodder, or bog meadow hay. This gives bulk to the ration and is the framework to which the grain ration must be fitted.

Let us see what this framework will furnish. To do this, turn to table C, and opposite "mixed hay" and "oat straw" we find that 100 pounds of the former will furnish 3.71 pounds of digestible albuminoids and 47.61 pounds carbo-hydrate equivalence; the oat straw, 1.41 pounds, and 43.31 of the same nutrients, consequently.

| | Albuminoids. | Carbo-hydrate equivalence. |
|-----------------------------------|--------------|----------------------------|
| 12½ pounds mixed hay will furnish | 0.47 lbs. | 5.95 lbs. |
| 5 pounds oat straw will furnish | 0.070 lbs. | 2.17 lbs. |

To this add the following grain ration:
3 pounds cottonseed meal will furnish .94 lbs. 1.26 lbs.
2 pounds shorts will furnish .27 lbs. 1.05 lbs.
2 pounds middlings will furnish .27 lbs. 1.15 lbs.
4 pounds corn meal will furnish .16 lbs. 1.43 lbs.

Required as shown by Table B.

This gives a ration near enough for all practical purposes. In finding what quantities of the various constituents are needed, it will usually be necessary to make several trials before the right proportion of albuminoids and carbo-hydrate equivalence is secured, but as a general rule, the more coarse fodder used the greater should be the amount of cottonseed, linseed, gluten or shorts in the grain ration, and the less amount of corn meal. Now let us see how the hay and straw framework would balance if, as is too often the case, only corn meal is used:

| | Albuminoids. | Carbo-hydrate equivalence. |
|----------------------|--------------|----------------------------|
| 12½ pounds mixed hay | 0.47 | 5.95 |
| 5 pounds oat straw | 0.07 | 2.17 |
| ¾ pounds corn meal | .44 | 4.05 |
| Furnished | 0.98 | 12.17 |
| Required | 2.25 | 12.15 |

Deficiency of albuminoids . . . 1.27

This ration gives us a sufficient supply of starch, sugar, fat, etc., but less than half the required amount of albuminoids. If the German experiments are worth anything, they show that it is poor policy to use corn meal alone as a grain ration, for English hay and coarse fodders. Once more let us see what would result if we take a sufficient quantity of corn meal to get the required amount of albuminoids:

| | Albuminoids. | Carbo-hydrate equivalence. |
|----------------------------------|--------------|----------------------------|
| | Lbs. | Lbs. |
| 12½ pounds hay | 0.47 | 5.95 |
| 5 pounds oat straw | 0.07 | 2.17 |
| 22 pounds corn meal | 1.71 | 15.75 |
| Furnished | 2.25 | 23.87 |
| Required | 2.25 | 12.15 |
| Excess of non-nitrogenous matter | | 11.72 |

These two rations show very forcibly that either the practice of feeding corn meal alone, with hay and straw, is a bad one, or the feeding standards are worthless.

It will be noticed, that the proportions given on page —, have 1000 for their first term, this must always be so because the tables are computed for animals weighing 1000 pounds, this being so the determination of what a given animal requires, when its weight is known, is very simple.

Rule for determining the digestible matter required by an animal of any weight: Multiply the number of pounds of albuminoids, and carbo-hydrate equivalence, found in table B, for the desired condition, in which the animal is, by the live weight and move the decimal point three places to the left.

For example: A steer weighs 1250 pounds, and it is proposed to fatten this animal, what amount of nutrients (that is digestible albuminoids and carbo-hydrate equivalence), are required? In table B, it is seen that "oxen fattening," require daily 3.0 of albuminoid, and 16.5 pounds of carbo-hydrates and fat per 1000 pounds live weight. Applying our rule, we get $3 + 1230 = 3750$; removing the decimal three places gives 3.75 pounds of albuminoids; in the same way, $16.5 \times 1250 = 20625.0$, remove the point three places, = 20.62 pounds of carbo-hydrate equivalence required.

To form a trial ration, take 1% of live weight of animals in hay, and 1% in corn fodder, then take about one-third of one per cent of one of the following concentrated feeding stuffs, cottonseed, gluten, linseed, or malt sprouts, and half the quantity of shorts, and make up the ration with corn meal and middlings. A few trials will give a combination coming close enough to the standards.

| | Albuminoids. | Carbo-hydrate equivalence. |
|-------------------------------|--------------|----------------------------|
| | Lbs. | Lbs. |
| 12½ pounds of hay | .46 | 5.95 |
| 12½ pounds of corn stover | .27 | 5.11 |
| 4½ pounds of cotton seed meal | 1.41 | 1.90 |
| 2½ pounds of shorts | .30 | 1.18 |
| 5 pounds of middlings | .67 | 2.88 |
| 7 pounds of corn meal | .55 | 5.01 |
| | 3.66 | 22.09 |

There are reasons for believing that this ration is fully as economical for the American farmer as one corresponding exactly with the German standard. Our conditions differ from theirs. Corn is our standard grain, is cheaply produced in the West, and must constitute a considerable portion of our rations here, and hence a little less of albuminoids and more of carbo-hydrate equivalence must be used. I am satisfied, from the feeding experiments that have been conducted on our college farm, that a considerable variation from the foreign standards may be economical, and that instead of a nutritive ratio of 1 : 5.4 for cows giving milk, we can do better with a ratio of 1 : 6 or 7. This may perhaps be considered a pretty wide variation, but I believe the cheapness which we can produce starchy foods more than compensates for any loss that may result in quantity or quality of milk from the reduced quantity of albuminoids. The factor of cost of foods has been too much overlooked in American investigations, so that in pointing out the errors of the too common practice of feeding corn meal exclusively, we have tended toward the other extreme.

[CONCLUDED.]

Second Prize Essay.

WHAT IS THE AVERAGE COST TO THE FARMER TO RAISE A STEER TO THE AGE OF THIRTY MONTHS, SAID STEER TO BE SOLD FAT AT THAT AGE? HOW MUCH PROFIT IS DERIVED? IF THERE IS A PROFIT, HOW CAN IT BE INCREASED?

BY JAMES LOVELL.

Assuming that the question is average cost to the average farmer to raise an average steer, a suitable steer for that purpose should be a well-bred grade of a breed of cattle that will mature early, and with proper usage lay on flesh rapidly; no doubt, we have several breeds of cattle that will fill the bill in these respects. The weight of such a steer, as the one under consideration, will be about 1200 lbs., and would be worth, at say 4c. per pound, \$50, and the cost of raising such an animal would be about as follows, supposing that the calf came in the spring—as is usual with the average farmer—say 1st of April:

| | |
|---|---------|
| The first cost of such an animal we put for bull service | \$2 00 |
| We will suppose said calf is fed new milk for four weeks, and worth say, altogether 300 lbs., at 60c. per cwt | 1 80 |
| Say four months skim milk, 20 lbs. daily, at 20c. per cwt. | 4 80 |
| A little grain will be required, and also pasture for the first summer, would cost altogether say | 3 00 |
| Making a total cost for the first seven months of | \$11 00 |
| Six months winter feeding—hay ¼ ton, \$6; straw, \$1 | 7 00 |
| Grain, say 3 pints oats daily, \$2.50; bran, \$1. | 3 50 |
| Second summer pasture for yearlings say | 5 00 |
| Second winter feeding—hay 1½ tons, \$12; straw, \$2. | 14 00 |
| Grain or roots, worth say | 3 00 |
| Third summer for pasture | 8 00 |
| | \$40 50 |
| Making a total cost of | \$52 10 |

Under this system (the one usually followed by most farmers) there will be no profit in fattening steers at that age. The cattle will be ready for market in the fall of the year, when the prices are always somewhat lower, and consequently will nearly always be unprofitable to the producer.

But let us consider another way of producing such a steer—a way of working that I am of the opinion will, in every instance, produce better results—and that is by having the calves come in the fall of the year. All things being equal at the start, a fall calf will, in the competition, have a decided advantage over the spring calf. With the average farmer, a spring calf usually gets somewhat stunted during the first summer. They do fairly well for the first few weeks until they are turned out to pasture in the heat, and the flies torment them while they are young and tender, and by the time they really begin to eat enough grass to do some good, the cold chilly weather of autumn is on, and the result is, that such calves usually go into winter quarters in a somewhat reduced condition.

The margin of profit on feeding stock at the present time is no doubt small, and we cannot afford to waste feed by keeping animals in such a way that increase of weight is obtained at only certain seasons of the year. Early maturity should be constantly aimed at to make the business profitable. Constant and rapid growth is required, and this is particularly important during the first year, for, if allowed to fall away then, there is a loss of time and profit that cannot be regained afterward, for a young animal will always give better returns for extra care and feed than an old one. And, without doubt, the

steady and even advancement towards maturity, that is essential, can be more surely obtained in a fall calf. Give such a calf comfortable quarters and a little more generous supply of feed the first six or seven months, and it will have a strength and vigor of frame that will enable it to obtain the full benefit of the pasture when turned out in the spring, and if, in addition, a feeding trough is provided and a little grain fed daily, a gain in size and weight will be secured that will well repay the trouble and expense.

The plan of feeding, now under consideration, would require three winters' and two summers' feed; but the animal would be fit for market in the spring when beef always commands a higher price, and if, by a little extra feeding, we can produce a superior animal that will weigh 1500 lbs., and would sell for about 4½ cts. per lb., \$71.25, it is certainly the most profitable course to adopt. We will suppose the fall calf to come 1st of November, and the cost of raising to be as follows:—

| | |
|--|---------|
| Bull service | \$2 00 |
| Six weeks new milk worth @ 60c. per cwt. | 2 50 |
| Four months skim milk worth @ 20c. per cwt. | 4 80 |
| Hay, ¼ ton, \$2; grain and flax seed meal, \$2. | 4 00 |
| First summer feeding would cost for six months pasture say \$4; a little grain in addition, \$2. | 6 00 |
| Second winter—1½ tons hay, \$12; straw, \$1; grain, \$3; bran, \$1; flax seed meal, \$1. | 18 00 |
| Second summer—pasture, \$8; additional for a little grain, \$2. | 8 00 |
| Third winter—hay, \$14; straw, \$1; grain, \$6. | 21 00 |
| Making a total cost of | \$66 30 |

The gain in this case being a direct profit of \$4.95, or as compared with the spring calf, of \$7.05. There is nothing charged in either case for labor and attendance, as the manure should balance that account. Of course, the system of feeding can be somewhat changed according to the position and circumstance of the individual farmer; some may find it more profitable to substitute roots for a part of the grain ration in the winter; but, under any circumstances, the profits in fattening cattle will be mostly indirect. A market is provided at home for bulky products, that otherwise would have to be hauled in small quantities to town, and there disposed of. And a lot of valuable fertilizer is produced that keeps the land in a high state of fertility, and therefore, on the stock farm better crops of hay and grain are always produced, and it is from this source we must look for a large share of the profit.

A woolen mill is being built at Fish Creek eight miles South of Calgary, which will be in working order before the shearing season.

Professor Samuel Johnston, Michigan Agricultural College, says:—I should prefer to buy wheat, bran, oil-meal and other commercial foods for cattle rather than commercial fertilizers.

In a paper read before the meeting of the improved Stock Breeders' Association, at Iowa City, Hon. L. S. Coffin said that as the result of his experience, the sheep is the one domestic animal that never dies in debt to its owner.

The testimony accumulates that it is better to feed milch cows but twice per day; as it is alleged that well-fed cows can put in their time resting and remasticating their food more profitably than to spend it in any other way. The man who thinks a cow ought to be cantering all over a half-bare pasture to get a livelihood, doubtless does not believe the above.

Up in Wyoming a few years ago one of the flash cattle companies that have now gone to the wall, took it into their heads that they were going to revolutionize the future beef market by stopping the increase by spaying all the cows. They sent for a professional torturer, and in one day they had 300 animals operated upon. In ten days thereafter 250 of their caponed cows lay dead on the plains. Their loss was a just one, while their offence against humanity was revolting.

The Dairy.

Notes Taken from the Annual Report of the Ontario Agricultural College and Experimental Farm for 1888.

As the dairy season is about to open, we think a few extracts from Prof. G. W. Robertson's report on dairying will be instructive to dairymen everywhere.

His report deals, first, with the creamery work and the manufacture of butter. Second, the silo and ensilage for feed. Third, dairy associational work. Fourth, cheese makers and manufacturing of cheese. Fifth, the cow, and care and handling of milk for the cheese factories. The report is full of valuable information and suggestions for the practical dairyman, and is well worthy of personal study. We cannot go into any lengthy reprint of his report, but will give a few of the most prominent points, and may return to it again.

First—Let farmers learn a lesson from last year's drouth. In the creamery, during June and July, the make of butter was 400 pounds per day; during August, only 235 pounds per day, owing to shortness of feed for the cows. Don't miss to learn this lesson, and provide against such an occurrence this season by sowing oats and peas, or tares and oats or corn, in some form to meet the wants of your cows in dry weather.

We shall pass over the second (ensilage) for the present, and take the dairy association work. First—The education of our cheese-makers to understand their business more perfectly, and to put what knowledge they have into practice; and that cheese-makers ought to have some meetings of their own, after the form of conference, where each could give his experience with special points on his business; and so, by interchange of experiences and ideas, great benefit would be derived by the makers themselves, and also to the business generally. Reading and study is necessary to develop the maker as well as the trade. Second—The educated and studious maker can educate his patrons in their department so as he may have the best of raw material from which to make fancy grades, and thus raise the standard of the goods and the factory. For this purpose inspectors of milk and instructors were appointed by the association; and though in some cases the improvement of cheese was not raised in point of quality as high as might have been, yet in many cases the improvement has been very considerable; but the milk inspection has been a greater success than expected, and on all hands it has been acknowledged so by almost every factory who had the services of the inspectors. The ninety short hints to cheese makers should be tacked up on the wall near the vat in every cheese factory, so as the maker could easily see the different points as his work progressed during the day.

Third—The care of cows and the care and treatment of milk. One would need a little of the spirit of the great apostle of the Gentiles when he wrote to the Philippians: "To write the same things to you, to me indeed is not grievous, but for you it is safe;" and so long as unclean or tainted milk is brought to factories, so long must it be protested against. And this is right; and the transgressor ought to be pun-

ished in some way if they cannot or will not learn the ordinary laws of cleanliness. The seventeen short rules for patrons to observe in caring for their cows and milk, should be pasted up on the doors of the cows' stables and gateposts of fields where they feed, so that they would be observed by the attendants.

The Act to provide against frauds in supplying milk to cheese and butter factories, passed by the Legislative Assembly of Ontario, has been disallowed by the Dominion Parliament, and they have a new Act for the Dominion on the way for the same purpose as the one disallowed. It has passed its second reading and been referred to a committee for consideration before passing its final reading. It is to be hoped it will be practicable, and serve the purpose it is designed for—to protect the innocent and punish the guilty. It is to be hoped that, by efforts of the association and the education of cheese makers and patrons in their various occupations, the law will seldom need to be enforced; that inspectors, cheese makers and patrons will work in harmony, each doing his best to promote the most important industry in the land.

A few hints is given on the trade generally. And first, the cheese trade, the pride of the dairy agriculture of the province, is in danger of losing its prestige; first, by the employment of inexperienced and incompetent men; second, by the relentless cutting down of remuneration to competent men and experienced makers to manage factories. The fact is, there are any number of men at the foot of the ladder, with few at the top, where there is plenty of room; but men who can climb to the top and stay there must be remunerated, or they will not stay there, but will step down and out. Right here I would throw out a suggestion for the consideration of our dairy authorities. Dairy schools are an established fact in almost all dairy countries in Europe, where young men and women can get a thorough education in the theories and practice of manufacturing cheese and butter, care and feeding of cows, &c. And to these schools is attributed the great advance and success of the dairy interests where they have been established. They are to be established in England this summer; and even in canny Scotland there is one being established now, to give practical instruction in cheese and butter making, with Mr. Drummond, a Canadian, at its head.

At the last meeting of the New York State Dairy Association, Col. F. D. Curtis gave an admirable address, advocating the instituting of dairy schools, at the close of which the following resolutions were carried by a standing vote of the meeting:—

1st. Resolved, that this association approve of the plan of Col. F. D. Curtis for the establishment of dairy schools, as we believe such schools on the farm would afford a much-needed means for scientific and practical education and training in the work of dairying, and aid in the improvement of our dairy output, and increase its demands and price, and also enhance the value of our farms.

2nd. Resolved, that a committee of three be appointed by the chair, to present the subject of dairying schools to the legislature of this State.

Is Canada to sit still and do little or nothing to educate her young people in the science and art of practical cheese and butter making, while every other country with which she has to compete in selling her dairy products are doing their best to capture and hold the only market we have for our produce? In the very nature of things it is impossible for us to maintain our position unless we adopt some such system of educating our young men and women in the science and art of practical dairying.

DAIRYMAN.

Veterinary.

Wounds.

Wounds occur so frequently to our domestic animals, especially to the horse, that it is a matter of great importance that the stock owner should be equal to the management of them, or should understand the proper means to adopt till reliable veterinary assistance can be obtained. Wounds are called "incised," "punctured," "lacerated" or "contused," according to the manner in which they have been inflicted. Incised wounds are cleanly cut, with straight edges, and often heal readily if the skin is brought together and retained in position by sutures or otherwise. This is called healing by adhesion, a good exemplification of which is seen in "pinning up" after bleeding. Large, deep, incised wounds will not often heal in this manner, there being often extensive suppuration.

Punctured wounds may be inflicted by the stab of a knife, the horn of a cow, the prong of a fork, the end of a stake, &c. They are often the most dangerous, as, from their depth, important blood vessels may be injured, and if in the body some deep-seated vital organ may be injured. Or, if in the neighborhood of a joint, it may also be a very serious affair, as, if the joint itself be injured, it may occasion the alarming condition called "open joint."

"Lacerated" wounds are those that are torn asunder, and if extensive, the ragged edges of the wound, their vitality being destroyed, will probably be removed by sloughing, leaving an exposed surface of a greater or less extent.

"Contused" wounds are those in which, besides the wound, a considerable bruising of the surrounding parts has been produced. The bruise renders the case more complex, as, besides simple repair of cut, the bruised tissue must be restored or removed. A "contusion" is a bruise or injury without a cut in the skin.

It should be borne in mind that the very common practice of applying anything of an irritating or stimulating nature for the purpose of "healing it up quickly," of "keeping out the cold," &c., is calculated to do much harm. Instances are not unfrequent of boiling tar and tallow being poured into wounds of the feet, with the very best intentions, but such practices cannot be too strongly deprecated.

In the treatment of wounds, the first indication is to arrest the bleeding, if it exists. The difficulty in checking it will much depend upon whether an artery or a vein is injured. Arterial blood may be known by its coming from the wound in jets, also by its bright scarlet appearance. Venous blood is of a dark red color, and the stream is continuous. Should the escape of blood be from a large artery, it may be necessary to ligature it. And in some cases this may be rather a difficult matter. But pressure applied over the course of the artery between the heart and the wound is often effectual. Also, should the injured blood-vessel be deep-seated, or difficult to reach or discover, pressure applied immediately over the wound, and continued for some time, may usually be successfully adopted. Styptics, as the chloride of iron on cotton wadding, or caustics, are sometimes useful. But the continuous application of cold water, in conjunction with pressure, will probably be found sufficient in most cases of emergency. In wounds of the extremities, the bandage called the unit-

ing bandage is often very serviceable in closing the wound and arresting the bleeding by pressure. This consists in a long, narrow bandage, rolled from each end; then, by applying the central part opposite the wound and drawing each roll forward, the edges of the wound are brought together and pressure applied.

Bleeding having been checked, all foreign substances must be removed; and this may occasionally be a matter of some difficulty, as in the case of punctured wounds inflicted by pieces of wood, stakes or rails, slivers or broken pieces may be left in that may easily be overlooked. This should be done without washing if practicable; but when dirt, dust, &c., render washing the wound necessary, tepid water is all that is required, and this should be gently squeezed from a sponge or cloth held over the part. It cannot be too strongly insisted that irritating or stimulating applications to a flesh wound are always injurious, and always retard the healing process. All foreign matter, blood clots, &c., having been removed, the edges of the wound must be brought together by means of stitches, which may be either of wire, catgut or silk; or the parts may be held together by pins, similar to "pinning up" after bleeding, using as many pins or stitches as necessary. These should be about an inch to an inch and a-half apart, and not drawn too tightly.

In order to check the excessive swelling and inflammation that frequently results from lacerated and contused wounds, fomentations of warm or tepid water, according to the season, are beneficial; and if the fever should be high a purgative should be administered. In deep wounds it is best if possible to have a dependent orifice, so that the matter from the wound may be discharged from the bottom. The dressings or local applications to wounds should be of the simplest character. The eminent surgeon, Sir William Ferguson, preferred cold water, and its value has often been noted in veterinary practice. Or carbolic acid to eighty or a hundred of water. It will be found better to use mild lotions rather than ointments or oleaginous preparations, as these cause dirt to adhere to the part, and it will be more difficult to keep clean, cleanliness being an important consideration.

Wounds are healed by the processes of adhesion, also by suppuration and granulation. In the horse, healing by adhesion seldom takes place unless in slight incised wounds, in a great measure owing to the difficulty of keeping the parts perfectly still. If healing by adhesion does not take place, a discharge of a watery fluid occurs, and this is succeeded by "pus," or matter. If the pus is cleared away and the wound examined, it will be found to be filling up with a number of bright red granulations which bleed readily when touched. This is nature's mode of filling the cavity caused by the injury. The process of suppuration is longer in coming on in the ox tribe than in the horse, and the pus or matter is of a different character. Instead of being, as in the horse, yellowish, creamy and liquid, it is more like thin curd, and has a very unpleasant smell.

Wounds of the muscles heal much more rapidly than any other part. Wounds of ligaments and tendons are slower in healing, and injuries to bones still more tedious, as they frequently will not heal until a part exfoliates and is cast off. This may be known by the exces-

sively fetid smell of the wound. Wounds of the skin are also tedious, as new skin is never produced in the middle of a wound, but it gradually grows from the edges until the wound is closed. This new skin never produces hair, therefore it is of importance not to cut off or destroy any skin that can be saved, so that the blemish or scar may be as small as possible—though the old skin is often in time drawn over the wound by the new to a great extent, and the expected scar much diminished.

The Farm.

Our North-west Letter.

Among your many correspondents from this Province, I seldom see any from our farmers along the main line of the C. P. R.; some in fact are from districts where we think wheat growing a very risky business, while numbers complain of frozen crops, distance from markets, etc., etc. Now, sir, these "mountains and molehills" are likely to create an unfavorable impression of our Province generally; my intention is to try and give your eastern readers a glimpse of what I consider a successful locality. Virden is on the main line of the C. P. R., about fifty miles west of Brandon, and is the principal town in the county of Dennis. A few miles to the north, the Assiniboine river pursues its tortuous course. This district supports a sturdy body of yeomen, who are at the same time enriching themselves and their country. South, about twenty miles, is to be found the Pipestone Creek, certainly deserving a more dignified title—the famous valley of which produces an average of forty bushels of wheat to the acre, and where are to be found some truly magnificent farms. To the east are the Sandhills, the poplar of which supplies many with fuel. To the west we have "illimitable prairie," and that, too, of good quality. Throughout all these districts are to be found not only good farms, but good farmers; mostly successful men. If evidence of this was wanted, no better proof could be given than the substantial outbuildings that are taking the place of the sod and straw protections, in the quantity and quality of the stock, and the legitimate improvement that is taking place in all that is desirable. Let us return to our town and see how it compares with others of the same age. Eight years ago there was not a vestige of anything to be seen, not even a railway track; to-day there are two elevators capable of holding 50,000 bushels of grain; one-hundred-barrel grist mill; between 25 and 30 stores, comprising dry goods, groceries, hardwares, drugs, stationery, jewellers, tinsmiths, bakers and confectioners, milliners, tailors, book and stamp makers, feed and flour stores, butchers, barbers, furniture, etc., etc. There are also bankers, financial and estate agents and solicitors, several builders and blacksmiths; five implement firms have substantial warehouses; five hotels provide plentifully for man and beast. The Grand Central and Virden Houses being really first-class, the former would, I am sure, compare favorably with any in the Province. Again, we find livery, sale and feed stables, cheese factory, three churches, and good school, while on all sides are to be found substantial, and, in some instances, really handsome residences; we have here also what is not to be found in your transitory town ("which to-day is and to-morrow is cast into the oven"), by a good brass band showing a spirit of enterprise and love for refinement, which music invariably

stimulates, that is truly commendable. On the banner of our curling club success is plainly written. What? No, sir; we do not lack what I know rejoices your heart, a farmers' club. I hardly know whether I ought to dignify it with the above name, but simply allow it to pass under the title given it by its promoters, namely, farmers' meetings. These are held every fortnight, at which papers are read on subjects of interest, while much good accrues from these meetings. Still it is a lamentable fact that much is also desultory, for instance, as a mere hypothetical case, say the use of various green fallows to plough under for a crop of wheat. Mr. Haphazard has tried such a thing, and sees no good from it; Mr. Careful Calculator, on the other hand, has had great success with it. Mr. Pompous does not agree with Mr. C. C., but coincides with Mr. H., but would rather have his system than all the green manures in creation. Thus the discussion proceeds with perhaps a dozen speakers, when the chairman sums up, with becoming impartiality, saying, like Sir Roger de Coverley, that there is a good deal to be said on both sides. These discordant results may very often be traced to a difference in the conditions under which the experiments were made, the soil in the one case lacked the elements contained in the substance employed, while the other contained them in as large quantities as the crop could take up; or, in the manure employed, two substances required by the crop were plentiful, while, perhaps, two others were lacking. To quote an authority, experiments of the kind to be conducted properly, require a knowledge of the constituents of the soil and of the plants to be received on it, and a knowledge of what portion they derive from the soil and what portion from the atmosphere. But I am digressing, my only reason is the interest I take and the importance of farmers' clubs, if conducted on right principles. Why is there not a more general and legitimate interest taken in these clubs? I think the main reason is, so many fail to avail themselves of the stimulating influence of the agricultural press. Strange, indeed, it is there should be in so many cases antipathy to "book learning and farming." I fail to see what a farmer is to lose by being intelligent. What odds whether he gets his experience from the press, his neighbor or himself, so long as he gets only good, sound, practical ideas. None of us object to take our political news from a paper, we are also willing to take our market reports, historical and general information from papers, still many do not care to receive from this source information relating to their business. How is it every other class of men but farmers benefit by reading. Art, science, commercial men, mechanics, in fact all professions and trades are proud of their paper, and why not the profession on the successful pursuit of which all these others stand. If our farmers could be only brought to remember that much, if not most of the contents of our agricultural papers are written by hard-working, practical farmers; that the editors' business is not to palm off on unsuspecting men absurd ideas, but to scrutinize and sift all that comes, and obtain whatever has been proved by fact, to choke off imposters by exposure, to obtain from practical men whatever is of use to publish for the benefit of their readers, in addition, spreading among us workers such sound, well-approved, scientific knowledge as shall be of use to us on the farm or in the dairy. But I am trespassing on your

valuable space; however, I am proud to state that a large number in this district do subscribe to good agricultural papers, and while some are at times caught by frost, etc., still abundant proof exists that we are largely successful, being possessed of wealth, if not in the form of cash (our advance cannot be attributed to any demoralizing boom), it is of healthy growth and gradual increase.

The weather in this county has been this winter all that could be desired. I do not think we have had more than seven weeks sleighing. The wheat acreage will be large, a very large amount of plowing having been got through in the fall. With a favorable year and good crops we will indeed be a thoroughly satisfied community. There is not much vacant land in the immediate vicinity of Virden, but a few miles away there is abundance, of course there are always a few improved farms for sale, but those men who have good farms and improvements are not very anxious to sell, while the class that are to be found in every community, those that lay around saloons and stores all day and have not time to improve or means to buy agricultural papers, these are always willing to sell; more often these farms fall into the hands of mortgage companies, who are usually glad to sell them at reasonable prices.

The Greatest of Agricultural Societies.

Though its arrangements are far from faultless, the Royal Agricultural Society of England is beyond all question the greatest and most successful association of its kind in the world. It consists at present of nearly 11,000 members, and the prize money which (with extra assistance from outside), it offers for the great show to be held at Windsor, next June, amounts to £12,000. As it has always been a successful society, the details as to its management and arrangements may be interesting to those Canadian readers who are not familiar with it. Started in 1838 as the "English Agricultural Society," it obtained a royal charter in 1840, and altered its name to that by which it is still known. The main object declared by its founders was "the general advancement of English agriculture," and an "essential principle" of its constitution was "the strictest exclusion from their (the members) councils of every question of discussion having a political tendency." These terms were incorporated in the charter, which also sets forth the objects of the society in detail, which may be summed up as follows:—To publish information found by practical experience to be useful to the cultivators of the soil; corresponding with other societies in the endeavor to obtain information; to promote field experiments, and to encourage scientific men in researches likely to be useful to agriculture; to promote the discovery of new varieties of grain and other vegetables; to collect information relating to forestry and rural improvement generally; to take measures for advancing the education of those who depend upon the cultivation of the soil for support; to improve the "veterinary art;" at shows "by the distribution of prizes and by other means to encourage the best mode of farm cultivation and the breeds of live stock;" to promote the comfort and welfare of laborers, and to encourage the improved management of their cottages and gardens." Now, those objects have not been carried out at all equally. The last, at any rate in recent times, has been entirely ignored. The society has done something in carrying out or assisting experiments, but

next to nothing in promoting the improvement of grain and other products of arable land. What it has done for agricultural education does not amount to much, and except by its valuable and expensive Journal (6s. to non-members), it has done very little in the way of publishing information on its own account; but the reports of its council meetings and of its several committees are sent to the agricultural and other papers, and these often contain valuable information. To the improvement of our live stock its resources have been mainly devoted. Trials of implements have often been held at the annual shows, while a few medals are given for meritorious inventions, and there is always a great collection of implements and machinery at the shows, the society charging high fees for the space occupied, and reaping very large profits from the exhibitors. All but a miserable pittance out of the money devoted to prizes goes to breeding stock, extremely little being devoted to milch cows, as such, and to the products of the dairy. Every year, in the districts surrounding the place where the annual show is held, prizes are given for the best cultivated farms, and this is a very valuable branch of the society's work. In other respects the society has lately launched out in various directions. For some few years it has carried on valuable field and feeding experiments at Woburn. It has also caused enquiries into the agriculture of foreign countries to be collected for publication in its Journal. It has also given scholarships to lads from any school who pass its examinations. Another modern advancement is the establishment of a working dairy at the annual show, which has had an excellent educational effect. The shows of the society are models of good management, except with respect to the judging of implements. Lately, too, the society has endeavored to co-operate with provincial societies for carrying out field experiments. Heavy losses are often incurred when shows are held in districts not in the midst of a great population, for the society's arrangements are on a princely scale, and it goes to all parts of the country for the benefit of the agriculture of the several districts, even though a loss is fully expected. But the society has a great reserve fund to draw upon and never gets into difficulties. It is sustained by the subscriptions of its members and by the profits of successful shows, and does not receive any assistance from the State. The subscription of an ordinary member is £1 a year or £10 for life, entitling him to a copy of the half yearly Journal and a ticket for the entire show which lasts over a week. Governors pay £5 a year or £50 for life.

The management of the society is strictly oligarchical. At the annual meeting in May, the Governors and members elect the President, Vice-President, Trustees, and other members of the council, the principal officers sitting for one year, and the rest of the council for two years. But beyond the election of the council and officers, the members have no power in the management, the council having absolute power over the funds and arrangements. Governors may attend and speak at council meetings, but not vote. There are three general meetings during the year, at which ordinary members may make suggestions for the consideration of the council subsequently, but there is no power to insist upon the adoption of the suggestions. A standing committee is appointed by the council from

themselves for each of the branches, into which the several functions of the society are divided, and these committees send in reports to the council, and offer advice, which is usually adopted. The several branches are as follows:—Finance, selection, stock prizes, implements, shows, showyard contests, chemical, botanical, veterinary, journal, education. The only one of these branches needing explanation is that termed "selection." The selection committee recommend the election of members to fill vacancies in the council and the various honorary offices. One of the privileges of members is that of having analyses of feeding-stuffs and artificial manures performed at very low fees by the society's chemist; also examination of seeds by the society's botanist. The Queen is President of the society for the current year, the Prince of Wales acting for Her Majesty. There is one Secretary, Mr. Ernest Clarke, who is also editor of the Journal, assisted by the Journal committee. He has a staff of clerks under him. At the shows, the different sections are managed by stewards appointed for the occasion. The whole organization of the society is excellent in efficiency.

THE RYE GRASS CONTROVERSY.

A revival of the controversy as to the admission of *Folium perenne*, or perennial rye grass, in mixtures of seeds for permanent pastures, started six years ago, has broken out again in England. In 1882, Mr. Faunce de Louve denounced the grass as not really perennial and as not fit for permanent pastures, and Mr. Carruthers, Consulting Botanist to the Royal Agricultural Society, backed him up. But various trials with and without rye grass tended to support the old practice and to throw doubt on Mr. De Louve's theories. In the last number of the R. A. S. Journal Dr. Freave showed that in one of the best old pastures of various parts of the Kingdom rye grass was the "backbone" of the gramineous herbage, and white clover of the legumes. Mr. Carruthers has recently reiterated his denunciation of rye-grass, in reply to Dr. Freave. But practical farmers will not be misled; they know that they can form their pastures more cheaply with rye grass than without it, and that the produce in the first two or three years, when this grass is sown, is so much greater than when it is left out as to pay for the whole expense of the seed, and often for the laying down also.

PRICES OF FARM PRODUCE.

The official statement of the average prices of the principal cereals for 1888 has just been published, showing that of wheat to have been 31s. 10d. per quarter of eight bushels, as compared with 32s. 6d. for 1887, and 31s. for 1886; the last price was the lowest yearly average of the last hundred years. The average for barley last year was 27s. 10d., against 25s. 4d. in 1887, and 26s. 7d. in 1886; and that for oats, 16s. 9d., against 16s. 3d. in 1887, and 19s. in 1886. Only three times before, in the last hundred years, have the yearly average for oats been so low as it was in 1888.

Prof. S. W. Johnson, Director of the Connecticut Experiment Station, says: "I am astonished in looking over some of the agricultural papers, to see the character of matter they print, that their subscribers read and digest. But a few years ago all this would have been as unintelligible as Greek is to most men. The scientific feeding of cattle, the chemical constituents of the soil, and the practical discussion in print of kindred matters show how deeply farmers are thinking."

The Ontario act for prevention of adulteration of milk *ultra vires*.—A recent conviction in Eastern Ontario, under this act, was quashed on appeal to the Divisional Court at Toronto, one of the judges dissenting. It has, however, been carried to the Court of Appeal. The ground taken by the defendant was that it was a criminal act which is out of the jurisdiction of the Local Legislature. We understand, however, that a similar bill has passed a first reading in the Dominion Parliament.

Farming Affairs in Great Britain.
(From our English Agricultural Correspondent.)
TWO GREAT HORSE SHOWS.

The last week in March and the first week in April we had the greatest show of horses ever held in London. The Shire Horse Show was a remarkably successful one. The entries numbered 447, as compared with 410 last year. The first show of the Shire Horse Society was held in 1880, with only 110 entries, and that just held was the largest ever got together. The general standard of quality, too, was very high. The champion prize was won by the Earl of Ellesmere, of Worsley, Manchester, with Vulcan (4155), a magnificent six-year-old stallion, by Shaw's Cardinal (2407), dam, Jessie by Sir Colin (2407). The numbers are those of the Shire Horse Herd Book. Vulcan won, not only the first prize in his class, £20, but also the fifty-guinea champion cup given for the best stallion in the show, the twenty-guinea cup given for the best stallion in the three classes for horses three years old and upwards, and the Elsenham Challenge Cup, value 100 guineas, to hold for one year. The last cup has to be won two years in succession by the same exhibitor in order to be retained permanently. Apart from this, however, the horse won prizes to the amount of £93 10s. There were many other first-rate stallions, and a splendid lot of mares. After the show a sale by auction was held, and some high prices were made. Two realized 250 guineas each, and twenty-three were sold at prices ranging from that amount down to 100 guineas. The average for eighty-two stallions and colts was £80 19s. 10d. Only eight were sold at less than 40 guineas, and not many below 50 guineas. For 38 mares and fillies the average was £62 3s. 8d., the top price being 175 guineas. Much higher prices than any of those made at the auction were obtained by private sale. The two-year-old stallion, Marmion, belonging to Mr. Freeman, was sold for 1,000 guineas, while Lord Wantage paid 800 guineas for the champion two-year-old stallion, Hailstone Conqueror. Mr. Sutton Velthorpe refused 1,000 guineas for his first-prize mare, Blue Ruin. Never before was business so brisk at a cart-horse show. The Shires are the rising breed of cart horses, and a great export trade is done in them. It is said that two thousand were exported last year. The other great London show was held last week, being a combined exhibition of thoroughbred, hackney and Yorkshire coaching stallions, and hackney and hunter mares. The entries of stallions numbered 251, and those of mares, 133. The thoroughbred stallions competed for twenty-five prizes of £200 each, offered by the Royal Commission on Horse Breeding and the Royal Agricultural Society for horses to travel in specified districts of Great Britain and serve mares at low fees. It was a magnificent show; but too many of the thoroughbreds were declared unsound on strict veterinary examination. No doubt if the offer of liberal premiums should be continued, useful breeding will be stimulated, and hereafter we shall have a larger number of sound, and, in all respects eligible, horses at the annual competitions.

MANURES FOR GRASS LAND.

A full report of the important experiments in the manuring of grass land, carried out by Mr. Martin J. Sutton, near Reading, during the last three years, has just reached me. The experiments were commenced in 1886, six plots in

several fields being dealt with in various ways. In the following year twelve more plots were added in each pasture. Manure was applied to five of the first six plots in 1886, not in 1887, but again in 1888, the same dressing being used on the same plot. On eleven of the other plots manure was applied in 1887, and not in 1888. Taking the pasture which gave the most trustworthy results (some of the rest having had the crop injured by dry weather in two years out of the three), I show in the following table the weight of hay obtained during three and two years, respectively, in two cuttings each year, and the net profit during the period, after allowing for the cost of the manure, and comparing the value of the hay from the manured plots with that from the unmanured plot in each set of experiments:—

EXPERIMENTS DURING THREE YEARS.

| Plot. | Manure per Acre. | Produce in Hay. | Net Gain per Acre from Manures. |
|---|------------------|------------------|---------------------------------|
| | | Tons. Cwts. Qrs. | £. S. D. |
| 1—None. | | 5 15 1 1/4 | |
| 2—1 cwt. sulphate of ammonia. | | 6 9 0 | 1 6 9 |
| 3—1 1/4 cwt. nitrate of soda. | | 6 14 3/4 | 2 5 6 |
| 4—3 cwt. superphosphates, 2 cwt. kainit. | | 6 19 3 | 3 6 3 |
| 5—1 cwt. sulphate of ammonia, 2 cwt. kainit. | | 6 9 3/4 | 18 0 |
| 6—3 cwt. superphosphates, 1 cwt. nitrate soda, 2 cwt. kainit. | | 7 0 1 1/4 | 2 3 0 |

TWO YEARS' EXPERIMENTS.

| | | | |
|---|---|----------|--------|
| 7—4 cwt. basic cinder. | 4 | 5 1 1/4 | 3 5 3 |
| 1 " nitrate soda. | 4 | | |
| 2 " kainit. | 4 | | |
| 8—10 tons farm-yard manure. | 4 | 9 2 | 2 3 0 |
| 9—5 cwt. desiccated cotton cake. | 4 | 1 0 | 1 14 0 |
| 10—3 cwt. Peruvian guano. | 3 | 15 1 1/4 | 1 4 9 |
| 11—None. | 3 | 8 3 | |
| 12—4 cwt. basic cinder. | 3 | 19 0 1/4 | 2 10 9 |
| 2 " kainit. | 3 | | |
| 13—4 cwt. gr. coprolite, 2 cwt. kainit. | 4 | 1 3 1/4 | 2 16 0 |
| 14—10 cwt. cyfrum. | 3 | 12 1 | 19 0 |
| 15—1 cwt. nitrate soda, 3/4 " muriate of ammonia. | 4 | 18 1 1/4 | 6 1 0 |
| 16—3 cwt. dissolved bones. | 5 | 0 0 1/4 | 6 6 6 |
| 17—3 " balled bones. | 4 | 2 0 1/4 | 2 15 9 |
| 18—3 " raw bone meal. | 4 | 7 0 | 3 15 6 |

In the first set, for three years, it will be seen, the greatest bulk of hay for the whole period was obtained by means of two dressings (in 1886 and 1888) of the manures applied to Plot 6; but as these cost more than those applied to Plot 4, the latter gave the greatest profit. In the second set, for two years, the best result in both weight of hay and profit, were secured by the use of one dressing of 3 cwt. of dissolved bones. It is very satisfactory to find that phosphatic manures have given the best results. In the year of manuring, manures containing a great deal of nitrogen, such as nitrate of soda and sulphate of ammonia, usually force the greatest bulk of grass; but their effect is not lasting, and in the following year there is likely to be less grass than where no manure was applied. Besides, they deteriorate pasture by causing the coarse grasses to grow profusely, so as to smother the clovers and other plants of fine quality. On the other hand the phosphatic manures often produce the greatest effect in the year succeeding that of their application, and they stimulate the growth of the clovers.

THE CROPS OF LAST HARVEST.

The complete Agricultural Produce Statistics for 1888 were issued the other day by the Agricultural Department. As I gave the areas of the several crops in the FARMER'S ADVOCATE

for January, it is not necessary to repeat them, but it will suffice to give the following table, in which I have compared the yield per acre in 1888 with the official "ordinary average," and with the average for the period during which the official returns have been collected:—

YIELD OF CROPS IN GREAT BRITAIN.

| Crops. | Over or Under in 1888. | | Compared with five yrs. Ave. | |
|-----------------------------|------------------------|-------------------------|------------------------------|----------|
| | Ordinary average. | Five Yrs. 1888 average. | Compared with five yrs. Ave. | Average. |
| Wheat. | Bush. 23.80 | Bush. 23.05 | -0.75 | -0.24 |
| Barley. | Bush. 32.02 | Bush. 32.34 | +0.32 | +1.80 |
| Oats. | Bush. 30.02 | Bush. 29.24 | -0.78 | -1.08 |
| Beans. | Tons. 30.98 | Tons. 29.68 | -1.30 | +3.74 |
| Peas. | Tons. 23.48 | Tons. 23.87 | +0.39 | +0.34 |
| Potatoes. | Tons. 6.11 | Tons. 5.94 | -0.17 | -0.74 |
| Turnips. | Tons. 19.71 | Tons. 17.29 | -2.42 | +0.16 |
| Hay from clover, etc. | Tons. 17.11 | Tons. 17.27 | +0.16 | +0.02 |
| Hay from permanent pasture. | Tons. 1.47 | Tons. 1.40 | -0.07 | +0.18 |
| Hops. | Cwts. 1.28 | Cwts. 1.41 | +0.13 | +0.18 |
| Three years' average. | Cwts. 7.84 | Cwts. 4.81 | -3.03 | +2.74 |
| Four years' average. | Cwts. 7.84 | Cwts. 4.81 | -3.03 | +2.74 |

It will be seen that the comparison shown in the last column is much more favorable to the harvest of 1888 than that shown in the last column but one. In other words, compared with the mean of the returns obtained up to the present time, seven out of the eleven crops show a surplus, instead of only one as compared with the "ordinary average." The explanation may be either that the ordinary average is set too high for some crops, or that the harvests of the period during which the official statistics have been obtained have been, as a whole, below the true standard in productiveness. In Ireland the harvest was much better than in Great Britain, several of the crops being an average.

NEW SEED WHEATS.

Having watched with great interest the experiments in the artificial crossing of wheats carried on for six years by Messrs. Carter & Co., of High Holborn, London, I am glad to see that they intend to offer some of their selections for sale next autumn. Year after year I have carefully examined these new cross-bred wheats, and have been delighted with the appearance of some of them. That they are genuine crosses there is ample evidence to prove, the dissimilar characteristics of the male and female parents being often combined in an unmistakable manner. What pleased me most, with a view to their value for Canada, and especially for Manitoba and the North-west, were some new spring wheats. Last harvest two new varieties sown as late as the 12th of April—very late for this country, where March is considered quite late enough for spring wheat—ripened only a few days after the crops sown in autumn, and the heads were very fine, while the grain was of a goodly size and plump in form. Knowing the vast importance of wheat that will come to harvest early, though sown late, especially for the coldest districts of Canada, I have taken a special interest in the particular varieties above referred to. It is solely with a view to the interests of my Canadian readers, and not at

all to those of Messrs. Carter, that I mention the subject. I see that at least eight sorts, one gallon of each, and the whole eleven if the harvest proves satisfactory, are offered for five guineas. The eleven selections are described as follows in Carter's catalogue:—Selection A.—Red wheat crossed with White wheat, stout straw, medium length. B.—Red wheat crossed with Amber wheat, long, stout and valuable straw. C.—Red wheat crossed with Bearded White wheat, stout straw, medium length. D.—Velvet Chaff White wheat crossed with White Club-headed Smooth-chaff wheat, long, stout, useful straw. E.—White wheat crossed with Bearded Amber wheat, long, valuable straw. F.—Amber wheat crossed with Red wheat, straw rather thin, medium length. G.—Square-headed, Smooth-chaff wheat crossed with Bearded Amber wheat, straw very stout and short; impossible to layer; resists a deluge of rain. H.—Woolly-chaffed, square-headed White wheat crossed with Red Square-headed wheat, long, valuable straw. I.—Bearded Red wheat crossed with Bearded Amber wheat; useful straw, good length. J.—Smooth-chaffed, Club-headed, Amber-brown wheat crossed with White wheat, straw rather thin, good length. K.—Woolly-chaffed, Square-headed White wheat crossed with Bearded Amber wheat, stout straw, good length.

Turning to the private notes I made when examining these wheats just before they were cut last harvest, I am able to give their parentage and the opinions I formed of them. My remarks, taken from my note-book, are put in inverted commas. In each case the wheat first named is the female parent:—

A.—Royal Prize, a red wheat, crossed with Challenge White. "Very fine, long ears," is the remark made in my note-book.

B.—Royal Prize, crossed with Enobled Red, a thick set variety. "Cross better than either parent."

C.—Golden Drop, a famous old English red wheat of fine quality, crossed with Mammoth White, an American bearded wheat, coarse and very prolific. "Tougher straw than Golden Drop, and bigger ears. Healthy." This one is spiked, but not bearded.

D.—Imperial White, rough-chaffed, crossed with Club-headed, a smooth-chaffed white wheat. "Very good."

E.—Chidham, a famous old English white variety, a great favorite with millers, crossed with American bearded Golden Grain. "Like Chidham, but spiked. Bigger than Chidham. Grain not so white. A useful sort."

F.—Telavera, one of the finest quality among English varieties, and the earliest to come to harvest, but liable to blight. A delicate wheat, crossed with Royal Prize, red. "Earliest of all. Earlier than Talavera and thicker set. Worth trying. This is one of the varieties I specially recommend for Canada. Talavera is one of the few sorts sown here in the spring. The progeny appears to be one of the best varieties for sowing in the spring for early harvesting. It is much hardier and healthier than Talavera."

G.—Squarehead, a prolific, stiff-strawed, red wheat, with white chaff, crossed with Bearded American Mammoth White. "Shortest wheat of all—yet neither parent short. Very thick-set ears and strong straw."

H.—Fill-measure, white, crossed with a white Squarehead. "Ears larger than Squarehead. Useful."

I.—April wheat, the variety sown here latest in the spring, and yet fairly early to harvest; crossed with American Golden Grain—both bearded wheats. "One of the best of all for spring sowing, and for colonies. Long ears, well set, bearded." This is another variety I should like to see tried in Manitoba.

J.—Club-headed, red, crossed with Hunter's White. "Ears thin and long. Don't care for it."

K.—Fill-measure, white, crossed with American Bearded Mammoth White. "Thick-set, stiff-strawed." This new variety is called "Bird-proof," because it is covered with short prickly arms, supposed to be unpleasant for the sparrows. Messrs. Carter think very highly of this sort, and have already grown it very extensively on their farms.

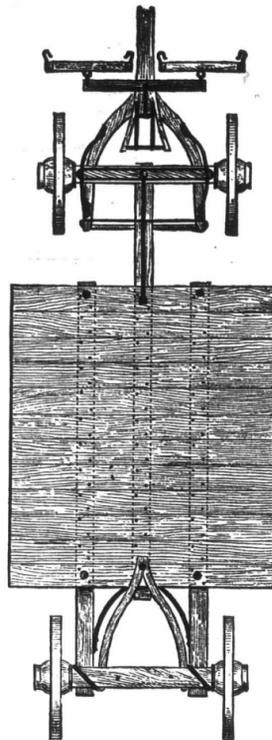
Of course, the people who buy these high-priced new varieties will dibble the seed in carefully, one grain in a hole, so as to make the most of them, and will sow the produce again to raise stock for selling for seed. The cost of producing the new varieties has been very great, and the producers, I should say, will never be directly repaid by the sale of them, or at any rate not for years to come. The stocks are very small, and probably they will be quickly bought up. That is why I mention the subject in good time. This is the first description of these particular selections that has been written.

How to Fill a Silo.

BY PROF. JAS. W. ROBERTSON, ONTARIO AGRICULTURAL COLLEGE, GUELPH.

ARTICLE III.

The tools, implements and conveniences should, as far as possible, be adapted to the cheap and easy performance of the work; this implies the making the best use of the machinery already owned on the farm. Reference has been made



to the cutting of the corn in the field. I prefer and recommend a common corn knife or an old-fashioned sickle. A strong reaper may do the work by horse power, but if the crop be heavy and the corn ten to twelve feet high, the rakes will not clean the board, and stalks will be dragged behind.

For a hauling convenience, an ordinary wagon may be made to serve by putting the hind wheels from a front axle on the hind axle. A truck or a wagon with low wheels and a large, flat platform may be used. In either of these cases, by trailing a gangway behind, the persons loading the fodder may carry it up in armfuls. These are not the best conveniences, nor do I recommend that way of loading. In the way now to be described, the handiest kind of a truck can be provided. I am indebted for part of the suggestions to my trip this winter into Wisconsin. Take three strong pieces of timber six inches by six inches, and each twelve feet long. Strong

poles will serve the purpose if flattened on one side. Place them sixteen inches apart, centre to centre. Let the middle piece extend three feet beyond the two outside ones. Then three feet from the other ends of the two outside pieces, bolt on securely a two-inch plank, eight feet long, across the three twelve feet pieces. Continue a covering of planks, each securely bolted, until the platform extends to the end of the two outside pieces, leaving the middle piece extending. Then, by removing the reach from a common farm wagon, the platform so constructed can be attached to the under side of the axles. The middle piece will serve the double purpose of a reach and the front support. It can best be attached to the front axle by a long king bolt passing down through it. A large flat washer and a screw nut with a key under it will make a strong, suitable and safe connection. A brace passing back from the top of the king bolt to the front plank of the platform will improve the attachment. The two pieces extending beyond the platform at the other end are to be attached to the hind axle on the under side. Two clamps passing over the axle, with a bar and nuts beneath the six by six pieces, will fasten it securely to the under side. The hounds can be used as a brace by attaching the end of it to the end of the middle piece through the hinder plank of the platform. I subjoin a rough sketch to make my description more easily understood.

The corn stalks may be filled into the silo without cutting, but more labor is involved, and the work of emptying for feeding is rendered doubly difficult. Any strong cutter, with capacity for a large quantity of cutting per day, will serve the purpose. Carriers should be attached unless the cutter stands on a level with the top of the silo, which, ordinarily, is neither practicable nor desirable. Horse power or engine may be used.

Then, everything in the way of machinery equipment being ready, the filling may be commenced. From six inches to a foot of cut or uncut straw should be placed evenly over the bottom of the silo. Every farmer with a large corn crop should provide two of the carrying platforms already described. If the field be near the silo one team will be enough for hauling. The stalks can be loaded most economically direct from the root. If the crop be as ripe as it should be, wilting will be unnecessary. The person cutting the corn might as well throw it on the low platform as on the ground, and thus avoid the double handling. The teamster may meanwhile be loading the corn, which would be laid in armfuls on the ground during his absence from the field with the previous load.

At the silo, the corn can be fed into the cutter from the same platform. The horses may be changed from the loaded to the empty wagon. At the cutting box two men will be required. A two-inch cut is as good as an inch and a-half, and both are better than one inch or less.

During the filling care should be taken to occasionally level the heavier parts of the stalks out against the sides of the silo. The filling may proceed every day or every second or third day as may be found convenient. In either case the contents should be tramped around the sides and in the corners just before the addition of a new layer. When the silo is full, after the lapse of two days, the sides and corners should be again thoroughly tramped and afterward covered with a layer from two to three feet thick of any kind of straw, cut or uncut. It should be laid on close, and for that reason cut straw is rather preferable. It should also be closely tucked around the sides and into the corners. The silage may be thus left to cure and to keep until wanted, be that time four weeks or ten months.

Riding Plows.

We have thought a statement of our observations on the introduction of sulky and riding plows among our Canadian farmers during the past few years might be valuable to some of our readers.

We note that the latest and most successful patterns have been constructed with more than two wheels, and are, therefore, *riding*, and not *sulky* plows, two wheels indicating a sulky. The designs that, to our mind, are destined to give the best results, are those that have the *plow proper* balanced on the wheels, especially when in work, so that the carriage cannot ride on the plow.

This, we believe, should be adopted as a guiding principle in the selection of a riding plow, as it will undoubtedly give the best results in draft, steady running, ease of handling, and the harder the plowing the greater the contrast in favor of this principle of construction.

This has been best carried out in three-wheel riding plows, with the plow beam balanced over an axle, and in no case under, or independent of an axle. We have heard of very few, as yet,

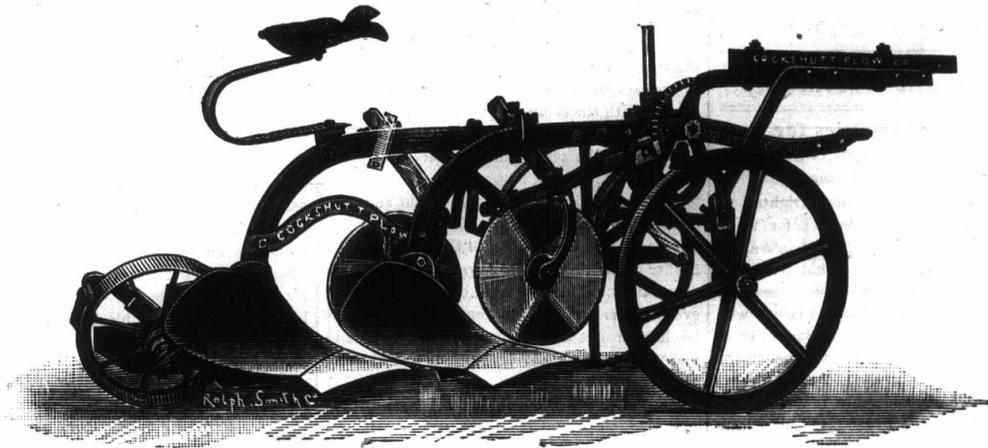
PRIZE ESSAY.**Potato Culture.**

BY DAVID GARVEY.

In order to obtain the best results in the culture of the potato, the preparation of the land should be begun the previous fall. Without enumerating all the crops which it is best to follow with potatoes, I will give the one which suits me best, and which every farmer has, or ought to have, at his command in the fall of the year, viz., a clover sod, or, rather, a second crop of clover ready to plow down. - I prefer to plow down about the time the clover would be cut for seed. Plow deep, and endeavor to bury the clover well beneath the surface. In the spring the ground should be again plowed, this time shallow, the object of which is merely to fit the land to receive the seed. If possible avoid turning up the bulk of the clover turned under. Cultivate and harrow until the ground is in proper trim, and mark furrows with the plow three feet apart, going about as deep as the second plowing. This furrowing may be done with an ordinary plow, but with a double mould-board plow

ing seem to indicate that the largest yield is obtained by planting large or medium-sized whole potatoes. This method would require a greater amount of seed, but if the increase in yield is greater than the extra amount of seed required, the difference is gain. Farmers should experiment on a small scale with these things in order to see if they are superior to systems which have given good results before.

Just before the plants are up, harrow the ground to level down the soil and keep down the weeds till the first cultivating. Of the two methods, flat and hill culture, I prefer the former, believing that it possesses advantages over the other. 1. In hill culture, when the dirt is heaped on the vines, it causes side shoots to strike out, and then if a drought occurs the tubers up in the hill suffer for want of moisture, and even light showers will not affect them, the result being a lot of small potatoes. But some will say there is an advantage in a wet season, as there will be less danger of rotting; but if the land is well drained the conditions will be about the same in both cases. In undrained land the advantage may be slightly for the hill culture.



J. G. C. TWO-FURROW RIDING PLOW.

that have been sold with more than a single plow attached. But double plows built on these principles are claimed by the users to have great advantages in saving labor and power required to accomplish a given amount of plowing. For instance, they claim that "in the hardest plowing the advantage in draft is more perceptible in a riding plow over a walking plow." That advantage must necessarily double in the use of a two-furrow riding plow, and this will follow in every advantage gained in the use of a single-furrow riding plow; and, therefore, we believe double riding plows will be most profitable for practical use on large farms.

The cut presented on this page shows the new two-furrow J. G. C. riding plow, as manufactured by the Cockshutt Plow Company, of Brantford, which we commend to our readers, as to our mind a most practical implement.

Mr. T. G. Powell said that with warm stables and sweet mature ensilage, winter butter can be produced as cheaply as summer butter. His feeding ration is forty pounds ensilage, six of clover hay, three quarts of bran, three quarts of wheat middlings. All this daily. He prefers a wooden silo to one of harder material, with air space between the outside and inside boards and the walls made air tight with tarred paper. Such a silo costs at the outside \$1.50 for each ton of capacity.

the work can be done much better and quicker.

My readers will perhaps think it strange that I have not given instructions as to when and in what way the manure should be applied; but although I am fully alive to the fact that to obtain large crops, manure in abundance and of good quality must be applied, yet if the land is moderately rich it will, with the crop of clover turned under, and thorough preparation and good after-cultivation, produce a good crop of potatoes without any manure. The intelligent farmer will of course use it if he has it, and in the way most suitable to his particular circumstances. If help is scarce it will be a saving of labor, in the rush of spring work, to haul the manure to the field on the sleigh and spread on the snow, but I would prefer to draw and spread just before the spring plowing. Either of these methods, I think, is better than to apply the manure in the drill, as the after effects are more marked, and the potatoes are of better quality and less liable to rot in a wet season. Having made the drills, drop the cuts 12 inches apart and cover with the plow. The best and largest potatoes should be selected for seed, and in cutting throw aside the seed end and leave two or three eyes to each cut. Recent experiments with the different methods of cutting and plant

2. With the land prepared as above directed, the tubers in the hill will be farther removed from the fertilizer than if beneath a level surface.
3. In flat culture the cultivator can be kept going as long as it is thought necessary, whereas in hill culture work with the cultivator must be stopped as soon as the plants are hilled up, and if any weeds spring up afterwards they must either be left alone or removed by hand, which latter course involves considerable labor, and at a time when it can be least afforded.

When the young bugs commence to get lively, apply Paris green. One tablespoonful of the poison, mixed with a pail of plaster of Paris and applied when the dew is on, I have found to be the cheapest and most effective mode of destroying these pests. You can get over more ground with the sprinkling can, but it takes more poison; nor is it as evenly distributed as with the plaster, because, when the water gets low the poison, having settled to the bottom, makes the latter part of the application stronger than necessary. In the course of a week or ten days a second army of young bugs will be hatched, and it will be necessary to apply the poison again. This will generally be sufficient to keep them in check for that season, but sometimes it will be necessary to go over the work a third time.

The work of digging can be best done with one of the improved potato diggers, but if the amount of land under potatoes is not sufficient to warrant the purchase of one of these, they may be turned out with the plow and the ground well harrowed afterwards, to turn up any potatoes which the plow has covered. Sort out the small potatoes to be fed to the stock, and store the rest in some outbuilding which is dark and moderately cool, until the time comes for storing away for winter.

Of the different varieties, I have not found any to surpass the Beauty of Hebron for general excellence. It is a good yielder, of first-class quality, and a good keeper. The Pearl of Savoy and Early Telephone are also good yielders, and fully equal to the Hebron in flavor, but not quite equal to it in keeping qualities. The Green Mountain is the best potato for long keeping, and every farmer should have some of these to keep up the supply till the next year's crop is ready. For those who raise new potatoes for market I would recommend the Morning Star. The White Elephant is an immense yielder, and is no doubt the most profitable kind to grow for stock.

In writing this article I have endeavored to give directions which could be followed by the man of small means as well as by the man who has the means to do as he would wish. I have not assumed the most favorable conditions to be present, but my aim has been to show in what way the farmer can best take advantage of the means at his command to secure a good crop.

Garden and Orchard.

Horticultural Specialties for the Canadian Farmer.

(Continued from last issue.)

But does all this discouragement frighten us out of our business? By no means; for while it is unwise to advise everyone to rush into apple culture for profit, the specialist would be a fool who would give up because of one or two seasons' failure. And I think also, that the farmer who has a good orchard of fine varieties, just in bearing condition, who is disgusted because of the difficulties and low price of apples, and who cuts down such an orchard, and grubs it out for the purpose of devoting the ground to some farm crop, is assuredly "pennywise and pound foolish." He is throwing away invested capital, and reducing the value of that land from \$100 to \$200 per acre. Why an apple orchard of twenty years standing, of productive varieties, will surely average one hundred barrels per annum, and most farmers can sell these at home at \$1 per barrel. For the fruit what else could yield that sum? This is not more than an acre should produce, when you consider the time and expense that has been put upon that orchard to bring it to its present condition.

But many will say, "my apple orchard does not yield that amount of fruit." No, probably not, unless you are making it a speciality. Nothing pays, nowadays, without special care. An apple orchard neglected certainly does not pay. How could it yield crop after crop without culture, without manure, and without receiving in place of judicious pruning, an annual butchering with the saw and the axe. Would any crop pay under similar treatment?

The apple needs potash. It is year after year extracting this element from the ground, and, if you do not supply, and other fertilizers besides, such as phosphoric acid, nitrates, and lime, according to the requirements of the soil, the orchard will soon cease to bear fruit in any quantity, or of any degree of excellence. One half of our Canadian orchards are starving to

death. No farmer would expect a good crop of wheat or potatoes without the use of manure; why then does he expect fine apples without it, and cut down his trees because, neglected, they will not do what no other crop could do? Do you advise cultivating an apple orchard? asks some one. You may as well ask a farmer: "Do you advise cultivating your corn crop?" Unless your orchard is vigorous and presents a healthy, dark-green foliage, by all means work it up by ploughing the ground shallow, so as to disturb the roots as little as possible, sow it to buckwheat, or keep the ground cultivated one way until you have developed a good healthy growth, then you may seed down for a few years at a time.

The orchard must have special care, and if a man has not time to give it special care, he may as well be rid of it. Insects must be fought. Large numbers of orchards in this Niagara peninsula are infested with the oyster-shell bark louse, an insect so small that it passes unnoticed; it hides itself under its shell, and there sucks the health and fruitfulness out of the trees. The writer has experimented with soap suds, kerosene, caustic soda and washing soda. The latter is the most economical. A strong solution may be made in a barrel, and about the 1st of June the trunks and about as much more of the trees as appears to be affected, must be thoroughly washed with the solution, at which time the insects are almost microscopic in size, not yet covered by the scale, and are very easily destroyed.

The codling moth must be fought and conquered with Paris green, else this insect will destroy one-third of the finest of the crop; and the canker worm may be destroyed with the same preparation. The mice must be guarded against every fall and winter, the tent caterpillar must be hunted out and diligently destroyed, and many other important precautions thoughtfully attended to.

And after all, when at last a bountiful crop rewards such patient labor, the same careful attention must be paid to the matter of gathering and marketing, or else all previous industry will lose its reward. Eternal vigilance is the price of success. It pays to use a good ladder and a swing-handle basket with a hook attached, and to gather every good apple with a gentle grasp of the hand, taking care that not even finger marks shall show upon the fruit when housed. It pays to spend time enough over the packing to look at every single apple, and to properly assort them into at least three grades. It pays to pack carefully the finest in clean, new barrels, lining head and tail end with white paper; and then the grower may hopefully consign his crop to some honorable and responsible salesman. But failing in all this careful attention, is it any wonder that many of our farmers who find poor sale for the scrubby products of an uncared-for orchard, should declare apple culture unprofitable?

I should include, among my remarks on apple culture, the importance of a judicious selection of varieties. The Early Harvest, the Fall Pippin, the Rambo and the Snow are subject to the spot, and the Spitzenburg no longer produce a crop with any certainty; therefore discard these varieties and plant Yellow Transparent, Red Astrachan, Duchess of Oldenburgh, Gravenstein, Cranberry Pippin, Baldwin, Spy, King, Roxbury and Golden Russets. Such varieties as these

will pay for the most careful attention, and not prove a source of disappointment, as the other varieties have done of late in so many instances.

Strawberry culture frequently pays the agriculturist, but not unless he has the time and the means to give it more than ordinary attention. Many a man has already more irons in the fire than he can attend to, and he will surely get burned with one of them, if not with several. But, given the conditions necessary, and success will surely follow. They are such as: a good, rich, loamy soil, plenty of nitrogenous manure from the barnyard in the autumn. The late Mr. E. P. Roe advised 60 tons per acre; a mulch of straw in December, as soon as the ground is frozen; constant cultivation all summer, both before and after fruiting season, and careful gathering and marketing. Now, if any agriculturist is prepared to make a speciality of strawberry culture in this way, let him try the Crescent, the Wilson and the Sharpless, and go to work with confidence, and he will succeed. Four and five thousand quarts per acre are reported as among the possibilities, especially with Crescents fertilized with Captain Jack.

The same advice may be given with reference to the culture of raspberries and blackberries. Grown as many people grow them, without sufficient cultivation, without manure, without pruning, they cost more than they come to. Every speciality which the agriculturist undertakes beyond what he has time, money, and knowledge to care for in the best manner, will prove an eyesore to him, and a certain loss. The berry patch, of which one-half the produce is thistles, and which is impassable on account of numerous unpruned, straggling branches, is a disgrace; but our experience is, that where a plantation of Cuthbert red, or Gregg black raspberries, or Kittatinny blackberries, has received proper treatment and attention, there is money in them, even at the low prices lately prevailing. The day is past when we could get from 17 to 23 cents per quart for our large Kittatinny berries, and from 15 to 20 cents for red raspberries. A fortune might have been made out of them in those days; but even now good returns may be counted upon by giving them careful and thorough culture.

A fine speciality in the horticultural line is the currant. "Bah!" says some one, "the worm! It will destroy the bushes." My friend, that is one reason for planting them freely; you will have the less competition. Plant an acre of such varieties as the Cherry and Fay's Prolific, on good, rich clay loam, well drained; give them the best of cultivation and manure as you would for a good crop of potatoes; prune back in spring one-third of the last year's growth to induce branching and to keep the stems stocky; give a good sprinkling of hebeore and water whenever the currant worm appears; and ship your crop to market in twelve-quart baskets, or strawberry crates, and you will succeed.

In short, our country has advanced beyond the time when it pays to be a jack-of-all-trades. Nowadays it is classed in the list of big blunders to be "Jack of all trades and master of none." Our agricultural friends must now be specialists. They must, in short, be professionals in the lines they pursue. Division of labor must be more and more the habit of the age, among our farmers. The rule must be, not to follow in the lines of one's neighbor, and do just what he does, so that when one man devotes his atten-

tion to some specialty every other man in the section rushes into the same thing, until there is a surplus of that article, and no profit in it; but, on the other hand, to choose each a separate line of his own and to persevere in it. Let him make a study of his subject, reading those books and magazines which treat of it, talking with those who have experience, and in this way let him pursue with confidence his chosen line of work.

Thus, I am convinced, shall days of greater prosperity dawn upon our agricultural community, and less hardship result to our country at large from a general failure of any one department of industry.

Planting Apples.

At a late meeting of the Dominion Farmers' Council, Mr. A. McD. Allan, of Goderich, President of the Ontario Fruit Growers' Association, gave a short address. In referring to marketing fruit, he said: It is necessary to go right back to the grower to begin. He thought the best time to sell any article was when it was first ready for market. And that if farmers would grow the right varieties, they would receive better prices. And that while formerly the English market took any variety that was good in appearance, they now want a really good apple. And while some shippers have lost money the past season, those who had handled the right varieties, packed and culled properly, had made money. He made it a point to pay what apples were really worth, and condemned the practice common with buyers of going to a man and paying so much per barrel for his apples in bulk, as in that case, he aims to produce quantity regardless of quality.

He, as a shipper, found when he could pay \$1.50 per barrel for such apples as King Tomkins, Ribston Pippin and Bleinheim Pippin, some other varieties were not worth more than \$1. He found the Greening coming up in value in the English market. He thought it necessary to exercise great care in recommending what varieties to plant, as some varieties succeeded best in one section and others in another, perhaps but a short distance from it. He claimed that liberal treatment of the orchard in the matter of manures was essential to success. He also recommended spraying with Paris green for the codling moth. Our apple market suffers severely from bad handling of the apples, and from the fact, that Canadian apples are sold by auction on the Liverpool market by the commission men.

When in Britain three years ago, in charge of the Canadian exhibit at the Colonial Exhibition, he handled about one hundred and twenty thousand barrels of apples, and averaged twenty-one shillings per barrel, while those sold by commission houses only made an average return of thirteen shillings. In answer to a question, he stated that Canada had comparatively a monopoly of the production of first class apples, and that for this reason there was little or no danger of a glut in the market. He dwelt largely on the necessity of great care in packing and labeling. As he had by this means been able to sell all he had shipped for the past five years, free on board the cars here, and had drawn his money at the time of shipment. He preferred the American Golden Russett where it would do well, (and it is very hardy). At the spring season it brings better prices than any other variety, and that it was folly to plant many varieties, as too many farmers have done in the past. He thought the new apple called Enormous, of which we were now hearing such good reports, was simply the Alexander with a new name. This has been done frequently with this variety, and as it is unusually handsome, the tree sells readily from the colored plates, although only a fall apple.

The Codling Moth.

One of the greatest obstacles to be overcome by the successful orchardist, is the codling moth. Various are the remedies suggested from time to time, but few are of much value. An old remedy (supposed), was to hang a lantern under the trees in the night in the month of June, and place immediately under it a tub of water. This will indeed catch a great many moths, but most of them will be found useful to man, while the codling moth, which is very secretive in its habits, will escape.

At a recent meeting of the East Middlesex Farmers' Institute, instances were given where orchards had been kept free from the ravages of this insect by keeping hogs in them, while orchards on farms immediately adjoining had very few apples that were not stung. Kerosene emulsions have been recommended, but their efficiency depends largely upon the skill and experience brought to bear in their preparation, and they are also comparatively expensive. London purple has been used to a considerable extent, but with very uncertain results, as this article, instead of being a preparation for a special purpose, is a by-product from the manufacture of other articles. Arsenic is the chief constituent, and is sometimes present in such quantities as to destroy the foliage if a formula is followed, which, with another sample, might not prove effective in the destruction of the moth. It would seem, therefore, that Paris green is the only reliable remedy of known strength. The easiest and most effective method of applying is with a force pump. Place a strong oak barrel in a one horse wagon, fasten securely to the head a force pump, run the feed pipe through a hole bored in the head, of just sufficient diameter for the pipe to fill it, down to within three-quarters of an inch of the bottom of the barrel. Screw the pump securely to the head, bore a hole two inches in diameter or a little larger in which to pour the liquid. Use three ounces of Paris green to fifty gallons of water. Mix part of the Paris green in a pail of water until thoroughly mixed, pour into the barrel and mix more in the same way until all is made. A stick should be inserted in the hole in the top of the barrel, and the liquid stirred frequently to keep the Paris green in suspension. Drive on each side a row of trees and the work will be quite readily accomplished. The proper time to do this is when the blossoms are falling. If done when the blossoms are at perfection, the pollen will be injured. One barrel of the solution will spray from twenty-five to thirty trees. One application will be sufficient, if it is not followed too soon by rain. In that case, another application will be necessary at once. At the New York Experimental Station, some of the trees were sprayed on the 3rd, 5th, and again on the 17th of June. In this instance, thirteen per cent. were wormy, while thirty-five per cent. of the fruit of those not thus treated was wormy. The demand for Paris green is so great, that it is often adulterated; this is easily discovered by placing as much as will lay on one-fourth of an inch of the end of a table knife, in an ounce bottle of ammonia. If the Paris Green is pure it will be entirely dissolved, if not, there will remain a white powder. There are various kinds of nozzles for spraying trees, the best we have seen throws a stream much the shape of a new moon, and as it leaves the nozzle spreads into a complete spray or mist. Mr. Dempsey, of P. E. County, throws the patent nozzles away, and with his finger on the end of the plain nozzle, causes the new moon shape before mentioned.

What our Seedsmen Write Us.

Mr. Geo. Keith, 124 King street east, says that in the vicinity of Toronto, the Mammoth Long Red mangel, has given excellent results, and that among the Swede turnips, Scottish Champion has been found very satisfactory. The well-known stockmen, Messrs. J. & W. Russell, of Richmond Hill, won first prize with each of these varieties. We have a letter from Mr. Russell, which states these turnips to have yielded 1212 bushels per acre, and the mangels 1960 bushels per acre. Mr. John Isaac, of Markham, another well-known breeder, won second prize with a field of Scottish Champion. These figures and facts speak for themselves.

Mr. J. A. Simmers, 147 King street, Toronto, also writes us as follows:—Large White Vosges Carrot.—This variety, now thoroughly established in all sections of the country, is certainly the best carrot of a white field variety that we can recommend to the farmer who wants a good crop, and where is there a farmer that does not want the best crops, even in carrots. We say there is none, all want to procure the best, if not any more expensive than what is considered reasonable, therefore we claim for the White Vosges carrot all that can be desired. It is a vast improvement on the old Long White Belgian, which is its predecessor. The White Vosges grows about three quarters as long as the White Belgian, with broad shoulders tapering to a point, and yields quite as much weight to the acre, and more, we can safely say; besides it has the great advantage of growing under ground, and being very easily lifted in the fall, never breaking off near the root, like the older varieties. For feeding it is grand, it has a green top, and the seed is no different than the old White Belgian. We confidently recommend all progressive farmers to sow this variety henceforth. It does well on all carrot soils.

Golden Fleshed Tankard mangel, is justly called the "Dairyman's Favorite," it yields an immense crop, grows well above ground, and has a blunt root, which is a point largely in its favor. We introduced this variety last season, and made several interesting trials among prominent dairymen in Ontario, all such trials were amply convincing, to the fact that this variety would displace the old Mammoth Long varieties; besides, the flesh of this mangel is quite yellow and cuts yellow, not white like most yellow mangels. It also abounds in nutritious qualities, and for milk producing food for cattle ranks beyond comparison, it is also the best mangel for all soils. Be sure to sow this one when looking out your stocks for 1889.

J. H. Simmers' Selected Purple-top Swede Turnip.—This magnificent Swede is the result of judicious selection, it is the hardiest, most productive, and most nutritious variety in cultivation. It is a large purple-top, orange-yellow fleshed variety, in shape, slightly oblong, with a single tap root, free from coarseness of neck, and for uniformity of crop and keeping qualities, is superior to all other swedes. It produces a very heavy weight per acre, and keeps sound until very late in the spring; flesh is always sweet and rich in flavor. Adapted to heavy soils, a peculiarity with all the best swedes commonly grown among our agricultural friends. The quantity of seed required to seed an acre is two pounds, no more is necessary to produce a beautiful crop with these rare qualities, and we may add essential qualities to the successful growing of

swedes. We claim for this variety the first and foremost place on all farms where the turnip crop is successful, it pays to sow the right variety, and therefore candidly say, grow it in preference to any other, and success is inevitable.

The "Thorburn" Potato.—"Spuds," as they are called on the "Green Isle," require to be carefully thought about as to variety, if you want a good yield, but we want quality as well, and certainly "The Thorburn" fills the bill. From one peck of good sized potatoes cut into seed planting size, fifteen bushels were harvested last fall. "The Thorburn" potato is a self-seedling of the once famous Beauty of Hebron, it is earlier and more productive than its parent, and in quality fully equal to it, which, of itself is praiseworthy, it is a strong grower, and as a field crop, will yield at least a third more per acre. It grows wonderfully smooth and handsome, and what is most extraordinary, a hollow or unsound potato has not been seen. Another important claim we make for "The Thorburn" potato is, that a measured bushel will weigh from three to five pounds more than the same measure of any other variety, and yet it is not heavy in the sense of being soggy when cooked. It is dry and floury, with a compact and fine grain.

John S. Pearce & Co. say:—The M. S. S. corn, for fodder and ensilage, is the most popular and largely-sown variety of all the various kinds now before the public. The above firm introduced it into Canada in 1883, and the demand has rapidly grown; and to such an extent has it spread that they last year shipped this corn in large quantities into Quebec, and even as far as Nova Scotia and New Brunswick. This very large trade is due to the care with which the corn has been selected and handled by the firm. So careful and particular are they in this respect that not a car of it is shipped till it is carefully tested, and the growth must come up to 95 per cent. This is a most important point. Cheap corn, or any other cheap seed, is not desirable, and is dear in the end.

Sheep-tooth is another variety that has some very excellent points in its favor, among them the very small kernel, making a bushel of this corn equal in value for seeding, to 1½ bushels of the ordinary Southern corns.

For planting as a field crop, One-Hundred-Day corn is among the best in cultivation, very early, and a dry, hard, flinty, sound corn. Self-Husking is a good sort, but not so well known or thoroughly tested as the former. Longfellow is good, and the stalks particularly valuable for fodder, as they are not so pithy nor woody as some of the other flinty sorts.

Among the potatoes, we recommend the London, a new potato. The Daisy, Morning Star, Pearl of Savoy, Green Mountain, Rural New Yorker No. 2. We have also eight or ten other sorts.

Among our new varieties of vegetables, are the Wardwell bean (dwarf), the Warren cabbage, Paris Sugar lettuce, Carter's Lightning pea, the new Japanese Pie pumpkin, Mammoth Chili squash, Vine Peach, Celestial pepper, Holt's Mammoth sage, King of the Mammoth pumpkins.

According to Mathew Crawford in the Ohio Farmer, an extensive apple grower of Illinois, is said to plant only half as far apart as the trees should stand permanently, and then he brings three-fourths of them into bearing as soon as possible by girdling, letting them produce all they will until the permanent ones need the room. The girdled trees are then cut out and the others have all needed space for growth and productiveness.

Black Knot.

BY J. DEARNESS.

In March the writer had occasion to call on an intelligent farmer and found him engaged in trimming his orchard. A few plum trees and a considerable number of cherry trees had been heroically pruned for the purpose of cutting out the black-knot. These prunings with those of the apple trees, were all being collected in a pile to be burned—"some time in the spring." The practical purpose of this paper is to point out the danger of delay in kindling such a pile of prunings, so far at least as the black-knot is concerned.

The real nature of this fungus puzzled investigators for a long time. The too familiar cancerous excrescence that marks affected trees was at first, and by many people is even yet, supposed to be a gall produced by the sting or ovipositor of some insect. Strong support is afforded that belief by the fact that in the summer months

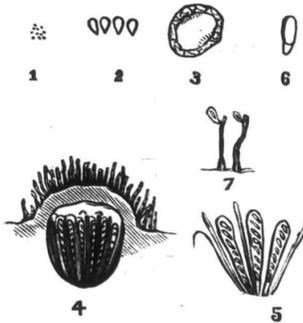


Fig. No. 1.—The spheres as they would appear to the naked eye if the surface on which they lie were transparent. One of these sphere dots is seen enlarged in No. 5.

No. 2.—The sphere magnified 60 diameters.

No. 3.—A cross section of a sphere magnified 300 diameters.

No. 4.—A ripened sphere (in January) still more enlarged, having the shell chipped off. The fragments of filaments that gave the knot its dark green, velvety appearance in the summer show where the summer spores were borne.

No. 5.—Sacs (asci) taken out of the sphere and greatly enlarged. Growing among these are the paraphyses, perhaps barren sacs.

No. 6.—A winter spore taken out of the sac. It is estimated that every square inch of the knot will, during the winter, ripen 1,000,000 of these spores.

No. 7.—Filaments bearing the summer spores (conidiospores).

almost every "knot" contains one or more larvae, generally of curculio. Its very suitability for the reception of eggs and development of larvae afforded an entomologist, Mr. B. D. Walsh, the opportunity of disproving the gall theory by breeding five distinct species of insect found in the knot, but not one of the species proved a gall-producing insect. He therefore concluded that black-knot must have some other than an insect origin. Another entomologist, Dr. Fitch, of the N. Y. State Agricultural Society, reached the same conclusion by a somewhat different chain of reasoning, the chief link in which was that in many cases, at certain seasons, no egg, larva, or trace of insect-work could be discovered. He arrived at the opinion that black-knot is a disease analogous to cancer in the human body. Although it is now over sixty years since the fungal nature of black-knot was discovered, the knowledge of the discovery does not seem to have reached half the people interested in it, and many of the experiments and attempts made to arrest the progress of the disease have been futile, because they have been directed towards a cause that did not exist.

The scientific name of black-knot is *Plowrightia morbosa* (Saccardo), although it is often referred to under the name, *Sphaeria morbosa*, given to it by a botanist named Schweinitz, who died in 1834. So far as I know neither he nor any subsequent investigator has discovered every circumstance connected with the life-history of this destructive fungus. What is known is interesting and instructive, and is partly stated hereafter.

Under the name fungi an immense number and variety of vegetable forms are included. Some of the common ones are known as yeast plant, black moulds, mildews, blights, blue moulds, rusts, smuts, puff balls, toad stools, mushrooms, etc., etc. Usually these have a kind of filamentous branching "root and stem" easily seen with the naked eye in the case of a white mould that grows on horse dung, and called the *mycelium*. This branching mycelium commonly sends up stalks, bearing the fruit with seeds called spores in a great variety of shapes, sometimes naked as in blue mould, but more frequently encased as in black-mould and smut. Some of the cases containing the spores are soft, some are leathery, and some as in black-knot are very hard.

Have you ever noticed a lot of little black things like millet or turnip seed on a twig, lying on the ground under a currant or other bush in the garden, or on a decaying carrot in a damp cellar or pit? These are fungi allied to similar but very much smaller little balls embedded thickly in the unsightly excrescences, which mar the branches of a plum or cherry tree smitten with black-knot. The spore is probably wind distributed, and by chance alights on a minute crack in the outer bark, or it may be in the axil of a leaf, and there germinates, sending its filamentous mycelium through the soft bark causing irritation, and producing an abnormal secretion of cellulose, which forms a nidus for the eggs of insects, a sugary food for the young larvae and a bed for the innumerable little microscopical balls, which hold the winter spores of the fungus. On, or rather, in the surface of the knot they are as thick, and to the naked eye no larger than the dots shown in Fig 1; although they are not so regularly distributed. Fig 2 shows what each one looks like when seen under a power of about 70 diameters. When treated in turn with a strong acid, as aqua regia, and then with a strong alkali, as caustic potash or ammonia, the shell of the little ball can be wholly or partly chipped off, revealing the little cupful of sacs each containing eight seeds or spores. I have counted as many as seventeen of these little seed sacs in one sphere, and then had not probably the half of them. Just as there are exactly eight spores in each sac, so there may be a uniform number of sacs (*asci*) in each sphere. It is an important fact that these spores do not ripen until late in the winter. In the fall the sac seems filled with granular or grumous protoplasm, which from January to March, separates into distinct spores as seen in the diagram, Fig. 6. When these spores get fully ripened they escape to the winds through a little pore in the sphere, and are carried hither and thither ready for spring operations, but perhaps not one in a million happens to fall and stay where it can germinate, and reproduce its life-history with its accompanying injury to its host. It would be mere repetition to emphasize here at any length, the reason for burning the affected branches before the little balls have time to distribute to every breeze their many safuls of spores.

[TO BE CONTINUED.]

The Farmer's Flower Garden.

BY GEO. J. GRIFFIN, OF JOHN S. PEARCE & CO.

What is more beautiful than a few flowers around the country house, but how few there are who take any interest in them. In cities, even the poorest class have their flower garden; in summer and in winter when the thermometer registers 20 below zero, windows full of flowers are to be seen by the passerby. Then, again, where land is expensive and gardens small, every foot is occupied with flowers or vegetables. Look at the contrast in the country, where there is abundance of land around the house nothing is to be seen in the shape of a flower, and even the lawn is sown with Timothy instead of lawn grass.

When visiting a gentleman in Delaware last summer, the first thing that attracted my attention was a row of beautiful Hollyhocks fully fifty feet long, next the lawn, the grass on which was so fine and velvety that it would do credit to Euclid Avenue. Here and there were diamonds and heart-shaped flower beds, in which were planted Phlox Drummondii, Asters, Coleus, Geraniums, Verbenas and many other sorts of beautiful and rare flowers, and upon entering the house the Clematis, Climbing Roses, Convolvulus, Sweet Peas, &c., were a beautiful sight to behold, and I venture to say the vegetable garden was the finest in the county. Said I, "How do you find time to attend to it all?" the answer was, "I do it before breakfast and after supper." Just think of a twelve mile drive and only one genuine flower garden to be seen. I admit that a person must have a natural love for flowers in order to make it a success, but at the same time love grows with culture, and I think every farmer should allot a piece of ground to his sons for the vegetable garden, and a suitable piece adjacent the house to his daughters for a flower garden. By so doing the growing youth would take a pride in it, and in a few years it would be no uncommon thing to see as fine flower gardens in the country as are to be found in the city. Just say: Now, John, there is a piece of land for you, and let me see what fine vegetables you can raise in it; and to your daughter the same for her flower garden. Try and get out of the old rut: cabbage and potatoes as vegetables, and old man and single poppies for flowers. Plant something more in fashion, they don't take up any more ground and the extra cost is very trifling.

In cities the taste for flowers was never so universal as it is at the present time, and why should our country residents not have as fine a flower garden as their city cousins; the outlay is no more for the one than the other.

I will endeavor to give a few hints, *re* the raising of flowers from seed, and the places most suitable for them. Hardy annuals (marked in catalogues H. A.), are generally sown in the open ground on the spot where they are to flower. Many of them, however, can be transplanted without material hindrance to their development. The sowing of the seed in the open ground varies according to the purpose they are to serve. If they are intended to fill up blanks in the flower border they are sown in the rows, which are suitable to the height they attain. The fine seeded and dwarf sorts are sown thinly in circles of about eight inches diameter so as to form afterwards a bush. Large seeded and tall-growing varieties are dibbled in a similar manner as beans, for instance. Cover the seeds with soil, according to the size of seeds, in the open

ground, or twice or three times their thickness; press down the soil and give them a thorough watering with a fine rose and do not allow the soil after this to get quite dry until the plants are well up. Begin sowing in the open ground about the first week in May. The average distance for dwarf varieties should be from four to six inches; for taller varieties, eight to twelve inches, and for the very tall sorts, eighteen to twenty-four inches. The following varieties refer to the above cultivation:—Abronia, Adonis, Agrostemma, Sweet Alyssum, Cactalia, Coreopsis, Candytuft, Clarkia, Gilia, Godetia Ipomea, Larkspur, Sweet Peas, Marvel of Peru, Mignonette, Nasturtium, Phlox Drummondii, Portulacca, and many others.

Half-hardy annuals (marked in catalogues H. A.), require greater warmth in order to germinate, and are therefore better sown under cover in frames, pans or boxes in the house, and when well-established are planted out when warm weather fairly sets in. Of this class the following are better sown as above:—Asters, Balsams, Cockscombs, Hollyhocks, Petunias, Pansies, Carnations, Verbenas and Stocks. While these varieties will succeed if sown in the open ground, they can be made to bloom much earlier if sown as directed.

Biennials require two seasons for their full development. In the first year these seed germinates, the plant gets more and more developed, stands over the winter, flowers in the second year, ripens its seed, and, in most cases, dies off, roots and all, in autumn. Snapdragon, Forget-Me-Nots, Pinks, belong to this class; many of them flower the first year if early sown, pansies, for instance; all such are marked in catalogue.

Perennials, which last for years, include shrubs and bushes as well as Ampelopsis Veitchii (Boston Ivy), Aquilegia, Double Daisy, Bignonia (Trumpet Creeper), Clematis, Cobæa Scandens, Cowslip, Delphinium, Polyanthus, Perennial Phlox, Sweet William and others. Their roots retain their vitality for a number of years. The stems generally come up from the roots in spring, they flower, ripen their seed, die mostly down to the ground in autumn, and renew their course again the year after. The cultivation of biennials and perennials differ only in so far, that the sowing of the former must be repeated annually, otherwise the treatment of both is the same. As a rule they are sown in June or July, in seed pans or in cool frames, though some may be sown in a sunny spot in the open ground. They are thinned out and aired freely, so that the young plants may grow strong, and afterwards planted pretty close, four to six inches apart in beds to stand over the winter. In spring the plants of biennials are planted with the earthball when they are to flower; perennials, however, remain in their beds to grow on still further. The spring flowering sorts of these are planted next autumn, the summer and autumn flowering sorts, however, not till the spring after. Shrubs do not stand being transplanted every year, they do not flower well if this be done, for this reason they are the most suitable plants for garden, we mean borders, which generally stretch along the walks.

If the border has a hedge in the background, plants so arranged that the tallest growing varieties stand behind and the smallest in front of the border, so as to slope down roof-like from the back of the border toward to walk. But if the border is open so as to be seen from all sides,

then the tallest growing varieties should be planted in the middle of the bed, and the lower ones so as to slope down on both sides. The distance which shrubs should be planted from each other averages from 20 to 24 inches. Regard must be had in planting, not only to their height but also to their time of flowering, and to Coleous so that a continuous bloom may be had all the summer through, any blanks between the shrubs are filled up with biennials and annuals.

Ornamental and Profitable Tree-planting.BY MR. M. PETTIT, WINONA, ONT.
(Continued from last month.)

The inauguration of Arbor Day is a step in the right direction, and if every man in this country would on Arbor Day plant from one to ten trees every year for the next twenty years, there would be a very great difference in the appearance of the country, and consequently an increase in the value of the property let it be where it will. If you beautify a piece of land by tree-planting you increase its value. We see proof of this on many farms, and yet but few farmers are alive to the necessity of tree-planting. Some may say it is a long time to wait for trees to grow. Not so long. Mr. Geo. Leslie, of Toronto, a few years ago built a large packing building of timber grown on the ground, the seed of which was sown by himself only fifteen years before, some of the timbers being large enough to use for barn building. He has also cut a quantity of timber into cord wood every year, thus setting an example to be followed by all who are interested in the prosperity of our country, by showing what can be done in a short time in the way of timber raising. It is also important that we should beautify our homes with trees, shrubs and flowers. Many men and women begin life with the very best ideas of home and its surroundings, and also with such an immense amount of patience that they are willing to delay beautifying the home until they can make money. This is a fatal mistake, and is more especially true of farmers than any other class of people; consequently in driving through the country there are to be seen many places with a peculiarly lonesome, homeless expression caused by the absence of foliage. Many of these homes could be crowned with trees, fruits and flowers, if care was given to the work. The question of time is one of much consideration in this matter of home-making with the farmer. But if we spend the precious hours in idleness or useless work we have taken our choice and must accept the result. Hundreds of homes tell us most unmistakably what their owners have done with their time.

Our homes are the nurseries of our children, their characters are formed there, and when they go from us to their life work the world receives the product of our homes.

We have a national pride in our growing industries, our machinery and our manufactures. Let us remember that the best production of any country is its people. It is a misfortune for children to live in a rural home where trees, fruits and flowers are not grown in abundance. They have not the refining influence that comes from the daily care and culture of the beauties of nature, nor the love for the beautiful which is a safeguard through life from evil. We, as farmers, should consider these things, and remember that the whole of life's work is not to acquire broad acres and large bank accounts. Another neglect is our school yards. In

driving through our country how many bleak, barren, desolate school yards do we see looking more fit for a habitation for sheep than for our children, when at a trifling expense they could be shaded and sheltered, and made an ornament to the neighborhood.

In my efforts to urge upon you the necessity of tree-planting I have not taken up the practical part of it, knowing that there are so many horticultural and agricultural journals distributed throughout the land, that any person who has the desire to plant can easily gain the required information. However, you will always find it safe to plant whatever you find growing in your own immediate neighborhood and on similar soil.

The Cultivation and Pruning of Small Fruits.

BY G. C. CASTON.

As the season has now arrived when the garden requires attention, a few hints on the above subject may prove interesting to those who have not had much experience, or who are new beginners in fruit culture. First, to begin with strawberries. I would advise any farmer who intends to grow this kind of fruits, to grow them in matted rows, for then he can work them with a horse and cultivator. I have often noticed that when strawberries are planted in a square patch in the garden they are nearly always planted too close, and in a short time they get into a hopeless tangle, so that you cannot weed them or cultivate them; and then they generally give them up and say: "It's no use trying to grow strawberries." If you only wish to put in 200 plants, plant them in rows three and a-half feet apart, and the plants about 12 inches apart in the rows. Then allow the runners to set new plants till the rows are set thick with plants to about 12 or 14 inches in width. Set your cultivator just wide enough to keep the rows the proper width. (The narrower the rows are kept the larger the berries will be; 12 inches will be found to be about right.) You need never cut any runners; the cultivator will do that. After the vines have fruited, run the cultivator between the rows once or twice a week all summer. This, with a little hand weeding to remove any clover or weeds that spring up among the plants, will be all that will be required; and it will be found that it is not such a hard task to raise fine berries, and plenty of them, as most people imagine.

Next, as to raspberries. Plant in rows five feet apart, and the plants three feet apart in the row. This will be found about right for both Reds and Black Caps. In starting a young plantation, when the canes have reached a height of 30 inches stop them (pinch off the tops). This will cause them to grow stout and send out side shoots. These must be pinched off also when they reach the top of the parent stem; none of them should be more than fifteen inches in length. Allow about eight or ten canes in each hill, and keep the ground between the rows clean and free from suckers and weeds. Remove the old wood in the fall, after the leaves have fallen, and always allow enough of new canes to grow each year to replace the old ones which are cut out, as it is the new canes that come up this summer that will bear next year's fruit. Fig. 1 shows a hill or bunch of canes, properly pruned, and Fig. 2 shows a hill that has been neglected and left to take care of itself. Black Caps and Thimble-berries will require the same treatment as the Reds, and the same width of rows will do, viz., five feet apart and three feet apart in the rows.

With respect to currants and gooseberries, there are two systems of pruning. One is called the tree system, as shown at Fig. 3. This plan is followed by many gardeners, and it certainly looks very pretty and tidy. But there is this drawback to it, that the wood of the currant and gooseberry does not last very long, and in a few years it gets old and ceases to bear, or only bears very little, and very poor fruit. Therefore it would be necessary to dig up the whole plantation and replant it every few years. The other is called the renewal system, as shown at Fig. 4, and consists in allowing several canes to come up, and have new ones coming on to take the place of the old ones, which are removed as soon as they get old and begin to fail in producing fine fruit. For beauty and neatness the tree system is to be preferred; but for crop I think



the renewal system the best and most profitable. The annual pruning should consist in thinning the bushes so as to keep them open to sun and air, and at the same time preserve the symmetry of the bush. Currants and gooseberries should be planted in rows five feet apart and the plants four feet apart in the rows. Then they can be worked with a horse. In fact, all small fruits should be in rows, and thus save labor in cultivating. As to soil, strawberries and raspberries do best on a good sandy loam which has been well enriched with manure; while currants and gooseberries generally do best on a clay or strong clay loam. It is a very good plan to sow salt—about 200 lbs. to an acre—on small fruits in the spring before the plants show any signs of blossom. I have found it very good for strawberries. It gives the fruit firmness and color, and attracts moisture to the roots during dry, hot weather. But for any kind of fruit no manure will compare with hardwood ashes. If the soil is sand



or sandy loam, ashes may be used sufficient to cover the ground an inch deep and worked in with the cultivator. The good effects of such a dressing will be seen for years after.

And now, in closing, I would repeat the advice given above as to planting in rows. Arrange your garden so that you can have all small fruits in rows, and cultivate with a horse. It saves so much time and labor, and they will be more likely to be kept clean and thrifty than if planted in square patches or in nooks and corners of the garden. They have then to be weeded by hand, and, in the busy summer months, are almost sure to be neglected, just at the very time when they most require cultivation and frequent stirring of the soil. I would like to impress upon every farmer the importance of having a good supply of all kinds of fruit, and especially the small fruits. Have fruit on your table every day in the year, and banish pork and pastry. You will then have little need for doctors or patent medicines. And your days will be longer in the land which the Lord your God has given you.

The Apiary.

Old Combs.

Many find it difficult to throw away or melt down combs once in use, and yet it is not desirable to use combs which have had so many generations of bees hatch in them that the cells are noticeably smaller from cocoons. The cell has a distinctly thick wall when in this condition; the comb is very dark in color, and inside the cells it is glossy. Such combs should be melted down, and the wax rendered and made up into foundation to take the place of the old comb. The quality of honey is injured by storing in such cells.

Brood Rearing.

The month of May is one very important to bee-keepers, and every preparation should be made for swarming and for honey. Strong colonies require but little attention; all, however, should have plenty of stores to enable them to rear brood to their utmost capacity. A colony will often curtail the rearing of young bees through insufficient stores, and when the honey harvest comes there will be no bees to gather the surplus. It must be remembered that it takes 21 days for a bee to develop into the perfect insect, and probably two weeks more before she takes a part in gathering honey; therefore the bee-keeper must study the time his honey crop generally requires harvesting, and its source. For instance, if there is nothing to get before linden or basswood bloom, there is no use in making a very great effort to build up the bees for clover harvest, whilst if no linden harvest nor anything but clover is obtainable, it is imperative to have colonies strong by June 1st.

Surplus.

The surplus compartment, whether for comb or extracted honey, should be ready early. If sections, they should be put together, and foundation put in. If extracted honey is taken, full combs or frames with foundation should be ready, for when swarming time comes there are too many matters which require attention, and which cannot be done earlier. The question will be asked, Shall I put full sheets in sections and brood frames, or starters only? The question is a disputed one. A few, a very few, of our best bee-keepers, claim that with great care they can do with starters only, but the vast majority say, for frames the only way to get good, straight-worked comb is to use full sheets. The way to give bees the least labor is to give them full sheets of foundation, and the gain in time and honey more than compensate for the extra expense. With sections, the foundation should be bright and light. Here, again, some argue that heavy foundations will be drawn out and thinned by the bees, with a very moderate flow of honey. The bees may do this, but in a heavy flow, such as we desire this year, the base will be left heavy, and the bees supply the wax for the walls of the cell. The result is a heavy ball of wax—pure wax, it is true, but not desirable; it does not pay, either. Heavy, 6 sq. feet to the lb., at 50c. per lb., and light, 10 to 12 sq. feet to the lb., at 60c. per lb., shows vastly in favor of the light. Here, again, full sheets will pay best, the bees filling the sections more rapidly. On the other hand, section foundation will not do for brood frames or extracting frames. The bees cluster on it in large numbers, and with the high temperature it is very apt to tear away from the frame, or sag.

Storing Honey.

The impression is all too general that honey should be kept like fruit, in a cool place, such as the cellar. This is a mistaken impression. We know of many substances that have an affinity for moisture, and will draw it from the atmosphere, such as caustic. Honey has, to a certain extent, the same property. Well-ripened honey, if set in a moist atmosphere, such as the cellar, or a cold pantry next a warm room, will draw moisture, become thin, and in time become quite unpalatable. On the other hand, no room fit to live in, however warm, will cause it to spoil. Contact with the atmosphere in such a place will never cause such honey to ferment. This is one great advantage the article has over preserved and canned fruits.

G. M. Doolittle, in the Apiculturist, says about work at this season:—When settled warm weather comes it is necessary that each colony contain a prolific queen, for if the queen in any colony should be old and failing, that colony could not be gotten in proper shape to take advantage of the honey harvest. As the queen is mother of all the bees in the hive, she must be able to lay rapidly so as to increase the population quickly, and if such a one is not in the hive she should be superseded with a better queen. To know what kind of a queen there is in each hive, inspect the combs, and if no eggs or larvae are found in the cells, you can reasonably expect that they are queenless, while if the eggs and brood are scattered about in different cells without regularity, the queen is unprolific, so that in either case another queen should be given them. While looking over the colonies at this time, I clip the queens' wings, as swarming is conducted with a safety and ease which are not attained when the queens have their wings. After seeing that each colony has a good queen with clipped wings, the next thing to be done is to prepare for the surplus crop of honey. Do not put this off till the honey harvest arrives, for if this is done we are often caught by having the best part of the season pass while we are getting ready. Always have the "dish right side up to catch the honey." A few days' neglect at this season will often turn what might be a splendid success into a failure.

If you have not already done so, get your surplus arrangement for honey all ready to go on the hive, so that there will be no delay when the bees are getting honey. We must now get the bees fully prepared for the harvest by getting the comb full of eggs in sufficient time for the bees hatching from those eggs to become laborers in the harvest. But how shall we get the eggs laid just when we want them? There are several ways of doing it, but I will give only one here. About May 1st to 15th I commence to do what is known as "spreading the brood," which is simply turning the brood nest by changing the places of the combs in the hive, so that those in the centre of the nest are on the outside, and the outside ones in the centre, which causes the queen to immediately have more brood in these now centre combs than was in the others removed from the centre. In a few days a comb that has no brood in it is placed in the centre of the brood nest by taking it from near the side of the hive, after which the nest is spread apart enough so as to take this empty comb. As soon as this comb is filled more are added, and so on till the hive is full of young bees, in all stages, so that there will be a multitude of laborers at the right time, and double as many as there would have been had the bees been allowed to take their own

course. As soon as the hives are thus filled with bees and brood, and honey is coming in from the fields, the surplus arrangement is to be put on, when the bees will immediately take possession of them, if all has been done as it should be. In this way the best possible result in honey is secured, far better than by any other plan which I know of.

Mr. Doolittle differs from many in the spreading of brood. Such work must be done very carefully, or greater harm than good may result by chilling and breaking up the brood-chamber. A careful and skilled bee-keeper might probably gain by the operation some seasons.

Poultry.

Mating Colored Dorkings.

In breeding Colored Dorkings close breeding should not be thought of, for no variety shows the deteriorating effect of inbreeding more quickly. Fresh blood is absolutely indispensable if hardiness and size are to be maintained. The breeder should either keep enough pens of breeding stock to insure an annual introduction of fresh blood, or he should each year purchase a good male bird from the yards of some responsible breeder. He will get more and better chicks by so doing.

Colored Dorking chicks should be hatched in Ontario from the middle of April to the middle of May, that is when the weather has become settled and mild and the fields are fresh with springing grass; in other parts of our country at a time which corresponds to this season in Ontario. Very early chicks are apt to suffer from the excessive cold and get stunted; very late chicks, that is those hatched after the middle of June are liable to be badly affected by the great heat incident to summer weather. Of course they can be raised when hatched at any season of the year, but the time indicated we regard as the most favorable.

In mating Colored Dorkings the cock should possess a distinctly striped hackle and saddle, and a plentiful admixture of black upon the back and wing-bows. If the hackle has the broad black stripe the back and wing-bows will be of the desired character. We insist upon the black stripe in the hackle as it is one of the distinguishing characteristics of the variety and separates the Colored from the Silver Grey; it also indicates a depth of color which will be of service in producing dark pullets. Other things being equal, we prefer the cock to have a solid black breast, but a good bird otherwise is not to be rejected for a slightly mottled breast. Much white in the breast is apt to be accompanied with white in the tail, which is objectionable in an exhibition bird although not amounting to a disqualification. The cock should be as near the standard weight as possible, strong on his legs and active, provided with a very full tail, and solidly and compactly built. His plumage should be close, the feather rather hard, and he should, therefore, weigh more than he appears to. The hens should be of a good dark color, the shaft of the feather lighter than the web, well broken with black, the plumage close and shining, the bodies long and square, and as large as can be had. Two-year-old cocks mated with pullets will produce a majority of the tender sex, and the reverse mating, that is of a cockerel with two-year-old hens a majority of the sterner sex; the best mating is of a matured two-year-old cock, and hens that are two or three years old. The chicks from this mating will be stronger and will make larger and finer birds than from almost any other. The cock at that age is in the maturity of his powers and the chicks seem to inherit

his robustness and strength. Such a cock mated to a half dozen fine large hens will produce a progeny from which exhibition birds can be easily selected.

For raising these chicks there is nothing superior to a good Colored Dorking hen. As sitters there are none better, and they are the most careful of mothers, remaining with their chicks for a longer time than most breeds. And in addition to this they are a very tame fowl by nature and the chicks learn by associating with them to be absolutely fearless. Tameness is a quality not usually over-estimated in value, for it means cheaper keeping, better laying, more ready fattening and a great increase in the comfort and pleasure to be derived from poultry. One season which was exceptionally bad for hatches, when other hens brought off from one to five chickens each, one of our Colored Dorkings hatched every egg. She was the only hen which did this in all that were set by us that year. It has often been objected that the fifth toe rendered the hen more liable to tread upon her young, but practical experience with Dorkings has proved that this is one of the many fallacies which from time to time are promulgated by purely theoretically writers. Dorking hens theoretically may crush their chickens to death at a frightful rate, but practically they never do it. If we had a very valuable sitting of eggs our first choice for an incubator and brooder would be a tried and trusty Colored Dorking hen; and when she once had fairly settled down upon the eggs in a convenient nest we should have little anxiety as to the final result.—[Ed. American Poultry Yard.]

The Artificial Manure Bill.

I had been expecting that some of your correspondents would have drawn attention to the debate in the House of Commons on the artificial manure question. Of course, the bill to admit artificial manures free of duty was vetoed. As usual, the farmer made no effort to get the bill carried, and he ought to be very thankful that he has such good friends in the House, and who are so sedulously working for his interests. One prominent speaker, giving as a reason why he opposed the bill, said it was to protect the interests of the poor farmer, because if they were allowed to purchase American-made manures they would surely be victimized. Others got astride the Canadian beaver, and, with the maple leaf in their button-hole, got off a little buncombe that would have caused the cheek of an American Fourth of July orator to pale with envy. Our phosphates were the best in the world; Canadian farmers wanted nothing else, &c., &c.; and again, that there was so little imported, it was not worth while making the change.

Canadian apatite is not a complete manure, and only supplies one of the ingredients required, and that in an insoluble state until treated with sulphuric acid. On my soil the latter has no effect. I have tried it on various crops, and could never see any benefit from its use; whereas, Napes' Complete Fertilizer, containing phosphoric acid, nitrogen and potash, makes a wonderful show. For my soil I would rather pay \$40 a ton for above brand than \$10 a ton for Canadian rock phosphate treated with sulphuric acid and sold as superphosphate. Besides, it is a very open question with agricultural chemists how much of the phosphoric acid, as found by analysis in samples of phosphate rock treated with sulphuric acid to be soluble, was actually available as plant food, and how much of it when brought into contact with the soil reverted into insoluble phosphoric acid.

As to protecting the farmer from buying fraudulent manures, the law in the United States compels the manufacturer to attach to every bag sold a guaranteed analysis of the contents, and the manufacturer is liable to a heavy fine if the contents do not come up to the guarantee; and as there are experimental stations now in nearly every State where samples can be analyzed for a nominal sum, it is not worth while going into the business as a manufacturer of bogus manures. Would not a laboratory attached to the experimental farm at Ottawa, where farmers could have manures and feeding stuffs analyzed at a reasonable cost, be of the greatest benefit?

I ask for no class legislation. The farmers, if they cannot protect themselves and look after their own interests, ought to suffer; but when the farmers ask that a raw material should be admitted duty free for the purpose of enabling them to grow a few more bushels of wheat per acre, or a few more tons of corn and potatoes and roots—no; you are attacking the National Policy! I am sorry that the representatives of rural constituencies could not see their way to vote for the bill. If the American brands are not worth as much as the Canadian they will not be used, and hence, had the bill passed no one would be the loser. If there is as good a Canadian brand as the one I have named, I should like to know of it, and I will wager it is not made from rock phosphate.

RICHARD GIBSON,
Delaware, Ont.

[This article was received after the body of the paper had gone to press, or we would have been glad to have given it a more prominent position.]

Family Circle.

The Old Mill-Wheel.

BY H. S. KELLER.

How we used to sit and watch it—
But you don't remember dear,
For, alack! we were but youngsters
In that old delightful year.

How the spray it turned to silver
In the early morning light,
And each paddle was a diadem
With jewels sparkling bright.

How the willows bended lowly
To the bank on either hand,
As we sat there wrapt in glory
Of the light of fairy-land:

Fairy-land because the elfin
Sprites we conjured in surprise,
Child-like, from the realms of fancy
Lighted up our paradise.

Do you recollect the sunset
And the glory of the west,
When the day-time turned to twilight
And the old wheel went to rest?

Do you recollect the swallows
Skimming homeward to their eaves?
Do you ever hear the whip-poor-will
Whose lone note ever grieves?

Do you see the dusty miller
As he closes up the door?
Do you ever see the light that comes
From out the days of yore?

Ah, you were a happy maiden
In the days of long ago—
And your babies and my babies
They are glad to have it so.

A MISSING HUSBAND.

(Continued from page 121.)

She hadn't the slightest intention of writing to Miss Elmore, or of leaving her address for her. That would have put the young lady on her guard, and have spoiled the little plot which Rose was carefully thinking out for her rival's discomfiture. As it was, she was afraid that the agent merely telling the actress that a lady had been asking for her might arouse her suspicions. She didn't think they would remember her name at the office. She had not written it down or left a card. Even if they did, the girl might not think it of any serious import. It was quite likely that she did not know what Wilson's real name was or that he had a wife in London. He had probably told her that he did not want his friends to recognize him for some family reason, and that had caused the girl's agitation after the visit of Tom Yarborough, as described by the landlady.

Looking on the brass plate outside the agent's door, Rose saw that the business hours were from 11 to 4, except on Saturdays, when they were 11 to 2. She calculated that the agent would write to Miss Elmore that afternoon, and make an appointment for the next day or the day after. On one of these two days, between the hours of 11 and 4, Miss Elmore would enter that office and leave again and return to the place where she was living. She might come alone, she might come with "Mr. Wilson."

Under any circumstances Rose would be there. The street was a wide and busy one. She would easily be able to keep the agent's front door in observation without being noticed herself. With her veil down and her parasol up "Mr. Wilson" could hardly recognize her, and Miss Elmore didn't know her.

The only difficulty was about following her, but it would be time enough to get over that when the time came. The girl was probably hard up and wouldn't take a hansom, she would either walk or go by 'bus, and in either case Rose could be her travelling companion without exciting suspicion.

If Jack came the case would be different. She should go up straight to him, confront him, and ask for the pleasure of a few moments conversation with him. All that evening and far into the night Rose thought over the scene that she might have to take part in on the morrow. She rehearsed it to herself and spoke her speeches aloud as she lay tossing from side to side, waiting for the dawn. She was too feverish and excited to sleep. She was not going to be violent, or make a scene. She had a few words of withering sarcasm ready for Miss Elmore, who would probably stare to see a strange lady accost Mr. Wilson rather unceremoniously and insist upon a private interview, but with Jack she was going to be calm, cold, and dignified. But she was going to let him understand that he would have to answer for his wicked, heartless conduct, and that Nemesis had overtaken him at last.

And, crushing her repentant husband with words of dignified scorn, Rose fell asleep at last, and woke so late that by the time she had had her breakfast and reached the side street off the Strand in which the agent's office was situated, it was on the stroke of eleven.

As she got out of the 'bus she noticed a gentleman who got down from outside the same conveyance look at her rather curiously, and she wondered

where she had seen him before. She thought it must be some one she had been introduced to, and so she bowed slightly, but the gentlemen took no notice of her salutation but looked deliberately the other way.

Rose knew then that she must have made a mistake, and she colored slightly at the idea of having bowed to a strange man who had stared at her. This little circumstance set her thinking of the man as she walked up the street, and she gave quite a little start when a quarter of an hour later, as she was loitering near the office, she saw this same man come along on the opposite side and enter a public house.

She watched for him to come out, but he didn't do so, and so she decided he must be the landlord, and then she fixed her attention on the agent's doorway, and forgot all about the stranger to whom she had bowed in mistake.

For two hours Rose watched the agency without any result. Plenty of ladies and gentlemen went up and came down the big stone staircase—actors and actresses most of them, she could tell by their style—but nobody in the slightest way resembling the photograph of Miss Elmore, and certainly no one in the slightest degree like Jack Smedley.

Once she had a false alarm. A lady and gentleman came along from the top of the street; the man was just Jack's height and build, but when he came nearer she saw that he was a man with grey hair, and Jack's was as black as night. He was an actor, she thought, because of his shaven face, but when they got to the agent's door he left the lady, who went in alone, while he went over the road to the public house.

He was in there about a quarter of an hour, and when he came out Rose thought he looked at her rather hard. But she was a pretty little woman still, and had a slim, graceful figure, and when ladies with slim, graceful figures go about closely veiled, there is nothing in gentlemen looking at them, as though they would like to see what sort of a face that tantalizing veil is hiding.

It must have been near two o'clock, and Rose was thinking that she should have to find out some place where she could sit down, for she was getting terribly tired, when a tall, thin girl, plainly, almost shabbily dressed, came up the street, looking up at the numbers as she walked along.

This action it was which first attracted Rose's attention, and then in a moment, instinctively, and before she was near enough for Rose to recognize her features, the deserted wife knew that she and her rival were about to meet.

It was Miss Elmore. There was no doubt of that. Rose soon forgot her caution in her excitement, and stood still and let the girl pass her so closely that their dresses touched. Miss Elmore evidently suspected nothing. She only begged pardon "as she accidentally touched Rose, but only gave her a passing glance.

The hot blood rushed to Mrs. Smedley's face, and a hard, cruel look came into her eyes. It was fortunate that her veil was down, and that it was thick. Otherwise she would undoubtedly have attracted attention.

The face of her rival was a beautiful one—so beautiful it made Rose hate her all the more. But it was very pale, and there was a melancholy look in the large lustrous eyes which told even Rose, blinded as she was with jealousy and passion, that her rival had suffered, and was suffering still, mentally as well as physically.

The pale face, the sorrowful eyes, the shabby dress, the thin frame, all told a tale to one who can read a life story in the crowded street.

Such a one would have looked after the tall beautiful girl and have said, "That girl is ill and unhappy." Rose only thought of her as the woman who had usurped her place by her husband's side, and had been his companion in the misfortunes she had not been allowed to share. She was glad in her heart of hearts that her rival looked ill, more glad than she looked unhappy. She never stopped to ask herself whether this girl might not be in utter ignorance of the true story of Mr. Wilson's "life," utterly innocent of the knowledge that she was injuring anyone but herself.

Rose watched her enter the doorway and go up the stone steps that led to the agent's office. Then she went a little way down the street and stood just where a building, jutting out, hid her from the sight of anyone coming out of the house which she was watching. She kept her eyes fixed upon the doorway so eagerly, so steadfastly that the strain made her eyelids ache. She was terrified lest she should not detect Miss Elmore the first moment she emerged, and so let her mix with the crowd and get away ere she had time to follow her.

Her attention was so fixed on this one particular point that she did not notice the gentleman to whom she had bowed in the morning come quietly to the public-house door, look up and down the street, catch sight of her, and then go in again quickly.

The time passed slowly as Rose stood and watched. When a quarter of an hour had passed it seemed to her that Miss Elmore had been with the agent an hour. She had never taken her eyes from the doorway, and yet she found herself fearing that the girl might have come out into the street again and got herself up into a fever of suspense a lady emerged from the doorway and walked rapidly away in the direction of the Strand.

It was Miss Elmore.

An instant afterwards another lady, the lady who had parted with the gray-haired man at the door, came out too. Rose darted forward almost with a run, but in her eagerness not to lose sight of Miss Elmore now, but in the very checking herself she crossed the road and walked rapidly till she was on a level with the girl, the two were dividing them.

Miss Elmore turned down into the Strand, and walked along until she came to Southampton street, then she crossed the road and made for Waterloo Bridge.

Rose followed, this time keeping on the same side of the road, but a little way behind. It was not an hour when the Bridge was crowded and it was quite easy to keep anyone in view.

"The girl is either going to walk home or to take the train at Waterloo," thought Rose, "whichever it is I have her safe now. I shall find out where she is lodging, and there I believe I shall find my husband."

Suddenly a shriek rang out just behind Rose. Everybody instantly turned to see what was the matter, Rose among them. A little boy had run across the road and fallen just as an omnibus was coming rapidly on to him. It was a woman who had seen the occurrence who uttered the cry. The driver pulled up and the boy was saved. Then everybody went on their way again.

But in the second that Rose turned her head she had seen something that astonished her. Close behind her was the woman who had come out of the agent's office immediately after Miss Elmore. And on the opposite side of the road was the gentleman she had bowed to in mistake and who had gone into the public house opposite the agent's office.

Swift as lightning a suspicion of truth flashed across Mrs. Smedley's brain.

She was being followed herself. She and Miss Elmore too.

The woman was following Miss Elmore, the man was following her. He had evidently followed her from her house that morning, taken the same 'bus as herself, and watched her while she watched the agent's office.

She saw it in a moment, and she knew by a flash of inspiration what it meant.

Some one else beside herself had a suspicion that Jack Smedley had returned to London. And they had been watching her, his wife, believing that she would know of it, and communicate with him.

The part of his story which she had for the time forgotten came back to her at once. She was trying to find him to reproach him for his offences against her. But these people were trying to find him to make him answer for his offences against the law.

The warrant which had been issued for John Smedley's arrest was still in force. She and the girl were being followed by police agents, and together, John Smedley's wife and his mistress were guiding them to their prey.

Instantly Rose felt a revulsion of feeling. All the wife in her rose up against the idea of seeing the man she had once loved stand in the felon's dock.

She would have punished him herself, but she would protect him from others.

In a moment she had made up her mind what to do. Quickening her pace she caught up to Miss Elmore.

As she came level with her, without looking at her she said in an undertone, "Don't look at me. You are being followed."

The girl gave a little start and turned her head toward the person who had addressed her.

"Hush!" whispered Rose; "take no notice of me. But don't go home; I tell you, you are followed."

Rose could see that Miss Elmore's face was now more deadly pale than ever and her lips trembled.

"What shall I do?" she said.

"Anything, but don't go home."

At that moment an omnibus passed them. The conductor held up his hand. "Room for two inside, ladies," he shouted.

"Yes. Get in," said Rose.

Miss Elmore, trembling and almost speechless with agitation, obeyed. She was too bewildered to think for herself.

Rose followed. The conductor slammed the door.

The two women passed to two corner seats at the top of the omnibus. As it drove off, Rose leaned forward and looked out of the window. The man and woman were getting into a hansom cab together. They intended to follow the omnibus.

Rose lean't across and whispered to Miss Elmore.

"When the 'bus stops at Waterloo Station," she said, "get out. I shall do the same. Have you any money?"

The girl blushed. "I have a shilling," she said.

Rose took out her purse and put some silver into the girl's hand. "As soon as you get out take a hansom and tell the man to drive you to No. 4 Guildford street, Bloomsbury. That is where I live. I shall be there as soon as you are. Then I will tell you more."

It had occurred to Rose that the best place for her to explain the situation to Miss Elmore would be her own house. There they could stay as long as they liked, and concert some plan by which the detectives, who were evidently following them, might be put off the scent.

Miss Elmore didn't venture to ask for any explanation there. She knew that there was danger to some one whose name had not been mentioned by either of them. She knew that she was being followed by those who meant him harm if they could find him. This lady evidently knew it too, but how she knew it and what interest the matter was to her, the poor girl was too agitated to even try and think out.

The 'bus stopped at Waterloo Station, and nearly all the passengers alighted, Rose and Miss Elmore among them.

"Remember," said Rose, before they left the omnibus, and she repeated the address. "You will come?"

"Yes."

A minute afterwards Miss Elmore had hailed a hansom and given the man his directions. As the cab drove off Rose saw a hansom which had pulled up a little way off, turn round and follow it.

The detectives were still on her track, or at least they thought they were.

A quarter of an hour later Mrs. Smedley and Miss Elmore were together in a little sitting-room at Guildford street.

And outside the door a man stood with his hands in his pockets and whistled in sheer astonishment. "Well, I'm hanged," he exclaimed to the woman who accompanied him, and who had just alighted with him from a hansom cab at the top of the street. "Well, I'm hanged!" he exclaimed. "This takes it. This is Mrs. Smedley's place, and the girl's in with her. John Smedley can't have been there all the while without my knowing it."

"It's not likely," replied the woman. "If he was it's hardly probable that the wife would ask this girl to come and see him there."

"You wouldn't think so, but then who would think of them, two being together at all, unless it was to pull each other's hair out?"

"Well, they are there and it's pretty certain that John Smedley isn't. What do you propose to do?"

"I'm hanged if I know," exclaimed the detective. "The thing looked straight enough this morning, but it looks dazedly crooked now. It's my belief one of 'em's fly, and having a game with us. But we'll stop about a bit. The girl will come out again presently and then I'll follow her. I'm going to see where she sleeps to-night, anyway."

"Do you want me any more?"

"You'd better wait a bit. I may want to leave you while I go after Mrs. Wilson. You'd better watch from the other end of the street and I'll take this corner. It's my opinion that one of 'em's tumbled, and there'll be nothing done while we're in sight."

The man and woman separated at once, and took each an end of that portion of Guildford street in which Mrs. Smedley lodged. They were too far away to be noticed by any one coming out of the house, but nobody could leave it without being seen by them.

When Rose Smedley saw how pale Miss Elmore looked, her first feeling was one of pity for her, and she hesitated to tell her who she was.

For a moment the two women looked at each other in silence.

Miss Elmore was the first to speak.

"Madam," she said, "I don't know who you are, but you evidently know something of me. You told me I was being followed. If that was so there was a danger in my going home. Do you know what that danger was?"

"I do," said Rose, quietly; "it was danger to the man who calls himself Wilson—the man you call your husband."

"He is my husband, madam!" exclaimed Miss Elmore, the blood rushing to her pale cheeks.

"Miss Elmore is only my stage name."

"You mean that he has married you?" cried Rose.

"Certainly. I—"

Rose sprang to her feet and ran to Miss Elmore's assistance.

The poor girl, who had been standing up as she spoke, had suddenly tottered. Rose was only just in time to catch her in her arms and to prevent her falling to the ground.

"It is nothing," gasped the girl, as Rose helped her to the sofa. "I am not well, and this anxiety and suspense has—has—Oh, my heart!"

The young actress put her hand to her heart with a cry of pain. Her face was livid, her lips were blue. In another second she fell back upon the sofa, senseless.

Rose rang the bell for the servant, and told her to fetch a doctor, at once, then she tried to force the poor girl's lips open and give her some brandy. She was terribly alarmed at her appearance, and wondered what she should do if the illness was serious.

When the doctor came he shook his head. "She must be put to bed at once," he said. "I will wait till she is a little better, and then send you in something for her to take. She is evidently subject to these attacks, but this one is severe. She has probably been over-excited, and she is evidently in a weak state."

"Put to bed at once!" exclaimed Rose, "she doesn't live here. She is almost a stranger to me. She will be well enough to go home to-night."

"Certainly not! To attempt such a thing would be to kill her."

Rose hesitated no more. With the help of the servant poor Miss Elmore was placed in Rose's bed, and as soon as she had recovered a little the doctor ordered her to be kept perfectly quiet, and leaving Rose certain instructions, he went away.

It was seven o'clock in the evening when he left, and Rose, now thoroughly bewildered, wondered what on earth she should do. Here was the woman she actually believed to be her husband's mistress lying ill in her house, and she was nursing her. It would be cruel of her to tell the poor girl the truth now. For the present, at any rate, she must be kept in ignorance of that. The shock might kill her.

But what of the man who was somewhere, evidently expecting the girl's return? Both women thought of him. Miss Elmore was the first to speak.

"I'm better now," she gasped, as she tried to sit up in bed, and was gently restrained by Rose. "You must let me go home; indeed, you must. Jack will be in a terrible state unless I come home."

Jack!

There was no longer any doubt in Rose's mind as to who Miss Elmore's "husband" really was.

"You can't go, my dear," she said, quickly; "I shall not allow it."

"Then I must send a message to him."

Rose had thought of that. But how was it to be

done? She felt certain that the detectives were still on the watch, that any attempt to communicate with Wilson would be the means of giving them the clue they wanted to his whereabouts. And she was determined that he should not fall into their hands.

Presently Rose had an idea. "I will send a telegram," she said, "if you will give me his address."

Miss Elmore hesitated. But there was no alternative. She gave the address. It was a street running out of the Lambeth road, and presently Rose wrote out the following telegram: "Have had one of my old attacks, but am better. Am with friends and safe, but cannot leave till morning. Don't worry. Kate."

It cost Rose a pang to sign another woman's name to a message to her husband, but she had what it might.

As soon as the telegram was written she put on her things, and leaving the servant with the patient, went out. She wasn't going to the office herself.

The nearest office was in a grocer's shop, and the young man might be tricked by the police into giving the doctor's address upon the telegram. So she went to the doctor's, told him a little romance about his patient, and he promised to send the telegram off himself when he went out, which would be in half an hour. The detective was hardly likely to follow the doctor's brougham, or to suspect his errand.

And if he did he would get no information from him. As a medical man, any information that came into his hands through a patient was sacred.

This task accomplished, Rose went back and tried to comfort and soothe the invalid.

At ten o'clock the female detective went away. The man remained till midnight. He knew that someone was ill in the house. He had seen the servant go for the doctor, and he had seen Mrs. Smedley go to the doctor afterwards. Miss Elmore had not come out. It was probably Miss Elmore. The case was getting more complicated than ever, but he made up his mind that the young lady wouldn't oblige him by coming out while he was there, and so he went away.

It was evident to him that for the present he was foiled. That John Smedley was in London he felt sure, that he was the actor who called himself Wilson he was convinced, and his view was strengthened by the fact that he had ascertained through his female assistant that Miss Elmore had given no address at the agent's except a well-known post-office, where people of all sorts were in the habit of having their letters left.

The next morning Miss Elmore was much better. Rose had watched her till she slept, and had then gone to lie down on the sofa in the sitting-room.

She was so much better that towards middle day, when the doctor came, he allowed her to get up.

Then she and Rose talked the situation over, and little by little the young actress told her story.

She had been playing with a company in America when she first met Wilson, who was then taken to the stage. He was not a good actor, but he was a gentleman, and made himself agreeable, and people liked him. They saw a good deal of each other and they fell in love. He asked her to be his wife and she consented, and they were married. Soon afterwards she heard that her mother was seriously ill in England, and she wanted to return and see her. At first her husband objected, but at last, upon thinking it over, he consented, but she noticed that he seemed very nervous as soon as they landed upon English soil. She returned to find her mother dead. All their funds had been exhausted by their journey, and she proposed that they should get engagements in England. At last she succeeded in obtaining one with a travelling company for herself and for her husband. One night, in a little town near London, a message was brought to her husband that a gentleman named Yaborough was waiting to see him. He was terribly agitated, and exclaimed, "My God, they've recognized me. I thought after all these years I was forgotten."

That night he told her his story. He confessed that some years before he had been in an office in London, and had been accused of embezzlement. He assured her that he was innocent, but could not prove it, and that if he were taken he would be sent to prison for years. She was terrified, and they left the place at once and came to London. Jack left that rarely went out. He seemed in constant terror of being recognized. They were very poor, and she had had to pawn to pay their rent. Then they saw the advertisement for an actor and an actress to go to the Cape with a company. Her husband said that would be the best thing for them, and he had sent her to try and get the engagement. Rose knew the rest.

"So," thought Rose to herself, "he has deceived this poor girl, and she really believes that she is his wife! What am I to say to her? What will she do when she knows the truth?"

A great pity swelled up in the heart of Rose Smedley for this poor girl who had been so loyal to the man she loved. She ceased to regard her as a rival and looked upon her only as a fellow victim.

But now more than ever she felt bitter against her husband, and determined to let him see that his baseness was known to her. Then he might go to the Cape if he liked. She would not raise a finger to stop him. But no mercy she might show him would enable him to atone for the wrong he had done Kate Elmore.

The doctor had still forbidden Kate to leave the house under any circumstances. Leaving her at home, Rose went out. She was determined in some way to see John Smedley that day. She looked about her to make sure that the house was not watched and saw the detective at the top of the

street. He had resumed his watch. But as she came out his back was turned for a moment. A few doors below was a corner of the street—round this Mrs. Smedley darted. Then she stopped well out of sight and waited. If the detective had seen her he would come after her at once.

She waited a few minutes and he did not come. Then she was sure that he had not seen her leave the house but was still watching it.

She was safe now. She went up the side street to the top and took a short cut and made her way into Holborn—there she took a cab and drove to the address given by Kate Elmore.

It was a poor, mean, little house, with dirty blinds, and a general appearance of being left off in lodgings to people who were not too particular.

She knocked at the door, and the landlady, an untidy person with an untidy baby in her arms and a small, untidy child clinging to her skirts, opened the door.

"I came from Mrs. Wilson, with a message for her husband. Is he at home?"

"No, he ain't ma'am. He's gone away."

"Gone away!" exclaimed Rose, in astonishment.

"Yes, he paid me my rent, and went away last night. He left a letter for Mrs. Wilson, which was to be given her when she came in."

"She is staying with me. I'll take the letter to her."

"Certainly, ma'am, and welcome."

The landlady went upstairs and fetched the letter, and gave it to Rose. She looked at it, and a chill feeling crept over her heart.

The last doubt was removed. It was her husband's writing. She had always believed that Wilson was her husband, but the certainty was a shock to her, none the less.

She took the letter home. She was bound to give it to Kate. It might contain something that it was necessary she should know at once.

Kate opened it, read it, and then let it fall with a cry of anguish. The next moment she buried her face in her hands, and burst into tears. "Read it," she sobbed.

Rose picked it up and read it.

It was a heartless letter. It told poor Kate, in a few words, that the man she had loved and served for, the man for whom she had almost starved, had let his cowardice get the better of him. He said the nervous dread was killing him, and he couldn't stop in London. He thought they would do better apart, as he was only a drag on her, and he could keep out of the way better by himself. He was afraid that through her one day he would be run to earth. Then he would be taken from her, so perhaps it was just as well that he should go now. Some day, if he had luck, he hoped to return and claim her, &c., &c., and she was to forget her unworthy husband and be happy.

The letter omitted to say that through a friend in the profession Jack had heard of a sudden vacancy in a company going to India, and that as it was only a vacancy for one he had thought it better to accept it and be off and leave his wife to shift for herself.

"He is a coward," cried Rose, "a miserable selfish coward! My dear, such a man isn't worth fretting for."

But Kate did fret. For a time she was almost heart-broken. She little knew what cause Rose Smedley had to view "Mr. Wilson's" conduct from the harshest possible standpoint. But she got over it in time, and found a true and loyal friend in Rose.

To-day Kate Elmore is a favorite London actress, admired everywhere for her beauty, her grace, her cleverness, and her goodness.

She and Rose share a pretty little villa between them, and they are as sisters. There is a common bond of sorrow between them, but only one of them knows it. They have both been deceived and deserted by the same man.

Rose has made up her mind that she will never let Kate know the truth, though now both of them are free to marry again.

The death of an English actor named Wilson was announced a short time since in the American papers.

His death was the result of a pistol shot which was administered to him in a drinking saloon by the brother of a woman whom he had deserted after getting possession of her property.

There are degrees of contentment; but it will be found that the most contented are those who are engaged in useful work of some kind, down into which thought flows, and that the least contented are those who are idle.

A man may have a right to stint himself of comforts, and even necessities, if he prefers to employ in other directions the money thus saved; but he has no right to deny his wife, his children, his servants, their proper comforts and luxuries, that he may buy old china or rare books.

It is bad policy to be haughty, repellent or unsocial. The most resolute aspirant to wealth or position may stumble as he climbs, and, if no one stretches out a finger to save him, may roll headlong to a depth far below the point from which he started. A lift for a lift is the business rule of to-day.

The Household.

Consumption, from a Mechanical Standpoint

BY WALTON HARRISON.

The human body is a machine, because it consists of a number of inanimate elements so united, arranged and adjusted as to be capable of performing work when acted upon by a certain motive power. It is a compound machine because it is composed in part of smaller machines, the most important of which are termed organs. Each organ is required to perform a certain amount of work, to the nature of which its structure is adapted. Although the character of the task assigned to one organ may differ entirely from that assigned to another, both have a common dependence upon the general system. Each organ does its work in accordance with mechanical or physical laws, some of which are understood perfectly, others partially, and yet others not at all. The motive power is designated by the vague and general term "life," and its precise nature is no better understood by the physiologist than is the exact nature of heat or of electricity understood by the machinist.

Two organs which have assigned to them a work of great importance are the lungs. Their principal task is to remove from the system particles of worn-out flesh and other impurities brought to them by the blood, and to supply to the general system fresh oxygen from the atmosphere. The circulating system, consisting of the blood, tubes, valves and ever throbbing pump, comprises the machinery used for the purpose of transportation, and for that purpose alone.

Consumption is what might be called a "mechanical" disease. It kills not from inflammation or other incidental causes, but because it disables and renders useless a portion of the machinery. A man in the last stages of consumption dies not because his system is worn out, but because he has no lungs. With the exception that a portion of his body is virtually absent he is otherwise a healthy man. He resembles the locomotive which would be in good running condition were it not for the fact that the slide-valves have been removed rendered useless. He dies from the same cause which extinguishes the life of a drowning man, because his supply of air is cut off.

A consumptive becomes fearfully emaciated. The emaciation is the result, and not the cause, of the real disease. Any well informed physician will admit that the emaciation is caused by unnatural and arbitrary decay of the lungs, no matter what may be the origin of this decay; he will also admit the emaciation arises from a curtailment of the functionary labor of the lungs; carrying the point further, he will admit that the emaciation results from the fact that lungs are able to handle only a limited quantity of available air. Here, then, is an important portion of the great secret unfolded. It is a law created by divine wisdom, yet so clear, simple and beautiful that when once understood it will be forever beyond the range of controversy: The emaciation incidental to consumption is simply an effort on the part of nature to reduce the body to such a size as will be suited to the limited and constantly-decreasing capacity of the disabled lungs. In other words when the machine, from some unknown and

arbitrary cause, is rendered incompetent to perform its proper amount of work, the task is lessened in order that the work may be continued as long and as thoroughly as possible. The purpose of this article is to illustrate the truth, application and moral of this wonderful principle, which is known to everybody and recognized by none. If the principle be admitted as true, then it must also be admitted that much of the usual treatment for consumption is radically wrong, in every sense of the word; that, should the patient recover, his recovery will be in spite of rather than through the aid of his treatment. Reference is made to the "building up" process of adding new flesh and blood to the frail body. If a railroad engineer finds that his engine has become disabled to such an extent that it is hardly able to pull the train, he will dispose of a few cars until the necessary repairs are made; if a cannoner discovers that his gun has become weak, he lessens the amount of his charge; if a teamster's horse becomes lame, he will contrive a way to decrease the load; yet an intelligent physician, when he makes a discovery that a patient's lungs have become so reduced in capacity as to be unable to do the work required by even a frail body, will endeavor to enlarge, strengthen, and if possible to fatten that body. Inasmuch as by this process the lungs themselves are not enlarged either in size or capacity, it becomes evident that they are thus made proportionately smaller and relatively weaker.

The healthy portion of the lungs will be taxed far beyond its normal capacity, for the simple reason that extra work has been added at a time when the lungs were hardly able, in fact almost unable, to accomplish the limited amount of labor which had already been assigned to them. Surely the building up of a body not supported by sufficient breathing apparatus can have no good effect, and the heavy duty and high rate of speed required of the diseased organs must inevitably hasten the untimely end.

It would be fair to answer, then, that the all-important step necessary when the disease first makes its appearance is to assist nature in her effort. By some legitimate means not much in conflict with the general laws of health, reduce the weight of the body a few pounds; as a consequence, the patient will breathe freely, easily, naturally and without effort. His lungs will be relieved of much of their burden; let his exercise and regimen, be calculated to expand and develop his lungs, rather than add flesh and weight to the general system. The patient will then, and not till then, be in condition to receive medical treatment.

That milk contains all that is required by the body, and the best proportions of mineral matters; is less irritating than other foods and better digested.

If glycerine agrees with one's skin, the following face lotion faithfully used will give some of the freshness of youth back to a complexion that has faded from want of care. Make oatmeal into a paste with glycerine two parts and water one part, and apply to the face at night. Some persons wear a mask over this.

"A beautiful woman is a jewel; a good woman is a treasure." So said Saadi, the Persian poet, some 600 years ago, and though we can't all be jewels, every woman may be a treasure in the poet's sense. Peach-like cheeks may become wrinkled, brilliant eyes dim; but real goodness never grows old. A good heart and a good temper will keep a woman lovable and attractive, if not beautiful, to the end of her days.

Minnie May's Dep't.

MY DEAR NIECES,—It is too bad that our duties confine us to the house such a delicious morning, for a glance from this window tells us it would be much pleasanter out of doors. The barn-yard is deserted, the cows and sheep have gone to pasture, the horses are at work, and ducks, geese and hens are in full possession. A motherly Brahma struts about, surrounded by thirteen white chickens that look like little balls of fluff. She has all she can do to find fat morsels for so many mouths. But seductive as this scene is we must turn our attention to household duties. House-keeping, whatever may be the opinion of triflers of the period, is an accomplishment. It includes all that goes to make up a well-ordered home. Perfection may be attained by study and experiment, but success is oftenest reached through great tribulation. And work badly done is only drudgery, but work well done is artistic. There is no dignity in slighted work; and no girl who aspires to be queen at home can afford to remain ignorant of the smallest details that contribute to the comfort, peace or attractions of home. There is no luck in house-keeping, however it may seem. Everything works by exact rule. There must be a place for everything, and everything in its place; a time for everything, and everything in its time. The reward is sure. Many valuable ideas are gained, how to stop numberless little leaks, which keep many a family in want, while a little care and economy in these details would be the saving of dollars and dollars. A neat, clean house, a tidy table and well-cooked meals are safeguards against the evils of intemperance. So we with our frying pans and soup kettles can wage a mighty war against it, though it has proved a deal too strong for an act of legislature. Well-fed men from well-ordered homes are not usually drunkards; and as women are the chief sufferers from this vice, with us it remains to stamp it out. It cannot be done all at once, but can, by slow degrees. We know what patient, persistent women have accomplished, and can accomplish again. We must begin with ourselves, for example always counts for much. Keeping our homes bright, tidy and sweet, and ourselves too; refusing to marry any man who is in the slightest degree addicted to intemperance; educating our children to despise it, and do all we can to raise the fallen and strengthen their resolutions. Women should be the very last to offer temptation to any man. The hand that rocks the cradle rules the world; and all great reforms have been commenced in home education. But what a long way I have wandered from my subject. Apropos of men and their shortcomings: Does it ever occur to any of my nieces that the men of our households might be a little more polite to us; and instead of saying: "For a wonder, dinner is ready in time!" they might say: "What a nice sound to a hungry man!" It would encourage us in our efforts, for we are often heart hungry. If dinner is not quite ready he need not say: "Of course not; it never is." It would not detract one whit from his manliness to give his wife a kind word by way of encouragement; and instead of the heart stab, he might say: "You are a good wife, Susie." I wish I could train several hundred boys to be husbands for the next generation. You may smile, my dear girls, but this is anything but a subject to laugh over.

MINNIE MAY.

P. S.—A prize of \$2.00 will be given for the best article on "Picnics." Communications on this interesting subject must be in our office by the 10th June.
MINNIE MAY.

Fashion Notes.

Young girls wear the skirts of dresses much longer than usual. The favorite length reaches just to the shoe-top.

Round hats for girls in their teens have projecting brims, with wide ribbon trimming for every-day wear, but flower laden for best wear; sometimes with rose wreaths lying flat outside the brim, at others with bunches of maiden hair fern, or again, with buttercups and daisies, branched flatly together on the brim. Toques and turbans, in round and oval shapes, are also being prepared for girls, and are becoming with their low catogan loops of hair in the back, and thick bangs on the forehead.

Turn-down pleated frills of embroidered muslin, for the neck and sleeves of girls' dresses, are favorites. Larger girls baste narrow feather-edge ribbon, white or colored, in the neck or sleeves, and tie it in pretty bows.

Black stockings are retained for children, and buttoned shoes without heels are worn by girls up to the age of ten years.

The Scotch flannels, partly wool and partly cotton, wash so well that they are made up for girls of all sizes, the favorite style being a blouse waist dropping over in sailor fashion, full sleeves and a full-pleated skirt. For smaller girls a sash of the same material is sewed in the under-arm seam and tied in a bow behind.

Green is the color, par excellence, this spring, and can be seen in all shades and in all materials, from satin to nun's veiling. Some of the shades are exquisitely soft; and, strange to say, all are becoming.

Bonnets of black lace, straw, tulle, or any other material, have green introduced, and it has a wonderfully soft, fresh look; the eye seems rested and refreshed. The styles for bonnets are as usual. Any shape or style that becomes the face is the fashion, from the stylish, high-crowned, flower-tipped tulle to the demure little Quaker shape of unpretentious straw, of any color to match the costume. Strings are worn or not, as suits the taste of the wearer.

The dress materials never were more lovely in tints, or more artistic in fabric and style. Silk warp Henrietta cloths, cashmere, surahs, satins and silks, are equally lovely. And the trimmings are simply exquisite. Braid in many designs; gold and silver gimps, jet, steel and silver look equally well, and can be had in prices to suit any purse.

Parasols with handles four feet long seem to be the favorites. These come in all styles, from plain checked, striped and brocaded.

The flowers are simply exquisite in form and color. Soft bunches of white lilacs, large sprays of poppies, and wreaths of willow blossoms; mignonette, natural as life; rosebuds that look as if they were emitting a perfume; even a spray of field flowers, a daisy, a buttercup or two and a spray of meadow grass would challenge admiration. Surely the cultivation of art has not been in vain. It shows itself in all our fabrics and decorations.

Wedding presents should always be sent to the bride, although the acquaintance may only be with the bridegroom.

PRIZE ESSAY.

How Every Girl Can Finish Her Own Bedroom.

BY MISS J. H. FERGUSON, KINGSTON, ONT.

Nothing gives a woman more pleasure than to choose a new carpet, order a set of furniture from a reliable upholsterer, with directions to send it home and see it placed; but when we cannot afford this it is equally as pleasing to be able to produce the effect of prettiness and cosiness through one's own ingenuity and taste. Each girl's bedroom should have an individuality of its own; for we spend much of our time in it, and it is our own taste that should surround us.

A room twelve feet square fell to my lot. It had two small windows, looking south over a lovely stretch of meadow land, with a glimpse of railroad in the distance. The floor was pine; this I had washed clean, and I then brushed it with warm boiled oil, and as soon as one coat dried, gave it another. I then brushed it with melted beeswax and turpentine, made warm. This was well rubbed on, and a broom, with a cloth pinned over it, passed around it every morning, keeps it clean and shiny. I painted the windows and door white, finishing with a coat of varnish. A very ordinary iron bedstead, a bureau and washstand and feather bed fell to my share. The bedstead I painted white; procured a small quantity of liquid gilding and tipped the scroll work and tops of the posts, which gave it a very pretty effect. I procured a wire-wove mattress, which I placed under the feathers. From one yard and two-thirds of white scrim I made a spread for summer, trimming it on two sides with a pretty little red and gold fringe. These fringed sides hang over the sides of the bed, scarf fashion. For winter wear I have almost finished a silk Japanese quilt, to be lined with red silesia, and which will feel quite as warm and soft as a genuine eider-down. My pillow-shams I made of twilled red Turkey cotton, edged with a full frill of coarse, white lace. Between the windows is just the place for my dressing table. This I contrived out of a large packing-case, knocking out all the projecting nails. I placed it with the open side towards the room, papering the inside all around with gay-colored, cheap wall paper. This recess is useful for a basket or bag for soiled linen, or muddy boots, overshoes, &c. Over the top and sides I tacked an old white sheet. A pair of very-much-worn Nottingham lace curtains I pleated full around it. After cutting off the best of the borders to make sash blinds for my windows, I looped up the centre with a big bow made of an old sash ribbon, and my dressing table looked very pretty indeed. A soap box I converted into a seat, and box for shoes by having the lid hinged and covering the inside with wall paper, neatly pasted on. I covered it smoothly on the outside with bright chintz, covered the inside of the lid also, and, bringing it over the top, tacking it neatly down. A small cushion, just to fit, I made of the same chintz and tacked it at each corner, with a large brass-headed nail through a bow of ribbon. My bureau holds all my shawls, laces, gloves, bonnets and underclothing, so a place must be made for hanging my dresses. I had a frame made of smooth boards six feet high, just like a cupboard minus the doors, and near the top inside of it I had a board securely fastened with six large wardrobe hooks screwed securely in. Curtains

of chintz hang before it to protect the contents from dust and light. This accommodates all my dresses for the season, as well as my two mantles. I gave all the wood-work of this wardrobe two coats of cherry staining and finished all with a coat of varnish. It looks very pretentious, and is quite convenient; for a room never looks tidy with dresses hanging on nails on the wall or back of the door. My mirror hangs over my dressing table, and is draped with white tartane tied at the top with another bow made from the old sash. The top of the washstand I covered with white marbled oilcloth. It can more readily be kept dry than cloth covers. Some pictures adorn the walls, and photographs of my friends. I intend making some sets of covers for my dressing table and bureau by hem-stitching a fringe around three sides, and drawing threads one inch deep to run a bright ribbon through. It can be removed when the covers require to be washed. My room looks very home-like. And the rest which a small basket rocking chair affords is very grateful to me at times. I still require a whisk-holder. This I can readily make from numerous hints and directions which I shall get out of the Christmas number of the FARMER'S ADVOCATE.

Gentlemen.

BY SNOWDROP.

I was very much interested this evening in a letter in the FARMER'S ADVOCATE. The subject was the utter lack of refinement, courtesy and thoughtfulness among the farmers. Several girls have at different times spoken to me about this, and they wonder why it is. Why should farmers be so boorish instead of gentlemanly? The letter in the ADVOCATE dealt almost altogether with their want of thought for other's comfort—in short, with their selfishness. Now, men, as a rule, consider that women should give up a great deal of time to them; that they should consider them in many ways; that it is a woman's mission to think of others and not of herself. This is particularly the case among a certain class of farmers. No doubt it is right for women to unselfishly consider their fathers' and brothers' or husbands' comfort; but ought not the men to do the same for them? These men undoubtedly work very hard; perhaps they say they are working for the women's comfort; would they not work equally hard if there were no women in the question? Perhaps these brothers do not know how much a sister values a little thing done out of regard for her; a little extra care taken to save her some annoyance; some little labor performed for her when she is over-tired; how these little acts are treasured up in a loving heart; and though no outward demonstration of feeling may be shown, it gives these sisters a different motive for the performance of their duties, and fills their hearts with a song of gladness.

Let us draw two pictures: First—It is early morning. Big Tom is the first to get up. On passing Mary's door he gives a tremendous thump and calls out: "Wake up there, Mary! It is half-past four! Time you were up! And mind, I want my breakfast early, so that I can be off; don't forget!" Mary does hurry; goes into the kitchen, lights the fire, goes out for the water, and gets the breakfast in a surprisingly short time; because Tom would be so surly and cross if she did not.

Second—Fred also rises early. Half an hour or less after his coming down he goes up again to Bessie's door, knocks and calls out: "I say, Bessie, five o'clock! Fire enough in that kitchen

stove to roast a goose! And, Bessie, can you let me have my breakfast soon! as I want to be off." How Bessie hurries! And how the kettle is boiling when she enters the kitchen! And the water-buckets are quite full. She has Fred's breakfast ready in no time at all; because Fred is such a dear, good boy, and makes her life so bright and happy.

Oh, that brotherly love, that kindly affection, how it brightens a home! In fact, it makes the home. The house alone, however handsomely built or richly furnished, will not make a home, though its inmates have all the wealth of the Indies. While the poorest and plainest tenement may be the brightest spot on earth, a real home to those who live in it, if they have a kind, unselfish love for each other, and are always thinking of others rather than themselves. It is this atmosphere of genuine love, which thinketh no evil, and is not easily provoked, the atmosphere of pure, unselfish love, which makes the home.

Now, with regard to the want of refinement and courtesy. Is this the result of a lack of education? To some extent it must be, for education will give some degree of refinement, if it be only skin deep. But why should a farmer be uneducated? Why should he think and talk of nothing but his cattle and his crops? his sowing and his reaping and his neighbors' affairs? True, he has very little time for reading, but surely he can spare an hour every evening to cultivate his mind. It is considered very bad taste to talk shop with a man of any other profession, when we meet socially, but people seldom talk anything else with many of the farmers, because these farmers know nothing of any other subject. As to outward polish and the observance of little matters of etiquette, these men utterly ignore them. I wonder sometimes if they despise them. You seldom see them raise their hat to a lady; they substitute a duck of the head and a grunt which sounds something like "ugh," a noise such as an uncivilized red Indian might make.

There is a steady increase of refinement and intelligence among the farmers' daughters; why should there not be the same among his sons? I know girls brought up in the country who are in every way perfect ladies, and better educated than their city cousins, with whom they rank in social position. But the young men do not recognize their own inferiority; they think that the girls are beginning to think too much of their own importance, and becoming superior to their position, when in reality they are becoming very superior in it. These girls do not think themselves too good for the position of a farmer's wife; they love the farms and the farmsteads; they rejoice in a country life; but they cannot tolerate having for a life's partner one whom they cannot respect, cannot honor, much less love.

A great deal of this borishness and of the selfish thoughtlessness is the result of early training, or rather lack of training. In childhood they are not taught to think of others, nor are they taught the most common politeness; the short and gruff yes or no, is sufficient for them. Never yes, mother, or no, mother; yes, sir, or no, sir. If the mind of the child were trained to think courteously, it would naturally express itself courteously; and the world would be benefited.

This is a case in which prevention is easier than cure. There are many growing up at the present time who will develop into bores. Should

not all those who so shrink from this style of man, train up their children and all young people placed in their charge, to be pure, unselfish, noble-hearted men and women? They cannot find a more glorious work; and it is one likely to give grand results. If our young school teachers thought more of the great responsibilities of their high and noble work, there would be more Christian courtesy among the children. They would develop characters truly Christian; tender-hearted, forgiving one another, ready to bear each other's burdens.

Recipes.

STEAMED OATMEAL.—Half a pint oatmeal, one teaspoon salt; put into a two-quart basin and pour over it one quart boiling water; put it into the steamer and steam two hours. Do not remove the cover during that time.

CRACKERS.—Butter, one cup; salt, one teaspoonful; flour, two quarts. Rub thoroughly together with the hand and wet with cold water; beat well, and beat in flour to make quite brittle and hard; then prick off pieces and roll out each cracker by itself and bake.

FRIED RAW POTATOES.—Pare and slice thinly into cold water some medium-sized potatoes; drain into a colander and put into a frying-pan, in which are two tablespoonfuls melted butter; cover closely ten minutes, removing only to stir them from the bottom to keep them from burning; cook another ten minutes, stirring all the time until lightly browned.

CHICKEN SALAD.—One head of celery, one small chicken boiled until very tender the day before required; chop very fine, when all the skin, bones and fat are taken from it. Chop the celery fine and mix well together, adding half a cup vinegar, two tablespoonfuls of salad oil, two of mixed mustard, a salt spoon of sugar and one of salt, with a pinch of red pepper.

Answers To Correspondents.

AUNT KATE.—It is hardly possible to restore hair that has once turned gray to its natural color, and anything which does so is usually a dye of some kind. Have, however, seen very good results from so simple a remedy as a half a pound of nails soaked several days in a pint of water, and then a pint of water added and all boiled up with a paper of sage and strained. This preparation seemed to have a tonic and changing effect on a head of hair, increasing its growth to quite a luxuriant thickness and actually seeming to restore the color. The following, it is claimed, will darken the hair: Take of rust of iron, two drams avoirdupois; old ale (the strongest), one imperial pint; oil of rosemary, twelve to fifteen drops; put them into a bottle, cork loosely and agitate it daily for ten or twelve days and then use. Decant the clear part for use. As the hair sometimes turns gray from a general weakness of the body, do all you can to tone up the system and so help restore the hair. Gray hair is sometimes inherited and so impossible to remedy. Do not dye it; gray hair is beautiful and has a softening effect on the face.

All sorts of cushions and pillows are popular more as bits of decorative furnishing than bits of utility; indeed, so delicate are the fabrics and the enrichments of the covers, that one dares not dare put head to one of these dainty down pillows for fear of injuring it. Some more serviceable pillows and cushions should always be found in a room, and these are such as are covered with Bolton sheeting, for instance, embroidered in washable crewels, or else in heavy linens worked in Bargarren threads.

Roses.

In order to have beautiful roses in the garden one must have beautiful roses in his heart, he must love them well and always, he must have not only the admiration and the passion, but the tenderness, the thoughtfulness, and watchfulness of love. While I cannot here just tell you how to grow roses, I will endeavor to give some hints which will lead to success, the degree of which will depend altogether upon the effects of the growers. Grand results have been accomplished by amateurs, and for these I need not write, but there are thousands of people who have a great love for roses, but do not have sufficient knowledge of them to make even a successful beginning. The great mistake most all buyers make is the selection of varieties. They either select their roses when in bloom at the greenhouse or from the catalogue of the rose growers. In either case roses are selected on account of the beauty of their flowers without the slightest regard to their hardiness, habit of growth, or blooming qualities. For instance, the Niphotos is a very beautiful white rose, and one that is quite well known and popular on account of its being largely used by florists for cut flowers, but it is quite useless for out-door culture. The grandest of all roses are the Hybrid Perpetuals, and the easiest to grow. They are perfectly hardy, that is, when once planted in the open ground and left all winter without the slightest protection. They bring an immense crop of flowers in June and will again bloom fairly well in the fall. A great many buyers reject these roses on account of their not being ever-blooming, buying instead, Tender Tea Roses, which in almost every case do no good at all, and if these Hybrid Perpetuals bloomed only once in two years, instead of bringing such a glorious show of flowers every June, I should give them preference to ever-blooming roses. What can be more beautiful than a well-selected bed of Hybrid Perpetual roses in full bloom in June, of such varieties as Baroness Rothschild, General Jacqueminot, Eugene Verdier, Glorie-de-Paris, Paul Neyron, Coquet-des-Alps, Alfred Colomb, Captain Christy, John Hopper, Madame Georges Schwartz. Why, the florists sell the cut flowers of these roses during the winter and spring months at 50 cents to \$1.50 per dozen, and it is in the power of suburban residents to have these roses by the bushel in June, and at no very great expense either. In fact, the expense may be considered trifling in comparison with money spent in other directions in beautifying homes.

Now while so much praise has been offered to the Hybrid Perpetual, it must be borne in mind that ever-blooming roses, such as Queen's Scarlet Hermosa, Perles-des-Jardins, Bon Silene, Safrano, Catherine Mermet, Mme. Welche and many others will, with fair treatment, bloom all summer through, and can, with careful protection, be kept safely through the winter. Little need be said on the subject of cultivation, as all that is wanted is a deep, rich soil, in an unshaded situation, and when protection is needed it should not be done until hard frost comes, generally about the first week in December. If done sooner there is danger, if the season is mild, that the shoots may be smothered and decay by a too early covering, and again, the covering should not be removed until the weather becomes settled; in other words, not until spring has fully come to stay.

Carving cloths are now used at the family table, but omitted if there is a dinner party, the meats being carved in the pantry.

Pheasant Breeding in Ontario.

Here, and there throughout this province, for the past twenty years, a few English Pheasants, and sometimes one of the Silver or Golden variety might be seen, but of recent years the two last named sorts have become more plentiful. For many years Mr. John Miller, Brougham, Ont., kept some of these birds, but the finest lot we have ever seen were bred and owned by Mr. Joseph Jeffrey, Bowmanville, Ont., this gentleman has been breeding them for some years, and certainly has been very successful. At the present time he has a large number of both the Golden and Silver variety. We were so much impressed with the rare beauty of these birds, we determined to present a picture of them to our readers. The Canadian Poultry Review kindly allowed us to use one of their cuts. In

Uncle Tom's Department.

MY DEAR NIECES AND NEPHEWS:—I imagine I see you with your eager, questioning faces, looking for what Uncle Tom has to tell you in this letter.

Someone has said the gorgeous sunsets we behold are glimpses from the heavenly entrance. The simile suits me. What you see, as with open eyes you look into the future, are but glimpses of the possibilities of the life before you. Those same bright eyes still bear the child-like purity and simplicity of your Maker, and these, with your merry voices and life yet free from care, and unpolluted by worldliness, teach us older folk lessons of trust and faith. They send their rays, like the good old sun, away down into our dark hearts and make sun-

my smaller nieces? Well, remember the quotation, and you will understand it better some time if you are growing wiser each day—just as those plants are growing which you are watching so closely. You see the tiny plant expanding, more leaves coming, stalk enlarging, then the forming of the buds, and these unfolding their delicate petals till the bloom is fully developed. So would Uncle Tom have his nieces and nephews develop to the full possibility that is within you. Leave no talents uncultivated. Undeveloped petals, however beautiful, never make the perfect flower.

You all know something of the Kindergarten. That just means a child garden; and as your flowers grow, utilizing sun, air, water, soil, so do you; developing more rapidly in congenial surroundings, your teachers and your books being



PHEASANTS.

an article in the above paper, Dr. Hinsdale says:—"The plumage of the Golden Pheasant cock need only to be seen to be admired. With his breast of brilliant red, his crest of the richest golden yellow, his back of metallic green, and long whiptail of black, mottled with rich brown, he is one of the great Creator's most beautiful productions. The female is trim, tidy in habits, and not an unworthy companion of so noble a lord. Her plumage is dark brown, barred with brown of a light shade. A male and five or six female Golden Pheasants make a most beautiful attraction for a lawn or park."

Pheasants are good flyers, and if alarmed are apt to take wing and fly away. From this fact it is best to keep them in aviaries that may be made to add to the attractiveness of the birds. In our next issue we will tell our readers how to rear these birds.

shine and gladness there, making us like those people Longfellow asks to read his Hiawatha, when he says:—

"Ye whose hearts are fresh and simple,
Who have faith in God and Nature,
Who believe that in all ages,
Every human heart is human."

But it is spring-time, and I trust you are all a part of your time at this good work of cultivating the soil. There are some questions I should like to ask you. Have you each a garden? What experiments are you trying this season? What have you learned in the past? Should I come an unseen, silent visitor, and visit your homes and your gardens—somewhat like Santa Claus comes—I wonder what I should see. There are houses and houses, but not so many real homes. When it is "childhood's temple and manhood's shrine," then its about right. Is that too difficult to understand for

to you what you are to your garden. Still, you are the care-taker—the earthly manager—of both yourself and your garden. You know what a weed is. Every one of you could answer that question if asked you. Well, it lives just for itself. So have none such in your garden. Do not be one yourself.

Uncle Tom has so much to say, he can hardly close, but must say "Good-bye" for another month; but in that time he wants you all to keep your ears open when out in your walks, your gardens, the woods and the fields, and listen to the birds and bird-language. By observing them we need not be lonely. There is so much of interest, and each day we may add to our knowledge. Our next talk will be of them. Let our observation be cultivated; then shall we find

"Tongues in trees, books in the running brooks."
When sowing your seeds, sow a "forget-me-not" for
UNCLE TOM.

P. S.—I hope my young puzzlers will remember to have their answers and puzzles in earlier. From henceforth they must be in our office by the 20th of each month. You have a long list of puzzles to work at this month, and some of them are pretty difficult, too. UNCLE TOM.

Puzzles.

1—RIDDLE.

How often I, respected, stood In sober suit of black, To counsel people for their good, And all false things attack. And now, in coat of red so bright, For years full twenty-four, I've fought the wrong, espoused the right, And been loved more and more. I've tried Canadians to weld To honest work and play, This noble Country I've upheld For very little pay. I keep each honest husbandman, From "running off the track," I like my gay coat better than My sombre suit of black.

HARRY A. WOODWORTH.

2—CRYPTOGRAM.

Uambb ulvrecki eu tvsi ulvrecki qfebi et bmutu, Yh hveizju, fyqirly fsalbi, okvzv zyt yzi: Tfi jmeuo, lo tfi ufmjyq tfmt et kmutu, Xvyitiku tfi bezgvevz jiqjvyy hyva tfi usz.

FAIR BROTHER.

3—HEXAGONS.

I.—From 1 to 2 something under your eye; 2 to 3, a town in France; 3 to 4, the "someone" that "blundered"; 1 to 6, a di-branched cephalopod; 6 to 5, a musician; 5 to 4, a bird; 1 to 4, division; 6 to 3, care; 2 to 5, what is left of this hexagon. II.—From 1 to 2, a leader; 2 to 3 deceit; 3 to 4, a spirit; 1 to 6, a heavenly body; 6 to 5, exhausted; 5 to 6, a court; 1 to 4, a reptile; 6 to 3, a periodical mind; 2 to 5, given up.

HARRY A. WOODWORTH.

4—ILLUSTRATED REBUS.



5—ANAGRAM.

My total is sure victory, (To make the answer plain.) By keeping right upon thy side, Thou wilt all contests gain. You'll always find that I'm ahead, But friend, I will admit: There's one more thing I might have said, That is, new rum tries it.

FAIR BROTHER.

6—UNION JACK.

DIAGRAM. A o o o B o o o C A to C—One of the United States. O o o o D to E—Opinion. O o o o F to H—Threatening. D o o o o o E A to F—To metamorphose. O o o o B to G—Conceited. O o o o C to H—Precision. O o o o A to H—Sneaky. F o o o G o o o H C to F—State of a hermit.

FAIR BROTHER.

7—DROP VOWEL PUZZLE.

L-t n- m-n h-ll h- s-s-f- t-ll h- s- thr- -gh th- w- -d. H- wh- w-ll n-t wh-n h- m-v m-st t-rr- wh-n h- sh- -ld; H- wh- l- -ghs -t cr- -k-d m-n sh- -ld n- -d w-lk v-ry str- -ght; O-, h- wh- -nc- -hs w-n - n-m- m-y l- - -b-d t-ll - -ght

HENRY REEVE.

8—NEW PUZZLE.

What number is that, which divided by 2 leaves 1, divided by 3 leaves 2, divided by 4 leaves 3, divided by 5 leaves 4, divided by 6 leaves 3, but divided by 7 leaves no remainder.

A. HOWKINS.

9—NUMERICAL ENIGMA.

My 35, 29, 29, 17, 25, 3, 9, 19, is a remembrance. My 34, 10, 12, 27, 8, 33, is to suppress. My 30, 5, 18, 25, 19, is to guide. My 13, 14, 7, 1, 8, 16, means original material. My 15, 2, 23, 24, 19, 30, is to be in want of food. My 28, 6, 32, 4, 21, is a hard lump. My whole is a wise and a worthy saying.

A. T. REEVE

10—AN EPITAPH PUZZLE.

Beneath this stone lies Catharine Gray, Turned from a busy life to lifeless clay; By clay and earth she got her pelf, But now she is turned to earth herself. My weeping friends let me advise, Refrain from tears and wipe your eyes: Who knows but in the turn of years, In some tall pitcher or broad pan, She may be in her own shop again. What was her occupation? E. E. WILSON.

11.—GEOGRAPHICAL STORY.

As (a river in Australia) (a town in Ohio) was cutting some (a lake in Ontario) from a (a lake in New Brunswick) (mountain in Vermont) pole, in his (island north-east Australia) (a city in Turkey, in Asia) (a department of France), he thought of his (peaks in Utah) (mountain in Oregon) (a mountain in Canada), and (a city in Italy) and he accordingly made (a island north Labrador) to visit new (a county in Ontario). His (a island east of United States) brother (a town in Cape Colony) gave him a (city in France) (island east of Anam) of (a sea in Europe), (a river in Quebec), and (a river in Manitoba) (a island in Ontario) from his (a lake in Nova Scotia) (a town in Grey county) for them. When he arrived in the (a cape south of Africa) the first thing he saw was an old (a sea in Europe) women selling (a river in Montana) and (a point in Prince Edward county) (a town in Ontario). He was surprised, and asked (a island east of Labrador) who looked (island east of Australia), the way to (a county in New Brunswick) street where his connections lived. Having delivered his brother's present with (island west of Chili), he sat down to (a river in Ontario) dinner, there was (bay north New Zealand) to eat, and he being (country in Europe) he made (a strait near Denmark) meal. After a three (island east of China) visit, he returned to (bay east of Baffin's Land) laden with presents. For his mother he had (a sea in Asia), and, (mountain in Australia) river in New Brunswick), of (lake in Ontario) make. For his father (a island north of Nova Scotia) pipe, for (cape east of Greenland) a toy (island in Bahama) with (a county in Ontario) (river in Wyoming) and painted (sea in Asia). For himself he had (a town in Perth) and (a gulf south of Australia) work. This ended our hero's trip. HENRY REEVE.

Answers to April Puzzles.

- 1.—LET-HE-AN. 2.—Industry and perseverance overcome every obstacle. 3.— P A R S E A R O M A R O W E R S M E L L E A R L Y 4.— M O O D D O O M T I M E E M I T E V I L L I V E N O T E E T O N D E E M M E E D 5.— "When virtue falls, 'tis not to die, But be translated to the sky." 6.— R E L I S H O E S I N U N T O C S I N U R O M E R N R O B B E R I I P O R T E R 7.— C A N T O N C A N T O C A N T C A N 8.—Reason's whole pleasure. All the joys of sense lie in three words—health, peace and competence.—Pope. 9.—Sum-mary—Summary. 10.— D I A N A A T E E P A N J A S O N 11.—Hemans. 12.—It was quite a disappointment to sister Isabel when the storm came on, as she was going away with Ann, the cook, to do some trading, but the foul weather and mud made the wheeling so bad that it was impossible to traverse the main roads. Brother James promised her a grand time if she would have patience until fairweather set in, and then he would take his race horse and cross the river, and they would have a pleasant time, plenty of candy and other nice things. Abright, says Bell, but I fear that I shall not be able to get my green jacket and black cashmere dress before spring. O, say, do you see that red apple-by that rock? Make haste and get it for me, and save a catastrophe. Be spry, now, or— But the sentence never was finished, because the dreaded catastrophe happened.

Names of those who have Sent Correct Answers to May Puzzles

Henry Reeve, E. Eulalia Farlinger, Morley T. Ross, A. L. Shaver, A. Russell Boss, Dorion T. Buchanan, A. Howkins, Anna K. Fox, Agnes S. Anderson, Charles S. Laidlaw, Naomi J. Danbrook, Mary E. Hunt, Clara Rilance, Willie N. Redner, Helen Connell, Charlie Crysler, Frank Riddle, Robert Wilson, Ed. A. Fairbrother, Cecelia Fairbrother, A. T. Reeve, Jessie Morley, G. J. Cowan, Frank Mortimer, C. T. Ormond, Edward McKenzie.

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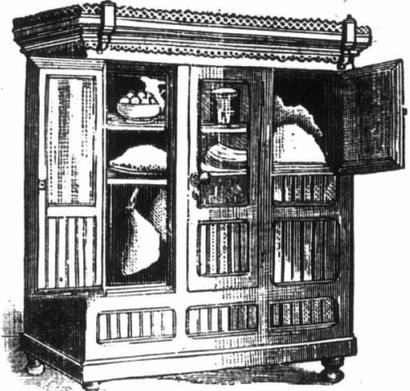
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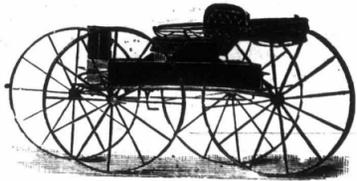
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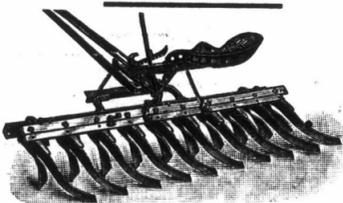
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The managers of DR. BARNARDO'S HOMES desire to obtain good situations with farmers throughout the country for the boys they are sending out from time to time from their London Homes. There are at present nearly 3,000 children in these Homes, receiving an industrial training and education to fit them for positions of usefulness in life; and those who are sent to Canada will be selected with the utmost care, with a view to their moral and physical suitability for Canadian farm life. Farmers requiring such help are invited to apply to

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150,000 FARMERS HAVE USED AND APPROVED THE
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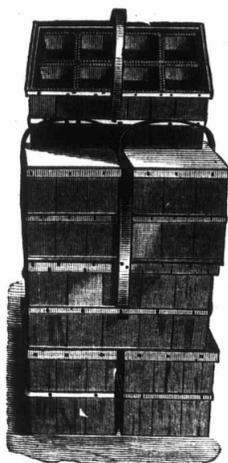
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Mention this paper. 277-e

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packages for every variety of fruit.

GIVE US A TRIAL,
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Send for price list. **A. GILCHRIST,**
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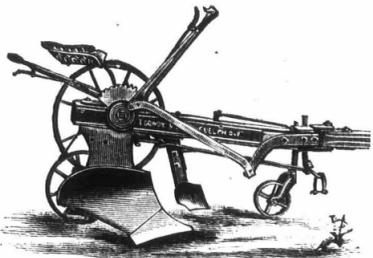
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FOR SALE—A HOLSTEIN BULL
three years old. For particulars apply to the undersigned,
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Two imported Walsh Pony Stallions; Pony Turnouts a specialty; Pony Carls, all styles and prices; Pony Mikadoes, Pony Harness, Boys' and Girls' Pony Saddles; also twenty Acme Pulverizing Harrow, Clod Crusher and Levelers at a bargain, made by Duane H. Nash, Millington, New Jersey. Address, **G. W. ROBINSON,**
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1889—SEASON—1889

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Also Cows and Heifers of both breeds at reasonable prices. Good animals, and of the purest breeding. Also pure-bred **Suffolk Funch Stallion.**
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CRUIKSHANK BULL
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WARRANTED CHOLERA PROOF.
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PRIZES IN U. S. & FOREIGN COUNTRIES. 2 WEIGHED 2806 LBS.
SEND FOR DESCRIPTION & PRICE OF THESE FAMOUS HOGS, ALSO FOWLS.
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Stock recorded in the National C. W. Record. Orders booked for spring pigs, in pairs and trios not akin. Prices right.
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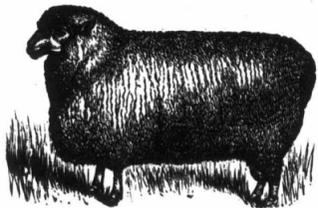
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Have at all times a number of both sexes for sale. Catalogue of young bulls recently issued. Address:

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COTSWOLDS.

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For forty years we have led all others in these lines, both in the show yards and breeding pens.

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My Shorthorns are well bred, good colors, and have been fine milkers for generations. I have over 100 females and a large number of bulls, from which buyers may select.

Prices to suit the times.
Satisfaction guaranteed.
Correspondence promptly answered.
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All by imported sires, and mostly out of imported dams, besides imported and home-bred cows and heifers. I have also a number of exceedingly good imported

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New Catalogue for 1889, will be ready about the 20th January, 1889. Send for one.

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Address, **JEFFREY BROS., Whitby, Ont.**
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WOOD ENGRAVING
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For Procuring New Subscribers to
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CONDITIONS:

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- 2nd. In all cases to secure these prizes the names sent in must be new subscribers. *Renewals will not count.*
- 3rd. Competitors may send in their lists weekly if they so desire. The party who first sends in the full number of names will secure the prize.
- 4th. A Cash Commission will be allowed to all who are not prize winners: From 10 to 20 names, 25cts. each; 20 to 50 names, 35cts. each; 50 to 100 names, 45cts. each; 100 to 200 names, 50cts. each.

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- For 150 new names, a Shorthorn Bull (fit for service), bred by James Graham, Port Perry, Ont.
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- All stock or goods shipped free on board the cars.

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A Fine White Corn, carefully selected. Will grow ninety-five per cent.

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Turns the soil both towards the tongue and away from it.



Thousands of farmers have been using this harrow for sowing and covering grain the past two weeks, and now, for working summer fallow, there is no implement to compete with the "Corbin." It is so perfectly balanced that it works well on the hardest clay, every disk cutting an equal depth and pulverizing the land thoroughly. Its ball boxes make it draw light and wear well. The "Corbin" is an immense success and leads all disk harrows, because it does the work of a gang plow, sod cultivator, seeder, pulverizer and vineyard cultivator, and does all its work well. Five implements at the cost of only one. Every farmer should post himself as to what the "Corbin" is and what it will do. Drop card for circulars.

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Porous Terra Cotta Building Material

— MANUFACTURED BY —

THE RATHBUN CO., DESERONTO, ONT.

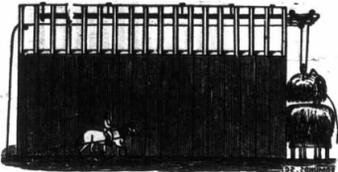
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Absolutely fire proof. Cool in summer and warm in winter. It insures freedom from rats, mice and other vermin. One-half the weight of ordinary bricks. Mortar can be applied direct without lath or furring. Applicable for old and new work. Farm Drain Tile of any size. Write for prices and further information.

BUCHANAN'S
Malleable Improved Pitching Machine

For unloading hay and all kinds of loose grain



Will unload on either side of barn floor without changing car. No climbing necessary in order to change from one mow to another. Will unload a load of hay in four fork fulls. All cars made of malleable iron. All forks made of steel. Machines guaranteed to give satisfaction or no sale. The purchaser to be the judge. Responsible agents wanted in all unoccupied territory. None but responsible men need apply. Send for circulars and terms.



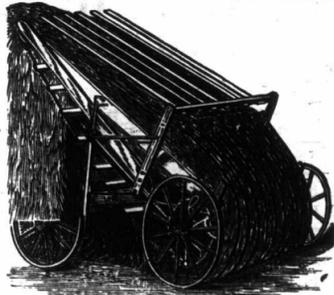
THE COMMON-SENSE SHEAF LIFTER

Works in connection with the hay carrier, and is the most complete apparatus ever offered to the public for unloading sheaves. Leaves the sheaves in the mow just as they come from the load. Satisfaction guaranteed. Price, \$5.00.

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INGERSOLL. 278-a

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Hamilton, Ont.,
Manufacturers of all kinds of

HAY TOOLS



Foust's Patent Hay Loader, Anderson's Patent Rake Attachment, Grand Rapids Hay Tedder, Wisconsin Dead Lock Hay Carrier and Fork.

The above mentioned implements are the most popular Haying Tools in the market. Send for descriptions and prices. Good, responsible agents wanted.

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Yours, etc.,
THOMAS SHAW, 280-g
Prof. of Agriculture, Agricultural College, Guelph.

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R. J. BENNER,
279-c PHEASANT FORKS, ASSA.

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STRAWBERRY BOXES, \$4 PER THOUSAND.
Further discounts on large lots.

All styles of Fruit Baskets manufactured.

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"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Cocoa, Mr. Epps has provided our breakfast tables with a delicately flavored beverage which may save us many heavy doctors' bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal shaft by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette*.
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IF SO, USE JOHNSON'S PURE LIQUID PAINTS.

DURABLE PAINTS! BEAUTIFUL PAINTS!
READY TO APPLY

No Mixing. No Difficulty About Getting the Right Shade. Always the Same.

Genuine old-fashioned Paints covering capacity
Equal to Pure White Lead and Linseed Oil.
They will last longer, look better,
Work easier and give better satisfaction.

Good results only can be produced by the
Use of good materials. The main expense
In painting is not the cost of paint
But the cost of labor and oil.

It costs more labor and more oil to apply inferior paint than to apply the best that can be obtained. We will re-paint, free of charge, any building or decoration painted with Johnson's Liquid Paints where results are not found in accordance with this guarantee. WE STAKE OUR REPUTATION ON THE PURE QUALITY OF OUR GOODS.

MAGNETIC :- IRON :- PAINT!

Oxide Iron, 92%; Hydraulic Cement, 8%.
We guarantee that it will cover 50% more surface, pound for pound, than any other oxide in the market. Five pounds of this Paint mixed in one gallon of pure linseed oil will cover 900 square feet of dry pine wood.

It does not blacken the lead as other oxides do. It forms beautiful warm tints with white lead, such as grey stone, drab and brown stone, and these tints, thus made, are most lasting. It does not scale or peel off. It covers 15% more than lead.

It is not affected by change of atmosphere or temperature. It contains 92% of Pure Magnetic Iron; absolutely pure; a rich brown color; fire proof; uniform in color; economical, everlasting, unfaiding; free from grit and acids. It contains no sediment.

We guarantee that Johnson's Liquid Paints will cover a similar surface as well as Pure White Lead and Linseed Oil. They will look better, work easier and give greater satisfaction.
The above goods are for sale by every first-class dealer in paints throughout the Dominion, where samples may be seen, or obtained upon application to the manufacturers.

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14 ST. JOHN STREET, MONTREAL.

STOCK GOSSIP.

Prouse & Williamson, Centreville Stock Farm, write us as follows:—In the Stock Gossip of last month, I see you are asking all parties to send in their sales and purchases. We have this winter sold two Canadian Clydesdale stallions. We have also added to our stables two imported mares, Jeanie Dean and Coyleton Maid; the latter won first at the Toronto Industrial last September, as a two-year-old, and was a prize winner in Scotland. They have lately purchased the Clydesdale stallion, Norseman (4500), which won first at Toronto spring show in 1887.

W. J. Bell, Banda, reports the following sales of Bronze turkeys, all bred in 1888 with one exception:—J. Maughan, Toronto, hen; J. Kitson, Avening, pair hens; J. Anderson, Guelph, hen; H. Element, Creermore, trio; R. Niblock, Smith's Falls, trio; J. Stevenson, Leaskdale, gobler; B. A. Lucas, Wallbridge, pair; H. P. Smith, Aurora, gobler; A. D. Harkness, Irena, pair; George Fraser, La Chute, Que., pair; George Merrill, Compton, Que., pair; Wm. Hodgson, Brooklin, gobler; J. M. Carson, Orangeville, pair; J. Monteth, Rosseau, pair; George Stewart, Maple Valley, gobler; Mrs. H. D. Rutherford, Middle Stewiache, N. S., pair; L. W. Edsall, Selkirk, pair hens. Many thanks to the ADVOCATE, as the majority of sales were made through it.

The Bollert Bros., of Cassel, Ont., write under date of April 20th:—Our crop of calves this spring is the finest we ever had, showing that high breeding is not lost in them. Geldertje 2nd is a rare beauty, and one might go a good way to find her equal. Geldertje is now giving 64 lbs. of very rich milk per day, and is gaining with every milking. She does this on ordinary feeding, without any crowding. Her Holland record is 84 lbs. per day, and 19 lbs of butter in 7 days on grass only. Jenne E. also has a very fine heifer, by Barton, which is undoubtedly a great sire. Her calves are eagerly sought after, and bring higher prices than those of any other bull of the breed in Canada. He fully substantiates the high opinion which Dudley Miller, Esq., of Oswego, N. Y., the expert judge, holds of him. He pronounces him one of the best bulls of the breed in America. The demand continues very good from all quarters. Since last report we sold to Mr. W. Thompson, Jr., of Derwent, Ont., the bull Lord Lytle. Individually, this is one of the finest specimens we ever saw, and for quality and breeding he is unsurpassed. Mr. E. Truscott, of South Monogan, took the bull Linden Court Prince. Mr. Robert Armill, of Tally Ho, Algoma, gets Barton, Jr. This is the first animal of the breed going to that district. He is a very good one, and will undoubtedly prove a good investment.

On the 28th of March we had the pleasure of witnessing one of the most straightforward and honestly-conducted auction sales it was ever our privilege to attend. The sale was called by Mr. James S. Smith, of Maple Lodge, Ont. Some fourteen Shorthorns were sold, which made an average of about \$110 each. The cattle were not in high flesh, not as high as would have been profitable to the seller, but were in what is often termed straight, useful condition. As each animal was brought into the ring, Mr. Smith referred the buyers to the catalogue; then if the beast had any defect he frankly stated it. This was his third annual sale, and he thinks the cattle were the best lot he ever offered at public auction. He still has nearly 40 head in his herd, as follows:—Two pure Bates, females, of the Constance family, viz., 2nd Constance of the Manor, bred by Mr. John Gibson, and a red heifer, from her, two years old, Constance of Maple Lodge, got by Duke of Colonus (222); another Bates-bred family, of which he has five females, is that descended from imp. Daisy, by Wild (233). Daisy was imported by Mr. Dunn, of Kentucky, and since then crosses has been added of the best Bates blood only. From this family and the Lavinias, of which he has about twenty head, he has produced his best milkers (and he has good ones). The Lavinia family in his possession is of two branches, the one branch having several crosses of Booth blood and the others all Bates. Then he has five females of Mr. Cruickshank's Lovely family—Lovely Queen 3rd and her four calves, three of them sired by Duke of Colonus (222), combining the graceful carriage and mellow "touch" of the Duke, with the Cruickshank characteristics of their dam. Lovely Queen 3rd was got by Butterfly Duke (he by 4th Duke of Clarence and out of Bow Park's show cow Butterfly Duchess), dam, imp. Lovely 19th, bred by Mr. Cruickshank. Five of the females are descendants of imported Jane 3rd, bred by Robert Syme, Dumfriesshire, Scotland, through the sire imp. Prince of Wales (18630), imp. Nicol (185), Highland Chief (701), Baron Constance 5th (1378), and Duke of Colonus. He likes this family. Then he has two females of the imp. Lily by Warden (1563) family: Tully's Duchess 9th by 5th Earl of Goodness (333) & sire, 2nd Duke of Rutland (1099), & gr. sire, 2nd Duke of Ardris (500), &c., and her heifer calf by Sir Arthur Ingram 2nd. He has five very promising young bull calves, thick-set fellows, with nice soft coats and lots of style. He recently bought of Mr. John Dryden, M. P. P., for use in his herd, a very nice red bull, Conqueror, calved November 1st, 1887. This is a massive, short-legged fellow of good quality, a typical Cruickshank, and is of the Cressida tribe, one of Mr. Cruickshank's most valuable families. Cumberland, of this family, is now the chief stock bull at Sittyton, and is to be followed in that position by Commodore, another of the same tribe. Owing to a number of recent sales to parties in different parts of the United States, his flock of Leicesters is not large. He has eleven ewes raising sixteen lambs, and six very choice shearing ewes. He has just on ram, one shear, left. He also has a few very nice Berkshires.

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Standard Harvesting Machinery!

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THE PATTERSON LIGHT STEEL BINDER, 5, 5½ and 6 ft. Cut.
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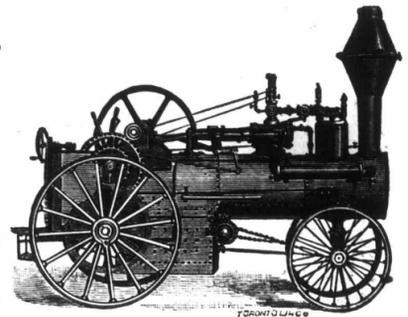
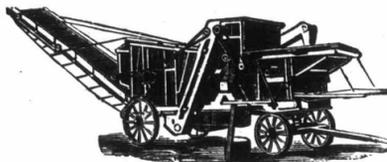
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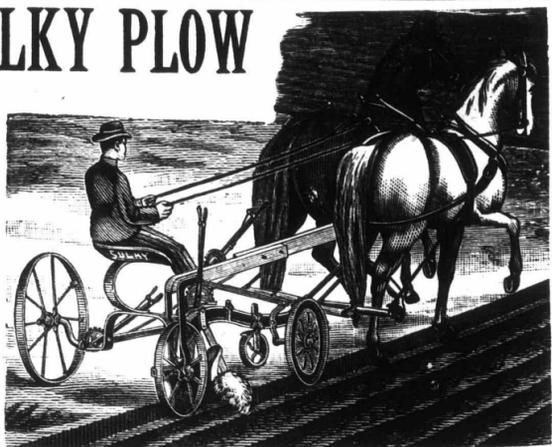
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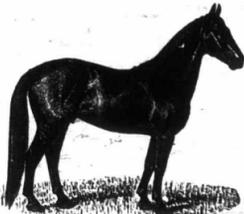
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Standard and Registered Trotting Stallions.



MOORELIGHT 9337, by **TWILIGHT 315**, by Hambletonian 10 (sire of 41 in 2.30 or better, and the dams of 49 in 2.30 or better), dam Mary Hulse (dam of Charley Chaplin, 2.21 $\frac{3}{4}$, and Sam Hill, 2.30 $\frac{1}{2}$). Dam **LADY CALE**, by American Clay 34 (dam of Ambassador, 2.21 $\frac{1}{4}$, trial 2.18; Alcandre, 2.26 $\frac{3}{4}$; Strathblane, record 2.34 $\frac{1}{4}$, trial 2.20; Alar Clay, trial 2.29 $\frac{1}{4}$). Terms—\$25 the season, with return privileges; \$40 to insure.

SARDINE 8004, by **SOCRATES 287**, record, four-year-old, 2.34 $\frac{1}{4}$, trial 2.25, and sire of 10; dam Lady Fallis, dam of Kisber, 2.27 $\frac{3}{4}$; Pickering, 2.30; granddam of (Lingstone, 2.14; Falls, 2.23. Dam **WELLIE DAWSON**, by Geo. Wilkes 519, record 2.22, sire of 65 in 2.30; second dam Lady Suffolk, 2.31 to wagon, by Lone Star 1249. Terms—\$25 the season, with return privileges, and \$40 to insure.

ABELARD 1846, by **MARIO 1359**, son of Sentinel 290, record 2.29 $\frac{3}{4}$ (full brother to Volunteer), by Hambletonian 10; dam Coquette, by Pilot, Jr., sire of the dam of Maud S., 2.08 $\frac{3}{4}$, Jay-Eye-See, 2.10, and 24 others in 2.30. Dam **ALICE CLAY**, by Almont 33, sire of 83 with records from 2.16 $\frac{1}{4}$ to 2.30, and the dams of 10 from 2.18 $\frac{1}{4}$ to 2.30; second dam Rosa Clay (dam of Capoul, 2.28), by American Clay 34. Terms—\$15 the season, with return privileges, or \$20 to insure.

Mares for service pastured at \$2 per month. Send for catalogue for extended pedigrees, etc.

TERMS—Season mares payable by cash at time of service, or note at three months. Insured when mare prove with foal.

J. D. O'NEIL, V. S., } Proprietors, London, Ont.
D. FERGUSON,

281

STOCK GOSSIP.

Mr. J. R. Martin, the Shorthorn breeder, of Cayuga, sails for England about the 12th of June next. See advt. of his sale on the 9th inst. in another column.

Mr. Birdsall, President of the East Peterborough Farmer's Institute, has secured the nucleus of a Jersey herd in Jeda Cicero 33885, imported, and Bella of Jersey 23210.

Since last issue Mr. Robt. Reesor has sold two Jersey bull calves to W. H. Russell, of Essex Centre; one heifer to M. Stonehouse, Port Perry; one heifer to M. Murray, Brooklin, and two heifers to Jas. Lang, of Durham.

Mr. Smith Stevens, of Bridgen, recently bought a pair of young Holsteins from Messrs. Bollert, of Cassell, Ont., about two weeks ago the heifer got into some drift-wood in a large creek that runs through the farm and was drowned.

The usual picnic by the farmers of Haldimand County will be held at Cayuga this year, on the 28th day of May. Dr. Baxter, the Speaker of the Ontario Legislature, will preside. Col. Davis, of the York Battalion, has kindly granted the use of the drill shed should the weather be such as to render it necessary.

D. Alexander, Bridgen, has made the following sales since January:—A young bull to J. C. Littlejohn, Highgate; a cow and young bull to Jno. McGugan, Melbourne; a bull to Thos. Duncan, Bridgen; two heifers and one bull to a gentleman from Brewster; a young bull to Daniel C. McLean, Melbourne. To show his neighbors what breed and feed would do, Mr. Alexander sold a heifer sixteen months old to a Bridgen butcher for Christmas beef, she dressed sixty lbs. beef to the cwt., producing six hundred and thirty lbs. of dressed meat from one thousand and fifty lbs. live weight.

Mr. A. C. Burgess, Arklan farm, Carleton Place, has been breeding Jerseys for about four years, and is still adding to his herd. He recently purchased a few cows from Mr. B. Folger, Kingston, also one or two from the Oaklands herd at the late sale. Mr. Burgess, in partnership with Dr. Preston, of the same place, recently purchased a yearling colt, which they have named Arklan, after the farm. He was got by Gen. Wilkes, who has a record of 2:15 $\frac{1}{4}$; dam Rosh by Sultan, time 2:24; grand dam by "The Moor," who was sire of the dam of Bell Boy, who was sold for \$51,000. Mr Burgess filled his silo last fall under very unfavorable circumstances, but had good ensilage. He says "that silo has come to stay."

On April 19th, A. C. Hallman & Co., New Dundee, Ont., write:—We for the first time take pleasure to furnish you with some "Stock Gossip." We have now been regular advertisers in your valuable paper for several years, and every number assures us of its benefits. Our Holsteins have wintered well, and we never had a finer lot to select from. Our foundation stock, originally selected from the famous herds of Smith, Powell & Lamb, Syracuse; P. G. Youmans & Sons, Walworth, and Hon. Gerrit S. Miller, Peterborough, N. Y., places our stock on almost equal footing with those noted breeders, and in the front ranks in Canada. We can furnish stock second to none in Canada, and for individual merit and choice breeding cannot be surpassed. We have representatives of the Laugel, Netherlands, Billy Bolyn families, which for large milk and butter records are hard to equal. We have great choice in calves, and parties wishing first-class stock should not fail to inspect our herd before purchasing. We can furnish pairs not akin. The demand for Holsteins is fast increasing.

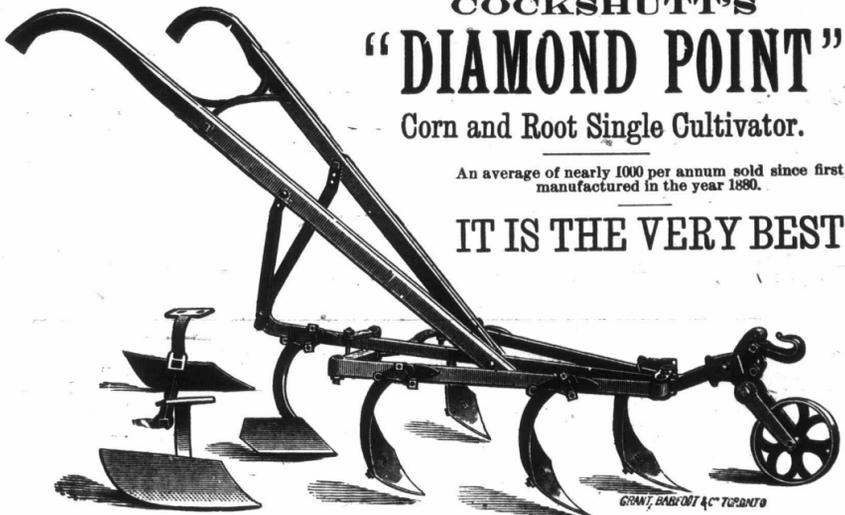
The celebrated Oaklands herd of Jersey cattle was sold by the assignees of V. E. & H. H. Fuller, at Oaklands, near Hamilton, on Wednesday and Friday, April 3rd and 4th, seventy-one head of Jerseys were sold realizing \$8,270 or an average of \$116.48 including calves and exclusive of grades of which there were a few sold, bringing fair prices. The sale was held under the large canvas tent usually used for the Oaklands sales, and although the weather was unfavorable the attendance was good, and prices fair, although not up to what we have seen realized on the same ground. A few were bought for the Ontario Agricultural College farm, and quite a number went to Philadelphia to Messrs. Moore and Kirkpatrick, and several to Mr. Glacier, Michigan. Messrs. Folger, Kingston, and Burgess Carleton Place, each bought some very fine animals, also Captain Wm. Bolph, Markham, and Joseph Stratford, Brantford. Many who had never kept Jerseys before availed themselves of the opportunity to obtain the nucleus of a herd here. This herd (Oaklands) was founded about ten years ago by Mr. Vallancey E. Fuller, who has shown great ability as a Jersey breeder. A few years ago the dairy world was astounded by the phenomenal production of the world renowned Mary Anne of St Lambert, viz., 36 lbs. 12 $\frac{3}{4}$ oz. of butter in seven days. He was also fortunate in securing a large number of fine animals of the same blood before breeders realized their value, and before the now famous Stoke Pogis blood had begun to be appreciated. It is perhaps not generally known that Stoke Pogis the grand sire of Mary Anne of St Lambert, was sent to the block at three years old, having been sold to a butcher for about \$50. If he was alive to-day and his stock known, he would doubtless fetch more than half that in thousands. It is a matter of regret that this breeding establishment and Mr. Fuller's ability as a breeder should be lost to Canada. But a crash in another branch of business in which he was engaged swallowed up Oaklands Jersey Stock Farm, and ere two months roll by Mr. Fuller will have taken up his abode permanently in Michigan.

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Corn and Root Single Cultivator.

An average of nearly 1000 per annum sold since first manufactured in the year 1880.

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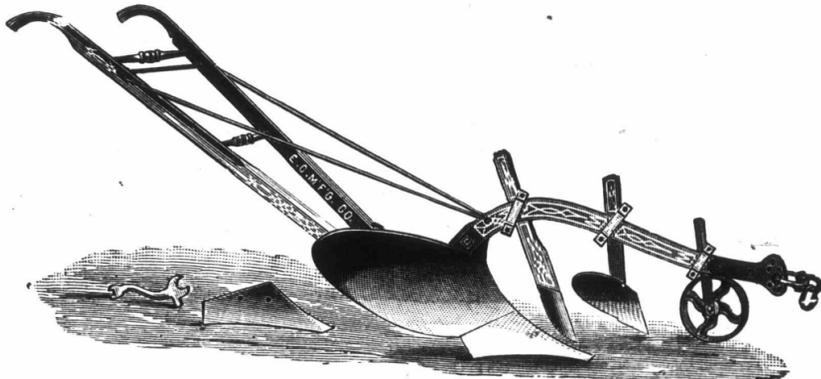
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281-a

STOCK GOSSIP.

The Peterboro' Central Exhibition will be held on September 24th to 27th inclusive.

Tisdale's Brantford Iron Stable Fittings. We lose no job we can figure upon. Catalogue sent free. The B. G. Tisdale Co., Brantford, Canada. Advt.

Mr. Robt. Miller, Brougham, Ont., wrote us on April 3rd, that "they then had 132 pure bred Shropshire lambs, and expected about 30 more soon, this year's crop is a very promising one."

Mr. Heber Rawlings, Ravenswood, Ont., has recently made the following sales:—A young bull to Jno. and Donald McIntyre, Bosanquet, also a young bull to Jno. Cochrane, Aberarder.

We take pleasure in calling the attention of our readers to the advertisement of Messrs. O'Neil & Ferguson, the well known horsemen of London, Ont. A full review of the stock will be given in our next issue.

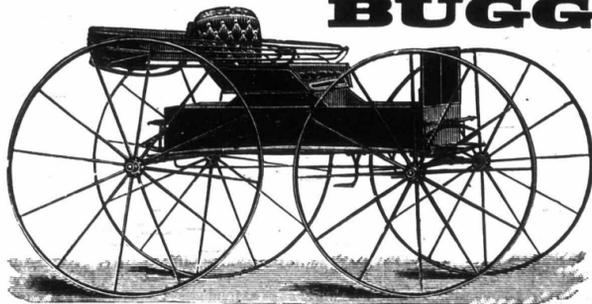
The Industrial Exhibition Association of Toronto, will hold its eleventh exhibition at its grounds in Toronto, on September 9th to 21st inclusive. Efforts are being and will be made, to make Canada's great fair even a greater success than ever before.

Messrs. Smith Bros., in a letter just received, say: "We have been counting up what our cow Slepke gave us during the past two months, and find that she gave 11,269 lbs., of milk. Onetta in six months gave 7,248½ lbs., of milk, or over four gallons a day for 180 days, and is still giving nearly four gallons a day. Dina of the Pines, as a two-year-old, gave 318½ lbs., of milk in seven days, her highest day's record being 48½ lbs., in one day. The sales during the past two weeks have been most satisfactory. Three young bulls, and three young heifers of excellent quality have been sold, and will be shipped in a few days. Inquiries are coming in almost every day, and we find that high class stock is what is chiefly wanted, individual merit with ancestors of good records are what satisfies all buyers of this noble breed. Our young stock being pretty nearly sold out, we are offering some of our cows for sale. Prices are being cut close so as to let the people know what this breed can do, and thus give all a chance to buy."

We have been advised of the dispersion of Mr. Henry Webb's celebrated flock of pure Southdown sheep. We learn Mr. John Thornton has been instructed by Mr. Henry Webb to sell by auction without any reserve, at Streetly Hall, three miles from Linton, and Bartlow Stations, G. E. R., and twelve from Cambridge, his entire and well-known flock of Southdown sheep, the first portion of which, comprising about 100 rams and 400 ewes, will be sold on Wednesday, July 3rd, 1889 (the day after the Sandringham sale), and the entire remainder in 1890, when the lease of his farm expires. During the present generation, Mr. Henry Webb's flock has quietly obtained among breeders in England, as well as in America and on the Continent, the very highest reputation. When the Babraham flock, belonging to Mr. Jonas Webb, was dispersed realizing an average of £11 15s. 9d. for 27 head, Mr. Henry Webb increased and improved his flock by the addition of about seventy of his father's best old ewes from the sale, as well as of many rams of different ages. The Babraham flock had a world-wide reputation; its success at the English Royal and County shows as well as at Paris and at Continental exhibitions was unprecedented. It was descended from the best of Sussex flocks, the blood of the sheep of Mr. John Ellman (who may be called the father of the breed) being its mainstay. Mr. Henry Webb's principle has been that which has acted all our eminent breeders, both of cattle and sheep, viz., to raise a flock having purity of blood, with hardy constitutions, that any farmer might breed from, and from which exhibitors might select show-yard winners. Mr. Webb has never exhibited nor has he introduced any cross of blood whatever. From the sheep obtained at Babraham he has, by careful selection, unremitting attention, and systematic management, reared a flock which breeders will know to be unequalled, and they have consequently drawn upon it for many years by privately hiring and purchasing rams, whose offspring have gained the highest honors at our summer breeding and Christmas fat stock shows. The flock is a magnificent collection of sheep. They are on a large scale, being very short-legged with deep carcasses, "so high, yet so low," with grand heads, fine sloping shoulders, and good thick legs of mutton; whilst the wool, which has been an especial study, is thick and close, and of remarkably fine quality. The sheep are folded throughout the year on the land, for out of about 550 acres only about 30 are pasture. The sheep have the same striking, healthy, robust character and uniform type, and, in the opinion of many excellent judges, have never been better. Lameness is unknown in the flock. Every sheep is tattooed with a number inside the ear, and a careful record of its breeding is kept in a private flock book, showing its descent to the Babraham flock. The removal of an old fountain head must be a source of regret to breeders, yet on the other hand it affords an opportunity of laying the foundation of new flocks, and of refreshing those in existence, particularly at a time when there is a growing demand both at home and from abroad for animals of the very best quality. It may be mentioned that the highest price for sheep of any breed last year, was realized by a Southdown ram which was by a son of one of Mr. Henry Webb's sheep. The great national meeting of the Royal Agricultural Society of England takes place on Monday June 24th, at Windsor. Streetly is within a couple of hours of London, and the flock will be open for inspection at any time by appointment with Mr. Webb.

MANY OLD FARMS require so much fertilizing that farms & gardens **WONT PRODUCE A PROFIT.**
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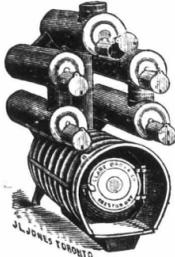
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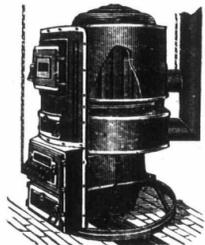


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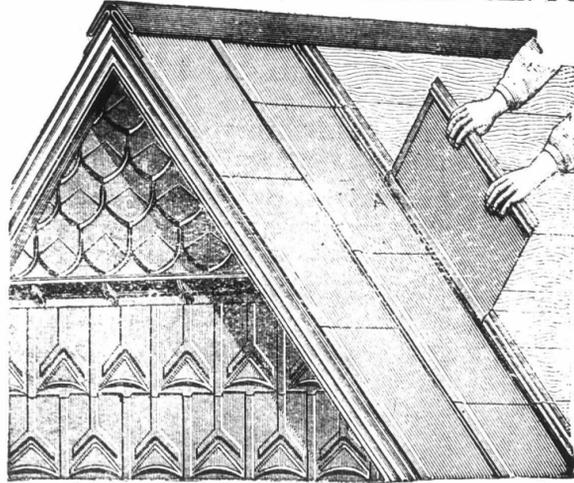
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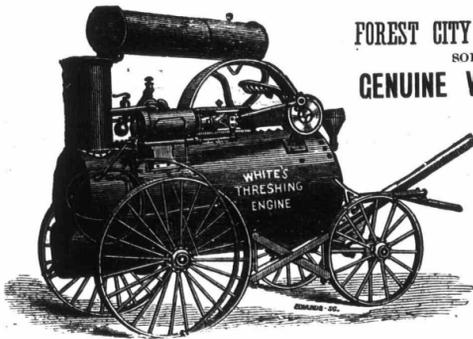
The importations of 1888 comprise a large number of one, two, three and four-year-old registered stallions and mares, the gets of such sires as Macgregor (1487), Darnley (222), and Prince of Wales (673). Also a few choice SHEPHERD PONIES. Correspondence solicited, and visitors always welcome.

GRAHAM BROTHERS,

Twenty-five miles east of Toronto.

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Special 20-horse power Portable Saw Mill Engine, (same pattern and style), Light and Heavy Traction Engine, and is licensed by all Insurance Co's, and has proved itself to be the most durable. The Engine for the Northwest is made to burn either coal, wood or straw. A thorough warranty given with all Machines and Engines. Call and examine our Machinery, or correspond with us before purchasing elsewhere.

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**Railway Platform Baggage Trucks. Farm and other Dump Carts.
Hardwood Lumber and White Oak Gang Sawn Ship Plank.
The Patent Champion Hay Rack, Etc., Etc.**

CORRESPONDENCE SOLICITED.

268-7

STOCK GOSSIP.

As several of our readers have asked for the pedigree of Anglo-Saxon, we herewith publish it. He was sired by Anglo-American, he by imported King Alfred; first dam by Forester, second dam by Wellington, third dam by Bonedclipse.

Mr. Wm. Young, of Bridgen, has the foundation of a herd of Shorthorns, having bought of Henry Arkel, Arkell P. O., the young bull Hyperion. His cow Bella Sales recently dropped a fine red heifer calf. He has also a very nice two-year-old heifer, Jenny Sales.

Jno. Wood, of Florence, has purchased an Ayrshire bull from Mr. Geo. Hill, of Delaware, this bull was got by the imported bull Stone Aisay [1435]. He is half brother to the noted bull Gen. Grant, which has taken the silver medal at the Toronto Industrial for three years in succession, in all-five silver medals.

A Dominion Hog-breeders' Association will be established sometime during September. Several gentlemen who are interested in the production of fine hogs, are now working to bring about a union of breeders and packers, such an association would be of incalculable benefit to the country.

We are glad to learn that the Hon. Mr. Drury has expressed his willingness to undertake the printing of the annual report of the Sheep-breeders' Association, and to issue it as a publication of his department. The Sheep-breeders are the first Live-stock Association to issue an annual report. We hope other kindred associations will follow their example.

Mr. E. W. Charlton, of the firm of E. W. & G. Charlton, called at our office, April 23rd, and reported their stock as doing well. They have recently sold Baron 2nd, of Drumlanrig, to Charlton & Paul, Coldstream, Ont., and the English Coach Horse, Yorkshire Lad, to Cameron & Dewar, Nairn, Ont.; also, the stallion colt, Prince of Maplewood, to Anthony Hughes, Kerwood, Ont. The famous Clydesdale mare, Polly Craig, gave them a fine horse colt, April 16. His sire was Good Kind. This colt will doubtless be heard from in the future. Their roadster mare, Lucy, dropped her eleventh foal the first week in April. On the 29th of April they started their two imported Clydesdale stallions on their rounds for this season.

Mr. A. B. Owen, the agent of Dr. Barnardo's Boy's Home in Toronto, writes us on the 20th inst. "We have just dispersed our first party of boys trained in our English homes. They were a particularly fine lot of lads, and the farmers to whom they were sent are writing, expressing in most cases the greatest satisfaction at their appearance. We have never yet experienced such a demand as there exists this spring. Our advertisement in the FARMER'S ADVOCATE brought us in a large number of applications from the best class of farmers, and altogether, we had quite three times as many applications as boys. Our next party will arrive here about the middle of June, and we shall hope then to supply a great many who have been left unsupplied now, and we shall also be glad to receive a few fresh applications."

NOTICES.

A subscriber wants to know the best and cheapest fence for a garden, to keep out fowls. We would refer him to the picket wire fence advertised by the Toronto Picket Wire Fence Co., in our columns, it is cheap and easily erected.

In this issue, Mr. Frank W. Hubbard, Bad Axe, Michigan, advertises a large quantity of improved land, which must be sold at once. We have been so favorably impressed with the property offered that we intend to visit it, and will give a review of it in our next issue. Write Mr. Hubbard for particulars.

A prominent farmer in Tennessee writes of the "Acme" Pulverizing Harrow, Clod-Crusher and Leveler, as follows:—"I had ten acres sown to rye for winter grazing, and wished to turn the rye over to seed with clover. The rye roots had taken a strong hold, and it tore up terribly rough in great long flakes. I was disappointed, knowing that I could not get a stand of clover unless the land was pulverized. I knew of no implement that would pulverize the land, and was about to give it up and fix it as best I could for corn. A friend persuaded me to try the 'Acme' Pulverizing Harrow, Clod Crusher and Leveler on it, which I did, and in going over the field twice, this tuffy land was made as smooth and as fine as a cabbage bed. I never saw anything in my life equal to it. With the 'Acme' I can pulverize the cloddiest and roughest piece of land that was ever broken up."

A traveller in almost any part of our Province must be surprised at the number of stumps, which are allowed to disfigure many good fields, and act as a harbour for weeds and vermin. It is a slow and tedious job to dig these stumps out by hand. They are a great nuisance and ought to be removed. Where there are a great many on a farm, it would pay the owner to buy a good stump machine, but where there are only a few it would pay best to hire a machine. A man and team can make good wages in a stumpy section, by going from place to place pulling stumps. By far the best machine we have seen is the Whitfield Stump Extractor, which has been advertised in our columns for years. The superiority of this machine consists in the rapidity and ease in which it can take out the largest stumps; its great strength and durability; its easy operation by man or beast. It leaves no holes to be filled up, or any stumps or snags in the ground. We would advise all who are in need of such a machine, to write for particulars to Mr. John Whitfield, 146 Front street, Toronto.

Plain Facts Concerning Paint.

The fact cannot be too forcibly impressed upon the minds of all users of paint, that good results can only be produced by the use of good material. The main expense in painting is not in the cost of the paint, but in the cost of labor and oil; and it requires more labor and more oil to apply inferior paint than to apply the best that can be obtained.

It costs as much to mix inferior and worthless paints and prepare them for the market as it does to produce the purest and best that can be obtained. The difference in cost is entirely in value of the ingredients used. The covering capacity of adulterated paints and their durability is equal to one-third that of pure goods. It is, therefore, poor economy to pay for three cans of trashy paints when one can of pure paint, from a reliable manufacturer will better answer the purpose, save labor, and give infinitely more satisfaction, and present unfading and beautiful results. There are many painters who are under the impression that they can tender low prices for work and make their profit by using inferior paints. This is a popular mistake, and many consumers of paint indulge in it. We repeat, that it requires more of the painter's time to brush out poor paint, that it falls short in its covering capacity, and falls in every instance in giving satisfaction.

We observe that a growing demand exists for "ready mixed paints," and these goods are fast taking the place of the old, unreliable method of buying the ingredients and mixing them by hand. These liquid paints, mixed by machinery and prepared ready for use, requiring no manipulation other than stirring with a stick, are put up in all-sized packages, and colored in every shade, and are undoubtedly a great convenience. We are satisfied these paints will become very popular, and be used to advantage where white lead was formerly in use. There is nothing that we know of to prevent this innovation unless it is that many manufacturers put up shoddy goods, and thus destroy the confidence that the consumer would otherwise have in this class of paint.

We can vouch for the quality of one brand of liquid paint brought before our notice, and we look forward with pleasant anticipation to the time when this brand will come into general use, to the exclusion of all inferior articles.

Although a very good paint has been obtained for many years from oxide of iron, it is only recently that it has come into popular favor. Speaking of the value of iron as a substitute for lead or other bases in paint, the highest French authorities say: "This product possesses all the good qualities of lead without any of its inconveniences. It is a rich brown color and mixes perfectly with linseed oil. Under equal circumstances, it covers 150 per cent. more than lead, and is a better protection against oxidation." A valuable mine of this oxide of iron has been found at St. Malo, in the Province of Quebec, and is worked by the William Johnson Company, who give employment to a great many men. The oxide from this mine contains 92 per cent. of iron and 8 per cent. of hydraulic cement. We consider the Johnson Magnetic Iron Paint the finest article of the kind we ever examined.



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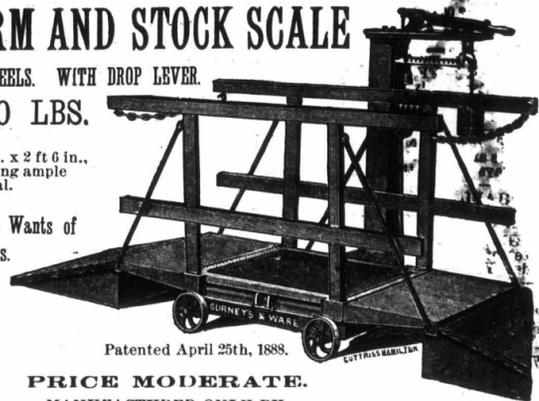
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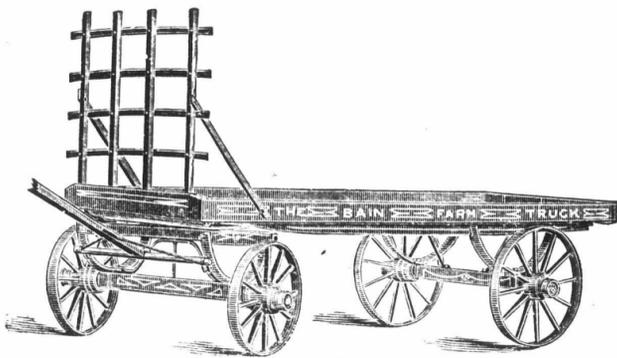
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