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THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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

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PUBLISHED AT

VOL. XXXV. LONDON, ONTARIO. DECEMBER 1, 1900. WINNIPEG, MANITOBA. No. 515

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AND HOME MAGAZINE

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

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875

VOL. XXXV.

LONDON, ONT., AND WINNIPEG, MAN., DECEMBER 1, 1900.

No. 515

EDITORIAL.

The Winter Fair.

The Ontario Provincial Winter Fair, including the Provincial Fat Stock and Dairy Show and the Ontario Poultry Show, to be held at Guelph, on December 11th to 14th, will be an event of more than usual interest this year, because of its being held in the new building erected for the purposes of the show, now nearing completion, and which will be its permanent home. The interest will also be augmented by the fact of the Ontario Poultry Show being held at the same time and in the same building. The business of poultry-raising is becoming one of great importance to Canadian farmers, and is proving one of the most profitable branches of their work, as our home market and export returns amply show. The display of poultry at Guelph will undoubtedly be the greatest ever seen in this country, while the opportunities for gaining information upon the merits of breeds and methods of raising, feeding and marketing poultry will be such as have never before been offered in connection with any public exhibition. The same may be said in regard to the hog industry, which has so rapidly grown in importance to our farmers in the last few years, bringing millions of dollars into the country, and promising to be a permanent feature in profitable farming. One of the most interesting and instructive branches of the show will be the judging of swine in bacon classes, and the comparison of the dressed carcasses with the living animals. This feature will be seen for the first time in cattle and sheep, as well as in swine, liberal prizes being offered for the best carcasses in each department. The dairy industry, which has made Canada famous in the best markets of the world, and is a permanent source of profitable returns to a very large proportion of the farmers of the Dominion, is recognized by the granting of generous prizes for cows of the various breeds, by actual test, in milking competitions, and will be of unusual interest this year, owing to the fact that the food consumed will be valued and taken into account in making the awards. Dairy appliances of all sorts will also be on exhibition, and addresses by experts are promised on various subjects connected with the breeding, feeding, management and marketing of beef and dairy cattle, sheep, swine and poultry and their products.

This is pre-eminently a farmers' fair, under the management of farmers, and free from all distracting side shows. It is an institution designed to encourage farmers to improve their stock on profitable lines, to impart sound, practical and helpful information, and to emphasize the fact, which statistics abundantly show, that live stock and its products, in the form of beef, mutton, wool, bacon, cheese, butter, poultry, and eggs, constitute the financial salvation of the farmers of this country. To farmers' sons especially, the Winter Fair offers an educational opportunity they can ill afford to miss, and as reduced rates have been arranged for on all the railroads, and Guelph is a convenient center for the greater part of the Province, the exhibition ought to be largely attended. Farmers' Institute excursions are, we understand, being arranged for in many counties, and it is hoped that many will avail themselves of these. The Ontario Experimental Union will hold its annual meeting at the Agricultural College during the week of the show, and all its meetings are open to visiting farmers. A public meeting will also be held on Wednesday evening, in the city, at which addresses by prominent men will be delivered. There is every reason to hope and believe that the Winter Fair this year will mark the commencement of a new era in its history, which will grow into splendid proportions in the coming century.

Forward Movement for Toronto Fair.

It is a matter of very great satisfaction to note that the Toronto Industrial Exhibition Association has lost no time in laying extensive plans for its immediate improvement. The very foremost of all the great annual exhibitions held on this continent, it is but fitting that the show should begin the 20th century by putting its best foot forward. We are in the midst of an era of great material progress in Canada, toward which our exhibitions have contributed no little share, but the close of the old century is not a time to rest upon the laurels of the past, but should rather mark the advent of a new era in which we shall rise to higher achievements. The discussion which has taken place in the FARMER'S ADVOCATE since the show in September, amply demonstrates the needs of reform in certain directions and for a genuine forward movement, in order to put the Exposition upon a higher and more permanent plane, so as to lead the van of industrial, agricultural and artistic progress, and do honor to the city in which it is held and the interests of which it has done so much to promote. We are therefore gratified to observe that at a recent special meeting of the Association, with the President, Dr. Smith, in the chair, the report of a special committee on the requirements of the Exhibition was unanimously adopted, as follows:

"Your committee beg to recommend that application be made to the City Council for the following new buildings and alterations, and that the same be submitted to a vote of the citizens at the time of the municipal elections in January next:

New main building, 100,000 square feet of floor space, estimated cost.....	\$106,000 00
New art gallery, 7,500 square feet floor space..	10,000 00
Dairy building.....	14,000 00
Remodelling main building and taking off the tower and repairing the roof, to provide for vehicle exhibit.....	5,000 00
Building for stoves and heating apparatus, 10,000 square feet of floor space.....	10,000 00
Changing music pavilion for women's building	3,000 00
Enlargement of poultry building.....	1,000 00
New horticultural building.....	15,000 00
Enlargement of fruit building.....	3,000 00
New agricultural building.....	8,000 00
New administration building.....	5,000 00
New natural history building.....	7,000 00
Architects' fees.....	10,000 00
Total.....	\$197,000 00

[EDITORIAL NOTE.—Provision should be made for sufficient funds to provide a suitable pavilion for witnessing the judging of the main live-stock exhibits.]

"Your committee would also recommend that the board offer prizes for: New main building, prize of \$250; art gallery, prize of \$50; dairy building, prize of \$75; stove building, prize of \$50; horticultural building, prize of \$75; agricultural building, prize of \$40; administration building, prize of \$50; natural history building, prize of \$50. Total, \$640—for competitive plans, open to Canadian architects only, the plans submitted to show floor plans, elevations, sections and perspective views, with synopsis of specifications showing the material to be used in construction, and estimated cost of the buildings not to exceed the amounts given above. The prizes to be given for one plan for each building only, the designer of the plan selected to get the money prize and the recommendation of the board to the City Council to be given the supervision of the building, the board not guaranteeing that the building will be constructed. The Board of Directors or a committee thereof, with two experts, to be the judges of the plans to be awarded the prizes. The other conditions of competition to be substantially those adopted by the Ontario Association of Architects. This recommendation is made in order that the plans may be prepared and ready for public inspection not later than December 20th. (Signed) Andrew Smith, Chairman."

In the discussion which took place in the consideration of the foregoing, Ald. Leslie and others heartily commended the course being pursued by the Association board. He would support the proposed by-law in his canvass, and he believed every candidate for aldermanic honors and for the mayoralty would do the same. The onus would thus be placed upon the property-owners. Referring to the city investigation into the affairs of the Exhibition,

Mr. W. K. McNaught said he believed it was the best thing that could have happened the board, as the management would come out so clear that the public could not withhold its confidence. While there might be on the part of some a feeling of restiveness over the city authorities looking into the affairs of the Exhibition Association, it should be borne in mind that Toronto as a city is largely interested in the well-being of the Exhibition, and in voting for the \$200,000 by-law—apart from the imperative necessity for the improvements specified—the citizens will naturally look for assurances as to the future. Moreover, the Exhibition is a public affair, in receipt of public funds, and is dependent very largely upon public patronage for its success; hence the wisdom of taking the public into its confidence, thus disarming suspicion and securing hearty co-operation. The "Industrial" has been a drawing card of very great advantage to Toronto, and now is the time to assure its permanence in that regard, and for the special reason that it may be properly equipped for next season, when the circumstances are such as to warrant the completest and in every way the best exhibition ever yet held within the bounds of the Dominion.

Preserving U. S. Timber Areas.

A new professional field for young men is being developed in the United States, which promises employment to many bright, active students, at remunerative wages, in connection with the preservation and improvement of forests. There is a growing demand throughout the country for foresters, and a man versed in this profession can almost command his rate of pay. The Department of Agriculture has opened what may be termed a school for foresters. During the summer season, the Department gives employment to students who have decided to take up forestry, paying them at the rate of \$25 a month while in the field, and defraying their expenses. Owners of vast tracts of timber land are awakening to the necessity of adopting means of preserving their forests so that more than one crop can be cut, and are looking for men who can take charge of their property and produce lumber in abundance without exhausting the trees. A well-trained forester can not only go into a forest and give an accurate estimate of the number of feet of lumber it will yield, but can map out a plan of cutting which will give a regular crop of lumber without lessening the permanent supply. The starting of young trees, the thinning out of old ones, and the selection of trees according to the character of the soil are subjects for scientific study. Several years ago the Department decided to take charge of timber lands for such owners as wished to turn them over temporarily to the Government, and to prepare working plans for the yearly cuttings. Advice was also to be given regarding the laying out of new trees, cultivation, etc. Under this plan, the Department now has control of more than 50,000,000 acres of forest land, scattered through States all over the country. Much of these timber lands are in the Adirondacks, some of the most prominent New York owners of tracts there having asked the Government to handle their timber property for them.

More and more, as the years go by, the importance to Canadian farmers of giving increased attention to the breeding and quality of the live stock on their farms is emphasized by the record of the markets. Animals of good breeding and quality feed more kindly, giving better returns for the food they eat, and selling readily at the best prices, while the inferior class is hard to sell at the lower prices. The need for a forward movement for improvement all along the line is urgent, and the advance should be general.

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THE LEADING AGRICULTURAL JOURNAL IN
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EASTERN OFFICE:
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WESTERN OFFICE:
MOINTRE BLOCK, MAIN STREET, WINNIPEG, MAN.

LONDON, ENGLAND, OFFICE:
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JOHN WELD, MANAGER.

1. THE FARMER'S ADVOCATE is published on the first and fifteenth of each month. It is impartial and independent of all cliques or 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.
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An Irishman on Bacon Pig Feeding.

The pig feeders of Ireland have in recent years been producing, on the whole, pigs of very excellent quality—well suited to the manufacture of high-class bacon. This excellence, we need scarcely say, is largely due to the judicious choice of feeding stuffs. Among these, the potato, when sound, is undoubtedly suitable. But when a bad season occurs like the present, it ceases to be a reliable food, both as regards quality and supply, and the farmer is compelled to look for some proper substitute on which to feed his pigs. If he wishes to maintain the quality of his pigs and the reputation of Ireland for producing the finest bacon in the world, it is absolutely necessary that he should be most careful in this respect.

Roots, such as turnips and mangels, which are temptingly abundant this year, will not do; they produce the worst class of pigs for bacon, besides being most disappointing to feeders in putting weight on pigs. Beyond all question, the very best food with which to raise pigs for the bacon trade is barley used as meal with fresh skimmed milk or separated milk. It need not be cooked, but can be wetted with water and the milk added.

In other countries, and particularly Denmark, which in a very few years has won for its bacon a high reputation, barley is the principal feeding stuff employed. So necessary do the farmers there consider it for this purpose that enormous quantities of it are imported every year, and it pays them well to buy barley and feed their pigs on it. If Irish farmers only knew the value of barley as a food for pigs, and how profitably it can be used in that way, they would soon grow much more of that grain than they now do, and they would not have to be anxious about its color as they must be for the distilleries. But even as an imported article they will certainly find it profitable if they once try it properly. What farmers in other countries are doing, they also can do, and they need not run the risk of ruining the bacon trade of the country altogether by ceasing temporarily to raise pigs, or, what is almost as bad, by feeding them on unsuitable foods.—*Alex. W. Shaw, Limerick, in Farmers' Gazette.*

Canada's Coming Competitor.

Never before, perhaps, was a higher tribute paid the Canadian farmer than when the Government of the Argentine Republic decided to send to the Dominion several of its brightest young men to study the agricultural methods of the country from the vantage point of the Ontario Agricultural College at Guelph. It was a tribute as well to the wisdom of those far-seeing Ontariostatesmen who conceived and carried into effect the plan of a great school of agriculture, to be presided over by men who had made a life study of scientific farming. When one pauses to consider that the Argentine Republic is at the opposite end of the hemisphere, and that between it and Canada are numberless excellent agricultural schools scattered throughout the United States, the compliment becomes the more gratifying.

The circumstances under which Senores George Peltzer, Julio Panelo, Alberto C. Fernandez, Cesarea Avila, Eduardo Ibainez, Saile Echegaray, Juan Rivara and Ricardo S. Bustamante came to Canada are interesting. The young men, who began their course at Guelph on Oct. 1st, are all graduates of the universities of their own land, and come of the oldest and best Spanish stock. Senor Peltzer alone is of German extraction, but a native of the Republic. Two years ago the Government of the Republic offered a scholarship, as we should call it, in agriculture to twenty young men. This scholarship included free tuition and expenses in a Canadian or American agricultural college. A national examination was set, and the man passing highest in each province received the trip abroad; while the six passing highest in the national capital, Buenos Aires, were elected to accompany them. The Republic is divided into fourteen provinces and nine territories, the latter not having representation at the national capital, the administrative head of each being a Governor appointed by the Federal Government, in which the provinces are each represented by a Senator and a Deputy Senator. Thus the party consisted of fourteen from the different provinces and six from the capital, making twenty. Senor Juan Rivara, who subsequently joined the other twenty, was not sent by the Government, but came on his own account, upon their recommendation.

The twenty students left Buenos Aires last March. They were then entire strangers to one another. They crossed the ocean to Southampton, visited the British Isles, and then came to New York, going from there to Washington, where they were received by the representative of the Argentine Government. They were there furnished with a prospectus of each principal agricultural college in the United States, as well as that of the Ontario college. After careful consideration, it was arranged that seven of the party should go to Guelph, and the remainder to United States colleges. When Senor Rivara decided to accompany the Canadian party, the number was brought up to eight. The proportion of eight out of twenty-one in favor of Ontario is flattering, to say the least. It should be borne in mind that no one of the American colleges will be visited by more than two of the remaining thirteen.

There are but two agricultural colleges in the Argentine Republic, one situated in the national capital and the other in the southernmost part of the country. When these young Argentinos have completed their course at Guelph and at the United States schools, they will return and remain in the Government employ for three years. At the expiration of this term, several colleges will be established throughout the provinces, in which the advanced science of agriculture, as demonstrated in the Canadian colleges, will be taught to native students.

With the exception of Mexico and Japan, probably no other country in the world has made more rapid and substantial progress during the past two decades than the Argentine Republic, and this despite revolution and long periods of political unrest. This development is most noticeable in agricultural and stock-raising pursuits; and if the productive resources of the country continue to be developed during the next twenty years at the same rate as they have during the past twenty, Canada may well look to her laurels. According to the census of 1895, the Republic had a population of 4,022,950, distributed over an area of 1,190,000 square miles. Of the vast area of land available for agriculture, but 15,000,000 acres, or six per cent., are actually under cultivation. The possibilities of this great undeveloped country, under a Government that is stable enough to defy revolution and progressive enough to send out students into the four corners of the world, are enormous. This resolve to learn the methods of more advanced nations made Japan the England of the East, and will eventually make the Argentine Republic the Canada of South America.

Although the analogy does not extend to its people and their customs, there are many curious points of similarity between the growing young Republic, whose southernmost territory nearly reaches the antarctic circle, and the young Dominion, whose northern shores extend into the arctic twilight. The one first settled by Spaniards, the other by French, both have witnessed the decay and overthrow of an old civilization and the growth of a new. Both are rich in forests, in vast tracts of arable land, and in minerals; both possess a boundless extent of seaboard and great inland waters. While, however, the growth of Canada has been steady, that of the Republic has been spasmodic,

though not less rapid. Prior to 1880 the country was in a comparatively wild and chaotic condition. According to the returns of this year, it now has 9,183 miles of railway in operation, and 25,000 miles of telegraph lines. The Canadian Northwest has been frequently termed the granary of the world, but the term may be applied with equal propriety to Patagonia, the great fertile and almost wholly undeveloped territory of the Argentine, which but a few years ago was an unknown land. A year or two prior to 1880, General Julio J. Roco, who succeeded President Nicolas Avellaneda as the administrative head of the Republic, led an expedition into Patagonia and freed the entire country from Indian domination, opening it for pastoral and agricultural uses up to the Rio Negro river. The possibilities of this immense tract, with its temperate climate, its vast grass-covered plains so admirably adapted to stock-raising, and its fertile soil, are almost beyond the bounds of conception. The country has, however, been under the disadvantage of having been developed almost entirely by Europeans. There was no healthy influx of intelligent, hardy settlers from the older provinces, as was the case in the Canadian Northwest.

The stock-raising industry of Argentina, which has already reached great dimensions, promises, with the success of the sterilized-air method for shipping dressed meat, to assume still greater proportions. The country is essentially one of grazing lands, but it is doubtful if it possesses, as such, any advantages over the Canadian Northwest Territories. To follow up the parallel between the two countries, it is interesting to note that the best foreign horses used by the British army in Africa came from Canada and Argentina.

For purposes of comparison, some statistics of the development of the Republic's export trade, as obtained from the Customs House and Statistical Department at Buenos Aires, may prove interesting. The quantities in these calculations are expressed in tons of 1,000 kilograms, say 2,200 English pounds. The values are expressed in dollars worth about 95 cents in gold.

The total exports of wheat in 1899 amounted to 1,713,429 tons, or 62,825,730 bushels, valued at \$38,078,343, a total which was only exceeded in the years 1893 and 1894. The exports of wheat during the first three months of the year were nearly double those of the corresponding period of 1899. During January, February and March, 1900, they amounted to 674,717 tons, or 24,739,623 bushels, valued at \$15,451,010; as against 364,372 tons, or 13,300,306 bushels, valued at \$9,182,167 for the same period in 1899.

The exports of maize increased from 62,160 tons during the first quarter of 1899, to 99,048 tons for the corresponding quarter this year.

During the first three months of 1899, 90,005 tons of linseed, valued at \$3,060,777, were exported. The figures for the same period of this year were 148,411 tons, valued at \$6,530,063.

Wool, the most important of the Republic's exports, showed a falling off in the export returns for the first quarter of the present year, but there has nevertheless been a steady increase in the export trade since 1893. In that year 123,000 tons, valued at \$25,000,000, were exported; and in 1899 the trade had grown to 237,111 tons, valued at \$71,283,619.

The export trade in sheepskins has steadily increased since 1893, when it amounted to 25,000 tons, valued at \$4,200,000. In 1899 it had reached 42,250 tons, of the value of \$6,195,000.

Of dry cowhides, there were shipped in 1899 23,956 tons, valued at \$8,001,132.

In 1893, 71,000 live sheep, valued at \$363,000, were exported. The trade has increased rapidly, and last year's returns show that 578,000 live sheep, valued at \$1,734,000, were shipped out of the Republic. There was a slight falling off in the number of animals shipped during the first quarter of this year, but the value of the shipments had, nevertheless, increased from \$152,178 to \$175,280.

The law prohibiting the landing of Argentine live stock in Great Britain has probably had something to do with the falling off of shipments of live steers this year. During the first quarter of the year, 58,752 animals were exported, as against 67,299 during the corresponding period of 1899; but the value of the shipments increased from \$1,790,090 to \$1,846,920. The total for 1899 was 360,000 animals, valued at \$7,700,000.

In the first quarter of the present year, 13,115 tons of wethers, valued at \$721,311, were exported, as against 13,688 tons, valued at \$347,510, in the same period of 1899. The total for 1899 was 56,627 tons, valued at \$2,265,069.

What the next quarter of a century will show in the way of development of the Argentine Republic as a great food-producing country can scarcely be conjectured; but that it is bound to become the greatest of Canada's rivals cannot be doubted. It is a country of vast expanse and wonderful fertility, and its people are only now awakening from that Rip Van Winkle sleep in which all South America has been wrapped for so long a period. The English language is daily becoming more popular in the Argentine, as it is the world over; and it is the expressed belief of the young Argentinos now in Guelph that its more general use as the language of commerce will be attended by a quickening of the national pulse. However, proximity to the British markets, the variety and richness of Canada's natural resources, and the general advancement of her people in agriculture, give the Dominion a great vantage ground. The distinguished

young visitors are hard-working students, and are making excellent progress in their work at Guelph. They were in residence in the college during the summer, but as the regulations give Ontario students the preference, they were compelled to take quarters in the city when college opened.

The college opened in September, with 150 registered students, 83 of whom are in the first year. The dairy courses for 1900 and 1901, the first session of which begins Dec. 3rd, will, it is expected, be attended by at least 165 students.

Pointers in Fattening Lambs.

Self-feeders.—For several seasons considerable money has been made in fattening lambs until mid-winter or spring, and doubtless many will be fed this coming winter. In the "West," where grain is cheap, labor dear, and flocks and herds larger, the self-feeder is very generally used for cattle, hogs and sheep, but its use in this country is of doubtful advantage. A self-feeder is a box so arranged as to hold quantities of grain sufficient to last a week or more. The box is so constructed that the grain passes down into the feed trough as rapidly as the sheep consume the supply below. Trials with self-feeders, with lambs, were made both at Michigan and Minnesota Stations. At the Michigan Station, 20 lambs were used in the test, 10 being fed with the self-feeder and 10 fed in the regular way. The grains used were corn and bran. The lambs fed with the self-feeder required 776 pounds of grain and 400 pounds of hay for 100 pounds of gain, whereas the other lot consumed 639 pounds of grain and 421 pounds of hay for 100 pounds of gain. At Minnesota Station, 8 lambs were used in either lot, and wheat screenings were fed. Those fed with the self-feeder consumed 908 pounds of screenings and 130 pounds of hay for 100 pounds gain, and the others, fed in the regular way, ate 742 pounds of screenings and 251 pounds of hay for every 100 pounds of gain made. The conclusions are therefore arrived at, that fattening lambs by means of a self-feeder is an expensive practice, and that economy of production requires more attention to the variation in the appetites of the animals than can be given to the self-feed method.

Fattening Shorn Lambs has some advocates, and in order to test the efficacy of this treatment, the Michigan Station divided a bunch of 20 lambs into two lots of 10 each. One lot was shorn and the other lot was left unshorn, both receiving similar treatment as to care and feeding. The grain consisted of corn and wheat, equal parts by weight, fed with good clean hay. The trial lasted 13 weeks, beginning in November. Both lots were kept in a barn, the shorn lot being more closely housed—that is, the windows and doors were kept closed in order to keep the place warm. The result of the test was the shorn lambs ate more food, drank less water, and made 30 per cent. less gain than the unshorn lambs.

At the Wisconsin Station, Prof. Craig studied the subject during four years, and in each case the results were unfavorable to shearing in the fall for winter fattening. It was found, however, that lambs six months old in October are better shorn in that month when they are to be fattened for the early winter market. When done under such circumstances, the removal of the fleece hastens the fattening, and the gain is made at a slightly cheaper rate.

Outdoor versus Confinement.—Prof. Shaw fed four lots of sheep at the Minnesota Station. Lot I. was kept out of doors continuously, in a yard sheltered from the wind by a low building on one side. Lots II. and III. were confined in yards, with an open shed for shelter. Lot IV. was kept in a compartment of the barn, having one large window facing the east for light and ventilation. The feed for all lots was the same. Lot I., out of doors, consumed for each 100 pounds of gain, 874 pounds of wheat screenings, 90 pounds of oil meal, and 316 pounds of hay. Lot II., in lot with shed, consumed for 100 pounds of gain, 817 pounds of screenings, 91 pounds of oil meal, and 127 pounds of hay. Lot III., in lot with shed, ate 668 pounds of screenings, 74 pounds of oil meal, and 251 pounds of hay; and lot IV., in stable, consumed 722 pounds of screenings, 80 pounds of oil meal, and 283 pounds of hay for each 100 pounds of gain put on. Lot I. made an

average daily gain per head of .28 pound; lot II., .36; lot III., .32, and lot IV., .28 pound. It will be seen that lots II. and III. made the greatest gain, and lot IV. the cheapest, but the difference between outdoor and indoor feeding is far less than would be supposed by many. The results of the trial show that indoor confinement may be as damaging as outdoor exposure.

Our Own Method.—While the lambs can get clover, grass or rape pasture they are left out during the day and brought to the sheds at night. They are not confined closely, but allowed the freedom of a yard, with liberty to go into the pens if they so desire. A little clover hay is shaken into the racks before they come in, and in the mornings they are given more clean hay, and a quart to each three lambs of oats and peas or oats and corn, oats forming two-thirds of the mixture. As soon as they can get no more feed in the fields they are given roots: at noons about a bushel for twelve head, and a little good pea straw or clover hay to pick over. As the season advances, the grain ration is increased to two feeds per day. A little bran mixed with the grain gives good results. A box of salt and a vessel of fresh water should always be within reach of the lambs, that they may help themselves. In fattening lambs, as well as all other stock, no more feed should be given at a time than is eaten cleanly, and troughs and racks should be thoroughly cleaned each time before feeding. The lambs should all have been dipped in one or other of the recognized good dips, such as are advertised in our columns, while the weather was warm, but if that was not done, they should be examined now, and if

giving me good results, but I find it best to have them pure-bred on both sides.

My walls are stone, floors cement, sleeping-places elevated about 3 feet above floor; my pens are 12x13 feet. I have had no trouble with rheumatism. I let pigs run in yards every day.

I feed plenty of ashes, some sulphur, and believe them to be good.
WM. J. WHALEY.
Oxford Co., Ont.

Mr. John I. Hobson's Death.

One familiar face and figure will be missed from the approaching Ontario Provincial Winter Fair and its gatherings at Guelph—one well-remembered voice will be silent, a commanding personality will no more be seen. In the death on Nov. 23rd, after but a few days' illness, of Mr. John I. Hobson, of that city, the Province of Ontario loses a man long and prominently identified with her agricultural and live-stock interests, and well-known also in the other Provinces of Canada, where as a judge at exhibitions and in other public capacities he often travelled. Mr. Hobson had reached the age of 65 years, being a native of Wellington County, born in what is known as "the Paisley Block," in 1835, and a son of the late Joseph Hobson, who came to Canada from England in 1833 and took up land. For many, many years he was more familiarly known as "Mr. Hobson of Mosboro," where he so long and successfully carried on his operations as a farmer and breeder. As an agriculturist he was progressive and thorough-going, his knowledge, judgment and standing in

the community having resulted in his being chosen as judge of prize farms under the old Provincial Agriculture and Arts Association, acting in that capacity for some ten years. He also did exceedingly useful work as a speaker at Farmers' Institutes, both in Ontario and other provinces. He was also for a long period Chairman of the Advisory Board of the Ontario Agricultural College, was a director of the Toronto Industrial Exhibition, and took an active part in organizing and promoting the Dominion Cattle, Sheep and Swine Breeders' Associations, and was President of the Provincial Winter Fair Association. He was one of the directors of the Dominion Shorthorn Breeders' Association, and at the annual meeting last winter was honored with the presidency. He took an active part in municipal affairs, retiring after filling the Warden's chair, and interested himself in promoting Guelph business enterprises. A constant reader of the FARMER'S ADVOCATE, he advised its reading in every farm home in the country, and frequently contributed practical articles to our columns prior to his leaving the farm. The

latter event was hastened by the early death, five years ago, of his only son, a young man of great promise who was just beginning life, following his father's footsteps as a farmer and breeder. He was a brother of Mr. Joseph Hobson, of Montreal, Chief Engineer of the Grand Trunk Railway, and leaves a widow and one daughter, Mrs. A. F. H. Jones, of Guelph. He was a life-long Presbyterian, and for years a member of the Board of Managers of Knox Church, Guelph.

Gasoline for Stomach Worms.

The dose of gasoline for a lamb is half a tablespoonful, administered in four ounces of sweet milk; for a sheep, use one tablespoonful of gasoline. Let the sheep fast for sixteen hours before dosing. Be very careful that they do not strangle and get the medicine into the lungs. Do not guess at the dose: measure it. Repeat the dose three times, at intervals of twenty-four hours. When stomach worms are found in a flock, dose every sheep on the farm, sick or well, three times, at intervals of twenty-four hours. Change the sheep to pasture where no sheep have grazed, if possible, or put them in the barn. This remedy will not remove other kinds of worms. Use a good worm powder in addition.

Delighted with the Fountain Pen.

DEAR SIR,—The fountain pen came to hand recently, and it is all you claim for it. I have used two other styles of fountain pens, but this one, for cleanliness, ease of filling, appearance and value, surpasses them both.

I am delighted with it, and thank you for the premium.
A. B. ARMSTRONG.
Northumberland Co., Ont.



GROUP OF ARGENTINE REPUBLIC STUDENTS ATTENDING THE ONTARIO AGRICULTURAL COLLEGE.

they have ticks they should be dipped the first mild day, or treated by pouring the sheep-dip solution, opening the wool at intervals of a few inches. They should then be housed for a few nights and cold days until they dry, when they will thrive much better for the insecticidal bath.

Bacon Pigs from Birth to Block.

To the Editor FARMER'S ADVOCATE:

I winter my sows on mangels, with a little corn, and swill made of pulp mangels and shorts, cooked and fed warm if weather is very cold. After farrowing, I feed light feed, such as bran or oat chop; after a few days, increase food, and use shorts, with mangels for noon feed, giving plenty of exercise before farrowing; after farrowing, keep very warm and dry.

Wean at seven or eight weeks. Feed shorts, not too much at a time, with a few pulped mangels once a day. It is very important to keep clean and dry.

I have had no experience with clover hay, ensilage or potatoes, but find mangels or sugar beets excellent food for winter. I have no use for turnips for pigs.

I feed principally shorts. I like peas or barley, but they are too expensive to feed with profit, but have found it good mixed with shorts for a change. For finishing pigs, I like a little corn at least once a day. I prefer it twice.

Tamworths make the best hog to satisfy the packer, and I believe feed with nearly as much profit.

I never buy any pigs except for breeding purposes. Have had good success with Berkshire cross; have some now nearly ready for shipping; cross, Tamworth sow, Yorkshire boar, and they are

The Faithful Shepherd.

The fame of many a flockmaster has depended more than most people are aware upon the watchful care and attention of the shepherd, and the success which has marked the career of the owners of noted flocks has in many instances been largely owing to the advice and counsel of the shepherd in the selection of sires and the mating of the matrons. Only those who have seen them and moved among them in the Old Country, where the calling of a shepherd is, with many, a life profession, and has witnessed their devotion to their flocks and their untiring vigilance in working for the best interests of the sheep and their owners, can fully appreciate their faithfulness. Late and early, day and night if need be, and in the most inclement weather, uncomplainingly, these men are found at the post of duty, the comfort and safety of their charges being their first thought and care.

In America, as a rule, the flockmaster or his son is the shepherd, and in many instances right well performs the duty, his work comparing well with that of the best of Old Country shepherds. There are, too, a considerable number, though fewer than we could wish, of native Canadian shepherds, who, having been entrusted with the care of valuable flocks, have shown most commendable faithfulness as well as skill and judgment in the breeding, development and preparation of stock for the showing, winning a large proportion of prizes with home-bred and fitted sheep, in competition with imported British prizewinners. These men are worthy of the highest consideration and encouragement, and we gladly record our meed of praise for their well-done work.

British-born shepherds as a rule cling to their native heath, many of them spending their whole life on the farm on which they served their apprenticeship. A few have found their way across the sea, and have done excellent service in the care of high-class flocks on this side of the water, their methods of feeding and the preparation of show stock having been seen and copied by others, to their acknowledged advantage. Among these is the subject of this sketch. John Miller, widely and well known as "the old shepherd," first saw the light of day some sixty-five years ago, in the village of Cayton, Yorkshire, England, but as he carries no ear-marks and has no record of dates earlier than those of his recollection, little can be learned of his pedigree, but his fidelity to duty and his life-work as a stock feeder is a happy confirmation of Burns' declaration that "the rank is but the guinea's stamp, the man's the gold for a' that."

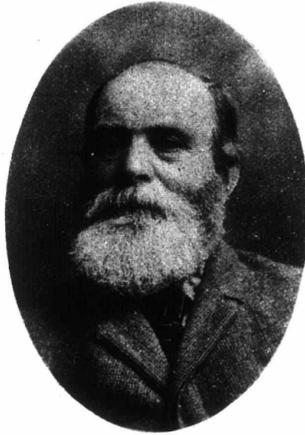
Under the training of experienced men to the manor born, Miller early became an expert, and as a young man served as head shepherd to such well-known Yorkshire breeders of Leicester sheep as Goffton, of Thirtleby, and Ray and Foster, of Luton; Squire Hill, Capt. Boynton; Crowe, and Robinson, of Carnaby. During these years the young shepherd lived near by Sledmere Hall, the estate of Sir Tatton Sykes, and tells many interesting anecdotes of the old Baronet, of his great retinue of servants, horses and hounds, and of gala-day entertainments at the Hall.

Coming to Canada in 1872, his first engagement in the care of pure-bred stock was with the Russells, of Richmond Hill; afterwards with the late Mr. Stone, of Guelph, and as he himself likes to put it, "for 20 years hon and hoff with the Snells, of Snelgrove," which we believe is literally correct, though he was away for a year or two at a time with such well-known Western breeders as T. L. Miller, of Beecher, Ill., and Geo. Harding & Son, Waukesha, Wis.; but on returning to the Snell farms, "Ise coomed 'ome again," was always among his first greetings. It was back in the '70's that his reputation as a feeder and fitter of show stock in America was made, when at the Dominion Exhibition at Ottawa, with the Snell contingent of Cotswolds, he won the gold medal for the best flock of long-wooled sheep, showing among others a 2-year-old ram of his own feeding, weighing 453 lbs., and a yearling of 345 lbs., and when, at the first Fat Stock Show at Chicago, with a pen of ewes and lambs of the same exhibit, he swept the boards in the long-wool class, showing a Canadian-bred ewe weighing 366 lbs., and others around 350 lbs. each. These sheep created a sensation in the show in the old Exposition building down by the lake, and were a center of admiration and a big advertisement for Canada, but the record was later practically repeated several times at Chicago, St. Louis, and other Western State fairs, as well as at leading Provincial shows in Canada, and the shepherd became a well-known figure at such functions, his quaint sayings in the Yorkshire dialect causing many a hearty laugh among the sheep-men. A good story is told by a well-known Wisconsin breeder and exhibitor, who met him at one of the State fairs in charge of Harding's Cotswolds. Frank Harding and the shepherd failed to agree on the mating of two pairs of ewes, and on the call for inspection there was a little contention as to how they should be paired; but the master, knowing the preferences of the judges, claimed authority, and mated them to his own mind, much to the disgust of the shepherd, who, after the judging was over, with a sorrowful expression, greeted our mutual friend with "Well, did you see that? Ise been wi' Lawds and Dewks and Snells, but I was never used like that afore." On another occasion, the same gentleman jokingly

slapped him on the shoulder and remarked, "Here's a Southdown," to which he indignantly replied, "Ise na Southdown, Ise a longwool." The face of the shepherd was a study when asked to give his judgment of a sheep. As he looked him over, with a wise cock of the other eye, he would say: "E's good of 'is ead, and good of 'is scraggy, and good of 'is fiddle brig, but I dis na like the way he stands of 'is pins."

It is a source of real pleasure to the writer to testify to the faithful devotion of the shepherd to his duty in the care of the flock or of other stock, for he made a success of feeding cattle as well, turning out many a stable full of well-finished bullocks for the British market, but it was among the "auld yowes" and the "lattle lammies" that he was most at home, and wedded only to his flock, he literally lived with the sheep during the lambing season, sleeping for weeks in his clothes on a couch, and visiting the fold to welcome the newcomers at all hours of the night, talking to his charges as if they were "humans," and calling them by their pet names. It was truly a case where the sheep knew the voice of the shepherd, and where there was mutual affection.

On his last return to Snelgrove, it was virtually understood that he had come home to stay till the end of the chapter of his life, and he had settled down to what promised to be a serene old age, but owing to the lamentable accident which brought to an untimely end the earthly career of him whom his host of friends familiarly called "Joe Snell," a change came over the scene, and among the many expressions of sorrow by grief-stricken friends and neighbors at the funeral, the wail of the shepherd was the most pathetic as he realized the loss at once of a true friend and a good home. In the half year occupied in the disposal of the estate, he had to finish another carload of export steers, that were admired by all who saw them, and at the winding-up sale he was engaged to take charge of the Berkshire herd of Mr. T. A. Cox, of Brantford, where as usual he has done good work, and though it is work probably less congenial to him than the care of sheep, yet the same fidelity to duty that has marked



JOHN MILLER.
(The Shepherd.)

his useful life is still observed, and being blessed with a strong constitution and a good conscience, he finds not a little in life to be thankful for, and maintains a cheerful courage in view of the future, for which he has the best wishes of a long list of friends.

President McKinley as a Farmer.

It is not generally known that President Wm. McKinley, recently re-elected for a second term as chief officer of the United States, has a large farm near Canton, Ohio. A dispatch from that place to the *Philadelphia Ledger* says that this farm produced 2,800 bushels of potatoes this year. An enterprising commission merchant bought the entire crop at an advance of five cents a bushel over the regular market price. The next day he was offered ten cents a bushel advance for his bargain, but declined. This means that the "McKinley farm" potatoes are to be sold at a gilt-edge price for seed. People out that way have great faith in "McKinley luck," and farmers who want a big potato crop next year will be glad to get McKinley tubers for their supposed luck. A correspondent of the *Cleveland Leader* gives some details of the McKinley farm. It is 20 miles from Canton and one mile from Bayard, and contains 162½ acres, with well-kept barns, wagon sheds, and corn-cribs. The Cleveland & Pittsburg Railroad and Big Sandy Canal cross portions of it. The soil is very productive, yielding large crops of corn, potatoes, oats, and hay. There is a large orchard, which has produced in a good year nearly 3,500 bushels of apples, chiefly Baldwins. There are 25 cattle, 10 horses and 200 sheep kept, with numerous hogs and fowls. Milk is sold and calves are raised. One season 175 sheep were sold. The farm has been managed for 20 years by W. J. Adams, originally from Pennsylvania.

FARM.

A Request Regarding Renewals.

We have a request to make to the reader. Our past relations with our subscribers assure us that it will be promptly complied with. During the year soon to close we have aimed to give an agricultural paper not only of the highest class as regards quality, but the most helpful in a practical way, and it has been by far the largest volume we have ever issued, containing over 750 pages of matter prepared by specialists who have made a success in their different branches of agriculture. In no other periodical do the farmers of Canada or the adjoining States obtain anything like the amount of valuable reading matter for so modest an outlay, and never in our 35 years' experience have the assurances of satisfaction on the part of our readers been so many and so encouraging as at the present time. The first year of the new century will see a further advance on our part. The Christmas number, to be issued this month, will be an assurance of this. Few have any idea of the vast amount of extra labor, on the part of both business and editorial departments, involved in such an undertaking. To facilitate the office work especially, we therefore make the simple request that every subscriber will at once examine his label on this paper, which shows the date up to which the subscription is paid, and then promptly remit amount to cover subscription up to end of 1901, by express or postal order, postal note or registered letter. Each individual's subscription is really a very small matter, particularly when the large return received is considered, but in the aggregate, and in facilitating our work in an extremely busy season, is of very great importance to us. Prompt renewals will therefore be a very great favor. When remitting your own subscription, can you not favor us with the names of one or more new subscribers, each of whom will be entitled to our beautiful Christmas number? By the way, what better Christmas present could you give a friend who is not already a reader of the paper than a year's subscription to the *FARMER'S ADVOCATE*? Two new subscriptions entitles you to have your own advanced gratis to the end of 1901. Or on new subscriptions you may select some premium to which you may be entitled, as per our lists announced elsewhere. But give the matter of renewal your very earliest attention.

Liquid Air Refrigeration.

The Standard Butter Co. of Oswego, N. Y., has bought of Prof. Trippler the right to use liquid air for refrigerating purposes in connection with the dairy business. The right embraces the United States and its dependencies. Within recent months this product has been made in such manner that it can be transported in packages that need withstand only 10 pounds pressure, instead of 350 pounds, as heretofore, and brought within a price that makes it a commercial possibility. The Standard Butter Co. owns and operates about 30 creameries, and utilizes the skim milk in making paper sizing. It has for years used the ammonia refrigerating process in its cold-storage department; now to be displaced by liquid air, of which 25 pounds are said to equal one ton of ice, at about the same cost. It can be carried in common milk cans if enveloped in some non-conducting substance.

Prof. John Craig, formerly Horticulturist at the Ottawa Central Experimental Farm, and subsequently Professor of Horticulture at the Iowa Agricultural College, has now entered upon his duties as head of the newly-created Agricultural Extension Bureau in connection with Cornell University, at Ithaca, N. Y. The *Country Gentleman*, referring to this appointment, says:—"The change which recently occurred at Cornell, in the addition of Prof. John Craig to the working force, is of more than incidental interest. Prof. Craig is a man of unusual experience, as well as of conspicuous ability, and will put a lot of ginger into the horticultural and agricultural extension work. Prof. Craig is a Canadian by birth, having come from Lakefield, P. Q., where he began his horticultural studies under the late Charles Gibbs, through whose influence he went to the Iowa Agricultural College to study with Prof. Budd."

Manures for Potatoes.

The experimental work conducted by Prof. Wright, of the West of Scotland Agricultural College, is recognized as being of a particularly practical character. Instead of confining tests to a particular field or to several fields in a district, trials are conducted on a number of farms in different parts of the country. The *Farmer's*

Quantities of Silage to Feed.

[From Prof. Thos. Shaw's new book on Soiling Crops and the Silo.]

Much difference of opinion exists as to the quantities of silage that may be fed with advantage. Some authorities claim that it may be made the sole food of animals for weeks and months in succession. That is not the view of the author. Much, of course, will depend upon the character of the silage. When it has been well preserved, the silage is not markedly acid, but it is acid in some degree. Now, that is not the condition in which nature provides green food for live stock, hence it does not seem wise to confine animals to a diet of acid. To test this question the author fed steers that were being fattened on silage and meal for a period averaging about 140 days and during three successive experiments.

These experiments were conducted at the Government Experiment Station at Guelph, Ontario. The first experiment began in the autumn of 1889. Two steers were thus fed each winter. They were pitted against an equal number of steers that were fed meal, an average of thirty-three pounds of corn silage per day, and all the cut hay they would eat in addition. A third lot of two steers were fed meal, cut hay and field roots. The amount of meal fed was practically the same in each instance. Of the six steers that were fed all the silage they would consume in addition to the meal, two died before the experiment was completed. The veterinarian of the

Station reported that death resulted from serious derangement of the digestive organs caused by the acid in the silage. More or less trouble was also experienced with all the steers confined to the ration of meal and silage. They occasionally got "off their feed." The steers fed on the ration of meal, hay and roots were uniformly healthy and hearty throughout the experiment. With silage less acid, the fatal results chronicled might not have occurred. But since the silage fed was quite as well preserved as corn silage usually is, the inference would seem fair that there is an element of danger in feeding silage in unlimited quantities to farm animals for months in succession.

While it is impossible to state definitely how much silage may be fed for a prolonged period to cattle without crossing the danger line, in the judgment of the author it is questionable if the amount fed daily to a mature breeding animal of the bovine species should exceed thirty or forty pounds per day. Of course, for a limited period it may be safe to feed larger quantities, and it is possible that larger quantities than those named have been fed to breeding animals for a period somewhat prolonged without any apparent harm. Nevertheless, the conclusion would seem fair that there is an element of danger in feeding silage in unlimited quantities to animals for months in succession. The most intelligent feeders concur in this view, and it finds further countenance in the craving which domestic animals manifest for a certain proportion of dry fodder while silage is being fed to them in large quantities.

Four to five pounds per day may be named as the maximum amounts to be fed to breeding ewes for months in succession, but it is possible, and indeed, it may be commendable, to feed larger quantities for a limited period.

Any kind of fodder that is palatable and well preserved may be fed along with silage. But when practicable the fodder thus given should be made as far as possible to give the entire ration the desired balance or equilibrium as to food nutrients. For instance, when corn silage is being fed, clover in any of its forms will make a ration more nearly balanced than would be obtained from feeding dry fodder, the product of corn, sorghum or any of the non-saccharine sorghums.

More About Removing Stumps by Dynamite.

In answer to "Enquiring Farmer's" question, I would say that dynamite is the cheapest means of getting rid of his pine stumps. It will be necessary to use great care in doing this work, otherwise both labor and explosives will be thrown away. If an experienced "stump blower" is not available, the next best thing to do is to get a man who is accustomed to handling high explosives. If such a person is not to be had in your locality, then do the work yourself, always following instructions as below:

Get fresh dynamite, 40% to 60% in strength. Make sure that it is not frozen. If it is soft, it is all right; but if at all stiff, it should be gently warmed till it feels soft and warm in the hand. Next cut your fuse to proper length; insert it in the detonator cap, making sure the fuse is cut off square, and that it fits down tight to bottom of cap. Make sure that there is no sawdust in the cap, but do not attempt to pick anything out of the cap with a pin or like instrument, as you might explode the cap, which has sufficient force to blow your hand off. Next crimp the edge of cap on to fuse, to hold the cap tightly in place (do not do this with your teeth—you might lose them, and also the place where your brains should have been). Next take the fuse, with the cap properly fastened on to it, and insert the cap into the dynamite cartridge, taking care that the end of the detonating cap is in contact with the dynamite in the cartridge, otherwise the cap may explode without exploding the dynamite. Also take care that the cap does not penetrate the cartridge more than its length, as if the naked fuse comes in contact with the dynamite it may set fire to it, and the dynamite burns so much faster than the fuse, that the dynamite will be burned away from the detonator, and your charge of dynamite will burn away without exploding. To repeat: First get fresh-made explosives. Make sure that it is not frozen (it will freeze at 45° F.). Second, make sure that the detonator is securely fastened to end of fuse, and that fuse fits tightly into cap. Third, see that end of detonator is in contact with dynamite; i. e., that it has not been pressed into the soft dynamite and afterwards moved out a small distance, thus leaving a space between the end of cap and the dynamite.

If more than one cartridge is required at a single shot, place as many as are required in contact with the one the fuse is connected with, and the whole will explode. All of the above is, of course, nothing new to any person accustomed to the use of explosives for other than stump extracting.

The placing of the charge is the all-important point in blowing out stumps. In no case should the explosive touch the stump, but should be, if at all possible, at least two feet below the stump, and in very large stumps I would prefer to have the charge placed even deeper than that. The cheapest way of placing the charge under the stump is to use an auger made specially for that purpose, by boring a hole in the earth, at an angle of about forty-five degrees, so as to extend slightly past the center of the stump. The charge, with cap and fuse attached, can be lowered to the bottom and the balance of the hole filled up with dry earth or sand, and firmly tamped. Light your fuse, return to a safe distance, and wait for results. Now, as to the amount of dynamite. This will altogether depend on the nature of the ground. On heavy clay ground,



LANGTON'S DANEGELT.

Three-year-old Hackney stallion. Sired by Langton Performer. First prize at London Exhibition, 1900.

OWNED BY EDWARD C. ATTRELL, GODERICH, ONT.

Gazette reports the results of a series of potato-manuring experiments conducted by Prof. Wright in different parts of Scotland last season, when several styles of manuring ordinarily practiced by farmers was dealt with. With a dressing of ten tons of farmyard manure, the yield of tubers showed an increase of slightly over two tons per acre, as compared with the plot that got no manure. The total yield of the latter was 4 tons 2½ cwt., and on the plot which got 10 tons of manure, 6 tons 4½ cwt. In the case of the unmanured plot, the average yield of large tubers was exactly two tons, while on that which received ten tons of farmyard manure, the large potatoes weighed 4 tons 3½ cwt. Estimating the value of the potatoes at £3 per ton for the large, £2 per ton for the seconds, and £1 per ton for the refuse, the total value of the crop on the unmanured plot worked out to £9 14s.; whereas on the plot that received ten tons of manure, the produce amounted to £16 2s. 6d., an increase of 12s. 6d. for every ton applied.

To another plot, twenty tons of farmyard manure was applied, and on this the yield worked out to 7 tons 6½ cwt., but there was a greater proportion of seconds and refuse potatoes on this than on that which only got ten tons per acre. The second ten tons of manure, therefore, proved much less efficacious than the first, and gave only about half as great an increase.

Comparisons were also made between the use of farmyard manure and artificials, and with combinations of the two. From the results obtained from this line of tests, Prof. Wright has come to the conclusion that it is practicable to produce larger and more valuable crops of potatoes by the combined use of a small dressing of farmyard manure with artificials than can be grown with a large dressing of farmyard manure alone. The average returns for each ton of farmyard manure applied were as follows: Where twenty tons were applied alone, each ton gave 5s. 5½d.; where ten tons were applied alone, 12s. 10d. per ton, and where ten tons of farmyard manure were applied with complete artificials added, each ton of farmyard manure gave 17 shillings. The general conclusions arrived at by Prof. Wright, as a result of his experiments, are summarized as follows:

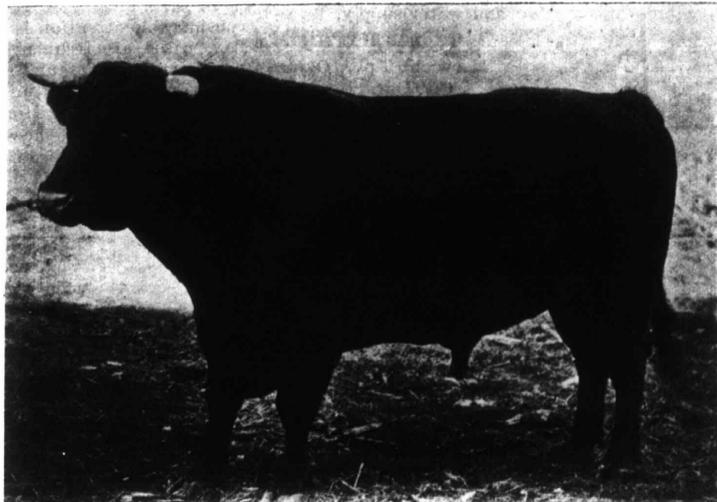
Large and good crops of potatoes can be successfully grown either with farmyard manure alone, or with artificial manures alone, or with a combination of farmyard manure and artificials.

A much greater increase in crop was obtained for each ton of farmyard manure applied when the manure was given in moderate quantity (ten tons per acre) than when it was given in a full dressing of twenty tons per acre.

A still greater increase of crop and a much more profitable return was obtained for each ton of farmyard manure applied when it was given in moderate quantity (ten tons per acre) along with suitable artificials than when it was applied alone, either in large or in small quantity.

A proper combination of artificial manures applied to the potato crop, either alone or with a half dressing of farmyard manure, gave a large and a profitable increase of crop.

Potatoes grown with artificial manures alone suffered more readily from drought on light soils than where farmyard manure had also been given. The safest and best method of manuring the potato crop is to use both.



LOVELY VICTOR =22170=.

Five-year-old Shorthorn bull. (See Gossip columns.)

AT HEAD OF HERD OF MR. THOS. MERCER, MARKDALE, ONT.

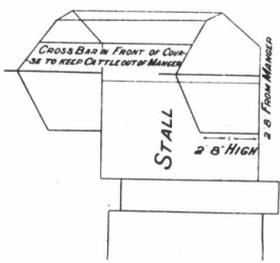
one stick of "Hamilton Stumping Powder" will blow out a cedar stump thirty inches through, provided the outer roots are cut. Also, five sticks of the same explosive will blow out a fir stump four feet through, provided the main roots are cut, say eight to ten feet from center of stump. The only way to do is to follow directions and experiment:

a little practice will soon enable you to determine the charge required for each particular circumstance, as even two stumps the same size and in the same kind of soil require different treatment, for a stump situated in a hollow, with the dirt plowed up against it, will require a greater charge than one on a knoll where some of the soil had been removed from around it. I would advise our friend to try one pound of 50% dynamite to a pine stump sixteen inches to eighteen inches in diameter, and three pounds for a stump twenty-four inches to thirty inches in diameter.

Yours truly,
"STUMP."
B. C., Nov. 6th, 1900.

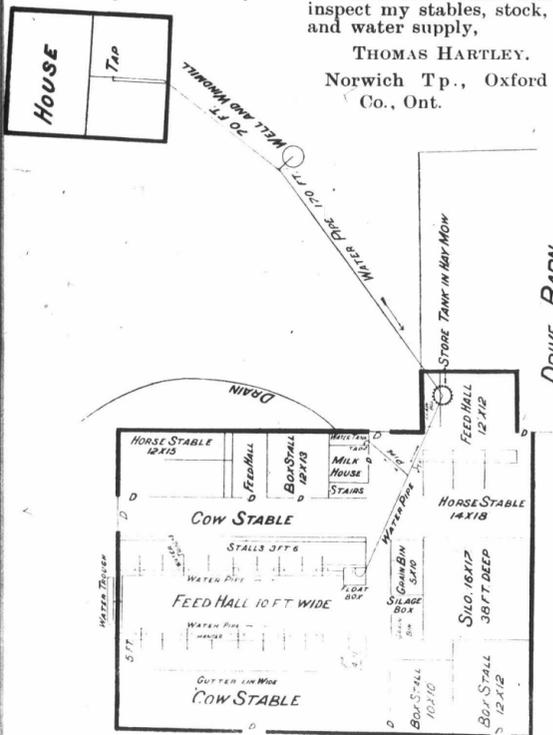
Water Supply System for House and Barns.

To the Editor FARMER'S ADVOCATE:
SIR,—Having gone to considerable expense in purchasing a herd of thoroughbred Holstein cattle, I found it necessary to fit up my barn and stables accordingly, and I thought, as the water-supply question is one of such great importance to farmers and dairymen generally, it might be interesting for your readers to know about the system which I use and which I consider an excellent one. I enclose a plan showing the location of the house, well, and barn, with relative distances. In the loft of the drive barn is the storage tank for water, inside of which is a 20-inch galvanized tank the same height as the store tank. The fresh water is forced into the galvanized tank, and the stale water overflows into the larger one. Then, as the water for



the house is drawn from the galvanized tank, it is always fresh, and the same pipe that carries the water to the barn, carries it also to the house. In the stables, as shown in the plan, each cow has a separate trough; the water enters from the bottom, and there is a check valve in each trough to prevent the water from flowing from one cow to another, so each gets a fresh supply. In the milk cellar the tap empties into a cement trough, large enough to hold two cans and two pails; then, after the milk is cooled sufficiently, the plug from the trough is pulled and the used water is carried away through a tile drain. In the stable I have 20 head of cattle, most of them thoroughbred Holsteins. Some of them are imported, and it is a satisfaction to think that they will not have to wade through snow up to their knees all winter, and drink through a hole cut in the ice, but will have pure, fresh water always before them. Should any of your readers care to examine further into this question, I should be pleased at any time to have them come and inspect my stables, stock, and water supply,

THOMAS HARTLEY,
Norwich Tp., Oxford Co., Ont.



BASEMENT PLAN OF THOS. HARTLEY'S BARN, SHOWING WATER SYSTEM.

A Reviving Interest in Plowing Matches.

SUGGESTIONS BY WILLIAM RENNIE, SR.

As there appears to be a revival of interest taken in plowing matches in some sections of the country, I take the liberty of offering some suggestions in this connection. The style of plowing adopted some forty or fifty years ago was a narrow furrow with high comb, necessary to cover the seed grain, which was invariably sown by hand and covered by harrowing the surface level. Since the introduction of grain drills, the seed-bed is prepared by first plowing wide and shallow furrows, then harrowing and cultivating thoroughly before seeding with the drill.

For testing the skill of plowmen, the old style is decidedly preferable. I herewith submit a scale of points by which plowing may be judged. By this the plowman will understand beforehand the standard of excellence that is required; this is desirable.

SCALE OF POINTS.	
Beginning	15
Finish	15
Shaped ridge	12
Even holding	10
Compactness	10
Covering the grass	10
Equal measurement (back and face)	10
Straight	10
Ins and outs	8
Total	100

In staking out lots for a plowing match, allow sufficient width for two ridges of about fourteen feet each. Set stakes with number in furrow (if any) between each lot. Plowmen must throw off two halves and gather a ridge in the center. The halves and center ridge must have an equal number of furrows; one or both finishes must be to the center ridge. Ample time should be allowed, say at the rate of sixteen hours per acre. No assistance allowed except setting and lining of poles. Plowmen should be allowed to use their hands to arrange furrows, especially in sod, which is preferable for match work. Plowing should measure six inches, both on coulter and share sides.

Enthusiasm may be created in plowing matches by several townships or counties in a district holding local matches, say end of October, and each select their champion in both the senior and junior classes, and, say, first week in November, a district championship match may be held to decide the "district champion plowman." This idea was inaugurated in the "Ottawa Valley district" this present fall, and proved a great success.

This might be taken up by the Farmers' Institutes in their several divisions. The object of holding these matches would be to enthrone the young men in the district to take a greater interest in their farms and horses, and also create a taste to keep everything neat and tidy on their farms. Prizes should be offered for the most approved modern style of plowing stubble land, using either single or twin furrow plows. In this class the ridges should be double width, so that each plowman will have one finish only; time might be at the rate of eight hours per acre. This class should be of very great interest and benefit to both the farmers and manufacturers of this country.

Growing Flax with Wheat.

In parts of Minnesota and the Dakotas, where considerable attention is given to the growing of flax, cases are frequently cited to show that a double crop, wheat and flax, can be successfully and economically grown. A farmer from Lincoln Co., Minn., thus writes in favor of the combination in a recent issue of *Farm, Stock and Home*:

"I don't just know why it is, but a combination of wheat and flax in the same field is a weed killer, or has proven so with me. I had as much wheat to the acre this year as the average around me, and as much flax to the acre, too, as fields in this neighborhood that grew flax only, and I got both off the same land. Flax alone and wheat alone had as many weeds for company as there was flax or wheat, so that such fields carried as much vegetable matter as mine did. I vote for the double crop."

Wheat, Chess, and Wild Flax.

To the Editor FARMER'S ADVOCATE:
SIR. I saw an article in FARMER'S ADVOCATE of November 15th, from H. Pettit, giving his experience with chess, which is very similar to mine. I have heard and read many a man's statement that wheat does turn to chess, giving reasons why they believe it, but have never heard or seen any good proof myself that such is the case. One man told us that if we would mow or cut the top off the wheat three times in the spring, two or three weeks apart, it would all turn to chess. I tried it, but never a bit of chess. One of my near neighbors thinks he has a proof that wheat does turn to chess.

Two years ago wheat killed out badly in this district, mine as well as the rest, but I had no chess, while he had scarcely anything else but chess, as nice and as even a crop as you would wish. His argument was that he did not sow so much chess, and that you could not find any chess between the drills. Last year he also had a field of wheat severely winter-killed, but had a good half crop of rye. Now, he does not argue that wheat turns to rye, but why not? He had no idea that he sowed that amount of rye, and you could not find a stool of rye between the drills. I am convinced that if many of our farmers would take the plan of Mr. Pettit and re-clean their seed carefully, they would be surprised to see what they would get out of it, and there would be a great decrease in the chess crop. When I came on the farm I am now on, I found wild flax, and have had considerable trouble with it ever since. If the wheat is a good crop, not winter-killed, we see but little flax; but if otherwise, there is plenty of it. I have no idea that wheat turns to flax, but the flax seed will lie in the earth for years and then grow if the ground is plowed early in September and harrowed. If anyone knows of a plan to clean the land of it (and not cost the whole farm) they would do me a favor to let me know of it. I can keep clear of raising chess, but I cannot of that stuff.

J. H. JULL.
Oxford Co., Ont.

DAIRY.

Expansion of the Canadian Cheese and Butter Trade.

BY J. A. RUDDICK, DOMINION DEPARTMENT OF AGRICULTURE.

Taking a general view of the situation, it seems to the writer that the outlook is a very hopeful one. I believe that our present position in the British market may not only be maintained, but that it may be improved to a very great extent, providing we make such efforts as we are capable of in that direction.

CHEESE.

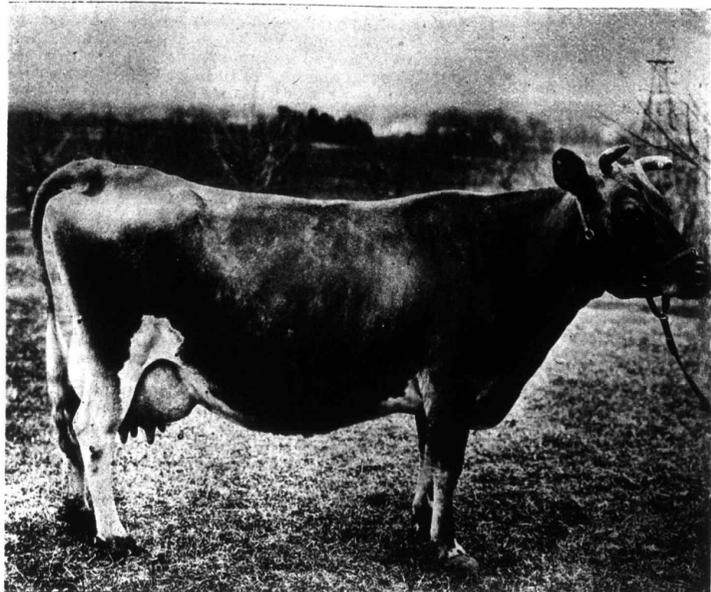
There is some danger that while we are congratulating ourselves upon having attained such a prominent position in the Old Country markets with our cheese, we may forget that other countries are looking in the same direction, and would drive us out if possible. That essentially British sentence, "What we have we'll hold," expresses a sentiment which finds a ready response in the minds of Canadians; still, we must not lose sight of the fact that some of our competitors have natural advantages equal if not superior to ours, so that they only have to do their work as well as we do to excel us in the matter of quality. In New Zealand, the comparatively cool climate enables the cheesemakers to turn out an article always free from the peculiar defects of our summer-made cheese, and to do it without any special provision for controlling temperature. At the present time New Zealand cheese is not as well made as Canadian, but earnest and systematic efforts are being put forth to improve the methods of manufacture. It would not be a good thing for the Canadian cheese trade if it came about that New Zealand, or any other country, for that matter, was able to furnish a better article than Canada. The redeeming feature of the New Zealand competition is that its volume is not large, nor is it likely to expand very much. The total export of cheese from New Zealand in 1895 was 79,650 cwt., while in 1899-1900 it reached 95,746 cwt., an increase of only 16,096 cwt., or about 25,000 boxes of cheese.

The United States have always competed with us for a share of the Old Country trade, and the story of that competition has been told too often to need repetition here. I think it may safely be assumed, however, that with our reputation for honest goods, our wise legislation and helpful efforts of the Governments, the uniformity in methods of manufacture, the cohesiveness of the different units which make up the dairymen of Canada, coupled with a more suitable climate and superior shipping facilities, to say nothing of our present lead, gives us an advantage which should enable us to hold our own without much difficulty.

These two countries which have been quoted are practically our only competitors in supplying Great Britain with the Cheddar cheese which she gets from outside her own borders. Other imports consist of various kinds of continental cheese. The competition from New Zealand and United States is, however, keen enough to make it necessary for Canadians to adopt every possible means of improving the quality of the cheese, if the present position is to be maintained or any headway is to be made.

The most encouraging feature of the outlook, it seems to me, lies in the fact that there is still so much room for improvement. The responsibility for this improvement does not rest on any one section of the trade, but is fairly well distributed. Thus the milk producer, by more careful observance of the proper methods of handling milk, may do much towards securing a better-flavored article; the cheesemaker has much to learn and to practice regarding the process of manufacture before the cheese are all even passable in the matter of body or texture and finish; the factory owners, whether

of private or co-operative concerns, can do a great deal through the medium of better curing-rooms and more sanitary conditions surrounding the factories; while the transportation companies have their share of responsibility in providing safer carriage and better handling, so as to insure less damage to quality and packages in transit. The best thing about it is that all this improvement can be effected without adding to the cost of production



GIPSY OF SPRUCE GROVE 69241.

First-prize Jersey cow and sweepstakes female, Provincial Fair, Halifax, N. S., 1900.
PROPERTY OF J. RUFUS STARR, STARR'S POINT, N. S.

in the slightest degree. Indeed, the experiments which have been conducted under the direction of the Commissioner of Agriculture during the past two years show that it is a matter of economy to control the temperature of a curing-room so that it does not go higher than 65 deg. In a series of experiments conducted by the writer at Kingston, in 1897 and 1898, it was found that the shrinkage was 1.34 per cent. less in three weeks when the temperature was partially controlled, as compared with no control of temperature.

Improvement in quality will surely result in greater consumption, which admits of increased production at remunerative prices.

Canadian cheesemakers should not rest content with having beaten all competitors in the import trade of Great Britain, but keep in mind the fact that the best English and Scotch Cheddar still sells 3 cts. to 4 cts. higher than Canadian does.

BUTTER.

The United Kingdom imported during the year ending August 25th, 1900, the enormous quantity of 386,020,554 lbs. of butter. Our share of that immense trade, for the same period, amounted only to 24,681,440 lbs. Denmark, Australia, France, and Holland, in the order named, all furnished more than we did. Sweden, Russia and New Zealand follow with large amounts. While our exports are small, compared with the total imports of Great Britain, it is very satisfactory to note that they are five times as great as they were when our excellent system of cold storage was inaugurated. Our exports to Japan and the British West Indies are increasing, but we still have to take a second place to the United States in these markets. Although the shipments of Canadian butter to the West Indies have been trebled in as many years, the total amount shipped in 1899 was about 200,000 lbs., while the United States sent over 2,000,000 lbs.

There is no reason why our exports of butter should not continue to increase rapidly, as long as we make a good article and find the production of it profitable. The forces which have helped us so far, viz., the spread of knowledge concerning the science and art of buttermaking, better control of temperature at the creameries, and safer transportation by rail and sea, are still with us, and capable of being strengthened at many points.

Another element in our favor is the deepening of the Imperial feeling which has lately manifested itself throughout the Empire. When trading with the motherland, in competition with foreign countries, it means more to be able to use the word Canadian than it formerly did. This would not be a good foundation on which to build all our hopes for the future of the butter trade, for quality will always be of prime consideration, but it is of decided advantage to have the preference when the quality of the goods are equal.

The three great points in favor of the cream separator are: (1) that it enables more butter-fat to be abstracted from the milk; (2) that it enables a great saving to be effected in space; (3) that it enables the skim milk to be used for calf-feeding and other purposes while quite fresh.

The Value of a Good Udder.

Just as there are cows and cows, so also there are udders and udders. Some very good-looking cows are furnished with but poor udders, and, as an old dairyman of our acquaintance is in the habit of putting it, "It is better to have a scraggy-looking cow any day with a good udder than a grand-looking beast with a miserable bag."

No matter how good-looking a dairy cow may be, except she has a well-developed udder, with its accompanying network of mammary glands wherewith to secrete the milk which she is to produce, she cannot be expected to excel as a pail-filler. As a rule, heavy milkers are seldom the best looking cows, because, though good-looking animals capable of creditably acquitting themselves at the pail are sometimes met with, it is the general invariable rule to find cows which are good at the pail thin in the flesh, narrow across the shoulders, slack over the loins, and in other ways deficient in shape from a butcher's point of view. The ideal udder is the one which goes well developed both fore and aft—one that is carried high up towards the escutcheon and at the same time goes a long way up under the belly. In addition to this, the udder must be deep and broad—the deeper and squarer the better. Its four teats

should be placed as nearly as possible at equal distances apart. Cows possessing udders of this description may generally be counted on to prove good milkers, just as other cows possessing small, round-shaped udders, with teats so close together that they almost touch one another at the points, may invariably be put down as poor pail-fillers, no matter how fine their appearance may be, or how good-looking in other respects.

Holding Back Milk.

COWS ARE NERVOUS AND MUST BE CAREFULLY HANDLED.

According to Professor Stewart, the following is the explanation why cows sometimes hold up or keep back their milk. The production of milk is due to a nervous action by which the glandular substance of the udder is broken down into milk whenever the cow is influenced by sufficient excitement of the right kind. It depends upon the structure and function of the udder just as much as the sections of other glands do, which we know are wholly subject to a set of nerves controlling this distinct function. The udder is not a mere vessel for holding milk that is supposed to be secreted continually and gathers in the udder, as one may suppose a constant dripping of any fluid would fill any other receptacle. On the contrary, it is a gland, made up of cellular substance, which grows by separation (from the blood) of the matter required. When it has attained maturity, or when the necessary nervous action occurs, it breaks down into a special product—milk.

Several experiments have been made with the udders of cows in milking condition that have been slaughtered, and an examination is recorded of the udder of a cow accidentally killed on the railroad when going home to be milked, when she would have given the usual ten quarts. The microscope showed the minute lobules of the tissue swollen and distended, but the udder contained practically no milk, except a very small quantity that drained from the divided tissue when cut across. Let us consider what happens when we sit down to milk a cow. The milker gently rubs the udder and gently handles the teats, and this excites the maternal instinct. There is what is called an erectile action of the muscles of the milk organs. The previously soft and loose condition of the teats change to rigidity, and in a very short time the milk flows and continues until the glandular tissue is exhausted, when the udder, previously hard and tense, becomes soft and loose. We perceive that this function of the cow is

wholly nervous in its action, as indeed every other function of the animal is, and if the due nervous excitement is absent there is no functional action. It is wholly due to the right influence on the nerves that the milk is produced and flows from every ultimate lobule of the udder down through all the ducts, small and great, to the teat. Then, if all goes well, and the cow is in her natural, easily excited, nervous condition, as soon as the milker begins to touch the teats the cow lets down the milk—that is, she does not exert herself to oppose the action of the nerves of the mammary glands. But let the milker be rough or ill-use the cow, or let the cow from any cause be stupid and willful, and this necessary motherly influence on the nerves be prevented in any way, and there is no milk. The udder may remain as tense and full apparently as usual, but not a drop of milk can be drawn until the current of the cow's mind is turned successfully to maternal desire.

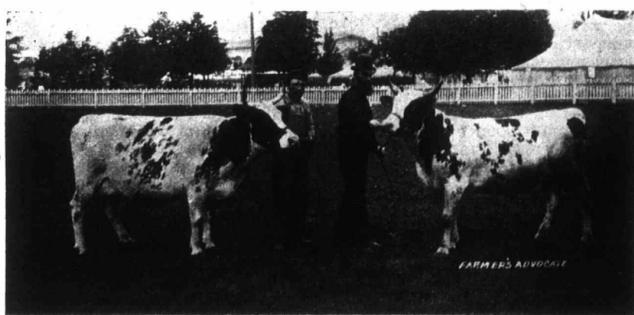
A Preventive for Milk Fever.

Milk fever is a source of heavy loss in good dairy herds; in fact, it may be taken as a rule that it is only the good cows that take this disease. It is not surprising, then, that our most enthusiastic dairymen pronounce milk fever the greatest scourge to dairying. Mr. Geo. Rice, of Oxford Co., Ont., whose herd has become famous from the high public records made by his Holsteins, has had several cows "down" with it, some of which recovered and others were lost. Mr. Rice, being a student and keen observer, made a study of the trouble, and after having found carbolic acid good to prevent abortion, and also to hasten the complete delivery of a retained afterbirth, gave it a trial for the prevention of milk fever, and found it to be a real success. Mr. Rice agrees with many scientists in attributing milk fever to a germ, and his treatment is to destroy the germ and thus prevent its possibility of damage. He gives the following description of his treatment:

"All my cows are heavy milkers, and all are treated about as follows: I aim to have them dry six to seven weeks before calving, fed well at all times and in good condition, and feed fairly liberally up to a week of calving, in order to have the cow in good 'heart.' About a week before calving (as indicated by her udder and other signs), I give 1 1/2 lbs. salts, 1 oz. saltpetre, 1 oz. ginger (large spoonful), and 1 cup of black molasses, and I give about the same dose day before the cow calves, but if I strike her right and have given a dose soon before calving, I give no salts after calving. I used to, but have quit it.

"I have treated the cows this way hitherto, still it did not prevent milk fever. Now, in addition, if in summer, the cow is kept in a shady and short pasture; if in winter, fed some ensilage, straw or similar light feed; and, in addition, no dry meal or bran is fed a week before calving, but two or three quarts of bran scalded, to which I add 25 drops of carbolic acid put in a cup of water and thoroughly mixed in the bran mash, adding a little salt. Give the carbolic acid for three days (twice a day), then drop it until very near calving, and give same dose same way with more salt, also spoonful of saltpetre in bran mash, continuing for a couple of days after calving.

"If a cow's bowels move 12 hours after calving, and continue to do so, then you may know the cow is all right. If the cow calves inside, it is well to sprinkle a disinfectant, carbolic acid, creolin, or any similar preparation, 1 to 50 or 100 of water, around the pen. Most of the troubles that dairymen have are caused by 'germs,' and where cows are kept year after year, these 'germs' multiply, and successful dairymen of the future must use more disinfectants. I think if we work on this tack, we shall be more successful in preventing milk fever, abortion, etc."



LADY OTTAWA AND HOVER-A-BLINK.

Third-prize Ayrshire cow at Toronto and second at Ottawa, and first-prize yearling bull at Toronto and Ottawa, 1900.

OWNED BY WM. STEWART & SON, MENIE, ONT.

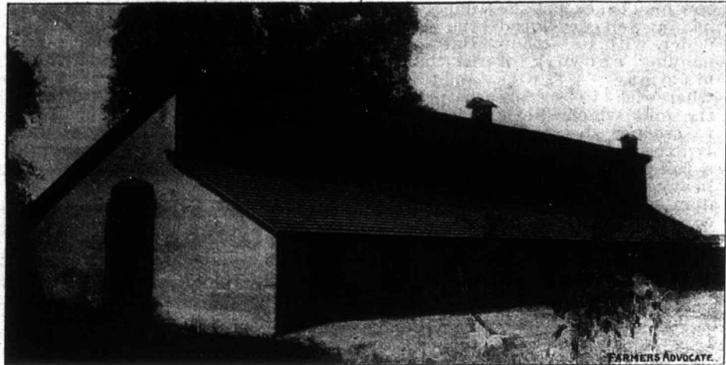
A press dispatch from Milwaukee states that a movement is on foot to consolidate all the creameries in the North-western States, for which Chicago is the market, for the reason that the past season has not been a paying one.

POULTRY.

How to House and Feed Your Poultry for Profit.

BY J. E. MEYER.

The house in which you are going to keep your poultry during the winter must be made as warm



MR. MEYER'S POULTRY HOUSE.

as possible, and be so arranged that there will be no drafts on the fowls. A low building, not over seven feet high inside, will, in this climate, prove best and warmest. It should face the south and be provided with plenty of light. One-fourth to one-third of the south side window is a very good proportion, and will give about the desired amount of sunlight.

Place the perches over a platform that is about twenty inches above the floor of the pen. Place them about eight inches above the platform, and arrange them so that they can be removed to clean. A round pole from two to three inches in diameter, or square pine of same size with upper edges cut off, will make suitable perches. Perches placed in this way are easily kept free from vermin by putting coal oil over them once each week in winter, and twice each week in hottest weather. Then, too, the droppings can be easily and quickly removed from the platform, so as to leave no breeding place for lice.

Arrange the nest boxes so that they can be removed to be cleaned. Paint them occasionally with coal oil and put in new litter, and with proper attention to roosts, you need never fear lice.

We are often asked how many hens can be kept in different sized pens, and we have invariably found that the tendency is to place too many hens together to obtain the greatest profit. It is claimed by all who have made poultry-raising for profit a study, that when kept in large flocks or crowded together during the winter, when they must, in this country, be denied free range, poultry will not return a profit for the food they consume. The largest flock of hens that can be kept together during winter and prove profitable, we have found to be fifty, and they should be allowed a pen of at least 300 square feet, or a pen 15x20 feet, or 6 square feet per bird. This is the smallest pen that we would put 50 hens into, and we have found that with the same feed and attention will do better in a larger pen, and that they will do best if the flock is divided into two flocks of 25 each, and the pen made into two of 10x15 feet each. It is useless to expect 100 hens to pay a profit when kept in this pen of 15x20 feet. They are sure to eat about twice the food, but experience has taught that they will lay even less eggs than the 50. This accounts for so many finding it difficult to make their hens lay in paying quantities in winter.

A DUST-BATH

of fine dry sand or road dust should be provided for winter use; place it in a corner of the pen where the sun will shine. We have found the best material for a floor to be cement. We would not use boards on any consideration, because rats are sure to harbor underneath, and, besides, we find that the boards become foul in time. Next to a cement floor we would use 5 or 6 inches of sand and fine gravel over the clay. Whatever kind of floor we used, we would put over it about 6 inches of straw, cut coarse, or chaff.

Before putting your hens into their winter quarters, besides being careful that you put none but those that promise by their age and health to prove profitable, give them a careful dusting with insect powder. The next and most important thing for you to do is to give them

THE PROPER FOOD

to make them lay. Poultry, like other stock, requires a variety of food. It is also necessary to feed them in such a way as to make them take exercise. The different foods that can be used are wheat, oats, barley, buckwheat, corn, middlings, bran, sugar beets, mangels, turnips, cabbage, potatoes, cut clover hay, green horse manure and table scraps.

As soon as daylight in the morning scatter grain in the cut straw, covering it up with your feet. Put only a comparatively small quantity, say a small handful for each hen. This will start

them to work, warm them up, and should keep them working till nearly noon, when you should give them some soft food composed of steamed clover hay or boiled potatoes mixed with middlings, bran, ground oats or some other grain in which is a little salt. Put this mixture, varied from day to day, in a trough and give what they will eat up readily, still keeping them hungry enough to look for more. Before leaving them, put up the troughs

and see that there is a little grain still in the litter for them to scratch for. About 4 o'clock give them a good feed of corn, wheat or buckwheat in their troughs. This time you may give a little more than they can eat up clean, so that they are sure to have a full crop when they go to roost. After they have gone to roost, go through, emptying what may be left in the troughs and scattering it amongst the litter for them to hunt for as soon as they can see next morning. Keep a mangal, a sugar beet or cabbage hung up or box of grit of some sort always before them. To this must be added, as being, perhaps, the most important food, as well as the cheapest food for the production of winter egg, viz., green cut bones. You can safely give your hens all this food that you can get them to eat, and you will be amply repaid. We believe that there is no food known to the modern poultry-raiser that we can so ill afford to do without as green cut bones. It has undoubtedly filled a long-felt want in this connection, and there is no reason why all who keep even a small flock cannot supply their hens with green cut bones, as there are many good and cheap green-bone cutters on the market that can be bought at a price within the reach of all.

We trust that these few hints may enable you to so feed and care for your poultry during the coming winter that they may prove a profit to you.

Diseases of Poultry.

The best way to combat disease in poultry is to prevent it by taking proper care of the flock. If the fowls are kept warm and have a dry house and are fed on wholesome food, disease very rarely attacks them.

The best poultry-keepers have the least trouble with diseases of any kind, and there are many extensive poultry yards where none of the infectious diseases ever make their appearance.

Lice.—There are more deaths among fowls from lice than from all other infections put together, and it is impossible to get the best results from hens that are lousy, and the poultry-keeper should use every effort to keep his flock clear of them. Where lice are, the roost and the whole inside of the house should be painted with kerosene liberally. The perches and their supports should be thoroughly scalded with boiling water. If this is thoroughly done, no lice will ever be found about the fowls.

Cholera.—There is no known cure for chicken cholera. Its symptoms are greenish color in the droppings and intense thirst in the fowls, and when this is noticed, every sick fowl should be taken from the flock and kept confined in a separate place. Give them water which has carbolic acid in, a teaspoonful to a gallon of water. Shut them up and force them to drink this water by not allowing them any other. Burn all fowls that die of cholera.

Canker comes from a cold originally, and if left to run its course will develop a blood poison that is fatal. It is known by yellowish-white blisters in the throat and mouth, and these will spread to the side of the face and get into the eyes. The cure is a strong solution of sulphate of copper (blue vitriol) in water, which should be applied to the canker with a swab. The sulphate of copper is poison, and none of it should be forced down the fowls' throats, if possible to prevent it, though a small quantity would not be fatal.

Gapes.—When gapes appear on a place they will infect it for years often. Many remedies are given by the authors, but the best one I ever tried is to put the chicks affected in a basket and swing it back and forth through the fumes of burning sulphur until the chicks cough and strangle. Care must be taken not to overdo this, or the chicks will be suffocated.

The above are the principal diseases that afflict

domestic poultry. With good care, none of them need ever be the source of great loss to the poultry-keeper.

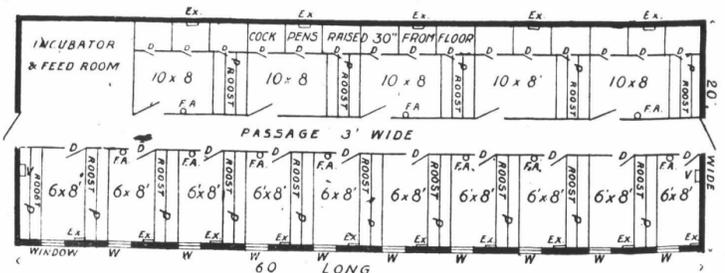
FARMER'S WIFE.

Raising Broilers for Profit.

There are different methods of raising broilers for market, and any one of these methods may produce good birds, and no doubt they have already been pretty well explained, yet there is always room for one more word on the subject. Many people have commenced raising broilers, and many have failed, yet these failures have come through improper equipment with which to work, and a general misunderstanding of the best means to the end, which in this case is the plump, yellow, juicy chicken which weighs from two and a half to three and a half pounds when dressed. Birds of this weight sell more readily, which means at the best prices, than birds of a heavier weight. The question is, how are we to get these plump, yellow chickens? We will not commence with the eggs which are to produce these chicks, but we will go back to the hen which is to lay the eggs, and find the health and strength of her ancestors. If we find that the hen which is to lay our eggs is the offspring of a generation of strong, healthy birds, then we may safely depend upon her supplying us with the proper material to produce these strong, healthy chicks. A broiler business will never succeed unless built up on eggs laid by birds in good health and of strong vitality. We must force the growth of our chicks from the time they are hatched in order to get the quick-grown, juicy carcass, and the chicks must be strong and healthy, which alone comes through inheritance, to enable them to stand the hardest feeding. Chickens from poorly-developed parent stock of hit-or-miss breeding cannot fill the bill. We also want fowls of good shape and color as well as strength and vigor, for in order to lay on flesh in the right place and in the proper proportion, we must have fowls of the proper shape. And the breed that fills the bill best is the Barred Plymouth Rock or the Silver-laced or White Wyandotte. I prefer the Barred Plymouth Rock. They grow quickly, are hardy and strong, and are also good feeders. They are fine-boned, yet have the plumpest breast of any of the suitable breeds, and have stout, wide-apart, yellow legs.

We will now leave the question of breed and eggs, and go to the method of hatching. Where a large number is to be hatched, it must be done by incubators. The chicks must be hatched in February or March, in order to get the best of prices, and at this time of the year hens will not sit in sufficient numbers to hatch as many chicks as are needed. And even if they would do so, we could not afford to use their valuable time in sitting, for we need them to produce the eggs. The incubator should be run as instructed, with a little bit of common sense, guided by the operator's own experience. Extended directions on this point are unnecessary here. As the incubating is artificial, the brooding must also be artificial. In the first place, avoid overcrowding and overheating. From 50 to 100 chicks is enough in one lot; in fact, a smaller number will do better. At the time the chicks are put under the hover, 95 degrees of heat is sufficient, and this should be reduced gradually and as quickly as possible without having the chicks huddling together and crowding, until 70 degrees is reached. Give them an abundance of pure air and exercise, with sunlight in moderation.

There are many good ways of feeding, but we will settle down to the simplest and easiest, which is a soft food composed of two-thirds bran and one-third corn meal, moistened with sweet milk into a crumbly consistency. Start the chicks with this mixture, to which add 10% of fine grit. Feed this in small troughs for the first 48 hours, after which omit the grit, keeping, however, a constant supply before them in a separate vessel. One thing to be avoided in feeding this soft feed is sloppiness. Only moisten it, and do not feed it wet and pasty. Feed five or six times a day at regular hours, only what they will eat up clean at a feed. Encourage exercise, and provide, if possible, an open-air run.



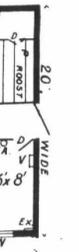
GROUND PLAN OF MR. MEYER'S POULTRY HOUSE.

D, doors; Ex, exit doors for fowls to enter yards; F.A., fresh air pipes; V, ventilation; Roosts (or P, perches) on platform to catch droppings.

Keep clean water before them at all times, and after three days add to the feed 5% of meat scraps. At three weeks, feed them the soft mash only once a day, and fill the rest of the bill with cracked corn, rolled oats, or wheatlets. Vege-

broilers birds may have there is subject, lers, and ve come o work, t means yellow, a half to Birds of s at the nt. The yellow the eggs will go and find If we s is the y birds, ying us strong, l never in good orce the ey are a, juicy ealthy, enable ns from s breed- ows of d vigor, ace and ows of the bill Silver-Barred hardy ey are any of e-apart,

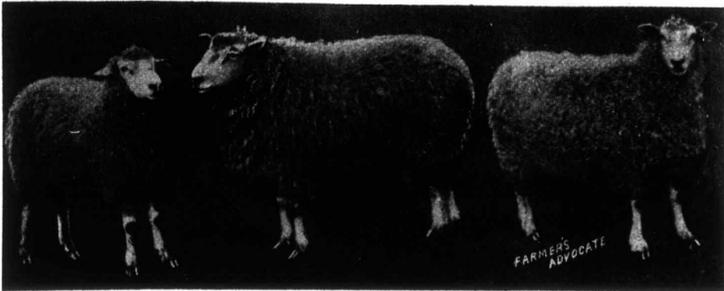
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Roosts

s, and raps. e soft e bill Vege-

tables cooked or raw may be fed. Cleanliness is absolutely necessary. Give them some chaff from the barn to scratch in. Anything is good which will keep them lively and healthy. Abundant quantities of common foods, intelligently fed, and a supply of clean, pure water, is all that is really necessary. As the chicks grow, substitute ground oats for the bran, as the bran gives a less attractive color to the skin. When nearly ready for market,



PRIZEWINNING LINCOLNS

At Winnipeg Industrial Exhibition, 1900. OWNED BY W. T. LYTLE, BEACONSFIELD, MAN.

the bulk of the food should be corn meal and scraps, with cracked corn as a hard grain. When the chickens have acquired the preferred weight, they are then ready for market, and should be given no food within 12 hours of the time of killing. Bleed them from the mouth, and pick dry before the animal heat has gone out of the body. Pick the body and neck clean; but pick the wings only to the second joint. Leave the head on, and the entrails undrawn. Cool them in cold water, and hang up by the legs until dry. Pack closely in boxes, using nothing between the bodies, unless clean brown paper. If the above has been carried out, the returns in nearly every case will prove profitable. PERRY F. DOUPE. Perth Co.

Practical Poultry Meetings--Mr. A. G. Gilbert in Manitoba.

Mr. A. G. Gilbert, Poultry Expert at the Experimental Farm, Ottawa, has been addressing a series of Institute meetings throughout the Province of Manitoba. As these meetings were held at a time when the farmers were busily engaged in getting the stock into winter quarters, the attendance was not as large as it otherwise would have been. One of the best meetings of the series was held in Winnipeg on the 17th of November, under the auspices of the Winnipeg Poultry Association, at which some twenty local poultry fanciers were in attendance. The president, Geo. Wood, occupied the chair. A deep interest was taken in the subject of Mr. Gilbert's address, and he was plied with questions. During the discussion many important points were threshed out. Mr. Gilbert advocated the poultry industry from the farmer's standpoint. Addressing fanciers, he urged them never to sacrifice those qualities that are required by the farmer and the farmer's market. The fancier, by careful attention, could breed birds possessing all of the essential fancy points and capable of winning prizes in the best company, and yet combining with these fancy points the qualities required by the poultry breeder on the farm.

Brief reference was made to the work of poultry specialists, showing what was being accomplished on the large poultry farms in Ontario and the Eastern States. He considered that every farmer should keep from 100 to 150 hens, and showed that a profit of at least \$1.00 per hen per year should be made. The speaker then went fully into the question of egg production, treating the subject principally from the farmer's standpoint. He recommended the use of all kitchen waste, which should be cooked and then mixed with sufficient crushed grain, shorts or whatever was handy to bring the whole to the consistency of a crumbly mash; a pinch of salt and a little black pepper might be added. No salt meat should be used. This mash to be fed in long, shallow troughs for the morning meal. Great care should be taken not to overfeed, as that would make the fowls lazy, and they would not take sufficient exercise during the day. While no set rule can be given, one quart of this mixture to fifteen hens, and one quart to ten pullets, was about right. He would occasionally, on alternate days, give the mixture in the afternoon instead of the morning, as there is not as much danger of overfeeding in the afternoon just previous to the long night fast. He strongly recommended the use of cut green bone, which made an almost perfect food, but should not be used every day, as it is too stimulating. About a pound for sixteen hens, given three or four times per week, is a fair allowance, and by actual test will add considerably to the number of eggs received. At Ottawa, green bones could be purchased at half a cent per pound, but he considered them cheap poultry feed even if 2 cents a pound had to be paid. Beef heads are good. He also recommended horse flesh and bones if they could be got cheaper and more easily than beef

bones. Ground bone is better than meat, as it contains phosphate of lime, which is of value in shell-making, etc. On the Ottawa Farm, the "Standard," a horizontal bone-cutter, is used, and he considers it the best. The noon ration should consist of sound whole grain, scattered about so that the fowls would have to scratch to get it, thus enforcing exercise. Whole wheat could be advantageously fed to the Plymouth Rocks and the Asiatics; whole corn may be given to the Mediterranean breeds, but is too fattening for such breeds as the Plymouth Rocks. It is well always to send the birds to roost at night with a full crop. He deprecated the use of raw meat, as having a tendency to teach hens to eat eggs. Overfeeding was undoubtedly the cause of half the diseases among poultry. He also referred to the desirability of supplying green feed during winter, than which there is nothing better than mangolds. Cabbages are good, but expensive and hard to keep. One fancier present recommended kohlrabi, as being as cheaply grown and easily stored as turnips, and most suitable for poultry green feed. Mr. Gilbert had obtained good satisfaction from "lawn clippings," carefully dried and put away for winter, and when steamed he considered them better than clover, but it was necessary to give small quantities, as fowls were liable to become "crop-bound" if fed too much at a time.

The speaker referred briefly to the construction of the poultry house, pointing out the importance of affording proper ventilation, and cautioning against top ventilation in poultry houses.

Speaking of the egg trade, he said it was most difficult to get really sound, good-flavored eggs in the month of July, a time when eggs were most plentiful. It had been proven, he said, that eight hours' warmth under a hen would cause sufficient change to take place in a fertilized egg to cause it to spoil when that warmth was removed, and he said in crowded poultry houses eggs are frequently under a succession of laying hens, or "cluckers," for that length of time before being gathered. Greater care should be exercised in collecting all eggs promptly once or twice a day, and keeping them in a cool place, not in a cupboard alongside of the cook stove, and in keeping no males in the laying flock. It was always best to make up breeding pens with a few carefully-selected hens, mated with the best procurable male birds. He advised farmers to buy breeding stock—even a trio—rather than depend upon buying eggs for setting. He then demonstrated the importance of feeding and preparing the chickens intended for market so as to obtain the best market prices.

The discussion following the address brought out many interesting points in reference to the care of eggs in incubators, feeding rations, the winter care and management, and lack of vitality of winter eggs, etc.

Our Poultry and British Markets.

Our system of cold storage, both as regards the cold-storage firms themselves and the cold-storage cars for transportation, is making rapid strides toward perfection, and it will not be long before we have in Canada a cold-storage system equal to anything in the world. Undoubtedly, of all the comparatively undeveloped sources of agricultural wealth, none will more surely fill the bill than poultry. The demand for the superior quality on the English market is unlimited. The home market is rapidly increasing. A help to this development is the cold-storage system of the Department of Agriculture and the furnishing of instructions as to poultry culture from the Experimental Farm system and the Commissioner of Agriculture. But the most direct aid is in the shape of such large firms as the Canadian Produce Co., of Toronto, who buy the chickens from the farmers and do the fattening, packing and shipping of the birds.

It may be that when the superior quality of our product is known and appreciated on the British market, and the prices established so, that we will know what it is possible to get, the time will be opportune for the individual farmer or association of farmers to fatten and ship for themselves. By that time our farmers should be well acquainted with methods of shipment to an already established market with guaranteed prices.

This year the poultry trade with Great Britain has developed as it never has before. As early as the middle of last month one firm had sent to England a shipment of Canadian chickens which was five times larger than all shipments sent before from this country in any previous entire year. Next year there will be a demand for chickens unheard of before. The farmer, for the present year, and probably for the next, should not try any direct shipment, but find out and send his chickens to the

most reliable firms in this country. It may not pay the farmers to do the fattening, but it will certainly pay them to raise chickens to sell to the large firms, who will do the fattening and shipping.

Ottawa, 1900. A. G. GILBERT, Manager Poultry Dept.

ENTOMOLOGY.

Silk Culture in Canada.

[A CHAPTER FROM PERSONAL EXPERIENCE.]

Figures Nos. 1 and 2 in the cut show the full-grown silkworm. It does not look at all beautiful, and it is likely that many of your readers would not care to touch it, but for all that it is a very nice, clean little insect. From the tip of its jaw to the end of its tail, outside and inside, it is the purest silk, and at no time and in no way in its short life is it at all offensive. It has five pairs of feet, three pairs of "hands," two spinnerets, one on each side of the head (they do not show in the cut), and a pair of what have been very busy jaws or mandibles. The little spots on the side have narrow slits in them, and serve as lungs to the insect. Its eating days are done; it has now only to spin its cocoon, come out the moth (seen in figure 6), and lay its hundreds of eggs and die.

As this is an insect probably of great future importance in Canada, it might be best, before proceeding to tell what experiments in silk culture have been made, to describe the insect itself and its mode of life, leaving the rest for a future article.

The egg of the silkworm is in size less than an ordinary pin's head. Under a glass it is seen to be speckled brown and white, though to the naked eye it appears to be a plain brown. When it first hatches out, the worm is like a little bit of black silk thread, about an eighth of an inch long. Its proper food is mulberry or osage-orange leaves, though it will thrive a little on lettuce and other leaves of the same family. It grows best when kept at a temperature of from 70 to 80 degrees F., though it makes fair progress in a wood shed or barn. The eggs should be kept over winter in a cold place (they will stand 25° below zero), and care must be taken that they be kept cold in spring, till the mulberry or osage orange is well leaved out; then, if necessary, they may be brought into a warm place. They have no eyes, and cannot go from branch to branch of the plant for food, so they need to be fed, and this is done by placing fresh leaves on a tray made of cardboard and mosquito netting and laying the netting over the worms. They will come up on the leaves and eat them. Fresh food is given them twice—better, perhaps, three or four times—a day, the leaves being occasionally dipped in clear, cool water before they are placed on the netted tray. The worm knows neither daylight nor dark, and has no need of sleep, so it eats on, night and day, and when some hundreds of them are in a place together, the sound of their eating is like the sound of rain pattering on a roof. Growing as fast as they do, it is not long till the netting is too fine for them, and cardboard-box lids, with good-sized holes punched in them, are used instead of the netting. The holes



SILKWORM AND COCOON.

(The picture is about two-thirds life size.)

- 1.—Worm looking for a place to spin. 2.—Spinning the fastening threads. 3.—Chrysalis stage. 4.—Cocoon cut in two. 5.—Male moth. 6.—Female moth.

should be about three-quarters of an inch in diameter. Four times in the worm stage (and twice in the chrysalis stage), or about once a week, they moult a skin, each time becoming whiter, till they are a light gray in the end. As they do not feed while moulting, they must be lifted from one tray to another, and care taken that they are not thrown out with the refuse. In from twenty-eight to thirty-five days from hatching out, they are full-grown, and are from two to three inches in length and about as thick as a man's little finger. Until now they will stay in the box lids, but at this stage they want a place to fasten the threads they spin to as the beginning of the cocoon, and they will wander around waving their heads (as in figure 1) till finally they have found it, as in figure 2. It is advisable to place them in a cone of paper, or, better still, in little square boxes of cardboard, say about an inch and a half square by about an inch deep, and place something over them to keep them in, as they will thus lose little of their silk in useless spinning. In the picture (figure 3) it appears that they spin out of their mouths, but under the microscope it is seen that the silk comes out of three little holes on three little shell-like cones, called spinnerets, on each side of the head, not far behind the mouth. When the cunning little spinner wants to, as it sometimes does in the first loose spinning, it sends out two separate three-stranded threads, but when it begins to spin the cocoon proper, it puts up its first pair of "hands" and brings the two together, forming a six-strand thread. The silk is of three colors, bottle green, lemon, and orange, and very early in the worm's life the color of its feet tells what will be the color of its cocoon. In three days from the beginning, the cocoon is finished and the worm hidden from sight, to undergo a most mysterious change. Eight days after the spinning is done, the cocoon is ripe and ready for gathering. If the cocoon is meant for reeling, the chrysalis inside is now killed by subjecting it to a temperature of about 194°, in an oven, for a few minutes, and the cocoon is ready for the market. If the insect is wanted for its eggs, it is let alone, and in little more than a week the moth hatches out, as seen in figures 5 and 6. They do not fly, and will not leave the open box-lid, but will proceed to lay perhaps 500 eggs and then die. Such is the story of the life of a silkworm, and a marvellous one it is; and it only remains for this article to mention two great lessons that should be learned from it.

The first is taught by the fact that while the worm has neither eyes nor feelers, the moth has both, and what were the spinnerets, are, because they did their duty in that lowly sphere, promoted to the higher sphere of being eyes, and what were the jaws, are promoted to be feelers. The other is just the reverse. Sometimes a worm, instead of spinning its cocoon as good worms should, will scatter its silk about a little here and a little there, and when it has spun its all, it lies a naked thing, to dry up and die without attaining to anything higher. Thus, God's two books, Nature and the Bible, telling the same story, are seen to agree, and both inspire and warn us to be faithful to our duty.

The next article will deal with silk-raising as a future industry, and the prospects of making it a profitable one in Canada. W. M. FLEMING.
Essex Co., Ont., Nov. 21st, 1900.

Horticultural and Entomological Convention.

Very interesting meetings were held in London during the three days beginning with Tuesday, Nov. 13th. By a happy arrangement, the members of the London Horticultural Society joined with those of the Entomological Society of Ontario in a meeting at the Normal School, on the Tuesday evening. The chair was taken by Prof. James, Deputy Minister of Agriculture, who delivered the opening address. He began by explaining the intimate relation that naturally exists between these two societies, for we could have no fruits or flowers if there were no insects, and there would be no insects if there were no vegetation for them to feed upon. Insects are most useful to flowers and fruits; very many kinds entirely depend upon them for fertilization, and yet at the same time, insects cause more destruction to these things than anything else. We cannot, therefore, grow fruit and flowers satisfactorily, nor can we protect them from varied forms of injury, unless we know something about insects. He then spoke of the various aspects of horticulture. In the first place, there is the labor aspect; no results whatever can be obtained without toil; in the sweat of the brow must we cultivate our ground. But it is not mere barren labor; there is a financial aspect also. It must evidently pay, or there would not be so many in it. These are the lower aspects; is there anything higher—anything intellectual, anything moral—in horticulture? In the early days of this country, the farmers devoted themselves entirely to the raising of grain; it was their sole object, and any surplus obtained, after providing for their own needs, was used in exchange for other necessities. Gradually they added to this the care of cattle and pigs, and so in time there grew up the great livestock industry of the present day. But something more was found to be needed; the farm was not complete unless some acres were devoted to the orchard. This was found to be not only of great benefit in affording variety to the food of the family, but was also a source of profit as well. Other fruits besides apples were grown, and now

we see this Province taking the lead in its lucrative fruit-growing industry. This, however, is not the highest point to be reached: the addition of flowers for the adornment of the home and its surroundings is required. When we find a combination of all these things, we may consider that the highest stage has been attained, that an ideal mode of life has been gained, and this has not been achieved without the exercise of a higher intellectual standard and the development of superior mental powers. Prof. James then proceeded to show that highly intellectual people are usually much inclined to horticulture, and related many instances of well-known authors, in confirmation of his statements. Blackmore, the novelist, whose works are of the highest character, thought more of the perfection of his fruits and flowers than he did of the fame of his books. Rider Haggard has retired to an estate in England, and now prefers to be known as a farmer and gardener rather than as an author. Charles Dudley Warner lived quietly in Hartford for ten years before he became popular as a writer, and then it was due to his papers, as an amateur gardener, published in the *Hartford Courier*, and afterwards gathered into a volume, under the title of "My Summer in a Garden," that he became famous. The most remarkable instance is that of Dr. Francis Parkman, the renowned historian of Canada. Few men have had to labor under such difficulties as he—almost blind, crippled with rheumatism, prostrated with nervousness, without a well day for twenty-five years, yet he produced the most charming and admirable works on the early history of this country that can be found in any language. When his health was undermined from the privations he endured in exploring "The Oregon Trail," he made horticulture his exclusive occupation for some years. He applied himself to the growth of roses and lilies, and with such success that at one time he had over a thousand varieties of roses, besides numerous hybrids of lilies and other flowers. At the flower shows of the Massachusetts Society he obtained no less than 326 awards. His talents in this field were recognized by the University of Harvard, which made him Professor of Horticulture; this position he actually held for a year. Such instances, among others quoted, serve to show how congenial is gardening to men of the highest intellectual gifts. Horticulture is an education in itself, if broadly carried out. It develops the powers of observation and induction, and demands a high degree of intelligence for its successful pursuit. Lastly, the speaker referred to the moral aspect of horticulture. He took the case of a boy (or man) who has a love for fruit and flowers, for insects, birds, and other living creatures, and said that such an one could not be an immoral person. His devotion to these objects and his study of nature's works led him on to higher things, and could not fail to develop and improve his moral character. Hence it is that nature study in our schools is of so much value. The child is led by them in the right direction, and the cultivation of its instinctive love of nature must lead on to the formation of a sound character, that will be a blessing to its possessor and a benefit to the community.

Mr. W. E. Saunders, of London, was the next speaker, and he delivered a stirring address on "The Planting, Care and Pruning of the Trees in the Streets and Parks." He pleaded strongly for the proper care of the trees, which form the chief beauty of the "Forest City," and severely criticised the way in which they have been mutilated in the Victoria Park, at the Collegiate Institute, and on many of the streets. At the close of the meeting, a resolution was unanimously adopted, calling upon the City Council to appoint skilled and competent persons to take charge of these matters.

Dr. Fletcher, of Ottawa, the Dominion Entomologist and Botanist, gave a highly interesting address, illustrated with beautiful lantern pictures, first, on trees and their cultivation, and secondly, on the insects that have to be contended with by the cultivator of fruits and flowers.

The morning of the second day was taken up with business matters by the council. In the afternoon, the various reports of the directors, officers, branches and sections, were read, and then followed one of the most important features of the proceedings—a consideration of the work of the San José scale in Ontario, and the measures that are being taken for its suppression. Mr. George E. Fisher, Provincial Inspector, gave a by no means cheering account of the distribution and spread of the scale in the affected districts of the Province. It has increased very much during the past season, and is now a more serious menace than ever to the fruit-growing industry. Whale-oil soap was widely distributed among those whose trees required treatment, but the results were not satisfactory, because the people would not take the trouble to carry out the instructions given. Instead of using two pounds to the gallon of water, some would use only one, while others sprayed only one side of their trees. The season had been peculiarly favorable to the increase of the scale, and it was found that where they had been almost exterminated by treatment, the survivors soon multiplied and recovered their former numbers. Experiments had been tried with kerosene and crude petroleum, and also with these substances combined with whale-oil soap. Many details were given, showing success in some cases and serious injury to trees in others.

Professor Webster, of Ohio; Dr. Fletcher, Prof. Lochhead, Mr. Dearness, and others, took part in

the discussion. The general feeling was that the use of kerosene and petroleum could not be recommended, though it was advisable that careful experiments with both should be repeated, and that "whale-oil soap" is the most satisfactory remedy known at present. It does not always kill all the scales, but it clears the tree of aphids and a large number of insects that affect the buds and foliage, and is beneficial also as a fertilizer. All were agreed that the San José scale is by far the most dangerous insect that fruit-growers have to contend with, and that no pains were too great to be taken for its subjugation. It will be an up-hill fight for some time, but the battle must be fought strenuously and continuously if men wish to save their trees from utter destruction. As one speaker said, if this insect is not kept within bounds now, some of us will live to tell our grandchildren of the good old days when it was possible to grow apples in Ontario. This is no doubt a gloomy view to take, but it serves to show how tremendously important the matter is, and how necessary it is that every fruit-grower should take warning and do all that is possible on his own domain to prevent the incursion of this minute insect, and if it does arrive, to fight for its extermination.

At the public meeting in the evening, Dr. Fyles read his presidential address, illustrated with beautiful diagrams of his own production, on "Insects as Agents in the Cross-fertilization of Flowers." Prof. Lochhead pleaded for some systematic methods to be adopted in the preservation of our forests from the ravages of insects.

An interesting paper was read by Prof. Lochhead on "The Silk Worm in Canada," the points advanced being based on investigations conducted in the County of Essex, Ont. It was shown that the climatic conditions of that county are almost identical with those of France, where silk production is one of the chief industries. The discussion which followed was taken part in by scientists from either side the "line," who pretty generally agreed that the cost of labor in the western hemisphere would stand seriously in the way of competing successfully with the cheap labor of France and Asia, where the raw silk is obtained.

A large number of other interesting and valuable papers were read and discussed during the evening and at the morning and afternoon sessions on Thursday. These will be published in full in the annual report of the Society. The meetings were among the most successful ever held, and were greatly enjoyed by all who took part in them.

GARDEN AND ORCHARD.

Ontario Fruit Growers' Meeting.

On invitation of the Board of Trade and the Brant County Farmers' Institute, the Ontario Fruit-growers' Association is to meet in Brantford, on December 19th and 20th, at 9 o'clock a. m. Mr. S. D. Willard, of Geneva, N. Y.; Vice-President Westen, New York Horticultural Society; Prof. H. E. Vandeman, ex-U. S. Pomologist; Dr. Saunders, of the Dominion Experimental Farms; the Hon. John Dryden, and many others, have been invited to be present and take part in the discussions, and topics of extreme interest will be discussed. Our readers may secure programmes from the Secretary, Mr. L. Woolverton, Grimsby, Ont.

The Balance of Nature.

A curious illustration of the way that nature keeps one class of plants or animals from encroaching on another may be seen in the history of the mongoose in the island of Jamaica. The sugar plantations of that country became so badly infested with snakes and rats that heroic measures had to be employed in getting rid of the pests, and it was decided that the mongoose, a kind of ferret, should be introduced into that country. It was not long until there was scarcely a snake in the island nor a rat in the cane fields. The rats, however, took refuge in the cocoanut trees, and ate the nuts so badly that it is scarcely possible to grow cocoanuts ever since. When the snakes were all eaten up and the rats had taken to tall timber, the mongoose took after the ground-laying birds, destroying both birds and eggs. These birds had been invaluable because they kept down the ticks which gave so much annoyance to men and cattle.

When the birds disappeared, the ticks increased enormously, so that life in Jamaica was a burden, and there was not a yellow-legged chicken left for the preacher. Now we learn that the tick is getting after the mongoose and killing them off, the birds are coming back, and the Jamaicans can now keep cattle. In other words, they have gone around once, and are getting back to where they were when they started.

It is well that Secretary Wilson, of the Department of Agriculture, has absolutely prohibited the importation of mongoose. If he had not, some fool who had rats in his corn crib would have imported it, and then we should have no end of trouble, such as we have with the English sparrow and are likely to have with the Belgian hare when the fad has played itself out and these pesky diggers and bark peelers take to the woods. Ninety-eight out of a hundred will die, but those, like the original rabbit, may survive and plague our children and grandchildren to the last syllable of recorded time. —Wallace Farmer.

Cover Crops in Orchards.

The cover crop for orchards is a comparatively recent invention, only brought into prominence in the last decade or so, since the cultivation of orchards became common. Yet it is already widely recognized as a valuable feature in orchard management, and though, like every other good thing, including honesty, it is not used as much as it should be, it is gaining in favor with each year.



FIG. 1.—ORCHARD OF MR. J. ELLIOTT SMITH, OF WOLFVILLE, N. S., SHOWING CLEAN CULTIVATION DURING EARLY PART OF SEASON.

In the old days, when orchard lands were not even plowed, and when the hay which grew in the orchard was of more value than the fruit crop, there was no opportunity to use a cover crop, the land being perpetually "covered." But since the "strenuous life" which U. S. Vice-President-elect Roosevelt advocates for man has been extended to the apple tree, and orchards have been called upon for larger crops and better fruit, the need has been felt for something which should check the luxuriant growth induced by cultivation and fertilization, and lull the orchard back to rest before the coming of winter. This need has been met by the cover crop.

Almost every plant that will grow upon land has been made use of for this purpose, the commonest being weeds, and the best, perhaps, some kind of clover. Yet, whatever the plant used, if it is properly used, it is of value to the orchard. The commonest and best method is to plow the land in the spring as early as the soil is in proper condition, and, by thorough cultivation throughout the early part of the season, to keep down all weeds and put the plant-food of the soil in the best possible condition for the use of the trees. It doesn't require much judgment to appreciate the fact that if you are growing apples or pears on a piece of land, it is poor economy to let a part of the plant-food which might add to the size of the fruit be used up in forming luxuriant couch grass or vigorous rag-weeds. Every orchard, from the time it is plowed in the spring until midsummer, ought to be as nearly as possible in the condition shown in cut No. 1. The soil is here in almost ideal condition for growth; the particles are finely divided, so that the largest proportion possible of the plant-food is available for use; the top soil is stirred to retain moisture, and there are no plant robbers in the shape of weeds. But there comes a time when these conditions are no longer conducive to the best interests of the orchard. By midsummer the new growth of wood and leaves is practically finished, or should be, and it remains only to mature and ripen the fruit. It is then that the cover crop should be sown, and as it grows it gradually takes more and more of the water and other plant-food away from the trees, so that their growth is checked, and by autumn the wood is well ripened and the buds sufficiently matured to winter without damage. Figure 2 represents the same orchard above referred to as it appeared in the autumn after the cover crop of crimson clover was matured. This clover was sown on the 15th of July, using 10 pounds of seed per acre, and by the middle of September it had formed such a mat, along with the few weeds which grew among it, that windfall apples were scarcely bruised when they fell. Moreover, this carpet of vegetation will capture every leaf as it falls and hold it on the land, to be plowed under in the spring along with the clover, thus adding its humus to the soil, instead of being blown into the fence-corners to become a source of infection for "black spot" and other fungous diseases.

It ought, perhaps, to be said in this connection, that not every orchard will produce such a crop of crimson clover as the one shown. The land must be in the best condition physically, and fairly rich, for it to succeed. But if an orchard won't grow clover, begin with buckwheat and educate it up to the point where it will grow clover.

There are other and important benefits to be derived from the use of cover crops, yet the ones already pointed out should convince the man who cultivates that if he has not already adopted them, he needs them in his business. F. C. SEARS, School of Horticulture, Nova Scotia.

VETERINARY.

Contagious Abortion.

In some of the great breeding districts in Scotland and England outbreaks of abortion occasionally assume quite alarming proportions, and some herds have been known to lose quite half the season's calves through this malady. Of late years much has been done to check its ravages by

attention to cleanliness and to the health of the cows, but, like all other diseases which are caused by germs or bacilli, it is very difficult of eradication once it succeeds in getting a foothold on a farm or in a district. It is now well established that the disease is of a contagious character, and is transmissible from one animal to another. When one cow in a herd aborts, every effort should, therefore, be made to prevent the disease spreading, and the best way of accomplishing this is to immediately isolate the animal from her companions and thoroughly disinfect her immediate surroundings. The whole of her afterbirth, as well as the aborted calf, should be buried deeply in quicklime, and the stall in which the animal is kept should be given a thorough course of disinfection. It is now known that the disease can be introduced into a herd (which has hitherto enjoyed immunity from it) through the medium of apparently healthy cattle, and for this reason some of our most experienced breeders always make a point of isolating newly-purchased cows until after they have calved, lest they should be instrumental in introducing the infection. As a preventive of the disease the practice of sponging the region of the tail and the vent daily with some antiseptic is now followed in many herds where trouble has been experienced with the disease in previous years. For this purpose a weak solution of carbolic acid is the dressing usually applied. M. Nocard, the well-known French veterinarian, who made a special study of this disorder some years ago, found that a very good dressing for use as a preventive of the disease consists of 1½ ounces of hydrochloric acid and 2½ drams of corrosive sublimate in about 3 gallons of water. Animals which have once aborted are very liable to suffer from the same trouble with future calves, and for this reason, except cows are especially valuable, it is inadvisable to breed from them a second time.—*Farmer's Gazette.*

APIARY.

The Frame.

BY MORLEY PETTIT.

Hive-making has made rapid strides in the last century, and many valuable improvements have been effected on the old straw skep and box hive. Not the least important of these is the movable frame, which enables the apiarist to easily remove any comb or combs, or perform any other of the countless manipulations and exchanges of combs which are necessary in modern bee culture.

Leading up to this invention were movable bars, used in Greece and Candia in the eighteenth century? Della Rocca mentions them in his work, published in 1700, as bars placed across the top of the hive, to which the bees attached their combs. Dzierzon used these bars in 1838, but each comb had to be cut loose from the sides of the hive before it could be lifted out. About the same time Huber invented the leaf hive, which consisted of twelve frames, hinged together so that they formed a hive which could be opened or shut like a book. Here we have the nuclei, as it were, of the two great classes of frames, viz., standing closed-end frames and suspended frames.

Several attempts were made to invent a practical hanging-frame hive, but none were successful until Mr. Langstroth in 1851 discovered the principle on which the modern suspended-frame hive is based (it may be mentioned that Baron Von Berlepsch, of Germany, also invented a hanging-frame hive about the same time). In this hive each comb is built in a frame which is suspended by projections from each end of its top-bar, resting in rabbets cut in the top of the hive. For best

results, the top-bars are flush inch in width, and the frames are spaced 1½ inches from center to center. The spacing requires to be very accurate, as, if it is a little too wide, the bees, wishing to economize space, build in burr-combs, and if it is too narrow, they seem to fear the collapse of their hive, and brace the narrow space very firmly with brace-combs, which are readily distinguishable from burr-combs.

In a well-built hive, with nicely-spaced frames, these burr-combs and brace-combs rarely appear, and the frames when the hive is opened have a clean, neat appearance, pleasant to the experienced eye. But often the top-bars are too thin, and the weight of the comb causes them to bend in the middle and leave the space above too large, or the careless or inexperienced beekeeper does not space the frames nicely, and the top-bars present a mass of burrs and braces.

Despite these difficulties, loose frames are very commonly used, for, by employing a thick top-bar, the sagging can be prevented, and long experience of using the end of the thumb or finger as a gauge enables the operator to space the frames quite rapidly and accurately. To facilitate spacing, some have the top of each hive body "spaced" with marks, which show exactly how each end of each frame must come.

Many, however, have frames with some mechanical device which cause them to space themselves automatically. These are called fixed frames. Ordinary loose frames having thick top-bars are made self-spacing by driving a staple in each side of the top-bar, near the ends, and diagonally opposite. The staples project so that no matter which way the frames are turned they are spaced by simply pushing them together. Another style of fixed frame, the Hoffman, has the end-bars wide at top and touching about 2½ inches down. One side is brought to a blunt V edge, and the other left square so that a V edge comes against a square edge, to reduce propolis sticking and danger of crushing bees. It is said that in localities where there is not much propolis, the Hoffman frames may be handled more rapidly than staple-spaced frames; then, they are held more securely in position in moving bees. Other suspended frames have the end-bar wide all the way down, forming a closed-end frame.

This brings us to the standing closed-end frames, of which the chief are the Quinby and Heddon. The closed-end Quinby has end bars 1½ inches wide their entire length, which fit tight together. They are held in an upright position by a strap-iron hook on one corner of each, fitting into a groove in the bottom board. "With a panel on each side, a cover and a bottom board, the Quinby-Hetherington hive is complete, the ends of the frames forming the ends of the hive, though for additional protection in spring, Mr. Ellwood and Mr. Hetherington both use the outside case to set down over the whole."—*A B C of Bee Culture.* The main distinguishing feature of the Heddon frame is that it is only 5½ inches deep, but the idea is to use two sets of such frames for one brood chamber.

With regard to dimensions, frames may be classified as square and oblong, but the latter are given the preference, the standard frame for America, the Langstroth, being 9½x17½ inches. In the matter of frames, we are largely creatures of circumstance, but the writer would recommend to beginners a fixed frame of standard dimensions.



FIG. 2.—THE SAME ORCHARD AS IT APPEARED IN SEPTEMBER, WITH COVER CROP OF CRIMSON CLOVER.

"At Ardee I made the acquaintance of a beekeeper who had taken 112 lbs. of splendid honey from a stock simply hived in a box. At Dundalk I found a beekeeper, who accompanied me on my rounds, who had taken honey that season which had brought him the nice sum of £26 10s. 8d., £20 of which was, he said, clear profit. Then at Carlingford I met a lady beekeeper whose monetary returns for three successive years were £35, £20, £27."—*Correspondence Farmer's Gazette.*

QUESTIONS AND ANSWERS.

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

Veterinary.

LUMP ON COW'S JAW.

F. E., Grey Co., Ont.:—"Would you oblige me with a remedy for a lump on cow's jaw. It is pretty well back on the throat, and about size of small hen's egg? The same cow has white scum over right eye. Can it be taken off?"

[1. See reply to lump jaw in cow in this issue.
2. The white scum referred to is a provision of nature to protect the eye from light and exposure while ailing, and the treatment should be in the direction of dealing with the cause of the scum, and not the scum itself. Keep the cow in a comfortable stable and bathe the eye with warm water, with a little milk added, twice a day before applying the following lotion: sulphate of zinc, 12 grains; fluid extract of belladonna, 15 drops; boiled water to make two ounces.]

LUMP JAW IN COW.

J. N. F., Ohio, U. S. A.:—"I have a cow with a swelling started under the jaw; it is now quite large, and hard on the side of the jaw. Let me hear right away if anything can be done for it. I tried to blister it, but did not see much difference."

[Since the lump did not break, discharge and show signs of healing after blistering, the trouble appears very much like genuine actinomycosis, a contagious disease that is now believed to spread among cattle. It is caused by a germ that settles in the jaw, or sometimes the tongue. When the disease attacks the tongue, that member becomes swollen and hard, producing the condition known as wooden tongue. When it attacks the jaw, a hard, bony lump forms opposite the roots of the teeth. In time, if it continues, the teeth will drop out, the animal fails in condition and finally dies. With the best known treatment some cases prove incurable, but others respond to treatment. First of all, separate the affected animals from the well ones. Give repeated dram doses of iodide of potassium twice daily, in bran mash, for several days, then miss a few days and repeat the iodide as before. Apply to the surface Fleming's Lump-jaw Cure, advertised in our business columns, according to directions obtained with the remedy.]

MAMMITIS.

J. C. H. S., Lanark Co., Ont.:—"We have a cow that calved on Wednesday at noon, but did not give any milk after calving; udder very much swollen. On Thursday at noon she lost her appetite and did not eat or drink for 24 hours. Gave her a pound and a half of Epsom salts. On Friday afternoon commenced to eat a little and drank one-half pail of warm water. Rubbed udder well with marsh-mallow ointment, and now, on the seventh day, milk is just beginning to come in small quantities. Cow is in good condition, and was only a few days off pasture, but had not been fed dry food. 1. What was the trouble with cow? 2. What is the remedy?"

[The trouble with this cow was mammitis (inflammation of the udder), often occurring after calving, caused by the change taking place in the lacteal apparatus. In this case there was also a partial agalactia (absence of milk), and you should be pleased to be able to say that she is commencing to milk well, as in many cases such is not the case. Treatment consists in giving a purgative, as you did, bathing the udder long and often with warm water, or keeping warm poultices on and drawing off what milk or fluid there is three or four times daily. I do not think your marsh-mallow ointment has any special action in such cases. Heat to the udder, light food and attention to the bowels, and milking as stated, is the treatment that has been found most successful.]

J. H. REED.]

OPHTHALMIA IN SHEEP.

W. O., Jr., Middlesex Co., Ont.:—"About five weeks ago some of my sheep became blind, one after another, until most of them are having a hard time to get around. They are much inflamed, and some of them have a white scum over their eyes. They are in a healthy condition otherwise."

[In this disease the eye is partly closed, the eyelids are swollen, and there is a copious secretion of tears which flow down over the cheek. It frequently appears in successive attacks, each being more severe than the former, the result being blindness in many cases. The cause of the affection so far has not been ascertained, but that it is infectious in character is extremely doubtful. The treatment of sheep with this disease should consist in commencing with a mild purgative, such as four ounces of Epsom salts; then bathe the eyes with cold water, and use the following lotion: Sulphate of zinc, 2 grains; sulphate of atropia, 2 grains; distilled water, 1 ounce. Drop a few drops into the eye two or three times daily, and keep the animals in pen where there is only subdued light.]

PERIOSTITIS IN MARE.

J. E. PETTMAN, Bruce Co., Ont.:—"I have a valuable mare, seven years old, which ran away last March and hurt her right hind leg between hock and fetlock joints, on outside of the leg. The leg swelled and she was lame for a few days. I took her to the veterinary surgeon, and he gave me some liniment to apply to it. I attended to it well and the lameness disappeared. But ever since, the leg will swell from standing in the stable, and as soon as exercised or running in pasture, it will all go down, with the exception of a small ridge, about as large around as a lead pencil, and hard. The veterinary surgeon tells me to bandage it when standing in the stable. This I have done, but does not seem to help it any. She does not go lame at all, just the swelling. Would you kindly advise me what to do?"

[The periosteum (the fibrous covering of the bone) received an injury during a runaway, and the inflammation is not yet entirely allayed, and causes swelling when the mare is at rest. Cases of this kind are usually very tedious, and in many cases an immovable enlargement remains after all irritation ceases. Try the following liniment: Tincture of iodine, 1½ ozs.; iodide of ammonium, 1½ ozs.; alcohol, 12 ozs.; water sufficient to make 1 pint. Rub a little of this on, with smart friction, twice daily, and have patience. If necessary, get the second bottle of liniment, and you will eventually allay the inflammation and probably cause absorption of the enlargement. Bandaging is good practice, but do not apply the bandage in less than an hour after applying the liniment. If the liniment should blister, stop its use for a few days. J. H. REED.]



THE LATE JOHN I. HOBSON.

LUMP ON STIFLE.

N. B.:—"I have a colt, one year old, which has a lump on the stifle joint the size of a hen's egg, which causes it to be very weak on the joint. I had a veterinary see it in June, and he pronounced it excessive joint water. He has been treating it ever since, but without any improvement. His method of treatment is blistering. Do you think there is any hope for its recovery, and if so, what steps should I take?"

[You do not state the nature of the lump, whether it is soft and fluctuating or hard and unyielding, or whether it is tender to pressure, etc. From the meager symptoms given, I am of the opinion that it is a soft, fluctuating tumor, just below the stifle joint, and that it is not sore to pressure; but the colt shows defective action—not exactly lameness, but a weakness in the part, especially if going through soft ground, snow or the like. If so, it is what is known as a porcelaneous deposit, the result of partial dislocation of the patella. The treatment adopted is all that can be done—that is, repeated blistering. Keep in a box stall, and do not allow free exercise in the yard or field until spring. Keep on blistering, and you will probably have a useful animal, but not all right.]

J. H. REED, V. S.]

STOCKING OR FILLING OF THE LEGS IN HORSES.

READER, Middlesex Co., Ont.:—"A year ago I had a pair of mares, graded Clydesdales, that worked hard, and were well fed all season up to freezing-up time. Soon after idleness commenced

they began to stock up, look hard and feel cranky. I slackened off their feed, but it took several weeks before they became all right. I wish to know how to prevent a recurrence this year, and would appreciate instructions from you, both as to the cause and treatment of this trouble, which I believe is a general one at this season."

[There is a predisposition in many horses (especially those with what are known as round, fat or beefy legs) to stocking during idleness, following a season of steady work, and good feeding. The cause is a plethoric condition of the system and want of sufficient regular exercise. The animal is plethoric, or in high condition (though not necessarily fat). During idleness the circulation becomes sluggish, and there is a congestion of the capillaries (the very small blood vessels), especially of the extremities, and a consequent swelling or filling of the parts. Exercise increases the circulation, stimulates the capillaries and forces the blood outwards, and we have a consequent decrease of the swellings, only to reappear when the horse again stands, even over night. The general appearance and spirit of the animal become affected. Her hair looks dry and stands, and in many cases the heels, and sometimes higher up the legs, become inflamed, sore, and crack. Horses with clean, flat bone, with an absence of beefiness, seldom or never are affected in this manner. The best way to prevent the trouble in horses predisposed to it, without medical treatment, is to gradually decrease both the amount of work done and the qualities of grain fed to the animals, and when no work can be done, decrease still further the grain, and give regular exercise. Treatment for existing cases should be as follows: Feed nothing but a little bran from 12

to 15 hours, then administer a purgative, from 6 to 10 drams Barbadoes aloes (according to the size of the animal) and 2 drams of ginger; mixed with soap or treacle, and made into a ball. Allow nothing to eat but a little bran, and give water in small quantities until purgation commences (generally about 24 hours), then feed hay and bran, and it is good practice to give a little roots, as a couple of carrots or a turnip once daily. When purgation ceases, give one of the following powders every night in damp food: Soda bicarbonate, 6 ozs.; powdered nitrate of potassium, 3 ozs.; powdered resin, 3 ozs.; arsenious acid, 4 drs. Mix and make into 24 powders. We sometimes get stocking in horses that are lean and in poor condition. In such cases, good food and regular exercise and tonics will usually effect a cure. In these cases much the same symptoms are produced by entirely different causes. J. H. REED.]

Miscellaneous.

SICK CHICKENS AND TURKEYS.

L. E. J., Elgin Co., Ont.:—"We have been losing our chickens for nearly a year. They get diarrhoea, and get lame; combs get dark, and the chickens get very dumpy. Some die in a few days; others lie around for a month, and then crawl off some place and die. The disease is now among our turkeys. We have tried a number of remedies, with no good effect. Can you diagnose the disease and advise a remedy?"

[From the description given, I cannot say what disease you have among your flock. If they were troubled with cholera, the symptoms would be much the same, but, in addition, the birds would have intense thirst, drinking almost constantly, and further, the droppings would be of a greenish cast. Death usually results in the course of three or four days. If you could send a sick bird to the Bacteriological Department of the College, they would be only too glad to examine the bird for you and diagnose the disease. The following treatment I have found very useful in cases of diarrhoea: Sweet tincture rhubarb, 2 ozs.; paregoric, 4 ozs.; bicarbonate of soda, ½ oz.; essence of peppermint, 1 dr.; water, 2 ozs. Mix well, and give one tablespoonful of mixture to one quart of drinking water, giving them no other drink until cured. We have also found common salts a good remedy, giving about a teaspoonful to four birds.]

W. R. GRAHAM, Manager.

Poultry Dept., O. A. C., Guelph.]

TREATMENT OF YOUNG TURKEY HENS.

B. M., Grey Co., Ont.:—"1. Which make the best turkey hens for next year—those hatched last spring, or older birds?"

"2. Will it injure young hens for breeding purposes to have them fed heavily along with fattening turkeys this fall, provided they are moderately fed afterwards during the winter season?"

[1. Well-developed young hens are preferred to older ones, since they lay earlier, and lay less soft-shelled eggs.]

2. Breeding birds should not be allowed to become fat, and should therefore not be closely confined nor fed on corn or other fattening foods. Best results are obtained when the breeding birds are allowed to rough it and largely gather their own living while the ground is bare. Oats and wheat in moderate quantities are the best grains for breeding turkeys.]



What the Farmers' Daughters Have to Say About the Problem of Domestic Service.

With reference to an article in a previous issue upon the subject of the Problem of Domestic Service, the *ADVOCATE* willingly makes room for some remarks from the point of view of the farmers' daughters. That their mothers should say, "Do not tempt our girls away from us into the city—we want them at home," is not only the expression of their natural affection for their children, but it is also the outcome of the exigencies of their own position. How can the toil-worn mother who has had the strong young arms to help her in her weary round of heavy daily duties contemplate with equanimity the moment when she may be deprived of them. She probably has tried to spare them in every way possible; she has taken up the heaviest end of the load herself; she has given them what little relaxation she could; but to part with their services altogether is too much to ask of her; and so she cries, with piteous persistence, "Don't take my girls from me." Well, what is to be done about it? Is there not some way by which the natural instincts of young girlhood for freedom, for expansion, for an occasional sight of the larger world outside the limits of the apple orchard and the farm-yard, and the claims of the mother can at least in some measure be reconciled?

One daughter says: "Why could not father recognize how much of the year's profit depends upon mother's work and ours? He does not seem to see that if mother drops in harness, as sometimes we girls think she will surely do before long, that he *must* then get paid assistance—too late to save her. She has often done women's work and men's work too. She has slaved morning, noon, and night; made the children's clothes as best she could by lamplight, when our men folk were comfortably tucked up in their beds; cooked meals for the hired men (for men have to be hired and *paid*); got up early to churn the butter (no patent churn and separator for her); has risen before daylight to wash for a family of ten (no washing machine and wringer for her); and this she has done for years, with only, latterly, such help as we children were able to give her, neither father nor even the bigger boys realizing how heavily the burden was pressing upon her. It is for mother's sake we girls are stopping on the farm: it is for mother's sake we do not go, as we would dearly like to go, into the city and be able to earn a little money for ourselves. We know we should not have to work so hard there, and we know that we should have many opportunities for self culture which we could not possibly have in the country; but we do not go, though we are sorely tempted to do so, for mother's sake."

And this is what another daughter says: "I don't know that I have such a banking after improving my mind by going into the cities, where I can have lectures and libraries and all that kind of thing, and I don't particularly want to leave home; indeed, it would be pretty difficult for me to do that anyway, because I am the eldest girl, and mother could not get along without me; but I cannot see why a girl who bakes, cooks, washes and irons, and looks after chores generally inside and often outside the house, and who, if she worked half as hard in any family in the city, would get good wages, be able to buy all her own clothes, and perhaps put a little by in a savings bank for a rainy day, I cannot see why, I say, she should not have a certain sum given her every month regularly, so that she may feel a little more like other girls who are free to earn an independence for themselves. If father had to hire a girl, as he would have to do if I went away, he would have to pay her, and pay her pretty well, too, with not half such willing service as I give for mother's sake. So, why could he not find some way, perhaps by means of a share in the profits which we make in butter, cheese, eggs and poultry, to give us a regular monthly allowance? By us, I mean mother and I, for, after all, farming is a partnership, and though the man may hold the purse-strings, it does seem hard that the women folk should have to beg and almost cringe for every copper of spending money, which they have themselves helped to earn."

And lastly, a mother from a farm says: "Perhaps, if our work could be made easier for us within the home by improved appliances, as the outside farm work is lessened by the purchase of the latest inventions in machinery, we could manage to get along alone for a while, and give our daughters their chance of earning a little for themselves. We mothers do not want to be selfish, but it looks like it when we say 'No' to the natural desire of our girls to better themselves." The remedy lies, we venture to think, largely in the hands of the head of the household himself. If he would keep his daughters at home, he should recognize the justice of the claim of every young girl, as she grows into womanhood, to a certain measure of independence.

The farmer's daughter will repay in increased love and respect, as well as in willing service, this kindly concession to her very natural aspiration, and she would also be the less likely to desert her own home for one in the city. H. A. B.

THE CHILDREN'S CORNER.

"Wait Till the Clouds Roll By."

Neddie and Jennie were two little puppies,
The jolliest doggies that ever were seen.
They went for an outing one day in November,
Sent out by their mother so trim and so clean.
But the rain began to fall,
So they crouched beside a wall.
Little Jennie started to cry,
Said Neddie, "Oh, this won't do;
Your crying won't help us through;
We must wait till the clouds roll by."

An old green umbrella just then he discovered,
Though tattered and torn, 'twas some shelter, you see.
"What fun we are having," said Neddie, undaunted,
"Now cuddle up closer; it's warm beside me."
Though the rain came down like hail,
His brave heart did not quail.
Soon appeared a bit of blue sky,
Said Neddie, "I told you so,
We'll soon be able to go;
Let us wait till the clouds roll by." C. D.

Between Ourselves.

I promised you a nice, easy competition, didn't I? Well, you had better look over all your favorite story-books, for I will give three prizes for the three best stories sent in before the end of the year. They must be *short children's stories*, and you may either copy them out or send clippings. Stories that have already appeared in the *ADVOCATE* or are in the school readers will not be accepted. This competition is open to all boys and girls under sixteen. Write your name, age and address on the back of the story, and send to "Cousin Dorothy," Box 92, Newcastle, Ont.



Wait Till the Clouds Roll By...

"WAIT TILL THE CLOUDS ROLL BY."

I hope the winners in the last competition will let me know whether the prizes reached them safely.

You are probably much interested in the home-coming of our soldiers from South Africa. Do you know, a little Canadian girl, aged eleven, wrote a letter to the Queen a few months ago. In it she said: "If I were a man, I would go to South Africa and fight for you. If I were a big girl, I would be a Red Cross nurse. I should dearly love to see you, but I suppose I never shall, as I live so far away. But I can tell you that we love you, and all the Canadians do too. We would rather be British than anything. I hope none of your great officers will prevent my letter reaching you. Papa said that perhaps they might not think it worth while. But if you knew it was coming, I know you would not let them disappoint me." You will be glad to hear that the letter did reach the Queen, who, with her usual gracious kindness, sent a very nice message in return.

Are you at your wits' end to know what to make for Christmas presents? I saw something the other day that would make a splendid present for your mother or big sister. It was a contrivance to hang dress waists on, and was made of a piece of barrel hoop covered with strips of cotton. It was just long enough to reach from shoulder to shoulder, and had a loop in the middle to hang it by. When the waist was on, it looked exactly like the frames on which waists and jackets are hung in the stores. Such a present would be very useful, as it would keep a nice waist from being crushed when hung up in the closet. It costs nothing, which is an important consideration when money is very scarce. Don't make it too long in the arms.

Aren't those little dogs, under the umbrella, dear little chaps? Perhaps you think that animals never know enough to make an umbrella of their own. Birds make very neat little nests, but a roof would sometimes be an advantage. There is at least one bird, however, that understands roof-making. It is called the "oven" bird, because its house looks like an old-fashioned oven with a rounded top. There is a story about it which is a very good lesson in manners:

"It was a hermit, some believe,
That taught the birds their nests to weave,
Long, long ago in days of yore,
When none had ever built before.
But ere the hermit's words were said
Each silly bird would toss his head
And cry: 'Oh, pshaw! We know the way.'
And flap his wings and fly away.
The only one that stayed behind
Was the "oven" bird, polite and kind.
So when the summer days were come
And each would make a little home,
Just half a nest built every bird,
For only half the way they'd heard,
But only one was weather-proof—
The "oven" bird could make a roof.

Although this bird lives in an oven, it is not wise enough to build a chimney. I hope your chimneys are nice and clean and ready for Santa Claus. How busy the poor old fellow must be these days, like all the rest of the world! May he fill your stockings up to the top and running over! Is it too soon to wish you a very happy Christmas? Perhaps there will be no room in our Christmas number, so I will do it now, to make sure.

A merry, merry Christmas
To all my children dear!
Oh, don't you love December?
Best month in all the year.
Christmas is coming, coming!
It's very hard to wait.
Dear Santa, hurry, hurry!
Oh, please don't be too late!

COUSIN DOROTHY.

PRIZE ESSAY—CLASS I.

BY "CHRYSALIS."

Canada--Why Do We Love Her?

On the northern part of America's continent, bounded on the east and the west by the Atlantic and Pacific Oceans, her northern extremities reaching far into the regions of perpetual ice, and her southern ones terminating where flourish the peach and the plum on the shores of the Great Lakes, there lies the Dominion of Canada—our Canada, land of the maple—the fairest of Britain's daughters. Her acres are broad and rich; her sons are hardy; her future is bright with promise; and we, in our loyal Canadian hearts, are justly proud of this heritage that is ours.

Our Dominion is a land of beauty. The variety of aspects in which she presents herself are legion, for from the ice fields of the far north to the rolling hills and lake shores of southern Ontario there is constant variation of landscape and climate. Mountain and valley, forest and plain, lake and streamlet—they mingle in the delightful separation, yet union, of nature; while over them, in the midnight winter sky, there climb the weird lights of the Aurora borealis, and, on summer afternoons, the sunshine ripens the corn and wheat upon the hillsides. What special vistas and wonders there are, too!—the Rocky Mountains, Muskoka, Niagara, the Thousand Islands, Saguenay River, and a hundred others we could enumerate. The passing seasons, too, add their charms. Spring, summer, autumn, winter—each has its especial delights; but the fairest time of all the year, perhaps, are those hazy, uncertain days of Indian Summer. Then the smoke from the Manitou's pipe of peace lies purply over all the landscape, and the woods are tinted by hidden artist hand. Through the still air comes the call of birds, and in the twilight, it may be, the whip-poor-will—

"A wandering spirit, breathing yet
For parted joys a vain regret;
So plaintive thine untiring thrill,
Oh, whip-poor-will! oh, whip-poor-will!"

Canada contributes liberally also to our daily wants and necessities, and is a country rich in resources. In many parts, the land yields great crops of grain and other farm products annually. Our orchards bear luscious fruits in abundance. Our lakes and rivers abound in fish. It is long since our forests began to help to supply the needs of the nations, and yet, "still stands the forest primeval." Minerals are among the most important of Canada's resources, but, as yet, mining is in its infancy, compared with what we hope it will eventually be as our country increases in wealth and civilization.

True beauty is a thing of the soul; and when coupled with outward loveliness, how potent is its power to inspire love and reverence! So it is with our country. Her soul, her inner life, as it were, render her doubly dear to us. Her laws are strong and just and pure over all her subjects alike—Protestant and Catholic, Gentile and Jew. We have representative government. We have freedom of thought and will, freedom to worship as our conscience dictates and for this, let us bear in mind, our forefathers suffered and died in the dark ages of England's history. We have an excellent educational system; and by it (for, as Wordsworth says, "The child is father of the man") Canada is, in a great measure, shaping her future.

We love our country because of her lineage and her history. Her sons are the descendants of good old stock, and it is the Anglo-Saxon blood flowing in their veins that gives them those sterling qualities by which they are characterized as a nation. Canada, although "the youngest of the nations," has had her martyrs, her heroes, and her clever men of all callings. Among those martyrs the Jesuit Fathers Jogues, Salement and Brébeuf were the principal; but the redmen, although treacherous savages, had also their examples of noble manhood. Chief of these was the great

Shawnee warrior, Tecumseh; who fell, among his braves, in the battle of Moraviantown, under the British flag. Our heroes of war lie quietly in many spots. Wolfe, Montcalm, Brock—these are some of the best known, but what myriads of others there are whose names will never adorn the page of history, but whose precious blood has helped to lay its foundations!

"But the future spreads before us,
Glorious in that sunset land—
Nerving every heart and hand,
Comes a brightness none can shed
But the dead, the glorious dead!"

And our boys who have recently so distinguished themselves in the Transvaal—they have shown and are showing what sort of material Young Canada is made of. There were other great men, too, in the past, who fought their political battles and helped to make us what we are. And we must not forget our pioneers, the first settlers, who tramped the forest path that we have derived the blessing from, who endured hardships and privations, who were healthy and happy, and thanked God for their blessings, and handed down to their descendants a rich inheritance of hardiness and noble character.

And, lastly, we love our country because she is our home land. Perhaps that is the greatest reason of all. "In all the world over there's no place like home," and if, in this dear land, in our childhood days, we made "snow men" in winter, picked violets in spring, caught "minnies" in

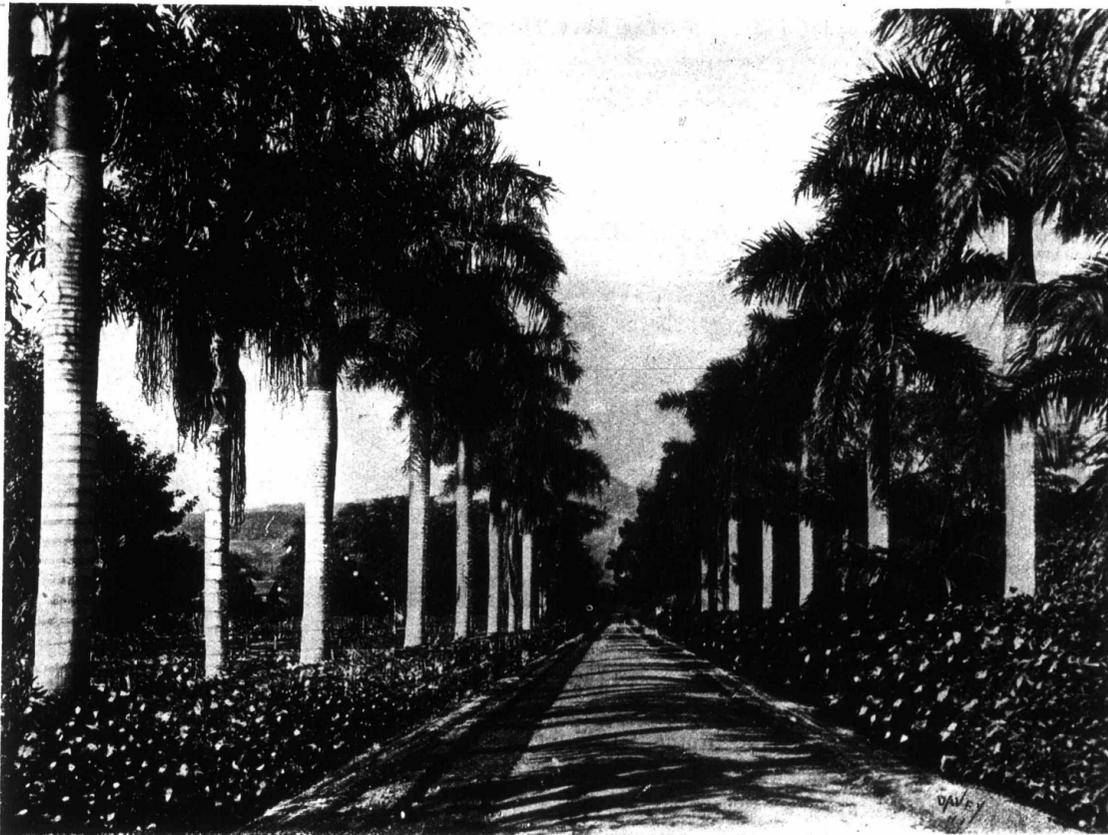
carpet the ground about them, without depriving them of the free air and sunshine, upon which they depend for life and beauty, and without which they would, even in Hawaii, droop and die. These lordly palms stand as giant sentinels along the walks and avenues, through which the patients can walk or rest at leisure. Surely amidst such lovely surroundings, no patient could long be sick, sad, or sorry; and so, perchance, to beauteous flower and shrub, as well as to kingly palm, may alike be committed its own especial message of health and healing.

H. A. B.

Good Health.

"The last quart of the milking, or the 'strippings,' taken immediately after milking, before it has parted with any of the animal heat, is," writes Dr. B. J. Kendall in *American Agriculturist*, "the most valuable thing known to build up a person who is thin and emaciated from any disease. I directed my patients to begin with a half pint and gradually increase the quantity until at the end of a week they are taking a quart at a time, or as much as they can possibly drink without causing too much discomfort. This should be followed up regularly twice every day. In consumption, it is no uncommon thing for my patients who have followed my instructions to gain five pounds a week in weight. No other plan I have heard of has proved so successful. It should be remembered that it is very important to select a cow that is healthy, and

Nourishment is also very important. Eat liberally of all nutritious and easily-digested foods. Forced feeding, or "stuffing," as it is commonly called, will produce marvellous results in conjunction with fresh air. It is better not to drink tea, coffee, or any stimulant, but take as much milk as possible. A large glassful should be taken every two hours during the day, and with meals, and one or two also during the night, if possible. Always make a point of taking a glass or two every night and morning, warm, just after it has been taken from the cow. Strippings are, of course, the best, as they are the richest; but to take as much as a quart at a time, as recommended by Dr. Kendall, might not agree with everyone. Some people say that they cannot take milk, and especially three quarts a day, but this is a mistake. When the machinery of the stomach becomes accustomed to taking the quantity mentioned, at intervals of every two hours, it will dispose of it without discomfort to the patient. Raw, fresh-laid eggs are also most valuable, and half a dozen and upwards should be taken each day. The 'very best' indication of an improved condition is a gain in weight. Do not be disappointed if you do not gain much at first. Half a pound a week is doing very well, but if you persistently follow this treatment, you may gain five pounds a week and more. Some of my friends did not expect me to live, I was so much reduced in flesh and had such a bad cough. Four months and a half ago I weighed 138 pounds; I now weigh within a pound or two of 180, and am



THE ROYAL PALMS, HONOLULU, H. I.

summer, and made nutting raids in autumn if these are some of our memories, what other land could inspire in us the same feelings! Never was there a time in Canada's history when she was brought so prominently before the world as at the present time, and we believe that one day she will be a great and powerful nation. By our aid, be it small or great, let us help to make her so.

"True to her high traditions, to Britain's ancient glory
Of patient saint and martyr, alive in deathless story.
Strong, in their liberty and truth, to shed from shore to shore
A light among the nations, till nations are no more."

The Royal Palms, Honolulu, H. I.

In a former issue, our picture of that wonderful field of luscious-looking pineapples served to show with what bounty generous nature rewards a comparatively small amount of toil in a tropical clime, giving to the laborer the varied fruits of the earth, each in its season. So, our picture to-day serves to mark the regal magnificence with which she crowns the wealth of floral splendor, covering almost without stint the favored Islands of the Hawaiian group. The Royal Palms of Honolulu are more especially remarkable in the beautiful grounds of its Queen's Hospital, built by the joint efforts of Kamehameha IV. and his queen, Emma. Those in our picture are, as shown by the rings which mark their growth, at least fifty years old, and forty feet high. Planted at a distance of fifteen feet apart, they rear their stately heads above the many-tinted flowers and shrubs which

one that gives very rich milk. Then it is also of very great importance that the very last of the milking, or 'strippings,' should be taken, and of equal importance that it should be taken immediately after milking, while it contains all the animal heat. No other food is so natural, and none has ever proved so successful."

The cure of consumption is so little known that the writer feels himself compelled to add to the above article a few words on a subject in which he has had personal experience, for the encouragement, benefit and guidance of those who are afflicted with this terribly stubborn disease.

The sheet anchor of treatment and cure is complete rest, fresh air and abundance of nourishment. The patient should never exert himself, and take but little exercise. A drive for an hour or two each day would be sufficient until he feels that he is better and stronger. He should sleep ten or twelve hours out of every twenty-four, if possible, and live out of doors (in a tent would be the best). In the summer, he should sit or lie out of doors all day long (in the sun, if possible), and during the winter, in cold climates, at least six hours every day, warmly wrapped up, of course, in furs and rugs. Keep warm, but live in the fresh air. Then at night the window should be kept open at all seasons. The writer of this article made a frame and covered it with cotton, which he fastened in the open window to prevent the wind and storm from beating into the room, and yet would permit a free circulation of fresh air.

well. It is a slow process, and may take six, nine or twelve months. This depends upon your constitution, condition, and yourself.

This is practically the treatment prescribed by the highest medical authorities—those who have made a profound study of pulmonary tuberculosis throughout the whole world.

A great deal might also be said regarding climates. A dry, invigorating climate, in a fairly high altitude, say about 4,000 feet above sea level, is the best, and Alberta, in our own Northwest Territories, offers, I believe, as good a climate for the cure of consumption as can be found in the world.

Large Families.

There seems to be a desire just now to find out who has the largest family in the world. The latest claimant to the honor is a Frenchman called Bresson, who has just celebrated the birthday of his forty-first child. It was born to his third wife, who is the mother of fourteen. His first wife bore him fifteen children, and his second wife twelve. Thirty-two of the children are still living, or were up to a few months ago, when the father last heard from them. Most of them are married and raising families of their own, and they have become so scattered that he can scarcely keep track of them. He kept the names of his grandchildren until they numbered over one hundred, and then gave up the record.

THE QUIET HOUR.

Worshipping the Bible.

God spake, and gave us the Word to keep;
Bade never fold the hands, nor sleep
Mid a faithless world; at watch and ward.
Till Christ at the end relieve our guard.
By his servant Moses the watch was set:
Though near upon cock-crow, we keep it yet.

The other day I saw an article on the recent English Church Congress, in which the critic rather ridiculed a statement made by one clergyman, to the effect that he did not deny the possibility of there being some mistakes and inaccuracies in the Holy Bible as we possess it.

There is no doubt whatever about the inspiration of the Bible. I have not the time to go into that subject now, but no one can study it or its claims without owning that it has a perfect right to its title of the Bible—i. e., the Book—no other book can attempt to be its rival.

After this long digression, I come back to the question of worshipping the Bible. The writers of the numerous books contained in this volume "spoke as they were moved by the Holy Ghost."

Three ozs. cod-liver oil, 1 oz. aromatic spirits of ammonia, 1 dram oil of lavender, 5 grains of powdered opium; mix, and rub well at bedtime, before the fire, into the parts affected.

this book, and the doubts will surely fade away. As Pierson says: "If there is one candid doubter living, who has faithfully studied the Bible and the evidences of Christianity, he has not yet been found."

We need not be alarmed when storms of criticism assail this Book. It is just as safe as the little fishing boat was, on the sea of Galilee, and for the same reason—the Lord is in it.

"The word were but a blank, a hollow sound,
If He that spake it were not speaking still."

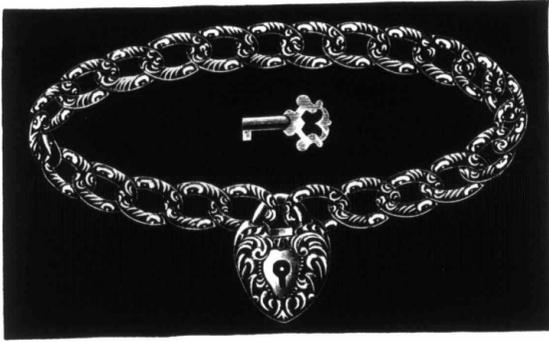
HOPE.

The Very Thing!

You're puzzling your brains every day to discover
A nice Christmas present for Maggie or Jean—
A dainty, bright something that's not too expensive—
To gladden the maiden of sweet seventeen.

But scarce are your quarters, it's very perplexing:
You hunt through your pockets, but cannot find one,
Then pick up the ADVOCATE, glance through its pages—
Why, here's what you're seeking! Now isn't that fun!

This handsome link bracelet for two new subscribers.
A bracelet of silver, with padlock and key;
Another subscriber adds two silver pendants,
A token of friendship—two hearts, do you see!



The paper you drop, make a rush for the stable,
Hit up the old mare without any delay,
Pitch a bunch of old ADVOCATES into the buggy—
Get two new subscribers that very same day!

C. D.

Some Simple Hints for Keeping Healthy.

Flannel should be worn next the skin all the year 'round.

House drains must be carefully seen to, and kept in perfect order.

Sitting with the back close to the fire for any length of time is weakening.

Beware of cold or damp feet, or standing about in damp clothes or on wet ground.

Don't sit or lean against a cold substance, particularly if the body is overheated.

On going outside from a heated room, be well wrapped up; don't stand; and keep the mouth shut.

Sleep on a hair, straw, or spring mattress; abjure feather beds. The bedclothes should be well aired daily.

A warm bath ought to be taken occasionally, and a cold sponging of the whole body quickly done in the morning is well worth the trouble.

Most people, even the hard worker, are the better of some dumb-bell or other manual exercise, to develop the capacity of the chest.

Excess of every kind is incompatible with health. Worry, quarreling, or ill-temper are inadmissible. A hearty laugh is worth much.

A Cure for Rheumatism.

Three ozs. cod-liver oil, 1 oz. aromatic spirits of ammonia, 1 dram oil of lavender, 5 grains of powdered opium; mix, and rub well at bedtime, before the fire, into the parts affected.

Scene—Railway Station. "How long does the train stop here," the old lady asked the brakeman. "Stop here," he answered. "Four minutes. From two to two to two-two." "I wonder," mused the old lady, "if that man thinks he is a whistle?"

The "Turkey Queen."

"I made \$2,500 last year raising turkeys," said Miss Arlita Martin, a young woman who is known in Texas, her native State, as the turkey queen.

"Because I live in Texas, however, you must not call my place a turkey ranch. It is simply a well-conducted farm, and other things are raised beside turkeys. Indeed, until five years ago we didn't raise our own turkeys even for Thanksgiving and Christmas.

"I began with five hens and a gobbler. You know, I suppose, that a turkey hen almost invariably lays thirteen eggs before she begins to sit, and also that she lays two 'litters of eggs' a year. Well, that first year, of the 125 eggs set in the spring, all hatched except five, and I raised 117 birds.

In the autumn when my hens laid again, I followed my original plan of buying extra eggs, but was neither so successful in the hatching nor the raising, bringing up only 79. Yet 79 and 117 make 196, so when I tell you that I sold those turkeys at an average of 97 cents, you will see that I had a snug little sum for my trouble.

As that was my first year, the food had cost me personally nothing, my father having told me at the beginning to go ahead and raise all the turkeys I wished to.

"However, when the second year began, although I started out with the same six birds, I determined to put myself on a business basis with the rest of my family, so I used a large part of my earnings of the year before in buying food, as well as building fowl houses and yards.

Then I followed the plan of the previous season in every particular, excepting that I added five Brahma hens to my flock. These I set on turkey eggs, about the same time that I did my turkeys, and when they hatched out I gave all the little ones to the chicken hens to mother, and turned the turkey hens out into the pasture to lay another litter of eggs.

"They will generally do in the spring when not allowed to raise the first brood. That spring I raised 200 turkeys, and in the autumn 234 more. This time I did not sell all. Instead, I increased my stock to fifty.

"From that flock of fifty I sold 1,400, after increasing my stock to 100, and furnished the table with as many turkeys as the family cared to eat.

"Of course my methods have changed very much since the flock has increased from five to a hundred stock birds. I no longer used hens to hatch the eggs, but incubators. I buy the food by the quantity, and plant acres and acres of small grain to give them for green food.

I plant whole fields of shallots and peppers, as well as corn, and I employ two women and several boys to attend to them; yet, in spite of all these expenses, last year I cleared more than \$2,500.

The greatest trouble about raising turkeys is with dew and rains, when they are young. Young turkeys should be housed at night in a house or covered yard, and not allowed to run into wet grass. As food for the birds, I use bread or unsifted, unsalted corn meal, into which a good quantity of red pepper is mixed.

As green food for them until they are old enough to look out for themselves, I feed them the tender tops of shallots, chopped fine. After they pass their fourth month I treat them pretty much like sheep, feeding them twice a day, morning and night.

"My birds meet with ready sale, and always fetch good prices. I take orders for birds fattened on fancy foods, such as nuts, etc., which are supposed to flavor the flesh, and, of course, these turkeys bring high prices. I see no reason why other women should not succeed in the work, and would be only too glad to give them all the assistance in my power."—Woman's Journal.

Cousinly Chat.

The prizes in Contest I, are awarded as follows: Class I (we are giving two prizes instead of one) —To Miss Agnes Laing ("Chrysalis"), Ancaster, Ont., and to Miss Lily Leveridge ("Lilian"), Skalholt, Man.

In this class there were many excellent essays, and I am sorry we could not give each a prize.

Class II.—To Howard G. Miller, Alameda, California. The competition in this class was not so keen.

Class III.—To Verne Rowell, Bryanston, Ont., as announced last issue.

Owing to our limited space in the Home Department, we can only publish the first-prize essay in Class I. in this number. Perhaps in some future number we may be able to give another one.

The following little poem is by our old puzzle cousin, "Essex." Don't you feel proud of your clever coz? I do. I take his permission for granted and let you all have the benefit of "Essex's" nice verses:

Mingle Wine with Tears.

When the bells their joy are pealing;
When the air is rent with cheers;
When the burst of martial feeling
Welcomes home the volunteers;

When the minute-guns, replying,
Echo, million-voiced, command:
When the glory-rag is flying,
And the colors drape the land;

When the rockets, skywards ringing,
Vein the blue of Heaven's dome;
And the martial music, changing,
Beats the time of "Home, Sweet Home";

When is heard the thrilling story,
Tale of valor, past belief;
How they kept, undimmed, the glory
Of the dear old Maple Leaf;

When the thoughtless throng is making
Loud rejoicing, with one mind;
Think of those whose hearts are breaking
For the loved ones left behind.

Cumberland, Ont. —Chas. S. Edwards. ADA ARMAND.

Wallop Him Well.

The head master of a denominational school in a certain English village recently sent out to parents of the scholars in his school, asking permission to administer, as he thought desirable, "corporal punishment or otherwise."

"Mr. Rattan:—Dear Sir,—Your floggen cirklar is duly received, and I hopes as regarding my sun Jon, you will flog him just as often as yew ken. Heas a bad boi, is Jon. Although I've been in the abit of teaching him myself, it seems to be he'll neva'ir larn anything, his spelling is spesilly otragously defisient. Wallup him well, sur, and you will receive my heartfelt thanks.—Yours truly, Mosas Spanker. P. S.—What accounts for Jon bein sich a bad scollar is, that he's me sun by mi ol woman's first husband."

Never Too Late

To Try a Good Thing.

I am fifty-two years old and for forty years of that time I have been a chronic catarrh sufferer, says Mr. James Gieshing, of Allegheny City; with every change of weather my head and throat would be stuffed up with catarrhal mucus. I could not breathe naturally through the nostrils for months together, and much of the time I suffered from catarrh of the stomach. Finally my hearing began to fail and I realized something must be done. I tried inhalers and sprays and salves which gave me temporary relief, and my physician advised me to spray or douche with Peroxide of Hydrogen. But the catarrh would speedily return in a few days and I became thoroughly discouraged. I had always been prejudiced against patent medicines, but as everything else had failed, I felt justified in at least making a trial. Our good old family physician, Dr. Ramsdell, laughed at me a little, but said if I was determined to try patent medicines he would advise me to begin with Stuart's Catarrh Tablets, because he knew what they contained and he had heard of several remarkable cures resulting from their use; furthermore, that they were perfectly safe, containing no cocaine or opiates. The next day I bought a fifty-cent box at a drug store, carried it in my pocket and four or five times a day I would take a tablet; in less than a week I felt a marked improvement, which continued until at this time I am entirely free from any trace of catarrh. My head is clear, my throat free from irritation, my hearing is as good as it ever was, and I feel that I cannot say enough in praise of Stuart's Catarrh Tablets. These tablets contain extract of Eucalyptus bark, Guaiacol, bloodroot and other valuable antiseptics combined in pleasant tablet form, and it is safe to say that Stuart's Catarrh Tablets are far superior in convenience, safety and effectiveness to the antiquated treatment by inhalers, sprays and douches. They are sold by druggists everywhere in the United States and Canada.—Adv't.

GOSSIP.

LAST CALL FOR THE KINELLAR LODGE SHORTHORN SALE. Continuing our review of Mr. John Isaac's great herd of imported Scotch-bred Shorthorns, to be dispersed by auction at Kinellar Lodge Farm, Markham, on Dec. 18th, we would call special attention to the grand group of 15 2-year-old heifers, nearly all of which were included in the importation recently received from Scotland, and most of which are well forward in calf to high-class bulls in Britain, while others have young calves at foot which will go with them. Among these is found perhaps the plum of the sale, the rich roan, Daisy 3rd, a Kinellar Claret, by the Dutch-bred bull, Sittytton Style, a Cruickshank Secret, and her dam, by Royal James, bred at Sittytton and got by Cumberland. She is a show heifer of grand quality, full in her crops, thickly fleshed, and carrying a capital coat of hair. The twin sisters, Claret Jay and Claret Jay, mossy-coated roans, are full of good quality, the former a big, smooth, sappy heifer; her sister, considered by some the better of the two before calving, is milked down some and looking not so fresh, but showing the right sort of flesh and hair, and a bonny calf to boot. Behind them, a red heifer by the Dutch-bred bull, Cruickshank Lustre family, and her dam by the Marr-bred British Leader, of the Blythesome tribe, is a straight, strong-backed, smoothly-turned heifer that has a handsome cowy head and well-sprung ribs, and looks like making a good breeder. Harthorn Blossom 10th, a sweet red, by the Dutch bull, Violet Prince, a son of the great William of Orange and of Violet Maid, of the Sittytton Violet family, from which came the great show cow, Violet's Forth, is low, level and wide, a typical Aberdeenshire Shorthorn. A long, level, broad-looking roan is Martha 4th, a Matilda, by the Marr-bred Ruler, of the Uppermill Rosemary tribe, sired by Craibstone, a son of William of Orange, and her dam by the Lancaster bull, Red Prince, by the Marr Missie bull, Watch Him. Winning Witch, one of the best of the batch, a red heifer close to three years old, and due to calve before the sale, is of fine cowy character and looks like making a milker. She was sired by the Marr-bred Marshfield, a well-bred Missie by William of Orange, and her dam was by Mediator, of the Miss Ramsden tribe, which has produced many of the best of the breed. Elsie 2nd, of the Kibblean Beauty tribe, is a daughter of the great sire, Star of Morning, sire of Mr. Dutchie's favorite stock bull, Pride of Morning, and of the dam of the Highland Society champion, Cornerstone, while the dam of Elsie 2nd was by Touchstone, the sire of Cornerstone, and himself a Sittytton Secret, and the sire of many winners. Columbine, a roan Claret of fine form, has for sire Marshfield, and for grandsire Mediator, while on her dam's side are the names of many of the most noted of the old Kinellars. Clymestra is another roan of fine proportions and quality, a daughter of the Sittytton Clipper sire, Zeodone, out of a daughter of Star of Morning, and her dam by the Bruce-bred Caesar, by Clear the Way. Most of the yearling heifers are in thinner condition than they should be to bring their value to the seller, but that will be the advantage of the buyers, as they are straight, smooth heifers, of the best of breeding, and most of them will be bred to imported bulls before the sale. Prominent among the best of these, and among the best in the sale, is the red Lavender heifer, Lovender 3rd, by the Dutch-bred Missie bull, Golden Measure, with three Sittytton-bred sires next below in her pedigree. She is every inch a show heifer, and hard to fault in a single point. With a handsome head, a proud carriage, level back and quarters, well-sprung ribs and full crops, she is as nearly right as they are made, and should stand a lot of bidding on. The winsome roan, Waterress, by Marshfield, a Marr Missie, by William of Orange, is of similar stamp as the Lavender heifer, and should go with her. No. 21 is a red Maid of Prinrose, one of the best of the Kinellar families, with four Cruickshank sires in her pedigree, and herself a strong, showy, useful heifer. The bulls are headed by Nonpareil, a red 3-year-old son of Emancipator, a prize bull at Perth, and sire of Golden Fame and many other

Christmas Farmer's Advocate

A SOUVENIR OF THE PASSING CENTURY AND A FORECAST OF THE NEW.

THE last FARMER'S ADVOCATE for the 19th century will be the Christmas Number for 1900. In prose and poetry, and its wealth of beautiful engravings, it will record the achievements of the past and foreshadow the coming time. Some of the brightest minds and cleverest pens of two continents will contribute to its pages articles unique and varied in their character and of fascinating interest to all classes of readers.

The Colored Frontispiece

will be a beautiful reproduction in colors of a Canadian farm landscape, specially photographed for this number, and entitled, "Breaking the 20th Century Sod."

J. W. Bengough,

Canada's foremost cartoonist, will give the country a laugh by turning the X Rays on THE 20TH CENTURY FARMER.

"A Century in Horse Breeding"

By ARCHIBALD McNEILAGE, Editor of the Scottish Farmer.

"Sir Tatton Sykes and His Times"

will be a fascinating chapter of old English days, by the ever-remembered pen of RICHARD GIBSON.

"Moose Hunting in Nova Scotia."

F. S. PEER tells of a day's sport after big game.

"My First Buffalo Hunt."

The famous Western pioneer of the Methodist Church, REV. JOHN McDUGALL, and author of many thrilling books on prairie life, recalls his first thrilling day with the old monarchs of the plains.

"The Field for 20th Century Improvement in Farm Crops"

affords a fertile topic for that enthusiastic investigator, PROF. THOS. SHAW, now of the Minnesota Experiment Station.

"Veterinary Progress in the 19th Century"

will be ably handled by A. G. HOPKINS, B. Agr., D. V. M., University of Wisconsin.

"The Wonderful Chicago Stock Yards"

will be rarely described by MR. D. E. SMITH, formerly well known in the ranks of Canadian breeders, who for four years has been a buyer for Swift's great dressed-meat establishment.

Splendid articles are being prepared on:

"The 19th Century Achievements in Horticulture."

"The Romance of Dairying."

"No. 1 Hard."

"The Successes of Canadian Fruit Growing."

"Ups and Downs in Breeding."

Each will be treated by competent specialists.

A Symposium on the greatest achievements of Agriculture in the past 100 years, and a forecast of the pathway to future success, by some of the brightest thinkers on the continent, will be read with intense interest.

"Canadians Who Have Added Luster to 19th Century Literature"

will be an article of unique and patriotic interest, by MR. FRANK LAWSON.

"Science and Art of Homemaking."

By MRS. H. A. BOOMER, of the National Council of Women. Many other features just as entertaining.

This beautiful and valuable number, to be issued on December 15th, goes free to every new subscriber for 1901. To non-subscribers the price is 50 cents. Subscribers paid up for 1901 may obtain extra copies at 25 cents each. Any present subscriber sending us the name of one new subscriber will receive one extra copy of the Christmas number as a premium. Nothing more appropriate to send as a Christmas greeting to a friend or relative. Every issue for 1901 of the FARMER'S ADVOCATE will be full of helpful, practical and timely matter. It is the best Agricultural paper on earth for the farmer, and only \$1.00 per year. Send for a free sample copy.

THE WILLIAM WELD CO., LIMITED, LONDON, CANADA.

good ones. He is royally bred, having a long list of noted sires in his breeding, and is individually smooth, straight, level and full of quality, a bull one would feel safe in using in any herd. The balance of the imported bulls are young and in very moderate condition, and will probably not sell for their value, but are richly bred, smooth, well formed, and full of quality, and only need time and fair treatment to develop into good useful stock bulls. The red 3-year-old Gloster bull, Sittytton Hero 3rd, is a big, massive, deep-ribbed, fleshy bull, and is grandly bred, while the home-bred bulls are a very useful lot, and bred from favorite families. This sale offers a rare opportunity to secure good cattle of the most approved breeding, at your own price, and which ought to go into the hands of young Canadian farmers and breeders. They are all needed here in our own country as leaven to raise the standard of quality of our cattle, and we hope to see them scattered through all the Provinces of the Dominion. There should be a large gathering at Markham on the 18th to witness the disposal of this excellent herd.

NOTICE.

Little's Sheep Dip for Ringworm. At this season of the year and later, young cattle, and especially calves, are frequently more or less disfigured with ringworm. There are many lines of treatment that may be followed successfully in getting rid of it, but none are more simple and sure in effect than Little's Sheep Dip, mixed with an equal bulk of water. One or two applications of this preparation will cure obstinate cases.

GOSSIP.

Messrs. A. & D. Brown, Iona, Ont., in sending us a change of advertisement, write: "Our sales this summer were: Two heifers to John McCallum, Iona Station; two heifers to John Trestar & Son, Strathburn; a bull and heifer to Mr. W. Scott, Highgate; a bull and heifer to Mr. Burdon, of Middlemiss; bull to Mr. George Leak, Wood-lee; and eight heifers to Mr. W. G. Pettit & Son, Freeman, Ont. We have had lots of grass, and our cattle are going in for the winter in good shape. We wish your journal success."

KENDALL'S SPAYIN CURE



The old reliable remedy for Spavins, Ringbones, Splints, cuts and all forms of Lameness. It cures without a bluish because it does not blister. North Post, Saguenay, Ont., Feb. 10, '98. Dr. B. J. Kendall Co. Dear Sirs—Will you please give me a remedy for heavy. I have a mare that is afflicted. I take pleasure in stating that I have cured a curb of four years' standing with your Kendall's Blisters, by using it once and then applying your Spavin Cure. As long as I have horses, I will not be without Kendall's Spavin Cure and Kendall's Blisters in my stable. Very truly yours, ADOLPHUS GAUTHIER. Price \$1. Six for \$5. As a liniment for family use it has no equal. Ask your druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the book free, or address DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

MICA AXLE GREASE advertisement with text: "Makes short roads. And light loads. Good for everything that runs on wheels. Sold Everywhere. Made by IMPERIAL OIL CO."

Our New No. 4 advertisement with text: "is especially recommended to farmers and fanners who want a good mill. At a LOW PRICE that will do all kinds of farm grinding. It does not disappoint. Rapid, strong, and durable. We put it up in any mill. Send for circulars and a sample mill. AURORA FEED GRINDER CO. Aurora, Illinois."

GOSSIP.

A. C. Hallman, New Dundee, Ont., writes of the Holstein cattle and Tamworth swine at his Spring Brook farm: "My Holsteins are a prime lot. 'Quality' seems to be stamped on nearly every one of them. My De Kol calves of which I have eleven are the finest and most promising I ever had. My De Kol herd bull is doing excellent service. My imported heifer, Queen Hengerveld De Kol, is proving a good performer. She dropped a beautiful heifer calf, sired by Judge Akkrum De Kol. It is a rare combination of breeding, and individually it is equally as good. I never had such a fine lot of young Tamworths. I have a few boars left ready for service, sired by British King, 1st at Toronto, 1899, that would do credit to any breeding herd in Canada. They are the proper kind, lots of length and full of quality. My fall litters, sired by above boar and Whitacre Crystal (Royal winner), are a thrifty lot. In Barred Plymouth cockerels, we are also not behind. We have a very fine lot of young birds, splendidly barred, and nice and plump. The red 5-year-old Shorthorn bull, Lovely Victor 2270, owned by Mr. Thos. Mercer, Markdale, Ont., and illustrated in this issue of the ADVOCATE, is a massive, thick-fleshed representative of the Cruickshank Lovely tribe, sired by the Kinellar Golden Drop bull, Albert Victor, by the Sittytton bred Gravesend. The dam of Lovely Victor was by imp. Baron Camperdown, also bred by Mr. Cruickshank, and his granddam was the fine old imported Sittytton-bred cow, Lovely 19th = 366, mother of a long list of high-class animals, breeding her last calf when in her 20th year. Lovely Victor has typical Scotch Shorthorn character, and a mossy coat of hair. He weighs 2470 lbs., and was carried off the highest honors in the showing in the County of Grey this fall, and was bid for by prominent breeders through the summer, to be shown at Toronto, but has recently been sold to Mr. Geo. P. Bristow, of Rob Roy, Ont., to head his fine herd of Cruickshank Village Girls. He has left his mark on Mr. Mercer's herd in a thrifty, vigorous and shapely lot of young bulls and heifers, which do credit to their sire and their breeding.

PLEASE MENTION FARMER'S ADVOCATE.

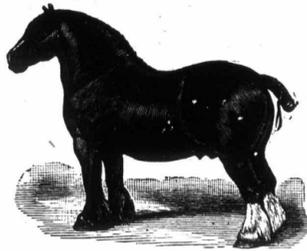
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CLYDESDALE STALLIONS FOR SALE.



Second consignment just landed, per SS. Marina, from Glasgow.

A High-class Lot, of Good Size and Quality, and of Most Fashionable Breeding.

Parties desirous of securing high-class horses will do well to see these or write us before purchasing.

Dalgety Bros., 463 King St., LONDON, ONT.

"Post" Fountain Pen.

SOMETHING THAT EVERY MAN, WOMAN, BOY AND GIRL NEEDS.

It is a wonderful tribute to the greatest invention in fountain-pen construction of the age.

THE PRICE OF THE POST IS \$3.00. IT CANNOT BE PURCHASED UNDER THIS PRICE ANYWHERE.

The patentee has a hard-and-fast agreement with the trade and agents that \$3 shall be the lowest retail price. By a special agreement we are in a position to make

A Great Offer: We will send one of these pens to anyone who sends us three new subscribers, accompanied by \$3.00 in cash.

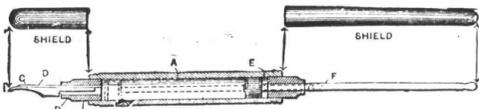


General Lew Wallace, the author of the greatest book of the age, "Ben Hur," also "Prince of India," "Commodus," etc., says in a letter in his own handwriting: "The fountain pen, Post, was received, and I have taken the liberty of trying it thoroughly. Please accept the excuse for failure to acknowledge sooner. "I have tried every pen of the kind on the market, and now unhesitatingly give the preference to the Post. It not only feeds itself with less care, but has the immeasurable advantage of re-supply without inking the fingers. I do all my work with it."

Lew Wallace

TO show our confidence in this pen, we will send you one on trial for a week upon receipt of \$1.00, which, if not entirely satisfactory, you can return to us and we will refund you the \$1.00 paid us. If satisfactory, you must send us the names and addresses of the three new subscribers and \$2.00 additional cash.

THE only self-filling and self-cleaning pen manufactured in the world. To fill the pen, put the nib in ink and draw the piston rod up. To clean, put the nib in water and draw the piston rod backwards and forwards a few times.



A, Barrel; B, Nozzle; C, Pen; D, Feed; E, Plunger; F, Rod.



The world's greatest singing evangelist, who has thrilled thousands and tens of thousands, now raises his voice in praise of the Post Fountain Pen. Mr. Sankey sends the following characteristic letter: "I have used the Post pen for some time, and have had great satisfaction with its use. It never fails or gets cranky. One can at least have clean hands by using the Post, whatever the heart may be."

Frank Sankey

THE Wm. Weld Co., LTD.,

LONDON, ONTARIO.

NOTICES.

Caustic Balm and Other Medicines.—The Eureka Veterinary Medicine Co., of London, Ont., advertise elsewhere in this issue a line of liniments and other medicines that they guarantee to fulfill all the claims made for them. Gombault's Caustic Balm is an old and tried preparation that acts with dispatch and certainty on sprains and the like. The other medicines are prepared by an intelligent veterinary surgeon, who understands disease and treatment of horses and other dumb animals thoroughly.

West's Fluid.—When cows fail to get in calf, and return to the bull irregularly, the probability is contagious abortion is responsible for the trouble, and so long as it is not dealt with by something that destroys the disease germ, the trouble is likely to continue. West's Disinfecting Fluid is a preparation, when properly used according to directions, that cures existing cases and prevents the disease spreading in the herd. It is also reliable in cases of hog cholera and all other similar germ diseases. It is cheap and simple of application. Write West Chemical Co., 15 Queen St. E., Toronto.

Gas Illumination in Country Homes.—The "Roswood" Acetylene Gas Machine advertised on the first page of this issue by the Canadian Packing Co., London, Ont., satisfactorily meets a need in country homes. It enables persons away from electric light and gas plants to do away with coal-oil lamps, substituting a cheaper and better illumination than either ordinary gas or electricity. The "Roswood" machine is safe and unobjectionable in any way. A card dropped to the Roswood Light Co., London, Ont., will be answered with a circular of information.

International Stock Food.—The International Food Company, of Minneapolis, Minn., have such demand for their preparations that they have found their present factory, occupying fifteen floors 100 by 22 feet, inadequate for their needs, and have commenced to build an addition of a five-story brick block, which they expect to occupy before March 1st, 1901. The increasing consumption of this food is credited to repeated and larger orders from old patrons, as well as the ever-increasing new consumers who hear of the merits of this preparation. Read the advertisement of this firm elsewhere in this issue, and note their liberality in furnishing free a large, useful and expensively illustrated stock book.

Folding Sawing Machine is designed to take the place of the old back-breaking crosscut saw. It does this and more. It saves the time of the extra man; it will saw more wood, crosscut more logs, saw down more trees than two men can with an ordinary saw; it adjusts itself to all kinds of land, hillside, uneven places, etc.; it folds up neatly, and is easily conveyed from place to place, and it is well and substantially built from best seasoned white ash, malleable iron castings, and the best steel saw blade that money can buy. It will therefore continue long in service, and with reasonable care will last a long time. Men have saved as much as nine cords of wood in ten hours with it. Write the Folding Sawing Machine Co., 55-79 Jefferson St., Chicago, Ill., for illustrated catalogue. This machine will save its users time, labor, and money.

"SOILING."—By E. S. Peer, Mt. Morris, New York. Price \$1.00, may be ordered through the FARMER'S ADVOCATE.

A short time ago I prepared, at the request of the Department of Agriculture, a bulletin entitled "Books for Farmers." Since the publication of this bulletin, Mr. Peer's new book on soiling has been brought to my notice, and I take this opportunity of recommending it to the farmers of this country. It deals principally with soiling. On this point many will be inclined to consider him extreme; but he presents for the reader's consideration not arguments deduced from theory, but facts gleaned from practical experience as a farmer. Other topics dealt with are ensilage, which he styles winter soiling, and barn, stable and silo construction. His chapters on these subjects are fresh and up-to-date. J. B. REYNOLDS, Ontario Agricultural College.

American Shorthorn Herdbook.—We have received from Mr. J. H. Pickrell, Secretary, Springfield, Ohio, Vol. 45, American Shorthorn Herdbook, which contains, including indexes, 1,391 pages; 5,137 pedigrees of bulls and 8,165 pedigrees of cows, making a total of 13,292 pedigrees. These pedigrees were received in the office between the first day of April, 1899, and the 31st day of October, 1899, and the volume is sold at \$3 at the Association office, or \$3.38 prepaid. It is a fine volume, and bespeaks the flourishing state of Shorthorn breeding. Vol. 46 contains pedigrees received from the 1st day of November, 1899, to the 31st day of January, 1900. It is now in press, being printed in two parts, and the work is being done by two different establishments at the rate of 32 to 36 pages a day. Pedigrees for Vol. 47 have been checked. They run from the 1st day of February, 1900, to the 31st day of August, 1900, and it will also be printed in two parts. The work of the office being almost up to date, having two printing establishments engaged at the same time, the work of getting out the volume will be very much facilitated.

Agricultural Experimental Union. The next meeting of the Ontario Agricultural and Experimental Union is announced for Monday and Tuesday, the 10th and 11th of December, commencing at 1.30 p.m., on Monday. The meeting will consist of five sessions, and will be held at the Agricultural College at Guelph. From the programme which has been received, it is seen that practical experiments were conducted this year by three thousand six hundred and thirty-three Ontario farmers. Besides the reports on experimental work, addresses will be delivered by Prof. I. P. Roberts, Cornell University, Ithaca, N. Y.; Prof. Ellen H. Richards, Institute of Technology, Boston, Mass.; Hon. John Dryden, Dr. Jas. Mills, Superintendent (Creelman), and other good agricultural authorities. The meeting will be made interesting to stockmen, dairymen, poultrymen and fruitmen, and to all persons engaged in mixed farming or in household affairs. The ladies' session on the afternoon of Monday, will be a unique feature of the meeting. There will be excursion rates to Guelph from the 10th to 15th of December. All are welcome. For particulars apply to the Secretary, C. A. Zavitz, Agricultural College, Guelph, Ont.

HORSEMEN! THE ONLY GENUINE IS

GOMBAULT'S CAUSTIC BALM.

None genuine without the signature of The Lawrence-Williams Co. Sole Importers & Proprietors for the U.S. & CANADA. CLEVELAND, O.

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPERSEDES ALL CAUTERY or FIRING. Impossible to produce scar or blemish. Every bottle is warranted to give satisfaction. Price \$1.50 per bottle. Sold by Druggists, or sent by Express, charges paid, with full directions for its use. Send for free descriptive circulars. THE LAWRENCE-WILLIAMS CO., Toronto, Ont.

WANTED:

An experienced shepherd, single. Apply, with references, to W. H. Gibson, Beaconsfield, Ont. Pointe Claire, P. Q.

FOR SALE OR TO LET, a well-equipped henry, with 10 acres of land, dwelling house and barn. Apply to A. Gray Farrell, Smith's Falls, Ont.

For Sale.

The Samuel Hanna Estate, at Griswold.

As this estate must be closed out, it has been decided to offer for sale all those splendid farms owned by the late Samuel Hanna, and comprising about seventeen hundred acres within a few miles of Griswold. The land will be sold in parcels. It is highly improved with buildings, fences, and cultivation.

A great opportunity is here offered to any one desiring a first-class farm.

For particulars apply to

Or to Edmund W. Hanna, Coldwell & Coleman, Box 243, Barristers, GRISWOLD, Brandon.

FOR SALE.

CLYDESDALE stallions, mares and fillies, representing the best blood in Scotland—Prince of Wales, Darnly, Macgregor and Lord Lyon—including the great sweepstakes winner, The Marquis (1182), a grandson of Prince of Wales and Macgregor; also the first-prize 3-year-old at Ottawa this season.

THOS. GOOD, Richmond P. O., Ont. R. R. Station, Stittsville, C.P.R.

HOGATE & CO., OF TORONTO, ONT.

IMPORTERS OF Clyde and Shire Stallions.

Large importation just arrived. Can show you more Clyde stallions of breeding ages than any firm in Canada. Prices from \$700.00 up. Don't fail to see our horses before you buy. Have had fifteen years' experience, and can save you money. All horses guaranteed to be reasonably sure getters. We are stabling our horses at Woodstock this winter, and can be seen at our barn there.

FOR FURTHER PARTICULARS WRITE E. R. HOGATE, WOODSTOCK, ONT.

WM. HENDRIE, VALLEY FARM, HAMILTON,

Will sell on the 5th December, by public auction, at Grand's Repository, Toronto, a choice lot of brood mares in foal, 2-year-olds, and yearling horses; sired by Derwentwater and Versatile. A rare opportunity to get the best blood in Canada at a low figure.

ROBT. NESS & SONS, HOWICK, QUE.

BREEDERS AND IMPORTERS OF Clydesdale Horses & Ayrshire Cattle Also the leading breeds of fowls for the farmers.

NOTICE.

Messrs. James Epps & Co., Ltd., the well-known Cocoa Manufacturers, of London, have just issued an exceedingly tasteful little medal in aluminium for distribution amongst their numerous customers and the public generally. It is called the national medal of the United Empire, and having been struck on the termination of the war in South Africa, it forms at the present time an interesting souvenir of the Mother Country and her various colonies, typical figures of each being represented thereon. A pretty scarlet ribbon and a suitable inscription completes its equipment, and we feel sure that all sections of the public will be eager to possess Messrs. Epps & Co.'s patriotic medal. See their ad.

IT PAYS TO ADVERTISE IN THE FARMER'S ADVOCATE.



Hearing Restored

by the use of

Wilson's Common Ear Drums

The only scientific sound conductors. Invisible, comfortable, efficient. They fit in the ear. Doctors recommend them. Thousands testify to their efficiency.

Information and Book of letters from many users Free.

WILSON EAR DRUM CO.,
403 Trust Bldg., Louisville, Ky.

9 CORDS IN 10 HOURS



BY ONE MAN with the FOLDING SAWING MACHINE. It saws down trees. Saws any kind of timber on any ground. One man can saw more with it than 2 in any other way. Made at Essex Center, Ontario. No duty to pay. Write Main Office for illus. catalogue showing latest IMPROVEMENTS, and testimonials from thousands. First order secure agency. Address: FOLDING SAWING MACHINE CO., 65-57-59 No. Jefferson St., CHICAGO, ILL.

NEW IMPORTATION

Just arrived. Personally selected from the best studs in England and Scotland.

CLYDESDALES

By the champion winners, Baron's Pride, McGregor, Flashwood, Prince Alexander, Prince of Carruchan, etc.

Shires, Suffolks, Percherons and Hackneys

By the leading sires of the day, all combining size, color, quality and action.

Fourteen first prizes and six second prizes won at the recent State Fairs of Illinois, Iowa, and Wisconsin, in the very hottest competition. Inspection cordially invited.

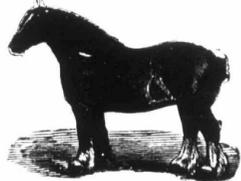
ALEX. GALBRAITH, Janesville, Wis.

THORNCLIFFE

Stock Farm

The largest stud of Clydesdales in Canada, headed by the Champion Stallion of all ages,

"LYON MACGREGOR."



Stallions and Colts

From the best blood in Scotland and Canada. Ayshire bulls and heifers from imported stock. Jersey heifers and bull calves, sired by the prize-winning bull, Distington's Golden. Best milking strains, with good tests.

Terms reasonable. A visit to Thorncliffe will well repay you.
ROBT. DAVIES,
Thorncliffe Stock Farm, TORONTO.

IN WRITING
PLEASE MENTION FARMER'S ADVOCATE.

The Health Habit

Just as Easy to Form as Any Other.

We do not deliberately form our pet habits, but they are unconsciously acquired and grow as we grow, and by the time we learn they are hurting us, we find them too strong to be easily broken.

Then, why not form a good habit, a habit which will counteract the many bad ones; in other words, contract the unfashionable habit of being always well.

The best health habit to get into is to have and keep a vigorous stomach; if you have a healthy digestion you can drink your beloved coffee, smoke your favorite brand of tobacco, with little or no harm; the mischief begins when these things are forced upon the faithful stomach without any assistance.

Form the habit of taking after meals some harmless but efficient digestives which will relieve the stomach of so much extra work.

Nature furnishes us with such digestives, and when they are combined in such a pleasant preparation as Stuart's Dyspepsia Tablets, they give the overworked stomach just the necessary assistance to secure perfect digestion without any of the harmful effects of cathartics and similar drugs.

The habit of taking Stuart's Dyspepsia Tablets after meals is as necessary to the weak stomach as food itself, and indeed to get the benefit from food eaten, nothing better and certainly nothing safer can be used.

Many families consider Stuart's Tablets as essential in the house as knives and forks.

They consist entirely of natural digestive principle without the effect or characteristics of drugs; they have no cathartic action, but simply go to work on the food eaten and digest it.

Take into account your bad habits and the expense they entail and then invest fifty cents in a box of Stuart's Dyspepsia Tablets and see if your digestion for the next month is not vastly improved.

Ask the clerk in any drug store the name of the most successful and popular stomach remedy and he will say Stuart's.—Adv.

GOSSIP.

The fourth annual meeting of the Continental Dorset Club will be held at the Great Northern Hotel, Chicago, December 6th, at 2 p.m.

Dr. T. A. Geddes has been appointed by the United States Department of Agriculture to test cattle in Great Britain prior to shipment to this country, and is now en route to Liverpool.

Mr. Geo. E. Goodhand, the well-known dairyman of Milverton, Ont., has accepted a position as instructor at the Western Dairy School at Strathroy, which opens for the season on Dec. 3rd, 1900.

Thoughts of Christmas turkey turn attention to the new advt. of Mr. R. G. Rose, of Gleanworth, Ont., offering for sale fine Mammoth Bronze birds for breeding purposes.

The annual meeting of the American Cots-wold Record Association will be held at the Grand Pacific Hotel, Chicago, Ill., Dec. 6th, at 8 p.m. Geo. Harding & Son, Waukesha, Wis., are the secretaries.

Mr. Wm. Hendrie, Valley Farm, Hamilton, advertises in this number that on Dec. 5th he will sell by auction, at Grand's Repository, Toronto, a choice lot of brood mares in foal; also 2-year-old and yearling colts, sired by the well-known Thoroughbred stallion, Derwent and Versatile. This will be a good opportunity to buy the best blood, at your own price.

Southdown sheep and Dexter-Kerry cattle are advertised in this issue by Wm. H. Gibson, manager of Hon. G. A. Drummond's Huntleywood farm, at Pointe Claire, Beaconsfield Station, G. T. R. and C. P. R., 15 miles west of Montreal. Mr. Drummond has the largest flock of imported Southdowns in America, and has used only *first-class* imported rams. A very useful lot of 1, 2- and 3-year-old rams and 30 ram lambs or more are now for sale, and can be bought worth the money. Write Mr. Gibson for prices, etc.

The annual meeting of the American Short-horn Breeders' Association will be held Dec. 5th, at 7:30 p.m., at the Palmer House, Chicago, for the purpose of electing five directors for the term of three years, and the transaction of other business. Directors whose terms of office expire are W. E. Boyden, Emory Cobb, J. B. Dinsmore, C. E. Leonard, and S. F. Lockridge. By-law 5 says: "The stock shall be voted only in the name of the owner, as the same appears on the books of the Association; and if, at any meeting of the stockholders, shares of stock are represented by other than the owner or owners of said stock as shown by the books, the authority to act shall be by written proxies filed with the Secretary." (Each proxy also requires a ten-cent revenue stamp.)

Messrs. J. H. Jull & Son, Mt. Vernon, Ont., write: "Our Oxfords are looking fine, and sales have been good. We have three orders for three full show sets for 1901, and several orders for single ones. List of sales this season: To W. Heskett, Fulton, Ohio, one yearling ram, one yearling ewe, two ram lambs, two ewe lambs; Edson Carr, Jonesville, Mich., one yearling ram, one ram lamb; E. Campbell, Pittsburg, Ohio, one two-year ewe; J. Wilcox, Kelvin, Ont., one ram lamb; G. Harding, Waukesha, Wis., one yearling ram, one two-year ewe, two yearling ewes, two ram lambs, two ewe lambs; Andrew Elliott, Pond Mills, one ram lamb; Thos. Cole, Badaxe, Mich., five yearling rams; J. B. Shuttuck, Cherry Creek, N. Y., one ram lamb; John Sherwood, Otisville, Mich., one ram lamb; Peter Arkell, Teeswater, Ont., one ram lamb; N. Sherk, Mulgrave, Ont., one yearling ram; W. T. Shelt, North Bergen, N. Y., one ram lamb; R. Holdsworth & Sons, Port Hope, Ont., one ram lamb; J. Davidson, Mason, Mich., two ewe lambs; J. Pierson, Burgoyne, Ont., one ram lamb; G. Grives, Maple Lodge, Ont., one yearling ewe; Bate & Colling, Moose Jaw, N. W. T., five yearling rams; Shannon Bros., Cloverdale, B.C., one two-year imported ram; W. Courtney, Princeton, Ont., two aged ewes, six ewe lambs; R. Simons, Paris, Ont., two aged ewes; E. & J. E. Broadbent, Broadbent, Ont., one ram lamb; Joseph Gilroy, Lyn, Ont., one ram lamb; Peter Cochran, Albion, Ont., one ram lamb; W. Davidson, Etouia, Ont., one ram lamb.

PLEASE MENTION FARMER'S ADVOCATE.

DISPERSION BY AUCTION

OF A HIGH-CLASS HERD OF

SCOTCH SHORTHORNS

AT MARKHAM, ONTARIO,
TUESDAY, DEC. 18TH,

Being the entire Kinellar Lodge herd of MR. JOHN ISAAC, who is retiring from farming, and will sell without reserve.

This offering of 53 head includes:

16 Cows	6 Imported bulls
15 2-year-old heifers	2 Home-bred bulls
11 Yearling heifers	3 Heifer calves.

FORTY-FOUR are imported animals, selected from first-class Scotch herds, and strong in breeding and individual merit, and are representatives of the Ury, Claret, Golden Drop, Lavender, Wimple, Rosebud, Broadhooks, Rosemary, Minna, Jill, and Lady Dorothy tribes.

The farm is 1½ miles from Markham Station, G. T. R.; 2½ miles from Locust Hill, C. P. R., and 20 miles from Toronto.

Catalogues will be mailed on application to—

JOHN ISAAC,

MARKHAM, ONT.

on

AUCTIONEERS:

COL. CAREY M. JONES, JOHN SMITH, M. L. A., CAPT. T. E. ROBSON, M. L. A.,
Davenport, Iowa. Brampton, Ont. Ilderton, Ont.

Reduced Rates on Canadian Railroads.

HOARD'S CREAMERIES' PARIS EXPOSITION BUTTER.

Among the prizewinning exhibits of American-made butter at the Paris Exposition, which were almost exclusively the product of the "ALPHA-DE LAVAL" Separators, was that of the Hoard Creameries, Fort Atkinson, Wis.

Few Creameries are more widely known than those of the Hoard concern, both by reason of the pre-eminence of "Hoard's Dairyman" as the leading dairy publication of America, if not the world, as well as of the magnitude, splendid equipment and superior merit of the output of the Hoard factories. Hence, while every big and successful creamery enterprise is to-day using De Laval Separators, what the Hoard Creameries may be doing in that regard is of interest to others with less experience.

The following letter speaks for itself:

HOARD'S CREAMERIES,

Fort Atkinson, Oct. 23, 1900.

[copy]

The De Laval Separator Co.,
31-45 W. Randolph St., Chicago:

Gentlemen,—Yours of Oct. 20th, in regard to our Paris medal, received. In addition to the medal awarded our butter, our Superintendent, Mr. C. L. Fitch, received a silver medal for original processes in buttermaking and apparatus and tests therefor.

The cream from which the prize butter was made came from two "Alpha" No. 1 Belt power machines and from the 20th Century Turbine "Alpha" No. 1. We are running ten "Alpha" No. 1 Belt machines, one "Alpha" No. 1 Turbine, one "Alpha" No. 2 Belt, and own only one other separator—which we wish was an "Alpha" Turbine. Respectfully yours,

HOARD'S CREAMERIES.

While the separator does not make the butter, practically all prizewinning butter is to-day made from De Laval separated cream, and there is no question in the mind of any well-informed person that under like circumstances and equal conditions any buttermaker will make better butter from an "ALPHA-DISC" machine than is possible from the product of any other separator.

A De Laval catalogue will make plain the reasons for this to anyone who may not already understand them.

GENERAL AGENTS FOR CANADA:

CANADIAN DAIRY SUPPLY CO.,

327 Commissioners Street.

MONTREAL, QUEBEC.

GOSSIP.

The annual meeting of the American Oxford Down Record Association will be held at Exchange Hall, Union Stock Yards, Chicago, Ill., December 14th, 1900, at 7:30 p.m. W. A. Shafer, Hamilton, Ohio, Secretary.

The cut of Mr. John C. Nichols' Tamworth boar, in our issue of November 15th, represents his boar over one and under two years, and not the one under a year, he having been sold in October to Prof. C. F. Curtis, of the Iowa Agricultural College farm.

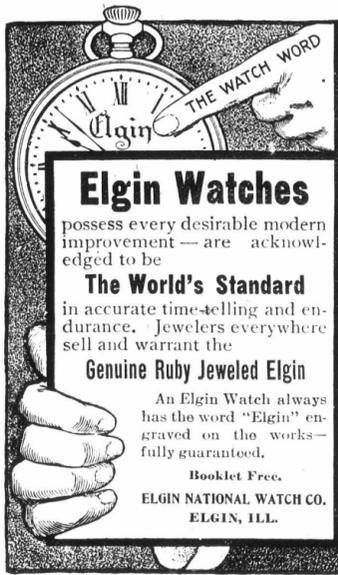
Official Tester for Breeding Cattle Going to U. S.

Dr. E. L. Volgenau, East Buffalo, has been appointed by the United States Government to test, at the farms of the owners, the breeding cattle shipped from Canada, and he will give his services in Canada free, barring his hotel and travelling expenses.

Live Stock Dates at Buffalo Show.

Frank Converse, Superintendent of Live Stock at the Pan-American Exposition, states that the following dates for live stock exhibits have been agreed upon instead of those previously announced: Swine, August 26 to Sept. 7; cattle, Sept. 9 to Sept. 23; sheep, Sept. 23 to Oct. 7; horses, Oct. 7 to Oct. 19; poultry, Oct. 21 to Oct. 31.

Iseleigh Grange farm, Danville, Quebec, advertises in this issue Ayshire and Guernsey cattle, Shropshire sheep and Yorkshire pigs of different ages and both sexes. Mr. T. D. McCallum, late manager at Iseleigh Grange, has retired, and correspondence should be addressed in accordance with the advertisement. Mr. J. N. Greenshields, the enterprising owner, has spared no expense in importing high-class breeding stock of all the breeds handled at Iseleigh Grange, a choice importation of Shropshires having recently been received at the farm. These were specially selected and shipped by Messrs. Alfred Mansel & Co., Shrewsbury, and comprise 12 shearing ewes bred by Mr. Wm. Thomas and Messrs. Edwards Bros., and sired by such well-known rams as Shropshire President 7726, purchased at 200 gns.; Adam Odstone 8247, bred by Mrs. Barrs, by Odstone Commander; Parish Accountant 9627, by the 70-gn. Parish Councillor; Manchester Royal 9571, winner Manchester R. A. S. E., bred by Mr. Bowen-Jones, purchased at 87 gns.; Downton Emblem, 7433, winner 1st R. A. S. E., bred by Mr. T. Fenn, sire Attractor 2nd 4388; Beam House Enterprise 8376, bred by Mr. T. S. Minton, by Montford Dado 7613; Lord Middleton 9590, bred by Mr. J. E. Farmer, by Montford Dreamer 7615. These ewes were all in lamb to a ram bred by Mr. A. E. Mansell, by Fortification 9198, sire of Mr. Mansell's Royal Blood, 1st York R. A. S. E., and sold to go to Australia at 240 gns. Accompanying these ewes was a well-grown shearing ram, by Uster Rose 9371, dam by Ercall Flagstaff 7174, and going back to the Crane-bred ram, Calcut 317.



Elgin Watches
possess every desirable modern improvement — are acknowledged to be **The World's Standard** in accurate time-telling and endurance. Jewelers everywhere sell and warrant the **Genuine Ruby Jeweled Elgin**

An Elgin Watch always has the word "Elgin" engraved on the works—fully guaranteed.
Booklet Free.
ELGIN NATIONAL WATCH CO., ELGIN, ILL.

PROMINENT HORSEMEN SWEAR



by our REMEDIES and TESTIFY they are as recommended. You will do likewise after a TRIAL. Our line consists of

Caustic Balsam (the greatest Liniment and Blister known — it has no superior), Colic, Chill and Fever, Tonic Mixtures, Lotion for Wounds, Heave Remedy, Condition Powders, Hoof Ointment, and Gall Cure. Your druggist or storekeeper should have them. If not, send us his name, and we will see that you are supplied. Every remedy guaranteed, or money refunded. Veterinary advice free. **EUREKA VETERINARY MEDICINE COMPANY, London, Ont.**



TENDERS FOR SUPPLIES, 1901.

The undersigned will receive tenders up to noon on THURSDAY, 4th DECEMBER, PROX., for supplies of butchers' meat, creamery butter, flour, oatmeal, potatoes, cornmeal, etc., etc., for the following institutions during the year 1901, viz.: At the Asylums for the Insane in Toronto, London, Kingston, Hamilton, Mimico, Brockville, and Orillia; the Central Prison and Mercer Reformatory, Toronto; the Reformatory for Boys, Pentanguishene; the Institutions for deaf and dumb, Belleville, and the Blind at Brantford. Exception—Tenders are not required for the supply of meat to the asylums in Toronto, London, Kingston, Hamilton and Mimico, nor for the Central Prison and Mercer Reformatory, Toronto. A marked cheque for 10 per cent. of the estimated amount of the contract, payable to the order of the Honorable the Provincial Secretary, must be furnished by each tenderer as a guarantee of his bona fides. Two sufficient sureties will be required for the due fulfillment of each contract, and should any tender be withdrawn before the contract is awarded, or should the tenderer fail to furnish such security, the amount of the deposit will be forfeited. Specifications and forms of tender may be had on application to the Department of the Provincial Secretary, Toronto, or to the Bursars of the respective institutions. The lowest or any tender not necessarily accepted. Newspapers inserting this advertisement without authority from the Department will not be paid for.

YOUNG SHORTHORNS FOR SALE

Our present offering includes several choice young bulls fit for service, sired by "Scotland Yet," and out of Warfare (imp.) dams; also bull calves, from Blue Ribbon (imp.), and out of Royal George cows. Inspection and correspondence solicited.
A. & D. BROWN,
M. O. RAILWAY. -om IONA, ONTARIO.

SHORTHORNS FOR SALE.

Two young bulls and a few young females, carrying Isabella, Kirklevington and Kinellar strains. All in good form and health.
JAS. S. FLEMING,
Gill, Ont.

High-class Shorthorns and Yorkshire Pigs.

One very superior bull, about 17 months old; three bulls about 5 months old, from imp. stock; cows and heifers due to calve this fall. Forty Yorkshire pigs, 2 months old, from imp. stock; imp. boar, 2 years old, and sows due to farrow soon. Write, or come and see us.
JAS. McARTHUR, GOBLE'S, ONT.
Goble's Station, G. T. R., 10 miles east of Woodstock, 2 miles from farm. Visitors met.

FOR SALE 3 Berkshire hogs and 1 sow, all 7 months old, bred from Shells stock; large, and excellent quality. Also some suckers.
J. L. NEWLOVE,
Brampton, Ont.

GOSSIP.

Mr. W. D. Flatt, Hamilton, Ont., has recently landed a new importation of 39 Shorthorns in quarantine at Quebec, which he considers the most valuable consignment he has yet brought over, particulars of which will be given in a future issue.

Mr. C. A. Archibald, Truro, N.S., has recently made a good sale of a nice lot of Ayrshire cattle to the superintendent of Mount Hope, Dartmouth, including a daughter of his grand show cow, Ayrnie, four times sweepstakes winner at the Provincial Exhibition. Mr. Archibald sold over 50 registered Shorthorns and Ayrshires last year.

Alfred Mansell & Co., live stock exporters, Shrewsbury, England, write: "It will doubtless interest breeders of Shropshire sheep in all parts of the world to learn that at the recent public sales held in various parts of Great Britain and Ireland, no less than nine rams have realized 100 guineas and upwards, and have made the splendid average of £136 10s., whilst several others have made between 40 and 50 guineas, and that several ewes have realized between 20 and 30 guineas each. North America, as usual, has largely helped the general run of prices, but Australasian breeders have done the most to enhance values, and have been spirited bidders at several of the sales, giving in one case 240 guineas for a ram, and in others 140, 120 and 90 guineas. The Australian demand has been greatly fostered by the wonderful results obtained by the Shropshire ram on cross-bred Merino ewes to produce fat lambs for export."

THE SEVENTEENTH ANNUAL ONTARIO

Provincial Winter Fair

(Including the Ontario Provincial Fat Stock and Dairy Show and the Ontario Poultry Show)

WILL BE HELD IN THE

CITY OF GUELPH, ONTARIO,
DECEMBER 11 TO 14, 1900.

Over \$7,000 offered in prizes.

SPECIAL PRIZES are offered by the Dominion Cattle, Sheep and Swine Breeders' Associations, and by prominent manufacturers.

LECTURES will be delivered by experts in the different departments during the time of the show, which will prove interesting and instructive.

ENTRIES in the cattle, sheep and swine departments close on December 1st; in the poultry department, December 3rd.

Reduced passenger and freight rates on all railroads.

For prize lists and particulars, apply to
A. P. WESTERVELT,
Secretary,
TORONTO, ONT.

W. D. FLATT

Hamilton, Ont., Can.,

IMPORTER AND BREEDER OF

Shorthorn Cattle.

MY herd is one of the largest in America, both imported and Canadian-bred. A very choice importation of 27 head now in quarantine and due out Oct. 11. New catalogue of the herd ready for distribution Oct. 1. Address all communications to

James Smith, Mgr.,

MILLGROVE, ONT.

R. R. Station and Telegraph, Hamilton, on main line Grand Trunk R. R.

HAWTHORN HERD OF DEEP-MILKING SHORTHORNS. We are offering 8 young bulls for sale, of first-class quality, and AI breeding.
Wm. Grainger & Son, - London, Ont.

SPRING GROVE STOCK FARM

Shorthorn Cattle and Lincoln Sheep. Herd prize and sweepstakes at Toronto Industrial Exhibition, 1897 and 1898. Herd headed by Topman =17847=, champion at Winnipeg, Toronto, London and Ottawa, 1899. High-class Shorthorns of all ages for sale. Also prizewinning Lincolns.
Apply to

T. E. ROBSON, Ilderton, Ont.

The Breed THAT FIRST MADE Hillhurst Famous SHORTHORN FEMALES

Ever sold in Great Britain and the sire and dam of the 4,500-guinea Duke of Connaught were bred at Hillhurst. To-day "Joy of Morning," the highest-priced Scotch-bred bull ever imported to Canada, and "Scottish Hero," brother in blood to the Royal champion, "Marengo," are in service in a herd of 65 Scotch and Scotch-topped Shorthorns in a lilly limestone district, where cool summers, green pastures and winter food more closely approach Aberdeenshire conditions than any other part of the continent. **HAMPSHIRE DOWN and SHROPSHIRE SHEEP.**

M. H. COCHRANE,

HILLHURST STATION. -om COMPTON CO., P. Q.

W. G. Pettit & Son, FREEMAN, ONT.

IMPORTERS AND BREEDERS OF

Scotch Shorthorns and Shropshire Sheep

OFFER FOR SALE:
20 Imp. bulls.
40 Imp. cows and heifers.
6 Home-bred bulls.
30 Choice Home-bred heifers—1, 2 and 3 years old.
25 Ewe lambs.

Our importation of this year arrived home August 17th, and is one of the largest made this year. Selected by ourselves from the leading herds in Scotland.

Our new Catalogue, with full information, is now ready to mail.

Burlington Junction Station, Telegraph and Telephone Offices, within half a mile of farm.

H. CARGILL & SON,

CARGILL, ONTARIO, CANADA.

WE have the largest herd of Cruickshank and Scotch-bred imported cattle in Canada. Herd headed by the Duthie-bred Golden Drop bull, imp. "Golden Drop Victor," assisted by the Marr-bred Princess Royal bull, imp. "Prince Bosquet." The herd was augmented in August last by a fresh importation of fifty-two head, personally selected by Sylvester Campbell, of Kinellar, an expert judge both as to individuality and pedigree. The cattle in this lot will compare very favorably with any lot yet imported. All females of suitable age are bred to the very best bulls obtainable. Correspondence or personal inspection invited. Catalogue and service list upon application.

Cargill Station is on the Farm, Half a Mile from Barns, and 70 Miles North-west of Guelph. See Catalogue for Map.

Isaac Usher & Son, QUEENSTON, ONT.,

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Herd headed by Lord Gloster (26995), by Abbotsford. We have for sale seven young bulls, 4 to 20 months; also young cows and heifers. Stock offered for sale sired by or bred to such noted bulls as imp. Guardsman, Royal Standard, Abbotsford, Lord Gloster, Indian Count.

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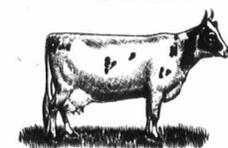
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REINFORCED BY A RECENT IMPORTATION of 20 cows, 2 bulls, and a number of calves, selected from noted Scotch herds, and including the male and female champions at leading Scottish shows this year. Representatives of this herd won the first herd prize at the exhibitions at—

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SPECIAL OFFERING:
Two yearling bulls (prizewinners), sired by DeKol 2nd's Paul DeKol Duke. Five bull calves, sons of Count Mink Mercedes and Daisy Teake's King. Also several yearling heifers in calf. Will make special prices to reduce stock before winter.
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From such noted dams as Snowball and Strawberry, and such sires as Tom Brown. Leicesters—Now offering shearing rams and ram lambs of much merit and first-class breeding.
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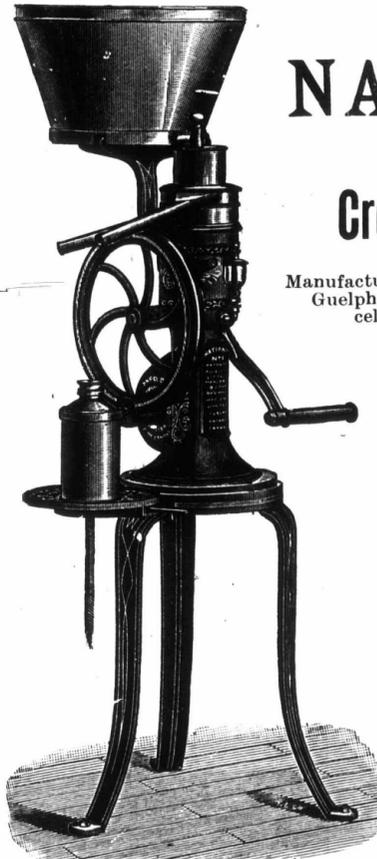
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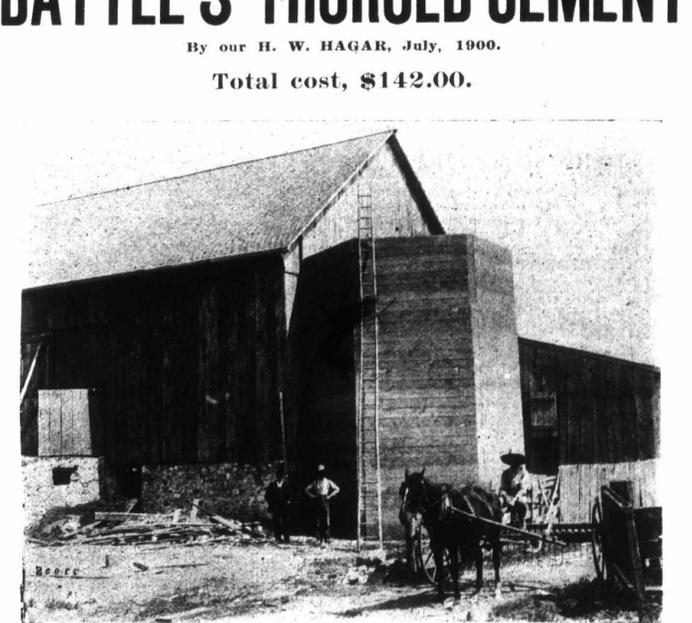
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Total cost, \$142.00.



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Size—14 feet inside diameter; 25 feet in height. Hexagon shape (6 sides). Built with BATTLE'S THOROLD CEMENT.

Material and Labor. Cement, 63 barrels (in paper sacks); gravel, 45 cubic yards; stone, 12 cubic yards; labor, 54 days (1 man). Walls 16 inches thick at bottom, 10 inches at top. The labor was divided as follows: 2 men 1 day putting in footings and one-half of the stanchions; 3 men 1 day building; 1 man 1 day building walls; 6 men 7 days building; 3 men 1 day to plaster inside and put in floor.

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Newly imported from the greatest English breeders. Home-bred rams and ewes of best quality. Scotch Shorthorns and Clydesdale horses for sale at moderate prices, and in large numbers, by

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Fairview Shropshires.

A few good rams still on hand. A splendid lot of ewes (imported and home-bred), bred to my best stock rams, are now offered at good values. They are the producers of winners. JOHN CAMPBELL, Woodville, Ont., Can.



Berkshires Large, lengthy, English type. Finest prize boars in service. Spring pigs ready for shipment. Bred for service. Sows ready to breed. GEORGE GREEN, Fairview, Ont.

Berkshires.

We are offering a fine lot of Young Pigs of the Highest and Sillie families. In supply pairs not akin. Two good stock boars for sale on exhibition, in demand. JOHN RACEY, Jr., Leamsville, Que.

GOSSIP.

THE INTERNATIONAL LIVE STOCK EXPOSITION AT CHICAGO.

The management of the Union Stock Yards at Chicago is erecting a building 600 feet long and 100 feet wide, to be used as additional space for the International Live Stock Exposition, to be held December 1st to 8th. This building will be built alongside of Dexter Park Amphitheatre, which, as has been often stated, is 600 feet long and 200 feet wide, constructed of brick and steel, and containing stall room for about 3,000 animals. The new building is being built for Exposition purposes only, and its erection is a strong evidence of what the Exposition will be. Some idea of the magnitude of the International Live Stock Exposition can be found in the fact that there are 2,230 premiums to be awarded. Only brief breeds of cattle, fat stock, the mutton breeds of sheep, swine and draft horses are recognized in the arrangements for this show, and no less a sum than \$75,000 is offered in prizes.

The live-stock interests, the railroad management, and a lot of the best and most progressive business men of Chicago have combined in the interest of the breeders, feeders and farmers of the country to make the show a huge success. The International Live Stock Exposition will be the Magna Charta of everything pertaining to edible meat as raised and fed on the range and farm, or as manufactured by the packers, who will display every branch and product of their work. An additional attraction will be the auction sales of thoroughbred cattle, which are planned on a very large scale, and the annual meetings of Breeders' Associations will be held during the week of the show, so that probably the largest gathering of stockmen ever assembled in America will visit Chicago for these events.

A "MODEL DAIRY" AT THE PAN-AMERICAN EXPOSITION.

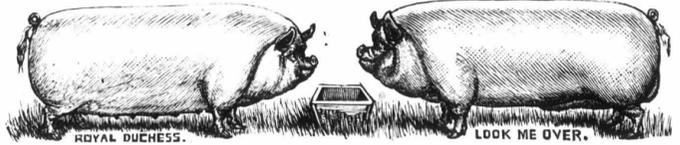
The Superintendent of Live Stock at the Pan-American Exposition, to be held at Buffalo next year has issued the following announcement: Aside and distinct from the regular cattle exhibit at the Pan-American Exhibition, it has been decided to conduct a model dairy throughout the entire six months of the Exposition. This dairy is to be composed of four or five representatives of the breeds of milch cows laying any claim to merit along dairy lines. Plans are being made to have eight or nine breeds represented in this model dairy, and nearly all of the live-stock associations have given assurance of their fullest co-operation in this matter, and have generously offered to place at the disposal of the Exposition the animals that shall form this model dairy. The stable in which the cattle will be kept will be one that is equipped with the most up-to-date appliances, particularly with regard to hygienic and sanitary conditions. It is not the plan to force these cows and milch cows to see what they will do under absolutely uniform conditions, as nearly normal as it may be possible to make them on the Exposition grounds. The work will be conducted by men of much experience in feeding and handling dairy animals, under rules which will be formulated for the government of this dairy. Only such changes shall be made during the six months as shall be especially calculated to prove the superiority of some particular breed, and when these changes are made with a view to establishing some characteristic of some breed, all other animals in the dairy will be placed under exactly the same conditions, and careful record kept as to their performance under these conditions. Accurate data will be kept as to the amount of food consumed, its cost, its nutritive value, and also the milk product as to the amount and quality. Those particularly interested in this matter can obtain the details of the management of the dairy by addressing F. A. Converse, Superintendent of Live Stock, Pan-American Exposition, Buffalo, N. Y.

MERCER'S SHORTHORNS.

Few young men in the business have gone more thoroughly into the breeding of pure-bred stock than has Mr. T. Mercer, of Markdale, Ont. With Shorthorn cattle Mr. Mercer realized that it required no more time to breed and develop the most popular and approved sort than those less sought after by discriminating buyers. At the head of the herd is found the dark red bull, Lovely Victor 22170, by Albert Victor (imp.) 6315, and out of Lovely Lena B9622, by Baron Camperdown (imp.) 1218, tracing direct to imported Lovely 19th, one of Mr. Cruickshank's most favored tribes. Those most familiar with Shorthorn pedigrees and favorite types will at once recognize the immense value in a sire in these days of Cruickshank breeding, and this bull is about as richly endowed in this respect as any to be found. In Lovely Victor (see cut, page 679), Mr. Mercer has a right good bull, whose conformation is strictly in keeping with the high character of his pedigree, combining size and quality, with the best of Shorthorn character, and the finest disposition, his dark red skin yielding to the touch a piece of velvet. Among the females we found many tracing direct to Cruickshank foundations. Fashion's Fancy 18825, by Premier Earl (imp.) 1281, and out of Fashion 7th 6091, and Red Lilly 12387, by the same sire, and out of Lady Waterloo 2nd 2539, by Prince Ingleswood (imp.) 1283, are a pair of cows that any breeder might justly feel proud of, having proven sure and good breeders, and are safely in calf to Lovely Victor. In Holly Stamford, by Royal Sailor (imp.), and out of Miss Stamford 22142, by young Abbot-horn, champion at the World's Fair, the reader will at once recognize a matron of superior value, whose strength of breeding and the show-yard popularity of her tribe have won fame for them and the breed, having won herself in Toronto as a yearling. She is a cow of good proportions, has proven herself a safe breeder, and is again in calf to Lovely Victor, while her red daughter by Aberdeen is among the attractive features of the herd. Much might be said in commendation of this herd if space permitted, and we cannot pass without noting a lot of useful young bulls which Mr. Mercer offers for sale in the advertisement elsewhere in this issue, and which are in keeping with those we have specified, among them being a roan son of Royal Sailor and out of Red Lilly - 2173a young bull which should readily find a home at the head of some good herd, where from his breeding and quality he could hardly fail to make his mark for good. Parties needing good cattle will do well to note Mr. Mercer's offerings, and write him for prices, etc.

Summer Hill Herd

HEADQUARTERS FOR THE IDEAL BACON HOG AND EASY FEEDERS.



The largest herd of imported and Canadian-bred Yorkshires in America. Out of 121 exhibits at the leading shows in 1909 and 1910, including Toronto and London, we gained 116 awards. Expert judges both at London and Toronto were unanimous in pronouncing our herd far superior to that of our strongest competitors. Won most of the best prizes offered, including first prize for best pen of pure-bred bacon hogs, also grand sweepstakes over all breeds in a class of 13 entries. The foundation of our herd was laid by personally selecting the choicest stock from the most noted breeders in England and Scotland. We have the ideal bacon type—size without coarseness, and easy feeders. Pigs of all ages for sale at moderate prices. Write us for particulars. Telephone, Millgrove, Ont. Telegraph 254 Bay St. S., Hamilton, Ont.

D. C. Flatt & Son, Millgrove, Ont.

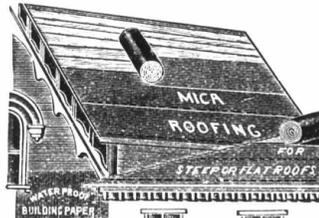
\$50.00

Invested in a good, sound, well-conducted Mining Company offers bigger returns, with less risk, than anything else you can name just now. \$50 or \$100 invested in Le Roi (B.C.) shares when they were first offered means wealth to-day. The shares could then be bought for a very few cents. To-day they are worth over \$40 each! So with "ROB ROY" shares. They are 15 cents NOW—but what of the future? Why not try a \$50 or \$100 investment? It may prove another Le Roi! Of course, it may NOT, but the Company is earnestly endeavoring to make a success of it. This is not a gamble; it's an investment, and our shareholders are largely clergymen, merchants, teachers, farmers, etc. Better look into this.

A. E. Welch, London, Canada.

MICA ROOFING.

USE MICA ROOFING on all your Buildings.



USE MICA PAINT to Repair Leaky Roofs.

IT IS CHEAPER THAN SHINGLES. WATERPROOF. FIREPROOF.

Shingle, Iron or Tin Roofs painted with it will last twice as long.

RAPIDLY TAKING THE PLACE OF SHINGLES. Is put up in rolls of one square each, 40 feet long by 32 inches wide, and costs only \$2.25, including nails, thus affording a light, durable and inexpensive roofing, suitable for buildings of every description—especially flat roofs—and can be laid by any person of ordinary intelligence.

HAMILTON MICA ROOFING CO., OFFICE: 101 REBECCA ST., HAMILTON, ONT.

SNELGROVE BERKSHIRES

We have for sale some promising young boars and sows of different ages. Boars fit for service, sows large enough to breed. Young pigs from 4 to 8 weeks old. These pigs are got by the prizewinning boars, Colonel Brant 3550, Court Master 7710, and Gallant Prince 7691. Our herd is bred from the best strains of Large English Berkshires. Write for prices.

SNELL & LYONS, Snelgrove, Ont.

BERKSHIRES FOR SALE.

YOUNG boars and sows carrying the blood of Baron Lee 1th, Bright Star (imp.), Enterprise and Highclere, on Boy's Park, Teasdale and Snell females, with Allandale Boy 3875 and Royal Lad 3rd 1307 heading the herd. S. DYMENT, BARRIE, ONT.

Large English Berkshires

YOUNG boars and sows from imported stock. Registered Leicester ewes and ram lambs. B.P. Rock cockerels from prizewinners. Write for prices. H. BENNETT & SON, St. Williams, Ont.

OXFORD HERD OF POLAND-CHINAS

The home winners of the sweepstakes at Toronto, London, Ottawa, and Provincial Fat Stock Show, we are offering again young boars and sows of superior quality; bred along the same lines as our winners. W. & H. JONES, Oxford Co. Mt. Elgin, Ont.

FRESH BERKSHIRE BLOOD.

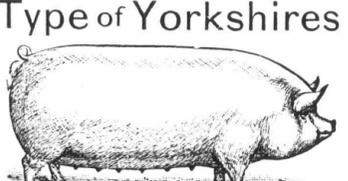
We secured the first choice of the champion gold medal head of America (which won over 100 prizes, cups and medals, including the \$100 show sow, Elphick's Mat-jess never beaten), and other sweepstakes sows in the United States of the same age, and June boars and 15 sows of the same age, and 3 fall litters, selected to meet the best Canadian demand, being long, low, and extra good through the heart.

Farm within 10 minutes' walk of electric R. R. Terminals on Kingston road. ONTARIO: BURHAM & CAVAN, East Toronto, Ont.

PLEASE MENTION FARMER'S ADVOCATE.

OAK LODGE

Type of Yorkshires



We have now on hand a large herd of pigs of different ages, and they are as good as we have ever offered. The winnings of this herd have been greater than all other herds combined at the largest Canadian exhibitions.

All stock shipped to order, fully guaranteed. Brethour & Saunders, Burford, Ont., Can.

Yorkshires and Berkshires

Boars and sows of both breeds. Boars fit for service and sows ready to breed. Young pigs ready to ship. Express prepaid, and guaranteed as described.

JAS. A. RUSSELL, Precious Corners, Ont.

Improved Yorkshires

FOR SALE. of the most popular families. All ages and both sexes now ready for immediate shipment. Write for what you want. Prices reasonable—consistent with quality. E. DOOL, Hartington, Ont.

YORKSHIRES AND POULTRY.

Am now offering a few choice young pigs, of both sexes, combining the most fashionable of breeding, tracing direct to imported foundation. In poultry, we have W. W. Wadsworths, B. P. Rocks, Blk. and W. Minorcas, Brown and W. Legehorns, Pekin ducks and Bronze turkeys. A. B. ARMSTRONG, Codrington, Ont.

FOR SALE: Poland-China pigs, both sexes

about two months old, eligible for registration. ROBERT CLEMIS, LADY BANK, ONT.

FOR SALE: Mammoth Bronze Turkeys.

The very best strain for breeding purposes. All heavyweights. R. G. ROSE, GLANWORTH, ONT.

Maple Grove Yorkshires
 of the long bacon type. Also a few choice Tamworths and Bronze turkeys. Turkeys bred from my 40-lb. tom. Hens weigh from 19 to 23 lbs. Prices right.
T. J. COLE,
 Box 188, BOWMANVILLE, ONT.

NORTH BRUCE HERD
 OF
Yorkshire Swine

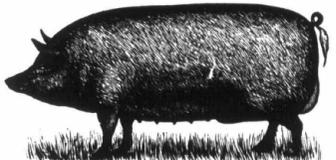
Boars fit for service, boars and sows of April and May farrow. Also orders taken for August pigs, singly or in pairs not akin.
WM. HOWE,
 Pt. Elgin St., G. T. R. NORTH BRUCE, ONT.

Large White Yorkshires.
 An offering during this month a grand lot of boars and sows ready for breeding; pairs supplied, not akin, from show stock; also several sows in pig to imported boar. Young pigs from 2 to 3 months old, all of the most improved bacon type. Registers furnished. Express prepaid. Address:
H. J. DAVIS,
 Box 290, WOODSTOCK, ONT.

YORKSHIRE AND ESSEX PIGS for sale, of the most approved type. We are offering young breeding stock of both sexes and breeds, and will be at Toronto Fair with a few choice things. Also have a limited number of imported Yorkshire boars and sows, having exceptional quality and valuable blood in their pedigrees. Correspondence invited.
JOSEPH FEATHERSTON & SON,
 Streetsville, Ont.

TAPE BROS., importers and breeders of
 Ridgeway, Ont. Duroc Jersey Swine. Ridge town, Ont.

TAMWORTH AND BERKSHIRE SWINE,
 Mammoth Bronze Turkeys, and White Wyandotte Cockerels.
 Choice Tamworths, all ages, and Berkshire sows, 4 months, sired by Duke of Snelgrove. Pedigrees registered and express prepaid. Write for prices.
D. J. GIBSON,
 HAZEL DELL STOCK FARM, Bowmanville, Ont.



One hundred Tamworth and Improved Chester White Spring Pigs of a true bacon type, our herd having won the best prizes offered at the leading exhibitions throughout Ontario and Quebec for the past ten years. Stock for exhibition purposes a specialty. We pay express charges between stations, and guarantee safe arrival of all stock shipped. Pairs furnished not akin. Write for prices.
H. GEORGE & SONS, Crampton P.O., Ont.

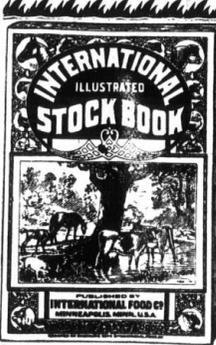
Spring Brook Stock Farm.
 THE LARGEST and leading herd of Tamworths in America. Stock of best quality from imported prizewinning sires. Stock of all ages for sale. Holsteins of the noted De Kol blood. Write at once for prices and catalogue.
A. C. HALLMAN,
 WATERLOO CO. NEW DUNDEE, ONT.

Tams. for Sale. Stock boar, Defiance, 2nd prize, Toronto. First-prize boar, six months; boars, sows, 5 months. Prices right.
JOHN HORD & SON,
 Parkhill, Ont.

STAY AT
HOTEL LELAND
 The Leading Hotel of the West.
 ALL MODERN CONVENIENCES. RATES, \$2 TO \$4 PER DAY. O.M. BUS MEETS ALL TRAINS.
W. D. DOUGLAS, Prop., Winnipeg, Man.

Family Knitter
 Cheapest, Simplest, Best.
 Price, \$8.00.
 Write for circular.
Dundas Knitting Machine Company,
 DUNDAS, ONTARIO.

PEKIN DUCKS.
 Large, heavy, long-bodied birds, and white as snow. Bargains for quick buyers.
H. GEE & SONS, Fisherville, Ont.



A \$3000.00 STOCK BOOK FREE.

We will mail you a copy Free, POSTAGE PREPAID, if you send us and answer 4 questions: 1st—Did you ever use "International Stock Food" for Horses, Cattle, Sheep or Hogs? 2nd—Is it for sale in your town in 25-lb. pails? 3rd—How many head of stock do you own? 4th—Name this paper. Our book is 92, by 64, and cover is in 6 colors. It contains 183 large colored engravings of Horses, Cattle, Sheep, Hogs, Poultry, etc., with a description of the different breeds. It also contains a very finely illustrated and valuable Veterinary Department. The engravings in this book cost us \$3000.00.
 WE WILL GIVE YOU \$14. WORTH OF "INTERNATIONAL STOCK FOOD" IF BOOK IS NOT AS STATED.
 "International Stock Food" is a safe vegetable stimulating tonic and blood purifier. It fattens Cattle, Hogs or Sheep in 30 days less time and saves grain by aiding digestion and assimilation. It is extra good for breeding animals. 50,000 farmers endorse it. Many use 200 lbs. per year. It makes Colts, Calves, Lambs and Pigs grow very rapidly and only costs \$73 Feeds for One Cent. Guaranteed to make Hogs weigh 300 lbs. at 6 months. It will save your Hogs from Cholera, because it stimulates and permanently strengthens the entire system. It won highest award and medal at Paris 1900. Your money will be refunded in any case of failure.
 OUR 20,000 DEALERS GIVE THIS BOOK FREE WITH "INTERNATIONAL STOCK FOOD" IN 25 LB. PAILS.
 Largest Stock Food Factory in the World. Capital Paid in \$300,000.00. **INTERNATIONAL FOOD CO.,** MINNEAPOLIS, MINN., U. S. A. We occupy 15 floors, also 100x22 feet each. And our new addition, 4 floors 60x25 each.
 Our Stallions Buttonwood 2:17 by Nutwood (600) and International Stock Food by Hartford (8574) eat "I. S. F." every day. We own the Big Horse that is 19 hands and weighs 2500 at 4 years. We own the Big Cow that is 6 feet tall, 10 feet long and weighed 2570 at 6 years. Our Big Short-Horn Steer weighed 3000 at 3 years. We have fed "International Stock Food" for years to our stallions, brood mares, colts, cattle and hogs. Beware of cheap imitations.

Built for Business!

That's the idea. There's nothing fancy; nothing foolish about them; just straight, practical, lasting, honest goods. The



CYPHERS . . INCUBATORS

are positively warranted to last TEN YEARS, without repairs, and are guaranteed to OUT-HATCH, during three trials, any other make of incubator on the market—bar none. THIS, OR YOUR MONEY BACK. Used exclusively at Experimental Farms, Guelph and Ottawa; also six American Experimental Stations. Daniels, the universal provider in the Poultry Supply business, has the sole agency for the Cypthers Incubators and Brooders for Canada. Our list of Poultry Supplies are too numerous to mention here, but just drop us a line and state what you require. We handle nothing but the best. Satisfaction every time, or money refunded. Mention ADVOCATE.
C. J. Daniels, 221 River St., Toronto, Ont.

W. E. WRIGHT, GLANWORTH, ONT. offers a choice lot of Mammoth Bronze turkeys, sired by his famous forty-two-pound, first-prize-winning tom. Also some good, straight, lengthy Chester White swine, 3 months old, of good bacon type. Shropshire ram lambs and ewe lambs.

The SAFETY Incubators and Brooders

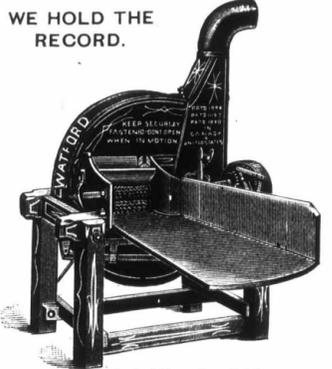
Are the leading hatching and rearing machines built in Canada, and you should use them if you wish to make the most money out of your poultry. There is no duty to pay on them, and they are sold under a positive guarantee to please you or your money will be refunded. Illustrated descriptive catalogue, containing much information that will be useful to you, will be issued shortly. SEND FOR ONE TO—

J. E. MEYER,
 KOSSUTH, ONT.

326 FIRST PREMIUMS SEND FOR FREE CATALOGUE. Prairie State Incubator Co., Homer City, Pa.

From High Authority.

WE HOLD THE RECORD.



Central Experimental Farm, Ottawa, Nov. 7th, 1900.
 THOM'S IMPLEMENT WORKS, WATFORD, ONT.:
 GENTLEMEN:—I have much pleasure in informing you that the Blower we purchased from you has done, and is doing, excellent work. We were able to fill our silos with the corn just cut, and even when it was wet with dew or rain. We put through in some instances as high as 13 tons per hour. I may say that we are using it now for cutting the straw behind the thrasher, and find it most useful in this connection.
 Yours truly,
 J. H. GRINDALE, Agriculturist.

THOM'S IMPLEMENT WORKS,
 WATFORD, CANADA.
 ESTABLISHED 1875.



Won't Injure the Polish

The only drawback with some cleaners is that you can't trust them for fine work.

"Sobrite" will not scratch anything. It cleans and polishes, but cannot scratch. Whether it's polished woodwork, a silver teapot, or the kitchen sink, it cleanses, purifies and sweetens. It is the best cleaner, because it does its work best. At all grocers.

SOBRITE 10 CENTS
 Rapid action cleaner, will not scratch

Going West and North-west.—The best line west of Chicago, if you are going to any point in Montana, Idaho, Washington, Oregon, Kansas, Nebraska, Colorado, Wyoming, Utah, Nevada, or California, is the CHICAGO, MILWAUKEE AND ST. PAUL RAILWAY. Direct and short lines between Chicago, Sioux City, Omaha, Milwaukee, La Crosse, St. Paul and Minneapolis. Solid vestibuled, electric-lighted, steam-heated trains; free reclining chair cars; compartment and sleeping cars; the finest dining cars in the world. If you contemplate a trip West or North-west, call on any coupon ticket agent in the United States, or write A. J. Taylor, Canadian Passenger Agent, 8 King Street East, Toronto, saying where you are going, about when you will start, how many there will be in the party, and full information, with maps, time tables, and rates of fare will be promptly furnished free. Be sure to ask for your tickets via C. M. & St. P. Ry.

BELL..**PIANOS AND ORGANS**

Built to Last a Lifetime by the
Largest Makers of Pianos and Organs in Canada.

The Bell Organ & Piano Co., Ltd.,
GUELPH, ONT.

HIGHEST HONORS
EVERYWHERE

PRESENTED TO

Massey-Harris Co., Limited,

as Manufacturers of the best Farm
Implements in the world.

MASSEY-HARRIS CO., Limited,

AWARDED

GRAND PRIZE

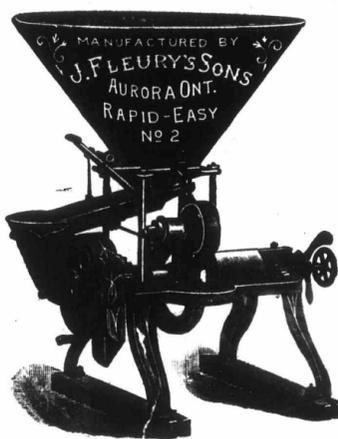
AT THE PARIS, FRANCE,
EXPOSITION

AND

GRAND GOLD MEDAL

AT THE VERONA, ITALY,
EXHIBITION.

In each case this was the
HIGHEST AWARD OBTAINABLE.

**RAPID-EASY GRINDERS**

Will do for you what they are doing for others.
We guarantee this. Do you ask more?

Seabright, Ont., Nov. 13th, 1900.

I thank you for the gentlemanly way in which you have dealt with me, and I take great pleasure in recommending your Rapid-Easy Grinder. This is the THIRD SEASON for it, and IT RUNS AS GOOD AS WHEN I FIRST GOT IT. As an example, I started it at 10 o'clock one morning and ran the Grinder until half-past nine at night, and in that time I put through 317 bags, and made FIRST-CLASS WORK.

CHARLES TAYLOR.

Bradford, October 22nd, 1900.

With your Rapid-Easy Grinder I have ground FOUR HUNDRED BUSHELS of mixed grain in TEN HOURS, and have ground TWO THOUSAND BUSHELS OF GRAIN with ONE SIDE of the plates, and THEY ARE GOOD YET. The machine runs VERY EASY. It is the only Grinder I ever saw that would grind barley right.

J. T. WATSON.

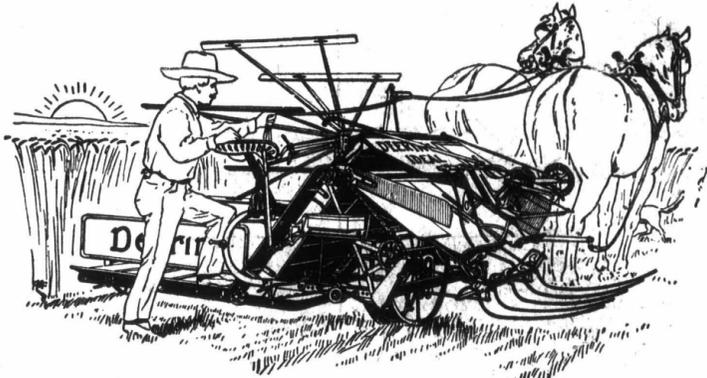
We shall be glad to have your enquiry by letter or card. On application, we will send a beautiful hanger showing Rapid-Easy Grinder No. 2.

J. FLEURY'S SONS, AURORA, ONT.

Medals for plows: Chicago, '93; Paris, 1900.

THE
MACHINES

THAT MADE
AMERICA FAMOUS.

**DEERING IDEAL BINDER**

IS the lightest draft, strongest built, easiest to operate, longest lasting, and will cut and handle any grain that grows. Ask any of your neighbors who have been using an IDEAL what they think of it.

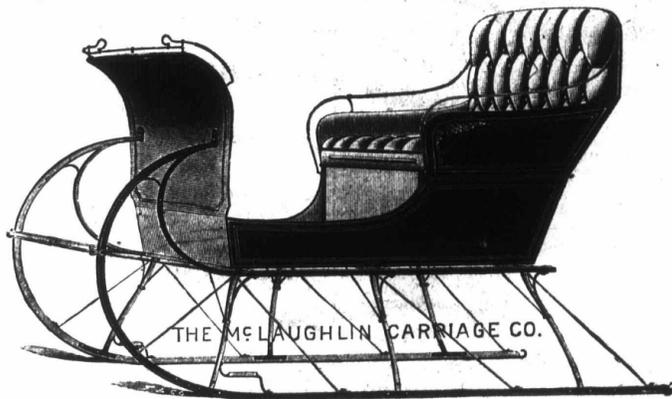
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U. S. A.

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Toronto, Ont.
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Montreal, Que.
Winnipeg, Man.



OUR No. 202.

McLaughlin Cutters

— AND —

McLaughlin Carriages

are always the same grade.

THERE IS NO 1st, 2nd or 3rd QUALITY.

FROM COAST TO COAST IT IS

"One grade only, and that the best."

ASK YOUR NEAREST AGENT FOR THE "OLD RELIABLE,"
AND TAKE NO OTHER.

McLaughlin Carriage Co., Oshawa, Ont.

IN WRITING

Please Mention Farmer's Advocate.