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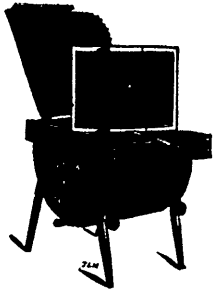
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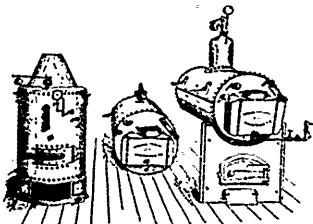


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S. VESSOT & CO.

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Riby Grove, Groat Grimsby,
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Has always for inspection, and sale, the largest flock of pure Lincoln Longwool Sheep in the county, including many prize-winners, having taken prizes for many years at the Royal and other shows for both Rams and Ewes, including champion medals at both the Paris Exhibitions, Vienna, Amsterdam, Canada, Australia, New Zealand, and all the leading prizes at the Chicago Exposition; also the first for the best collection of Lincoln fleeces of wool at the Royal Windsor Show and the Lincolnshire Show, which proves the character of this flock. The sheep are famous for their great size and one hundred and twenty-five years' good breeding. At Lincoln Ram Sale, 1896, this flock's consignment not only made the highest individual average of any consignor, but also made an average price exceeding that made by any other breed in England, i.e., \$512 per head, the first six ranking an average of \$340. The sheep for sale this year are all sired by noted rams, and are fully equal to their predecessors in every way.

Rail Stations: Stallingboro, 3 miles distant, and Great Grimsby 7 miles.
Telegrams: "Dudding, Keelby, England."

S. E. Dean & Sons

Dowsby Hall, Folkingham,
Lincolnshire, England

Have always for inspection and sale fine specimens from their FLOCK OF PURE LINCOLN SHEEP (No. 47 in Lincoln Flock Book), including SHEARLING EWES and RAMS, also RAM and EWE LAMBS. Sheep from this flock have been exported to nearly all parts of the world, where their great substance and large fleeces of beautiful quality wool give the greatest satisfaction to purchasers. Early in 1894, about twenty Rams from this flock were sold by public auction in Buenos Ayres, and realized the highest average ever obtained for Ram Hogs exported from England. The flock is most carefully bred, and none but the very best sires used. Messrs. Dean also send out selections from their flock to purchasers who are unable to come to England to inspect them, and they have given great satisfaction. Messrs. Dean have also for sale purebred Bates SHORTHORNS and pure LINCOLN RED SHORTHORNS.

Dowsby Hall is one mile from Rippingale Station, on the Great Northern Railway, Bourne and Stamford Branch.

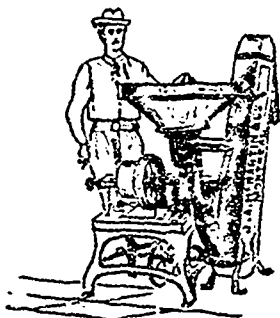
TELEGRAMS: DEAN, RIPPINGALE.

J. E. Casswell

Stock Book No. 45

Laughton, Folkingham, Lincolnshire, Eng. This well-known flock has been established more than 100 years, and the pedigreed Lincoln long-wooled rams and ewes have been noted throughout the Colonies and South America for their size, symmetry, and lustrous wool. Ewes from this flock have always passed from father to son, and have never been offered for sale. Mr. J. E. Casswell's grandfather, Mr. G. Casswell, of Laughton, was the first breeder in the county to let his rams by public auction. At Lincoln Ram Fair, 1893 and 1897, Mr. J. E. Casswell made the highest average for 20 rams. The rams of 1895 were all sold privately for export. During the last two years the following amongst other noted sires have been used: Bakewell Councillor and Baron Rigby, for each of which very high prices have been realized; Laughton Major, Laughton Style, Laughton Choice, No. 5; Ashby George, 60 guineas; Judge, 95 guineas; his son, Laughton Justice Lincoln, 200 guineas; Lincoln, 250 guineas; Welcott, 70 guineas; Lincoln, 75 guineas; and his sire, Laughton Ribby. Shire horses, Short-horn bulls, and Dorking fowls are also bred. Inspection and correspondence invited. N.B.—Laughton Choice was and at the Royal and a pen of 5 theives by him won 1st at Royal Doncaster. Visitors meet by appointment. TELEGRAMS: Casswell, Folkingham, England.

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One of the best and cheapest mills in the market, possessing qualities which no other mill of its kind has.

We also make mills to grind corn and cob in the ear, and windmills geared to wood or steel. Also pumping.

Send for circulars and prices.

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Turns all roots and vegetables into Fine Stock Food. Indispensable to dairymen and sheep breeders and of greatest value to general farmers and poultrymen. Cut the following: Half Bunch, Bunching, etc. etc. takes out all dirt; saves the animal's health; and is the only machine of the kind. THE K. CAMPBELL FARMING MILL CO., of Canada (Limited).

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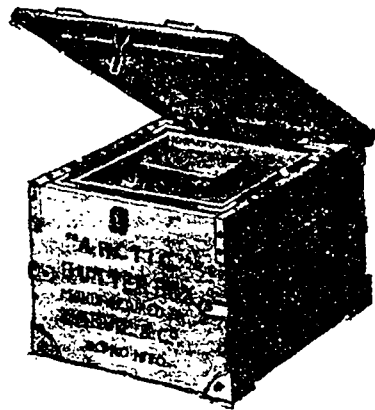


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Odorless
Cheap
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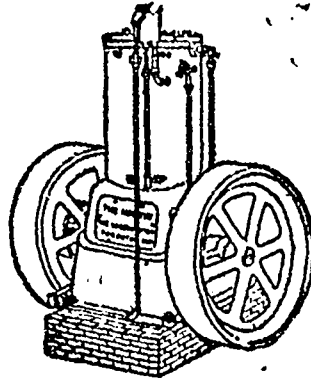
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Your grocer sells it—or will get it for you.

Windsor Salt

The Windsor Salt Co. Limited, Windsor, Ont.

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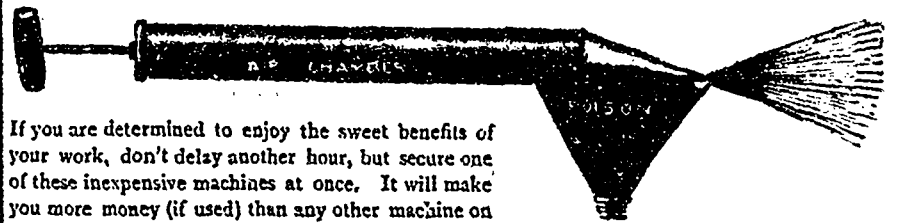
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This is to certify that we have given Robert Evans & Co., of Hamilton, Canada, sole Control of our Patented Electric Bug Exterminator in the Dominion of Canada. (Signed) J.A. EVERITT, Indianapolis, Ind.

ONE PINT EQUAL TO TEN GALLONS.

We mean that a teaspoonful of poison and a pint of water will treat as many potatoes or other plants as ten gallons of liquid applied in any other way. This is a strong statement, but it is a fact, and the work done with this machine is better than when you flood the plants; besides, there is no danger of injuring the plants.

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BESIDES 5 PROVINCIAL FAIRS

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79 Box Stalls added in the Horse Barns. Hospitals for Sick Animals. Several Important Additions in the Prize List. Fine New Art Annex, latest design. 5,000 square feet built to Carriage Building

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FARMING

VOL. XV.

AUGUST 2ND, 1898.

No. 48.

FARMING

AN ILLUSTRATED WEEKLY JOURNAL DEVOTED TO FARMING AND THE FARMER'S INTERESTS.

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TOPICS FOR THE WEEK.

Agricultural News and Comments.

It has been said that in slaughtering hogs the pork packers save everything but the squeal. But it would now seem that hereafter even this will not be wasted. At the Trans Mississippi Exposition an enterprising concern has in its exhibit a life-size image of a hog seated on its haunches, with a phonograph before him from which proceeds a choice assortment of squeals. The instrument was probably loaded in a pig pen at feeding time.

The highest prices paid for range cattle at the Chicago stock yards during the past ten years are as follows: In 1888, \$5.40 per 100 lb., in 1889, \$4.10, in 1890, \$4.50, in 1891, \$5.60, in 1892, \$4.60, in 1893, \$7.75, in 1894, \$4.90; in 1895, \$5.10; in 1896, \$4.25; and in 1897, \$4.90. From these figures it will be seen how the market varies from time to time. In 1889 the highest price was \$4.10, and in two years it had risen to \$5.60. There are ups and downs in all markets, and it will pay the farmer not to give up too readily any special line, as a reaction always takes place.

Barred Plymouth Rock pullets were hatched last year on March 10th at the Central Experimental Farm, Ottawa, which began laying about the end of September, and continued well throughout the winter. As a rule the chicks at the Farm are hatched by hens in May or early June, and lay late in December, sometimes sooner. Hens moult too late as a rule. The moult of young hens can be brought on sooner and shortened by proper care, diet, and range. The Experimental Farm hens, as a rule, show a profit of \$1.75 to \$2 each per annum.

Mr. Joseph Gould, Uxbridge, Ont., milks seventeen Jersey cows and fourteen of them last year gave, on an average, 303 pounds of butter each. A separator is used and the cream sent to the creamery and the sweet skim-milk returned. This skim-milk supplies about 60 per cent. of the food of his hogs, of which he sells about seventy-five every year. Among Mr. Gould's brood sows is one which gave fifty-seven pigs in three litters. The average output of this sow amounts to \$200 per year.

The following figures show the imports of dairy produce, etc., into the United Kingdom during the first six months of 1898, 1897, and 1896.

	1898.	1897.	1896.
	cwt.	cwt.	cwt.
Butter	1,620,604	1,655,254	1,554,974
Margarine	451,279	474,030	448,486
Cheese	725,855	794,813	771,964
Milk, condensed	406,751	363,803	285,195
Eggs (great hundreds)	6,431,123	6,934,548	6,240,032

It will be noticed that there is a shrinkage in every line excepting condensed milk, which shows a material increase. There is, however, a large increase in the imports for 1897 as compared with 1896, so we may expect a falling off in 1898 as compared with 1897.

An English poultryman claims that it is possible to keep fowls confined in a grass run, or at liberty about a farm-yard at the rate of 200 to the statute acre in a healthy condition and to yield a profit of not less than 5s. per head per annum. The food to consist of eleven parts Indian meal; eleven parts of a low grade Cockle seed and two parts of quarter-inch bones, the price of the mixture varying from 7s to 7s. 6d. per 240 lbs. In addition to this, five sacks of mixed peas and corn screenings were supplied in the experiment upon which the above is based, but no shell-forming or gritty material.

The best and finest wool is found on the shoulders of the sheep, and this is made the standard of the whole quality of the fleece. If the wool on the other parts of the animal approaches it in quality, the better the fleece will be all through. The density of the fleece is tested by closing the hand upon the wool of a part of the loin and on the rump. The perfect fleece is nearly equal in fineness of staple from the shoulder to the thigh. A perfect fleece is really a certificate of perfect health in the sheep, and of the good management of the flock by the shepherd.

In Great Britain roots take the place of much of the grain and coarse forage which would otherwise be required for stock. In such cases sheep are fed as much as 20 and cattle 100 pounds daily. In this county, where they are more often used for variety than nourishment, the animal is given a smaller allowance. A fair allowance of roots, according to *Feeds and Feeding*, is four to five pounds of carrots for horses; twenty to thirty pounds of mangels for dairy cows; and four or five pounds of rutabagas for sheep.

Live Stock Importations.

In our stock notes this week we give a short account of the purchases of sheep and hogs made by Mr. J. E. Brethour, Burford, Ont., in England, and which should arrive this week. All these purchases have been made with a view to securing the best animals possible, and, as will be seen, all of the stock importations have been either prize-winners or in the "highly commended" classes at the Royal Show held at Birmingham at the end of June. Both Mr. Brethour and the gentlemen for whom he has made purchases are experienced breeders in their special lines, and we may safely add that the best use possible will be made of these importations in the way of improving the live stock interests of Canada. Mr. Brethour made

selections in person, which is a guarantee that no inferior animals will be among the importations.

The value to the country of bringing in new blood in the way of live stock importations cannot be too highly estimated. There are some who are inclined to the opinion that such importations are no longer necessary. For years Ontario breeders have been giving special attention to the production of the highest types of animals, and have now the best herds of cattle, sheep, swine, etc., to be found on the continent. This is undoubtedly true, and it is to the lasting credit of our breeders that every year Ontario is coming to be looked upon in a greater degree as the breeding ground for America for pure bred live stock. But how have our breeders been able to build up their herds and to bring them up to their present degree of excellence? Has it not been by making frequent importations and by bringing in new blood? This fact, together with the skill in feeding and caring for live stock which our breeders exhibit, is the key to the situation, and it would be a sorry day for the live stock interests of this country if the importation of new blood were no longer looked upon as necessary in maintaining the efficiency of our pure-bred horses, cattle, sheep, and swine.

We are of the opinion that the future has in store for the Canadian breeder greater opportunities than the past has ever afforded him. There are two particular ones which we will refer to as likely to be the product of the future, and there may be others. During the past few years there has been a great demand in Canada for stockers for the United States feeding grounds. This demand is likely to continue in a greater or less degree. There is a feeling in some sections of the Western States that the stockers brought from the North or from Canada feed better than the wilder animals of the great prairie ranges. In last week's issue, in a short article on "Live stock in the Western States," we pointed out that the cross between the Shorthorn and the Western cattle produced an animal that was easier to feed and easier to handle than the Western or American cattle. The more docile qualities of the Shorthorn helped to modify the wilder nature in the prairie animal. Is there not something in this that can and will be developed, and which will create a great demand for Shorthorn animals for use in the Western herds; if so, there is an opportunity for Canadian Shorthorn breeders to dispose of their stocks to advantage, which may be of much greater value to them a few years hence than it is now.

Then, again, the Canadian bacon hog is arousing considerable interest among the American breeders, and, though many of them may "poo-hoo" the idea of the American swine breeder ever having to give up his fat, corn fed hog, we are inclined to the opinion that this feeling will change, and that the American farmer, as well as the Canadian farmer, in the near future, will have to confine his energies to the production of the bacon type only if he wishes to make money by producing pork. As the Canadian export bacon trade develops, and our farmers learn to raise only a class of hogs suitable for producing the highest quality of bacon, the Americans will find their export bacon trade with Great Britain gradually slipping out of their hands, the same as the cheese

trade did some years ago, when the superior merits of Canadian cheese were beginning to be recognized in the mother land. When that condition arises, which may be very shortly or several years hence, the American farmer and breeder will suddenly awake to the real state of affairs, and there will be such a demand for the bacon-producing type of hog as will fairly surprise the breeders of this country. When that time comes our breeders should be prepared for it by having developed the Canadian bacon hog to such a state of efficiency as will exactly meet the needs of the export bacon trade. Having in view this feature of the situation, as far as swine husbandry is concerned, it will be well for our breeders to bend their energies as fast as they can towards producing the bacon type of hog, and, if need be, to do as Mr. Brethour has done, make large importations of hogs suitable for this purpose from the mother country.

Inter-Provincial Trade.

The following extracts from a letter to the *Toronto Globe* by a British Columbia correspondent, who has taken the trouble to interview a merchant at Stanley, B.C., who is also a farmer, in regard to developing trade with the eastern provinces, contain some valuable information for producers:

Bacon was first discussed. He is well pleased with its appearance and flavor, etc., but says it gets hard after cooling when cooked. He thinks it is due to the process of pickling. Can this be remedied? . . . With Canadian butter he is delighted, and says he never got anything to equal it. He was quite ecstatic over some he got from Ayton Creamery, and said he could tell by the neat, clean boxes that the butter was good before he opened it. He finds nothing better than Canadian flour. He handles it entirely. Of fruit he gets two or three tons per year, and says some country packers put good fruit on top of the box, and inferior goods in the centre. . . . He likes Canadian cheese, but must have small boxes (ten pounds). His honey comes from the United States. He ought to be able to do better with some of our Ontario apiculturists. . . . He is getting a new wagon and mower from the States, and says Canadian manufacturers put in poor wood. This should not be. Canada can make as good farm implements as any country in the world, and should control her own trade in these lines. In woodware, as axe and pick handles, he says they send inferior goods, and the freight kills the profit. Must have best goods, as freight is the same on good and bad articles. Sincerely trusting these few rambling and hurried remarks may be the means of encouraging home trade here, and that our manufacturers will do their best to see that only first-class goods are sent out.

The remarks in reference to Canadian butter are very *apropos* at this juncture, when the good qualities of Canadian creamery are beginning to be recognized outside of the Dominion. It is interesting to note that the Ayton creamery referred to is owned and managed by one of the early pioneers in the co-operative creamery business in Ontario, Mr. Aaron Wenger—and the remark that the neat, clean boxes were a guarantee that the butter was good is very significant, and is something that our buttermakers would do well to give special attention to.

There have been frequent reports in the past that many fruit packers dishonestly practise putting the good fruit in the centre or at the bottom of the package or barrel. Not only does such a practice injure our fruit trade with other countries, but with the other provinces also. It is eventually sure to react against the guilty packer, and is not fair so far as the honest packer is concerned. The honest packer, who puts the same quality of apples on the top of the barrel as he puts at the bottom, suffers from the fact that his neighbor's dishonesty injures the good name of the fruit from the district in which both reside.

In reference to this question of inter-provincial trade there is a feeling in some quarters that it is not as necessary to give as much attention to the quality of the product shipped as when it is sent to a foreign country. The experience of the British Columbia dealer proves that such a contention is incorrect. It is characteristic of the consumer everywhere that he is going to buy in the cheapest and best market, and where he can get the best value for his money. The merchant in British

Columbia is not going to get his supplies in the Eastern Provinces if he can do better in the United States. This is a point that our producers should note particularly when endeavoring to develop trade with the other provinces or with any foreign country.

Agriculture in the Public Schools.

The following extract from an address delivered by Professor Geo. M. Wrong, of Toronto University, upon the subject of "History and Education," before the Ontario Educational Association last spring, bears directly upon what we have been saying during the past few months in regard to the question of agriculture in the public schools:

"Coming to the facts of our situation let us see what we need in Canada. To know our need will be the first step towards satisfying it. Canada is a huge country, with the agricultural interest as yet predominant. In Canada, as in other countries, the tendency is to crowd into towns. In so far as this tendency springs from necessary economical conditions, it is useless to resist it, but the fact is that many are restless in the country who have no call to live in the town. Their education has unfitted them for the home life on the farm, and has implanted ideas that engender only discontent. Side by side with this tendency to crowd into towns we find a curious contrast. The city dweller longs to get away to the country for one, two or three months in each year. The weeks in the country are dreamed about in the winter, and are looked upon as the happiest part of his life. The country obviously has charms. Now, the education in our schools should help to an understanding of nature and thus to an opening of possibilities of enjoying her. I will not here profess to say how this can best be done, but surely we enjoy nature in some proportion to our understanding of her working. I do not think that our country boys in Canada have as a whole the sympathy with nature that a country boy in England has. Some years ago, walking near Oxford, I stopped a small boy watching the flight of some birds. This boy explained to me what he knew about the birds in his immediate neighborhood. I made a note then of the different birds' nests that he pointed out to me. In showing me the nests he also described briefly the chief characteristics of each bird. There were more than twenty varieties. I doubt if boys in this country have the powers of observation and the enjoyment in the life of nature that this Oxford small boy possessed. Here, then, is one direction in which our educational methods might be improved—a simple understanding of the ordinary phenomena, the birds, trees, flowers, fishes that are to be found about us."

Professor Wrong touches upon the real essence of this subject when he points out that the education in our public or rural schools should help to an understanding of nature, and thus to an opening of possibilities of enjoying her. If the teaching in our public schools aimed to give the pupil a correct appreciation of the nature around him, and a taste for knowledge of bird life, the nature of growth in the tree, the flower or the plant, it would go a long way towards counteracting the tendency at present existing to leave the country and the farm for a life in the city. True, there has been a little teaching along this line in the past, but it has been entirely of a secondary nature, and the pupil has not been made to feel that it is the important thing to be learned. What we want in this country is a reversal of this order of things, and instead of the study of nature and of subjects pertaining to a life in the country being made subsidiary to mathematics, history, etc., let it be placed upon the same footing and, if need be, given a position of even greater importance on the curriculum of our rural schools. The youth of this country are far seeing enough to know that if agriculture or any other subject is given an inferior position on the school curriculum, it is not considered by those who are responsible for educational training in this country, of great importance, and consequently there is no need of their putting forth any special effort to master it, or to obtain an extended knowledge of the subject. We are promised a new text book on agriculture this fall for use in the public schools. If it is not given the important position it deserves on the curriculum and by the teacher the good results that are looked for from its study will not be forthcoming. To get the most lasting and the greatest benefit from the study of agriculture in the public schools, not only must the teaching of the subject be done in a way that will create in the young mind a love for the country and rural pursuits, but it must be taught in such a manner as will impress upon the

mind of the pupil that it is the most important subject upon the school curriculum. Then, and then only, will it have the desired effect of directing the pupils to a life in the country and on the farm.

The World's Wheat Yield for 1898.

Considerable interest is now being evinced in the wheat yield for the present season. Just now there are estimates galore being compiled through numerous agencies, purporting to give fairly reliable information, as to what the world's wheat crop will be. All these estimates indicate a big yield in nearly all the wheat-growing areas.

Beerbohm's London list of July 8th submits an estimate of indicated gains this season in wheat production compared with last year for prominent countries, exclusive of Russia and Argentina; reaching the conclusion that the several countries covered by the estimate will show an aggregate gain of 344,000,000 bushels in excess of 1897. If these conditions are borne out the year's production will be approximately 120,000,000 bushels in excess of requirements. According to the same source the world's wheat crop for 1897 amounted to 2,256,000,000 bushels. If the estimated gain mentioned above be added to this amount we have a grand total of 2,640,000,000 bushels—a quantity never reached before in any one year in the world's wheat production. The highest previous estimate of Beerbohm's list is for 1894, when it reached 2,560,000,000 bushels.

The following table, from *The Cincinnati Price Current*, will be interesting. Taking twenty-five years, 1873 to 1897 inclusive, and averaging the production for periods of five years each, the result in comparison with the above estimate for 1898 is as follows:

	Bushels.
1873-77	1,850,000,000
1878-82	1,995,000,000
1883-87	2,160,000,000
1888-92	2,283,000,000
1893-97	2,438,000,000
1898 approximation	2,640,000,000

Coming nearer home, we find that, according to reports gathered by the Department of Agriculture at Washington, the estimated yield for the United States on July 1st was 603,000,000 bushels. The *New York Journal of Commerce* thinks this estimate too low by about 100,000,000 bushels, and reasons in this way. Last year the Departmental estimate was only 447,000,000 bushels. Later on, when the harvest was over, the Department admitted that the total yield of wheat for 1897 was 530,000,000 bushels. If the same ratio should be realized this year, the *Journal of Commerce* figures that the 1898 crop will reach at least 700,000,000 bushels. No definite estimate has been made yet of the probable yield in Canada. But a very large crop is assured. In Ontario and the Eastern Provinces, where the fall wheat crop has been harvested, an extra big yield is expected. In Manitoba the results are not so definite, but, without doubt, that province will have one of its biggest crops.

Taking the world's wheat yield into consideration, there is not likely to be a wheat famine for a time. There are, however, several conditions in the situation which may tend to counteract the depressing effect a large yield may have upon the market. In the first place, during the past year or two the invisible wheat reserves the world over have been drawn upon to an extent that has not been reached for some years past. Spot supplies in some of the consuming countries of Europe are very low, and it is probable that large drafts will have to be made upon the new crop much earlier than usual. Then there has been considerable talk in Great Britain about establishing wheat reserves in the United Kingdom as a national security in case of war, and it is within the possibilities that something may be done along that line in the near future, which would seem to strengthen the market somewhat.

However, it does not do to be too optimistic when the market outlook is being considered.

There undoubtedly is an extra big yield of wheat predicted the world over, which will be taken every advantage of by speculators and others as an excuse for depressing the market and getting the crop from the producer as cheaply as possible. The farmer is, however, in a better position to hold his wheat than he was a year or two ago. The recent high prices have made him a little more independent of the market. Whether it would be advisable for the farmer to hold his wheat for a while it is hard to say until more is known as to the real situation regarding the world's wheat crop for 1898.

High-Class Horses in Demand.

There is an excellent demand just now for high class coach and draught horses, and the demand seems to be growing. Dealers report a great scarcity of these classes of horses throughout the country, and that it is difficult to secure a decent shipment for sending to Great Britain.

Mr. John Sheridan, a well-known Ontario exporter, shipped from Toronto last week a car-load of twenty high class draught and carriage horses. The animals comprising this lot were purchased at good figures in the district surrounding Toronto, and were good types of the kind of horses required for the export trade. Mr. Sheridan has made several shipments of horses of this class this season, and reports that the right kind of animals are hard to get.

While really first-class horses are getting very scarce, the poorer kinds seem to be getting more plentiful. There seems to be no demand for this latter class, and farmers who continue to go on raising an inferior and common class of horses are only producing a product that for sometime to come will be a "drug" upon the market. The kind of animal wanted for the export trade, and in fact for the American and home markets, is the highest type of animal only of the heavy draught, carriage and roadster classes. It will not pay to raise any other kind. It will cost as much to raise an inferior horse as a superior one, and, while the former will sell for a price that means a serious loss to the producer, the latter will bring enough money to return a handsome profit.

It may take some time for the farmer to adjust existing conditions, and place himself in a position to produce horses of the very best quality; but such should be the aim of every horse breeder. To begin with, only the highest type of animals of their particular class should be used for the dam and sire. Just at this point many farmers make a serious mistake by keeping inferior mares for breeding purposes. No matter how high-class the sire may be, the poorer qualities of the dam will show themselves in some form or other in the offspring. Of course it is better to use a good sire than a poor one in any case; but if both the sire and dam are high-class better results will be obtained. Then the young colt should receive proper nourishment during the growing period. If not, a good, well-developed horse cannot be secured no matter what good points the colt may have inherited. Many horse-breeders fail on this point, and allow the young colt to shift for itself until old enough to be of some use for work, when it receives the care which it should have received during the earlier years of its life. In raising horses more than anything else it pays to breed and feed right, and to give the young colt the very best of care. When these points are well looked after there should be no difficulty in securing a good price. As far as we are able to judge at the present time, the price of really first-class horses will continue high for some time to come.

A Well-known Agriculturist and Live Stock Breeder Passes Away.

Early last month there passed away a noted and well-known Canadian agriculturist in the person of Mr. Wm. Rodden, of Montreal. Ayrshire breeders all over this country will remember with gratitude the excellent services rendered that

branch of the live stock industry by Mr. Rodden. He was always most energetic and persevering in his efforts to bring the good qualities of that breed to the attention of the dairymen and agriculturists of the Dominion, and it is largely due to his untiring efforts that Ayrshires have taken so prominent a place among the live stock interests of the Eastern Townships.

Mr. Rodden was a native of County Caven, Ireland, and was born in 1818. He came with his father's family to the United States in 1821, eventually settling in Montreal, where he remained until his death a few weeks ago after a lingering illness of some three years.

The deceased gentleman was greatly interested in agricultural pursuits, and in 1860 and the following years commenced the importation of Ayrshire and other high-class cattle. He was instrumental in publishing the first and second volumes of the Canadian Ayrshire Herd Record, and for fifteen years was one of the successful exhibitors at the Eastern, Western, and American exhibitions. At the Centennial Exposition, at Philadelphia, in 1876, and at St. John, N.B., in 1883, he was successful in securing first prize medals and diplomas for his exhibits.

In addition to being President of the Importers and Breeders' Association, Mr. Rodden was prominently associated with many organizations, benevolent and otherwise, in the vicinity of Montreal. He was well known in Montreal municipal circles, having been a member of the City Council from 1857 to 1872. After retiring from municipal life, he took up his residence at Pantagenet Springs, a suburb of Montreal, where he resided at the time of his death. Mr. Rodden was for many years engaged in the hardware business in Montreal, but during the later years of his life his energies were chiefly confined to promoting the breeding of improved stock on the part of farmers in his own province and other portions of the Dominion.

Canada the Place Where Dairy Experts are Produced.

Canada has evidently made an enviable name for herself abroad as the place where the most reliable and up-to-date dairy experts can be secured. Some years ago the dairymen of Scotland imported two Canadian dairy experts to instruct them in the best methods of making cheese. A few years later the dairymen of New Zealand followed suit, and secured the services of Mr. J. B. McEwan, a Canadian, as Dairy Commissioner for the Island, a position which he filled with credit to himself and to his native land until his resignation two years ago. Within the last week or two the New Zealand people have made another effort to secure one of our well known dairy experts, in the person of Mr. J. A. Ruddick, to whom a tempting offer was made if he would go out to the Island to take the responsible position of Dairy Commissioner. Mr. Ruddick, who was for several years on the Dominion Dairy Commissioners' staff, and is now Supt. of the Kingston Dairy School, has decided not to accept the offer. Had he done so, our competitors on the other side of the globe would have secured a reliable authority on practical dairy matters and Canada would have lost one of her best dairy teachers.

The Chair of Biology and Entomology at the Ontario Agricultural College Filled.

The chair of biology and entomology at the Ontario Agricultural College, made vacant by the death of Prof. J. H. Panton last December, has been filled by the appointment of Mr. Wm. Lochhead, B.A., M.S., of London. Mr. Lochhead comes to the college well fitted to undertake the responsible work connected with this important department. He is an honor graduate of the first rank from McGill University, and a successful science teacher of eleven years' standing. In addition to these qualifications he was fellow in the Science Department of Cornell University for a

time, and in 1895, after thorough preparation, he received the degree of Master of Science from the same institution. With this wide course of training and a number of years' experience in teaching, we are safe in stating that Professor Lochhead will prove himself a worthy successor of the late Professor Panton.

The Minister of Agriculture, recognizing the importance and greatness of the work in the Department of Biology and Entomology, has appointed Mr. M.W. Doherty, B.S.A., M.A., Toronto, as assistant to Professor Lochhead. Heretofore a fellow has been appointed each year to assist in this department. Mr. Doherty is a graduate of the college who has given some special attention to the study of the natural sciences since he was graduated in 1895, and should be able to render excellent service to the college as Professor Lochhead's assistant.

The Brandon Fair.

The success which attended the Winnipeg Exhibition seems to have been duplicated in the Brandon Fair, which took place a week later. The aggregate attendance was, of course, not so large as at Winnipeg, but the relative increase in the attendance as compared with last year was great. Visitors were not disappointed in the character and quality of the exhibits. The number of entries in nearly all classes greatly exceeded that of last year. The exhibits of horses and cattle were exceptionally good, and the sheep and swine comparatively large. The splendid results which have attended the Western exhibitions this year is another striking evidence of the growth and development of Western Canada.

Raspberry Pulp.

The Ontario Department of Agriculture has recently received advices in regard to the exportation of raspberry pulp to Great Britain. There appears to be a considerable market for this article there, which has previously been largely supplied by Australia. It is usually packed in crates containing two tins, each containing 45 pounds, or ten square tins of eleven pounds each, gross weight. The process of preparing this substance consists chiefly of cooking the fruit in the tin without the addition of water, sugar or any preservative. The fruit seems to be only sufficiently cooked to complete the necessary vacuum in the tin. The estimated value of the product at present, if placed on the London market, would be about £30 per ton gross in tin, ex-wharf London.

A New System of Preserving Eggs.

A new system of preserving eggs is being investigated at Leith, Scotland, and which is known as the "British egg storage patent." Mr. T. Christainson, the inventor of the system, in explaining its working, states that at a certain season of the year there is always a surplus of eggs produced in all countries. Hitherto, the eggs had been kept by a method known as water pickling. He had found out after a trial of seven years that eggs must not be enclosed in any substance, but allowed to be apart in a perpendicular position, the narrow points downwards, so that the air in the warehouse enclosed each individual egg. The position of the egg must be altered every second day or daily if desired. The eggs are stored in sections with about 16,000 eggs in each section, in trays of 120 each. By the simple turning of a lever the eggs were moved from the upright position to the one side or the other.

The principal objects attained by this invention over all other methods for the preservation of fresh eggs are as follows: It allows free access of the atmosphere to surround the eggs in every possible way; it keeps the egg in an upright isolated position which is the correct and proved position in which eggs should be kept when stored as an article of food; it turns the eggs in such a manner that the yolk of the egg is constantly embedded in the albumen, and practically keeps the yolk in its correct and natural position. This last point has been proven after experimenting for six months.

THE PREPARATION OF LAND FOR FALL WHEAT.

Now that the fall wheat harvest is over it is time to begin preparing for next year's crop. In order to secure a proper seed-bed, early preparation is necessary. In a larger measure than many farmers seem willing to admit the character of the seed bed will control the yield of wheat. If the wheat is sown on a rough, unprepared seed-bed a large yield need not be expected unless the other conditions are extremely favorable; and, even if other conditions are very favorable, there will be a larger yield when the land is in a perfect state of cultivation before the wheat is sown. It is better to sow a smaller area with the land well prepared than a large one with the land unprepared.

According to reports received from a number of farmers last year a summary of which was published in *FARMING* for August, 1897, there are several methods practised in the province of preparing land for fall wheat, and we cannot do better here than repeat the information gathered then on this particular point.

According to the replies received, the modes of cultivation usually practised are (1) to plow the land in the fallow, sow peas in the spring, and after the peas are harvested plow and cultivate well, and sow wheat about the first of September; (2) to plow under clover sod with or without manure, and, where no manure is used, to plow under the second crop of clover; (3) to sow after corn or roots; and (4) to summer fallow.

Sowing wheat after peas preceded by clover seems to be largely the practice, and which has given very good results, providing everything else is done in the proper way. There is no use in advocating a certain line of procedure if the work is not half done. It makes no difference what the method advocated may be, good results cannot be obtained unless the conditions involved are all fulfilled. And it is just here where many wheat-growers fail, and why one farmer will get good results by following a certain line of practice, while his neighbor who adopts the same methods invariably fails. Every detail of the plan must be carried out to the letter or the best results cannot be obtained.

During the past few years the system of shallow cultivation has been practised at the Ontario Agricultural College for fall wheat and, for that matter, every kind of grain. Mr. Rennie, the farm superintendent, believes in this system thoroughly, and the results obtained on the College Farm in wheat growing bears him out. This year a magnificent crop of wheat was grown by this method of cultivation, which tends to conserve the nourishment in the soil as near the surface as possible and within reach of the plants.

In brief, Mr. Rennie's usual plan is to sow fall wheat after peas. The peas are grown on sod land, plowed thoroughly, harrowed, and cultivated the previous fall. In the spring, before sowing, coarse barnyard manure is applied at the rate of fifteen loads per acre, and mixed with the surface soil by shallow gang-plowing, harrowing, and cultivating. After the peas are harvested, the land receives surface cultivation by gang plowing, harrowing, and cultivating at intervals with a broad share cultivator. Before sowing the wheat the soil is loosened to a

depth of six or seven inches with a grubber. To do this work thoroughly three horses are required. On heavy clay land it may be necessary to use a sub-soil plow. In no case is the decomposed vegetable matter plowed under with the ordinary plow, and covered with sub-soil which is unavailable for plant food. Fall wheat at the Guelph Farm is usually sown the last week in August, at the rate of less than one and a-half bushels per acre. In the spring, as soon as the land is dry, the crust is broken by a horse weeder or harrow.

The essentials then of successful preparation for fall wheat are a method of crop rotation, manuring and cultivation that will tend to conserve and increase the plant food in the soil and the production of a perfect seed-bed, in order that the plant may have the very best opportunity for growth possible. With these in view every farmer in this province ought to be able to grow fall wheat successfully. The work of preparing the land will take time, but it will pay in the long run and be the means of building up and improving the soil.

EXHIBITION POINTERS FOR CHEESE AND BUTTER MAKERS.

During the month of August dairy products are prepared for the fall exhibitions. With dairy products more perhaps than with any other product no good results can be obtained by chance. In order to obtain a quality of product that will be a credit to his workmanship when placed on exhibition, the cheese and butter-maker must exercise the greatest skill, and use his very best judgment in getting ready his exhibit. While it may not be advisable to adopt any other than the usual practice in making exhibition cheese or butter, it is well to give a little more attention to all the little details in the process of manufacturing. August is not the easiest month of the year in which to make either cheese or butter because of the difficulty of getting the milk delivered at the factory in prime condition. It would be advisable then to notify the patrons to take special care of the milk for a few days. If they take any pride in the reputation of their factory they will not object; and it might be well to have them believe that it will take two or three weeks to get the show cheese or butter made so that they will get into the way of giving this extra care to the milk, and be induced to continue the treatment after the shows are over.

When good milk has been secured, then the responsibility of making a good product devolves wholly upon the maker. If he fails to make a quality of butter and cheese that will win a prize, then he will have to admit that the skill and intelligence which he has put into his work is of a lower grade than that of his brother maker who has won the prize. Everybody, however, cannot win the prize, and, if success is not attained after your very best efforts have been put forth, do not be discouraged, but try again the next season. The special effort to do your very best will be helpful in your every-day work, and you will be a better cheese or butter-maker from having put your skill to the test.

At the leading exhibitions the score

card containing the points made by the exhibitor in the dairy products section is always forwarded to his address after the show. This is a valuable education in itself, and even if a cash prize is not secured it will pay every butter and cheese-maker to make an exhibit and find out in what particular his cheese or butter is lacking. To get the full benefit of this the maker should keep a detailed account of every stage in the process of making his show cheese—and for that matter the maker should keep a report of the operations of each day's make through out the season—and then he will be able to point to the particular parts of his method of making, which have given good results, and which have given bad results.

There can be no doubt about it, that in addition to the value to the trade in a general way in making a good display at the leading fairs, the making of either butter or cheese for exhibition purposes is an excellent dairy education and training for every maker. Therefore, we would advise every cheese and butter-maker to make a display of his goods at some leading fall fair. It will help your factory, bring your name before the dairy public, and will supply an opportunity for bringing out what is best in you.

THE EXPORT FRUIT TRADE.

The following letter, signed by Prof. Robertson, Agricultural and Dairy Commissioner, has been sent by the Department of Agriculture to the several steamship companies sailing from Montreal and Halifax, and will be of interest to fruit-growers generally:

Last season a lot of early varieties of apples was shipped from Western Ontario to Great Britain. About one-half of the quantity was forwarded in cold storage, and the remainder was sent as ordinary cargo.

Those sent in cold storage were reported to have arrived all in good condition, and to have been sold at an average price of 18s. per barrel.

Those sent as ordinary cargo were reported to have been sold at an average price of 8s. per barrel, and 63 per cent. were reported to have been landed in a "wet" or "slack" condition.

For the safe carriage of early varieties of apples, it seems necessary that they should be carried at a temperature at or below 40° Fahr.

On examining the returns from twenty-nine cargoes of apples last year, I find that the same varieties of apples were sold at the same time at prices showing as much as 8s. 6d. per barrel of a difference between the apples which were landed in good condition and the apples which were reported as being landed in a "wet" or "slack" condition.

For the safe carriage of late fall and winter apples, it seems desirable that they should be so carried that they may be thoroughly ventilated, so that the heat produced by the fruit itself will be carried off.

When apples or other fruits are kept at a temperature above 40° Fahr. they continue to ripen or go towards decay. That process generates heat. The increased temperature thus caused makes the fruit ripen still faster.

For the carriage of apples by your Line, could you arrange to have the hold or holds for apples thoroughly ventilated by an air duct leading to the bottom of the hold, and by the use of an electric fan or fans to suck the warm air from the top?

During any particular warm weather on the voyage, the ventilating ducts might be used only during the evenings or nights, when the air was cool.

Our department is calling the attention of growers and shippers of apples to the desirability of packing the fruit in barrels or boxes so constructed as to permit of ventilation through each barrel or box, and packed tight enough to hold each fruit firmly in place.

SUMMER POULTRY NOTES.

If any of the birds pull feathers, separate them or the habit will spread.

Coops of young chickens placed beside the cornfield in mid season will do no harm to the crop, and the corn will shade them.

If milk or other food is fed from a pan the top should be covered with very coarse wire netting to keep the hens from getting into it.

Don't leave food in the pen from one meal to another, else they will get sick of it and not eat as much as they need to supply egg material.

Refuse crackers can be bought quite cheaply from the cracker factories. These make a good cheap chicken food for a change.

A good feed for young chicks is a cooked cake made of shorts, Indian meal and beef scraps, wet up and baked fairly dry, but not hard, in the oven.

Dig up the run often. It will sweeten the ground and help keep the hens busy. With a large run a good plan is to divide it into halves and cultivate one section every year.

Unless the ground is mellow in the chicken run, a dust bath should be provided even in the summer. The hens will take care of the body lice themselves where there is dust.

A good summer morning feed is equal parts of cornmeal and shorts. It is better if fed with some beef scraps and boiled potatoes or refuse vegetables. Mix with hot water and let it cool.—*Mass. Ploughman.*

SELLING SHEEP YOUNG.

We have frequently advocated selling sheep which are intended for market as early in life as possible. Under present conditions of the live stock industry the earlier any animal goes to the market the more profitable it may be made to the producer. In the sheep industry this involves two or three contingencies. If a lamb is to be sent to the spring lamb market it is sent quite young and it is useless to castrate it if it is a ram lamb, for it is soon in the market, and no damage can be done by reason of its being a ram. This can only be done where the spring lamb market is available. If the lamb is to be kept until it weighs about 100 pounds it will pay to castrate at the proper age.

A two-year-old wether is not as profitable as a ten months-old lamb. A carefully bred lamb of some of the mutton breeds, if well cared for, will weigh close to 100 pounds at the age of ten months. At this age it will bring the best price it will ever command, and it has cost, for the amount of mutton produced, a minimum price. Some breeders of sheep will say that a lamb cannot be made to weigh 100 pounds at ten months old, and that it is only the pampered lambs that can be made to attain any such weights. On this please let us disabuse your minds, for we know of quite a number of shepherds who are doing this very thing. If one man can do it another can under similar conditions and management. The present writer now has lambs that dropped in the middle of February that will come very close to the weight we have given as that which

a ten-months-old lamb should attain. We have found it easier to make a lamb weigh eighty to 100 pounds at the age of six months than to put on the other extra 100 pounds in the next six months. This we have so far failed to do.

Ewes of some of the good milking breeds will produce the 100 pound lamb much quicker than a breed which is known to be a scanty milker. The Hampshires and Suffolks will produce lambs attaining heavy weights at six to ten months old with but little additional care on the part of the shepherd. It is true the ewes suckling such lambs must be provided with plenty of feed, and the results will be more satisfactory and will be more quickly attained by giving the lambs access to feed during their life than to let them depend on their dams alone. When the writer was a boy lambs were worth from \$2 to \$3 each, and the man who could sell a lamb at the latter figure had the best sheep in the country. Many are the instances where flocks have been sold at weaning time for lambs, and the lambs were not counted in the sale. In this day, where is the man with a sixty to eighty pound lamb at its mother's side, and perhaps two of them, worth from \$4 to \$8, who will consent to let them go in with the sale of a flock of ewes at the market price for the dams? These men are exceedingly scarce.

It will pay to get an early maturing breed of sheep, feed them well and sell the produce that is not to be kept for breeders as early as possible after they have attained a selling weight. It will not pay any man in this late day and with the present improvement in live stock lines to keep anything else. It is fooling away time, a waste of feed and energy, and an all round loss to the man who undertakes it.—*The Homestead.*

SIZE AND FEEDING.

In regard to the above subject Professor Haecker, of the Minnesota Experiment Station, says. It has been time and again demonstrated at the Minnesota Experiment Station that there are large cows with comparatively small feeding capacity, and, on the other hand, some of the small cows had even greater feeding and digesting capacity than some of the larger ones. There is no one rule of feeding, that has led astray so considerable a number of our American experimenters and destroyed the practical value of their work, as the one declaring that animals should be fed according to their size.

Some cows with short legs and light quarters will barely raise the beam at 900 pounds, and yet, having a very capacious middle, will eat and digest more than others with long, heavy quarters, with a comparatively light body and weighing 1,200 pounds. It has been clearly shown in our experiments in cost of production that small or medium cows have greater digesting capacity in proportion to their size than large cows. Indeed this seems to hold good with all our domestic animals, not only so far as feeding capacity is concerned, but in strength and endurance as well. In breeding to increase size we always fail to increase strength and endurance or speed in the same proportion.

That the cost of maintenance is fairly measured by the size of an animal is true only in a general way. We must always take temperament into account. An animal having a highly developed nervous system would under certain conditions require more food for maintenance than would another animal of the same size under similar conditions, but having a highly developed vital temperament. In the future temperament and form in the animal will be found to play a more important part than has been generally supposed. Indeed I am satisfied they will be found to be greater factors in deciding the usefulness or adaptability of animals for specific purposes than the generally accepted breed characteristics.

FLAVOR IN EGGS.

There is no doubt that the flavor of eggs depends very much on the kind of food given to the hens. When they are fed largely or almost exclusively on raw meat, which often happens where there is a slaughter yard close by, the yolk of the egg will be a darker color, and the flavor strong or coarse. When milk is almost exclusively fed, the yolk is paler, and the white often has a milky appearance, while the whole egg is watery and less firm in texture than those laid by hens fed on grain. And, just as the color and appearance is affected, so is the flavor. The milk-fed eggs are insipid and unsatisfactory when poached or used in puddings.

In the latter capacity the quality of the egg is very noticeable to the cook, who sometimes finds that she requires four eggs to make a custard to-day, whereas last week she used but two. Sometimes four or five eggs will not thicken at all, at others two ordinary-sized eggs will thicken a pint of milk; this is all owing to the feeding.

The cook can generally tell when she breaks them into the bowl how many will be required, by their color and firmness. The harder the egg is to beat at first, the richer in good qualities. No animal requires greater variety of food than the hen, and nothing we can eat contains such capacity for nourishment as an egg. One egg weighing 1 1/4 ounces contains 120 grains of carbon and 17 3/4 grains of nitrogen. As a flesh producer one pound of egg is about equal to one pound of beef. And in the egg the

albumen, oil and saline matter, as in pure milk, are in the right proportion for sustaining life, thus the egg, like milk, is a complete food itself, containing everything necessary for the development of a perfect animal, as is proved by the chicken whose bones, muscles, feathers, flesh, etc., are all evolved from the white and yolk of the egg.—*Farmers' Journal.*

TORONTO EXHIBITION ENTRIES.

Why will people always leave the sending of entries for fall fairs until the last moment? If they only knew the trouble they cause by all rushing in together, some of the more considerate would certainly forward them a day or two earlier. Although entries for the live stock departments (horses, cattle, sheep, and swine), dairy products, ladies' work, fine arts, honey, and all classes of manufacture close on Saturday next, August 6th, up to the end of last week, Dr. Bell, assistant manager of the Toronto Industrial Exhibition, reported that the entries so far received were very few, "but," he added, "I suppose they will test our strength and health by all rushing in simultaneously. It would save us both time and money if our friends would not unananimously wait until the last minute. However, judging by the applications for prize lists, there will be plenty come in finally." Comment has already been made in this column on the fact that the Toronto Exhibition gives more money in premiums for live stock than any other fair on this continent. It, therefore, deserves the most liberal support. What we should like to see would be more individual exhibits. In some classes at present the big breeders carry off nearly all the money, smaller breeders and farmers being seemingly unmindful of the fact that it does not always follow that the numerically strongest farm is the strongest in quality. This year it is anticipated that there will be in attendance the largest number of foreign visitors the fair has ever seen; in fact, one railway man estimates the possible presence from the United States during the ten days from August 29th to September 10th at two or three hundred thousand. Although there will be no horse sale at auction on the grounds this year, there are to be an extra number of high-class sales on the outside, and, therefore, the opportunity for disposing of stock will be exceptional. But, in addition to the financial value of showing at Toronto, is the fact that excellent facilities are offered for the practical farmer to gain much valuable information. For instance, the Ontario Agricultural College will make special exhibits under their lecturers and experimentalists, one of cereals and another of bees and their products; while the Experimental Fruit Farm at Grimsby will make an extra large display both of fresh and bottled fruit. Then there are the innumerable extra features, exhibitions by English and French firms, and such a large variety of general entertainment that to see it all in any other large city—and it is only in a large city that it could be seen—would cost ten or twenty times as much as is asked in Toronto.

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Sold by all Druggists.
 Send for Pamphlet.
ROBERT WIGHTMAN, Druggist, Owen Sound,
 Sole Agent for the Dominion.

Fertility that is locked up in clods is not available, and this is the reason why clods are not desirable. It is very plain why a loose, pulverized soil is best, to say nothing of the advantage in conserving the moisture in times of drouth.

IMPROVED OXFORD DOWN RAM
 LAMBS—Canadian bred yearling and ram lambs. Yearling ewes and ewe lambs for sale, reasonable.
HENRY ARKELL, Arkell, Ont.

ALL PEDIGREE STOCK-BREEDERS
 Should keep in touch with Herd, Flock and Stud movements by reading the

FARMER AND STOCK-BREEDER
 The best, most complete and attractive Agricultural and Live Stock newspaper. Enlarged to 36 pages weekly; frequent special issues 40 to 48 pages. Illustrations are a specialty, each number containing many of the leading prize-winners, etc. Brilliant and practical articles on the Farm, Dairy, Horses, Cattle, Sheep, Pigs, Poultry, Veterinary, etc. Unequaled as a medium for advertisements intended to reach the best class of breeders and farmers throughout Europe.
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BUY **Coleman's Salt**
 THE BEST **Salt**
For Dairy or Table Use
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Salt on the Farm
 for wire worm, joint worm, army worm and all insects that destroy crops. Salt is the best insecticide. It is also a fertilizer.
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R. & J. Ransford,
 CLINTON ONT

The Ontario Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breeders', \$1; Sheep Breeders', \$1; Swine Breeders', \$2.

BENEFITS OF MEMBERSHIP.

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the Swine Breeders' Association this includes a copy of the Swine Record.

A member of the Swine Breeders' Association is allowed to register pigs at 50c. per head; non-members are charged \$1.00 per head.

A member of the Sheep Breeders' Association is allowed to register sheep at 50c. per head, while non-members are charged \$1.00.

The names and address of each member, and the stock he has for sale, are published once a month. Over 20,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experiment Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the Dominion Cattle Breeders' Association, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association.

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the undersigned by letter on or before the 9th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The data will be published in the most condensed form.

F. W. HODSON, Secretary,
Parliament Buildings, Toronto, Ont.

STOCK FOR SALE.

The next list of members of the Dominion Cattle, Sheep, and Swine Breeders' Associations, with the stock they have for sale, will be published in THE ONTARIO AGRICULTURAL GAZETTE in the issue of August 30th. Matter for publication must reach the secretary on or before August 23rd.

As a very large number of the papers which publish this list will be issued about this date, and distributed at the Industrial Fair and other leading exhibitions, we are particularly anxious to have the list of stock for sale as complete as possible.

Members will please give this matter their immediate attention, and forward a list of stock for sale to F. W. Hodson, Parliament Buildings, Toronto.

ROADMAKING

By A. W. CAMERON, Provincial Road Commissioner,
Toronto

The majority of roads as constructed are too flat to shed the water. The sides of the grade form square shoulders which obstruct the water from passing to the side drains. Drains of sufficient size are frequently made but no outlets provided; where this occurs they simply form receptacles for water which soaks into the roadway, and cause it to yield readily to the wheels. Proper outlets should be made for all drains, and these outlets should be obtained as frequently as possible. It is advisable to dispose of the water quickly after it falls and in small quantities; for this purpose all natural watercourses should be used. Deep open ditches provide good drainage, but are dangerous, unsightly, and expensive to maintain; shallow gutters with uniform fall are preferable. Where deep drainage is necessary, tile drains built under these gutters, sunk below the frost line, and provided with a proper out fall is more serviceable. When the ground becomes saturated the frost penetrates a depth of from two to four feet, causing considerable expansion, and when leaving creates voids which weaken the structure. Tile drains are constantly at work preventing largely this saturation, and removing the destructive action of the water and frost.

Crown.—Roads should be crowned so as to shed the water from the centre to the side drains, otherwise water will stand on the surface, soak into it, soften, and cause rapid wear and decay; but a crown higher than is necessary to properly drain the surface is also objectionable. A gravel road should be given a crown of about an inch of rise to each foot in width of grade from centre to the side. This is sufficient to properly shed the water if the surface is made hard and smooth. If a greater crown is given, the tendency is to concentrate the traffic on the centre and cause greater wear; again, an excessive crown causes the load in turning out to be thrown on two wheels in such a way as to cut the sides of the road. The form of the crown should be as near circular as possible.

Gravel.—Where gravel of a good quality can be procured within easy hauling distance, it is undoubtedly a valuable material for country roads and residential streets. Where such gravel cannot be obtained within easy hauling distance, it will be well to consider the use of other material. If gravel has to be hauled a considerable distance it frequently does not prove the most economical; the first cost may be the lower, but the final cost greater than a higher priced stone. Many municipalities are teaming poor gravel from five to ten miles; a first class metal could be supplied by rail at a little advance in first cost but much less expensive to maintain. Gravel has not very satisfactory qualities, especially when it contains a large amount of sand and earthy matter. Where much sand and earth are contained it should be removed by screening and the large stones broken. Foreign matter assists consolidation, and under traffic the mass quickly becomes smooth and hard. This remains during dry weather, but it readily attracts the moisture and permits the rain to pass down through the mass, weakening the bond and causing the metal to yield to wheels and create slush, mud, and ruts. Ruts form receptacles for water, the destroyer of roads. Gravel found in streams is usually of the best quality, as it can be washed by natural

drainage. Lake gravel varies greatly; although usually of a good quality, the stones are much water-worn, and difficult to consolidate by traffic, but contain enough clean sand to properly bond under a heavy roller.

Broken stone.—A good quality of broken stone is a much more durable material than gravel. The best stone is that which is tough, hard, and which will not readily decay by the action of the atmosphere. Field stone, stream, and pit boulders are to be found in abundance in a great many sections of the province. Generally this stone is of a good quality, but often contains a large percentage of "weathered" sandstone and granites. Care should be taken to exclude these boulders which are soft or weathered. Stone broken into cubical fragments will take on a mechanical grasp and a perfect bond formed by rolling without the assistance of foreign matter. This cannot be effected to the same degree with gravel or round pebbles. The stone should be broken into sizes varying from one inch to two and one half inches. The largest stone should be placed in the bottom of the roadbed, and the smallest on top, this should be done in layers, the thickness of which should vary in proportion to the strength of roadway required. Each layer should be thoroughly rolled before the next is applied. A coating of the fine screenings produced from the crusher by screening should be placed on the surface of each layer to fill the voids. A watering cart would precede the roller. By keeping the surface moist, consolidation will be more readily and perfectly effected.

Width of Roadways.—Main or much travelled roads should be made 24 feet wide between the gutters. Roads leading into these and accommodating neighborhoods or sections, and the next in importance should be 20 feet, and cross roads or concession roads but little used should be 18 feet. The metallic portion of the road should be from seven to ten feet in width, according to the importance of the road. The depth of gravel or stone must vary with the quality of the material, the amount and nature of traffic on the road, and the nature of the sub-soil. A dry, stony, and compact sub-soil will need less metal than would a plastic clay difficult to drain. From six to ten inches of metal well consolidated will afford a sufficient range to accommodate the circumstances.

Rolling.—Heavy rollers have been but little used in this country. Municipal officials are fast becoming convinced of their usefulness, and within the past couple of years several have been purchased in the province and in every instance they are greatly appreciated. London, Stratford, Galt, St. Catharines, Brockville, Kingston, Ottawa, Toronto, and Niagara Falls are using steam rollers from ten to eighteen tons in weight, while a number of municipalities are using horse rollers from five to eight tons in weight. In order that the best

results may be obtained rollers are indispensable. Material should be carefully selected and applied. It should then be compressed so that the whole mass would be joined to support the traffic instead of a few individual or disconnected particles. Grading machines are being extensively used on country roads, and have established their merits in performing the work for which they were intended, but the good results are largely lost in the absence of their counterpart, the roller. When the grader has finished its work the soil is left loose to be displaced readily under traffic and absorb moisture, whereas if thoroughly consolidated by rolling the full benefit would be realized. All machinery should be in charge of one man, the township supervisor, and the teams and men required to operate them should be employed by the council for that purpose and should be experienced.

Bridges and Culverts.—In every line of business it has been proven that durable work is the most satisfactory and economical. The construction and maintenance of temporary bridges and culverts is the greatest drain upon the funds of a municipality. Timber is perishable, and being exposed to constant change of wet and dry soon commences to lose its strength, when repairs are demanded and in a few years a renewal. A large amount of this must be done each year requiring a considerable expenditure, and this is perpetual, whereas, if durable material such as iron, stone, and concrete were used in a few years these structures would be completed and a very large saving effected in maintenance.

Wide Tires.—Narrow tires produce ruts, wide tires produce a smooth and even surface; the one destroys the road, the other preserves it. Narrow tires are almost universal in Ontario. Narrow tired wagons are the greatest destroyers of gravel and broken stone roads. Even with the traffic which is not excessive, our country roads will not be kept in a moderately good state so long as they are subjected to the damaging effect of narrow tires. It is contended that the draft is greater on wide tires, that they set in the ruts made by narrow tires. This will be the case to some extent so long as narrow tires are commonly used, but these ruts would not exist if wide tires were general. It is further contended that wide tires come in contact with more loose stones, on the surface of the road, with roads properly constructed and wide tires used loose stones would disappear. Tires on ordinary lumber wagons should be four inches wide, and this width should increase on all wagons designed to carry greater loads; such increase to be proportionate with the load. The reason, largely, that wide tires are not used in this country is that people are not accustomed to seeing them and studying their effect upon the roads. England and all progressive countries have laws regulating the width of tires according to the load the vehicle is intended to carry.

CORRESPONDENCE.

REFRIGERATOR CAR SERVICE.

IMPORTANT TO CREAMERY MEN.

Editor of FARMING:

The hot weather which at present prevails puts the refrigerator car service to a severe test, and makes it imperative that the shippers, as well as the transportation companies, should take extra precautions to insure against any possibility of the butter becoming heated at the creamery, on the way to the station, or at the station before it is loaded into the car.

Information which has come to hand goes to show that some of the creamery men are not as careful as they ought to be in handling the butter from their own refrigerators to the cars. Cars have arrived in Montreal lately with the butter from some creameries in good condition, while that from others was very soft, indicating clearly that the butter must have been put into the car in that condition. If the butter is allowed to get warm and soft on the way to the station, or at the station, no refrigerator car is cold enough to harden it much, if at all, before it reaches Montreal. If the car keeps the butter in good condition after receiving it in good condition, it serves its purpose admirably.

Those who have to deal with the matter should see to it that the butter is taken as direct from the creamery cold storage to the car as it is possible to arrange, for every hour that the butter is exposed to the heat means so much deterioration, which can never be corrected.

It might be well to point out in this connection that, if butter is once allowed to become soft through heat, it will take a much lower temperature to harden it again than that at which it was formerly held. To illustrate: The average melting point of butter is about ninety one to ninety two degrees Fahrenheit; but once it is melted, the temperature must be reduced to about seventy four degrees to solidify it again.

By giving space to the above in your paper, you will confer a favor upon this department, and, it is hoped, a benefit to the dairy business.

Yours faithfully,

JAMES W. ROBERTSON,
Agricultural and Dairy Commissioner.

RESTORING LOST FERTILITY.

Editor of FARMING:

Having been asked by a reader of FARMING for a plan to restore fertility to a farm run down by cropping and cattle-raising, and also how to most economically keep it in condition, I send you the answer for publication, as it may be of some value to others besides the inquirer. The inquirer states that he does not want to keep cattle, or at least, not for some years, as the outlay required for preparing proper quarters for them, and buying enough stock to make the operation profitable, is more than he is prepared for. A large part of his land is in meadow and pasture, and the balance in grain and roots. The meadows and pastures are better than usual this season, but usually they are very poor, and getting poorer every year. His grain is about as poor as any he knows of, and his roots the same, but he says he knows lots of farmers whose crops are not a whit better than his own on an average.

I can only undertake to advise in a general way, and he must use discretion in the matter of detail procedure. Where he has a fair amount of clover in any meadow or pasture, I advise the plowing of the sward as early as practicable this season, and seeding with clover, applying a liberal dressing of Thomas-Phosphate Powder, and plowing down the clover for his 1899 fall crops, or, in case of a good fall growth, for the spring crops; or, the seeding with fall wheat and clover with the Thomas-Phosphate manure, the clover afterwards serve for a humus crop to plow down. I would take the chances of the plants well supplied with available phosphate, finding sufficient potash in the land for the present, and getting enough nitrogen for average production from the clover swards. On the grass lands showing no clover he should immediately apply a liberal dressing of the same manure, and next summer they will develop richly in clovers, probably red and white only. This he will plow down instead of cutting, and in the fall of 1899 drill in wheat with phosphate, as on the other land, sowing clover.

After that he can begin a rotation of crops, without a further application of the phosphate to last described lands for four years, and then such of the land as he has in meadow he will find advantageous to top-dress with the phosphate. The lands he is now cultivating for grain and roots should be got into clover for plowing down as soon as practicable. If it is the intention to continue the farm without cattle it will be necessary to supply potash, in which case "Kunt" is the cheapest and most practicable potash manure for the purpose. By adopting this plan some formerly barren wastes and barren lands have been restored to fertility profitably, and prepared for still more profitable stock-farming and dairying. On some of the lands it may be found more economical to use peas and vetches as a plow down manuring crop, as it gives a larger growth for the purpose in much shorter time than clover, and they are gatherers of atmospheric nitrogen on the same plan as clover.

T. C. WALLACE
(Wallace & Fraser),
Toronto, Ont.

PROFITABLE FARMING DEMONSTRATED.

Editor FARMING:

A correspondent asks in the July 19th number of FARMING the pertinent question: "Tell us how to make more money out of our farms and keep up the land," etc., etc.

In reply to this I offer to inform your enquirer in, perhaps, a new way. I have always taken the stand that a practical demonstration and object lesson is the true method of imparting knowledge in the minute business science of agriculture, and I therefore make the following offer and reply to your late enquirer:

If he will take the trouble to visit my farm at Bainsville, Ont., any time during the month of August, we will undertake to present the following facts, and allow the individual to draw his own conclusions, and should we fail to verify these by careful inspection and investigation, and to establish them as true facts, we will agree to pay your reader's expenses directly to and from the two points of departure. We will undertake to show a daily average cash product for five months, from six acres of pasture land, of over twelve dollars per day, at a cost of five dollars purchased feed, and less than fifty cents per day for labor, and also added fertility to the land of over four dollars per day during the entire 150 days. We will also show over ten dollars per day cash product from sixty acres of pasture during an average period of 150 days, starting from the middle of May; also an added fertility to the land of one dollar per day at a labor cost of two dollars per day, and one dollar and fifty cents of purchased feed. We will also show grown and growing crops on eighty acres of land, which give a daily market crop value while growing during an average of four months of over fifteen dollars per day at an average daily cost value in labor of five dollars per day.

All of which is submitted as an answer to your enquirer, and are demonstrated facts.

D. M. MACPIERSON,
Lancaster, Ont.

July 27th, 1898.

CANADA CENTRAL FAIR.

Visitors to Ottawa's great fair in September will see many changes and improvements at Lansdowne Park, where the exhibition is held. Indeed, the improvements have been so great that Ottawans confidently assert their fair park and accommodation are now the very best in Canada. The size of the grounds has been increased by the acquirement of some eight or ten acres, and the canal bay has been transformed into a beautiful lake with a running fountain. A new main building, fire-proof, in which all the exhibits will be on the first floor, additions to all the other buildings, and the construction of a wharf near the Elgin street gate, are among the other improvements. As usual, the fair directors have secured a fine list of special attractions. The night spectacular will be the "Siege of Delhi," the costliest and most thrilling military spectacle yet produced by the renowned firm of Hand & Teale. We learn that among the specialists secured are Prof. Lazeam, the famous balloonist and parachute performer; Prof. Sutherland, the "dare-devil rider of the century; Johnson, Davenport and Lorello, comedy crobats; Newell and Shevette, triple

bar performers, and the Cornalla's quintette, the favorite European court acrobats. The last-named family is said to be the greatest in their line in the world. There will also be the marvel of the century, "the high diving horses," and the "guidless wonders" horses that trot against each other without drivers.

You can make money at your local fair by securing an agency and representing FARMING. Write to us at once for particulars. FARMING, 44-46 Richmond St. W., Toronto

Stock Notes.

Live Stock Importation.

Mr. J. E. Brethour, of Barford, Ont., is importing from England, per S.S. *Lake Superior* of the Beaver Line, the following live stock: Forty sheep and thirty-eight pigs. Among this number are four prize-winning Southdown sheep, purchased at "The Royal" for Mr. John Jackson, of Abingdon; seven Oxford Downs, for Messrs. John H. Jull & Sons, of Mount Vernon, Ont. Three ewe lambs of this lot were in the third-prize class at the Royal, and two of the ram lambs were selected from the pen of three ram lambs that were highly commended, also two very choice shearing ewes.

Mr. R. H. Harding is getting a shearing Dorset ram purchased from the celebrated flock of Hugh McCalmont, M., who was one of the successful exhibitors at the Royal this year. The balance of the sheep are Shropshires, which have been carefully selected by Mr. Brethour from noted flocks.

Mr. George Green, of Fairview, Ont., is getting a Berkshire yearling boar and a sow in pig. The second prize boar in the yearling section and a splendid Tamworth sow-in-pig that has made a record in the English shows are going to A. C. Hallman, of New Dundee, Ont. Mr. Andrew Elliot, of Galt, has secured the best young boar in the first-prize pen of three pigs, farrowed in 1898; and Mr. John Bell has ordered a young boar bred by the same exhibitor, and which would have been shown in the first-prize pen had it not been for a slight accident to one of his feet. A Tamworth and Berkshire sows have been purchased for Mr. D. C. Flatt, of Millgrove. The balance of the pigs are purchased to be added to the celebrated Oak Lodge herd, and, without doubt, they are equal to any importations of Large Whites ever brought to Canada. The winner of the first prize in the over one-year section of boars, and also champion prize and gold medal for the best large white Yorkshire, any age or sex, has been secured by Mr. Brethour at a long price. Forty five guineas were offered for the second-prize boar in this same class.

A young boar from the first and second-prize pens of three boars, farrowed in 1898, both of which prizes were won by Mr. Daybell with six pigs all of the same litter, and the second prize for three sows same age, and of the same litter as the boars, was won by this exhibitor; which goes to show that there must be some uniformity of breeding in Mr. Daybell's herd. These three sows were all purchased by Mr. Brethour, together with two sows from the pen winning first prize in this section at the Royal. Added to these are the three young sows section, also a number of young boars, together with a lot of sows-in-pig.

All these pigs have been personally selected by Mr. Brethour, from the largest and best herds in England, at a great expense, and they ought to be the means of assisting to build up the reputation of Canadian bacon, which is attaining an enviable position in the bacon trade in England.

The Celebrated Hackney Banquo Dead.

Horse breeders throughout the Dominion will learn with regret the death of the celebrated hackney stallion "Banquo," the property of Mr. Beith, M.P., of Bowmanville, Ont. Banquo was bred by Mr. Beith, and was without doubt one of the best bred hackney stallions in Canada. He was a remarkable prizewinner. A year old he won second prize at the New York Horse Show; the following year he won first place as a two-year-old at the same show. At the Chicago Horse Show in 1897 he won first prize, and at the Toronto Horse Show last spring he won first prize and the championship. Twice in succession Banquo won the English Association's medal for the best hackney-bred stallion in Canada. He was also a winner of valuable prizes at the Toronto Industrial and other leading Canadian exhibitions. Banquo had proved himself a valuable stock-getter, and his loss is a serious one not only to Mr. Beith, but to the local breeders in the Bowmanville section. Mr. Beith has recently added to his hackney stud the promising young colt "Squire Rickall," sire, the famous "Cadet," dam "Miss Rickall," a full-sister to "Banfire," who was sold for \$15,000 to go to England. Besides this colt Mr. Beith has now sixteen hackney mares in his stables at Bowmanville, which he is fitting for the Toronto Industrial and other leading exhibitions.

AGRICULTURAL COLLEGE

GUELPH, Ont.

Will re-open on the

26th September of this Year

Full courses of lectures with practical instruction in subjects needed by young men who intend to be farmers. Send for circular giving information as to course of study, cost, etc.

JAMES MILLS, M.A., President.

Guelph, Ju'y, 1898.

Rheumatism POSITIVELY CURED

Dr. Robbins' Rheumatic Remedy

The only guaranteed positive cure for any case of muscular, inflammatory and chronic rheumatism that does not destroy the tissues or ruin the internal organs. Three doses afford relief from all pain; five bottles positively cure or money is cheerfully refunded. (Two bottles usually effect a cure).

Read the following Testimonial:

Toronto, Ont., Nov. 10th, 1897.

J. McINTYRE, Esq., Toronto, Ont.
Dear Sir:—My case of rheumatism was, I think, the most terrible a person could possibly have. After having been treated by several doctors all treatment being of no avail, I was taken to the Toronto General Hospital, and underwent all known forms of treatment for four months, and was pronounced incurable by the Medical Staff. My limbs were stiff and swollen and I suffered with constant agonizing pain, my hands and fingers were swollen and stiff as if frozen. I was taken home and resigned to die. I fortunately heard of Dr. Robbins' Rheumatic Remedy and sent my little girl for a bottle. When I had taken three doses I was entirely free from pain, and after taking half a bottle I went back to work and have not missed a day since. I have taken two bottles and am entirely cured and consider my recovery the most remarkable I ever heard of. I would cheerfully recommend it to anyone suffering from rheumatism. Yours sincerely, R. BYRTELLE, M.G. G.N.W. Tel. Co.

Sent to any address on receipt of price, \$2. Manufactured by

J. McINTYRE, Druggist,

Cor. Carlton and Bleeker Sts., Toronto, Ont.

Woodstock Steel Windmills

FOR POWER AND PUMPING

Get a DANDY

WITH GRAPHITE BEARINGS They Run without Oil.

Steel Towers, Pumps, Tanks, Saw Tables and Watering Troughs, etc.

WOODSTOCK WINDMOTOR CO., Limited. Woodstock, Ont.

Binder Twine

SISAL TWINE PURE MANILLA MIXED MANILLA

Owing to a large demand, we can offer only limited quantities of our own brands. Write for prices.

Ontario Binder Twine Co., Toronto

MARKET REVIEW AND FORECAST.

Office of FARMING,

44 and 46 Richmond street W., Toronto.
Aug. 1st, 1898.

There is nothing new to report in general trade circles. The hot weather and the harvesting operations have checked trade considerably, but the outlook for a big fall trade is good. The confidence in the future seems to have been greatly strengthened by the assurance of a big crop everywhere.

Wheat.

Dealers are anxiously watching the wheat situation. Though the wheat harvest in the United States began three or four weeks ago, there does not appear to be very much of it coming to market. The world's visible wheat supply seems to be decreasing very fast, and if the new wheat is held back for a few weeks longer it may disappear altogether. But the new wheat is not likely to be held back in sufficient quantities to bring this about. Reports from many sources indicate big crops, though some sections of the United States will not give as large a yield as expected. The Canadian crop will be a large one, and the sample good. A good many samples received on this market weigh over 60 pounds standard.

The London market for spot stuff is largely steady owing to the recent decline in futures, but spot wheat continues to meet with ready demand, though holders are not fighting for any advance in prices. The tendency of the western wheat markets has been downward during the week with values 1½c. easier. At Montreal during the week a lot of new western wheat was offered laid down there at equal to 76c., but it was not taken. Sales are reported throughout the province at 67c. to 68c. Manitoba No. 1 hard is quoted at 90c. to 91c. at Fort William, and 77c. at Brandon. The market here is very easy, and prices have receded during the week from 75c. and 76c. for old wheat west to below 70c. The quotations for new Ontario winter wheat are from 65c. to 67c., as compared with 70c. to 71c. a year ago at this time.

Oats and Barley.

The reports from some sections of the Western States disclose a large extent of light weight grain, and it is expected that there will be a larger proportion of this grain falling short in this particular. The dry weather recently throughout most of Ontario has caused the oats to be rather short in the straw, though the showers of the past week or two will help the grain to fill out. Canadian white oats are quoted in London at 15c. to 15c. 3d. c.i.f., and the market shows a steady feeling. Though there are large supplies coming into Montreal prices keep up well, and quotations are 31½c. to 32c. alfalfa. The market here is steady at 26c. to 26½c. for white west.

The barley market is merely nominal here. At Montreal quotations are 36c. to 38c. for feed, and 45c. to 50c. for malting.

Peas and Corn.

The London market for peas is quiet though prices are steady. Some Canadian white peas sold during the week at 3d. advance. Prices remain firm at Montreal, with sales reported at 63½c. to 64c. alfalfa, and with holders asking 65c. to 66c. Peas here are steady at 54c. to 55c. north and west.

The Montreal market for corn is quiet. The market here is quiet and easier at 34c. for Canadian yellow west, and 41½c. to 42c. for American Toronto.

Bean and Shorts.

The Montreal market continues firm for Ontario bean at \$12.25 to \$12.50 in car lots, and shorts at \$15 to \$16 per ton. Shorts here are nominal, and bean is quoted at \$9 west.

Eggs and Poultry.

The London egg market continues firm, with a good demand at an advance of 3d. per 120. Liverpool quotations for choice fresh Canadian are 6s. 3d. to 6s. 6d. per 120. Owing to the wheat harvest being earlier, new fall eggs are coming in about two weeks sooner, owing to the hens getting the run of the fields earlier. At Montreal prices for new laid are 12½c. to 13c. choice fresh candled, 10c. to 10½c., and No. 2, 9c. to 9½c. The market here is easier, at 11c. for candled. The poultry market is steady at about last week's quotations.

Potatoes.

The market is dull, and new ones sell out of track at 60c. to 65c. per bag.

Hay and Straw.

Low prices are likely to prevail for hay this year. There appears to be a big crop in every hay-growing district. The bulk of the sales at Montreal during the week have been from \$5 to \$6 per ton. No. 1 quality is quoted at \$8 to \$9. There is very little inquiry here. Cars of new are quoted on track at \$7.50 to \$8, cars of old bring from \$8 to \$8.25. Baled straw brings 24 in car lots.

Fruit.

New apples are quoted in Montreal at \$2.50 to \$3 per barrel, and Canadian peaches at 50c. to \$1 per basket. Canadian tomatoes bring from 40c. to 60c. per basket. Fruits here bring fair prices. Lawton berries are quoted at 45c. to 5c. per quart, and peaches at 25c. to 40c. per basket.

Cheese.

Buyers this year appear to be too timid and hesitating, while, last year, they were over-confident, and paid too high prices. They lost money, however, on last year's business, which may account for their timidity this season in the face of greatly-decreased supplies. The exports from Montreal up to July 23rd show a decrease of 169,975 boxes, as compared with the same period last year. And the combined exports from Montreal and New York up to July 23rd show the large decrease of 285,219 boxes, as compared with the same period last year. There is, however, reported to be a large English make, which may account for the present series of low values. But, notwithstanding this, the London market is firmer and higher, and the Liverpool public cable continues steady at 37s. 6d. In the face of this it is hard to account for the easier feeling in the market here last week, when prices generally were from 1.16c. to 1c. lower than the week previous. Factorymen, however, seem inclined to hold for higher prices. Montreal quotations are from 7¼c. to 7½c. for finest Western colored, and 7¾c. to 7½c. for finest Western white, 7½c. to 7¾c. for finest Eastern, and 7½c. to 7¼c. for finest French. The local country markets show a wide range of prices from 7 1/16c. to 7¼c.

Butter.

The London market is weak and lower, with Canadian creamery quoted at 78 to 80s. There are large receipts of Canadian, Danish, and Irish coming forward. In spite of this the market on this side shows a little firmer feeling and an increase in values, which is hard to account for. The increase in cold storage facilities may have something to do with it. It is reported that immense quantities of butter are going into cold storage in the United States and Canada to be held for a higher market. The butter exports from Montreal, up to July 23rd, show an increase of 24,046 packages as against the same period last year, while the reports from New York show a decrease of 56,287 packages, thus leaving a decrease from this side of 32,241 packages. Choice fresh lots of creamery have been sold at Montreal during the week at 16½ to 16¾c., and in one exceptional case, 17c. for choice, and quotations are 16½ to 16¾c. for choiced, and 15 to 15½c. for good to fine. Dairy butter is quoted at 13½ to 13¾c. The market here is firmer at 17½ to 18c. for creamery prints, and from 16 to 16½c. for tubs, though as high as 19c. is reported in some quarters for fine prints. Dairy rolls bring about 15c., and the best dairy tubs 12 to 13c., and medium to good 10½ to 11c.

Wool.

A slight improvement is reported in the United States market, but it does not appear to have much effect on the market here, which practically rules the same as last week.

Cattle.

The general condition of the cattle trade is slightly easier, which seems to be in keeping with London cable reports which are weak and lower. Receipts of Canadian beefs have been large and sales have been made at a decline of 3d. per stone of 8 lb. The western cattle markets show very little change. The receipts here have been large during the week.

Export Cattle—Are quiet and easier and prices rule from \$4.15 to \$4.65 per cwt., though early in the week \$4.80 was asked, but the offer was not taken. Export bulls bring from 3½c. to 4c. per lb.

Butcher Cattle—There has been a slow demand and prices are low. The best cattle sold on Friday at from 4c. to 4½c. per lb., and medium to good brought from 3½c. to

3¾c. per lb. As low as 3c. was paid for common stuff.

Stokers and Feeders—These are quiet with a lower market. There has been little demand from Buffalo during the week. Stockers bring from 3c. to 3¼c. per lb., and feeders from 3¼c. to 4c. The quality of some of the cattle is not very good and as pastures are getting short farmers are selling more readily.

Cakes—The demand is steady, and the market is firmer at \$3 to \$7 for good, choice veals. Fancy lots bring as high as \$10.

Milk Cows and Springers—These are slightly lower, owing to a falling off in the demand owing to the pastures drying up. Prices rule from \$25 to \$46 per head.

Sheep and Lambs.

The London market for sheep is dull and the prices are low for shippers. Lamb are easier at Buffalo, though good sheep continue high. There have been heavy offerings here and the demand is not very active. Ewes and wethers sell at 3c. per lb. and bucks fetch 2½c. Lambs are plentiful. They bring from \$2.75 to \$3.35 each.

Hogs.

At the western markets supplies have been large for this season of the year, though prices have not changed materially during the week. Choice bacon hogs are in good demand here, and bring from \$5.95 to \$6 per cwt. Light hogs fetch from \$5.40 to \$5.50. Lower grades bring lower prices, but for the prime, grain-fed bacon hog prices are higher.

Publishers' Desk.

Exterminate the Bugs.—Our readers are all interested in the destruction of the pests which annually rob them of a considerable portion of the fruits of their labor, and will be pleased to learn of any means which will effectively rid them of these mischievous depredators. It will be some satisfaction, therefore, to read the advertisement of Messrs. Robert Evans & Co., of Hamilton, Ont., which appears in this issue, in which the means required for the purpose mentioned is indicated. The apparatus offered through the medium of this advertisement is remarkably cheap, and is said to be most effective.

Protect Your Cattle.—The other announcement of Messrs. Robert Evans & Co. which appears on the back cover of this issue, is equally important. The protection of cattle from flies and other insects is not only necessary from a humane point of view, but pays. Read the advertisement and you will appreciate this fact most thoroughly.



ELECTRIC BUG EXTERMINATOR Price Only **\$1.00**

This Sprayer is also just the thing for Spraying Horses and Cattle with "Fly Fuma" protecting animals from flies of all kinds. Cows will return the investment many fold by the increased flow of milk. Price of Fly Fuma, 40c. per can.

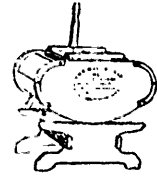
CHARLES W. BISHOP, Seedsman, Belleville, Ont.

BINDER TWINE

SISAL TWINE
SELECTED MANILLA
HIGH GRADE MANILLA
CENTRAL PRISON PURE MANILLA

Owing to a large demand, we can offer only limited quantities of our own brands. Plymouth and other brands in stock.

THE INDEPENDENT CORDAGE CO., Limited
TORONTO



The Maple Leaf Churn
EASIEST AND BEST
Ask your dealer for it, or send direct to the manufacturers,
WILSON BROS.
COLLINGWOOD, ONT.

CREAM . . .
SEPARATORS

THE ALEXANDRA

Hand and Power. Capacity 160 to 2,000 lbs. \$50 to \$350.

THE MÉLOTTE

Hand Style only. Capacity 330 to 850 lbs. Price \$100 to \$185.

Up-to-date Dairy Machinery and Supplies

AGENTS WANTED.

R. A. LISTER & CO., Ltd.,
18 St. Maurice Street, MONTREAL.

Windmills

The Most Economical Power for the Farm is a



Canadian Steel Air-Motor

When the FALL FAIRS be sure to see one in ACTUAL OPERATION

Full line of PUMPS, GRINDERS, TANKS, Etc.

We do our own Galvanizing on the premises

Ont. Wind Engine & Pump Co. Limited
LIBERTY ST. - TORONTO

72 65 1/2

Farmers' Binder Twine and Agricultural Implement Manufacturing Co., Limited.

(BRANTFORD, ONTARIO).

WE think it necessary to immediately advise you to refute the treacherous and damnable reports that are being put out and circulated against this co-operative movement of farmers by our enemies. Some are stating that this mill is closed down, others that we are pleading with the Government to reinstate the duty on binder twine; others that raw material has so tremendously advanced, that the present moment is the correct time to buy twine requirements for the harvest of 1898; while still others are claiming that the great American combine must absorb this enterprise, as it will be impossible for us to manufacture twine on a free trade basis. We have simply to say, in answer to all these diabolical statements, that there is not a single word of truth in them; the mill is being run three hundred days in the year to its utmost capacity; we have requested the Government not to reinstate the duty on twine; and we are just now manufacturing a quality of pure Manilla 650 feet long, known as our Sampson brand. It and our splendid Red Star (the farmer's pride) are superior to anything that has ever yet been placed on the Canadian market. As in the past, we will again shortly set prices on binder twine for the coming harvest at a fraction above actual cost of production, that all other manufacturers and dealers will have to follow. All we now ask, after five years of honest and determined endeavor in the interest of agriculturists of Canada to hold this Company as an independent concern, is that they, the farmers, give us their continued loyal support. Order our twine early from our appointed agents, listen to no statements made by the enemy, and remain truly loyal in not purchasing one single pound of American or other twine in opposition to us until they inform themselves positively that every ball of this Company's twine is exhausted. Small samples and prices will be sent you in the near future, or can be had on application.

See copy of a letter enclosed that appeared in *The Farmers' Weekly Sun*, February 24th, for your careful perusal. We specially request you, as an intelligent man, to plead with your people to realize the importance of this company getting their undivided individual support instantly, and to understand what our being driven from existence through indifference or scepticism on their part would mean to them in the future. The Salt Act would simply be repeated a hundredfold.

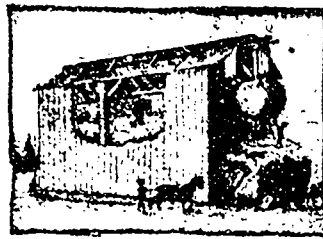
General Manager, Brantford



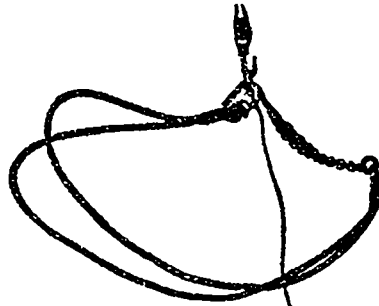
Faithfully yours,
JOSEPH STRATFORD.

BUCHANAN'S (Malleable Improved) PITCHING MACHINE

For unloading hay and all kinds of loose grain.



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



The Common-Sense Sheaf-Lifter

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

RESPONSIBLE AGENTS WANTED

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

DO YOU KNOW

What your cows are doing? Every factory should have

DILLON'S

Milk Pass Book.

Secretaries of cheese and butter factories will find that

Dillon's Improved Milk Book Combined
Dillon's Milk Sheets
Dillon's Pass Books

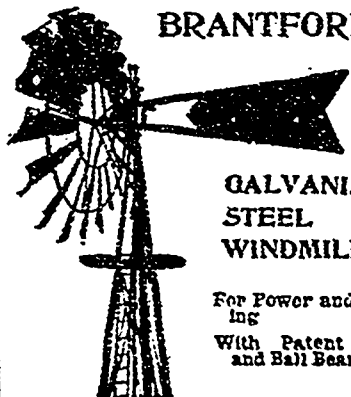
ARE THE BEST AND CHEAPEST

For sale by all Dealers in Dairy Supplies, or

Thos. J. Dillon

Charlottetown, P.E.I.

BRANTFORD



GALVANIZED STEEL WINDMILLS

For Power and Pumping
With Patent Roller and Ball Bearings

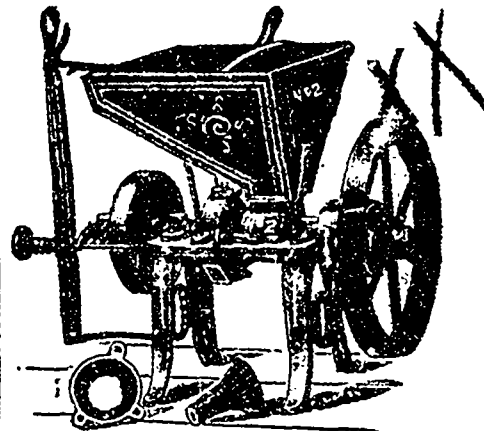


GOLD SHAPLEY MUIR
WINDMILLS
BRANTFORD CAN.

Makers of the lightest running and best constructed Galvanized Steel Windmills and Towers made.

Write for Illustrated Circulars.

The Only Grinder



Which will crush and grind corn cobs as well as small grain. Three sizes. Can be furnished suitable to be run by sweep power, tumbling rod or by a belt. A complete Grinder and ahead of anything in the market. SEND FOR CATALOGUE.

We manufacture

TREAD POWERS, HAY PRESSES, THRESHERS, and FEED CUTTERS, Etc.

MATTHEW MOODY & SONS

TERREBONNE, QUE.

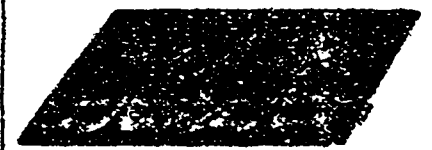
THERE'S ONLY ONE PAPER...

In the Maritime Provinces devoted exclusively to the interests of the 100,000 farmers in that part of the Dominion. It's a neatly-printed, sixteen-page semi-monthly, officially adopted and endorsed by the New Brunswick Farmers' and Dairyman's Association, the Nova Scotia Farmers' Association, and the Maritime Stock Breeders' Association. An advertisement in it will be read by more progressive agriculturists in the three Lower Provinces than can be reached by any other single medium. Free Sample Copy and advertising rates on application to

CO-OPERATIVE FARMER, Sussex, N.B.

Metal Roofing

Our Patent Safe-Lock Shingles are cheap, easily laid, handsome in appearance, and practically indestructible.



Patent Safe-Lock Shingle.

They are absolutely weather-proof, fire-proof, lightning-proof, and will last a lifetime. Perfect satisfaction guaranteed.

Sample and Price List Free on Application.

The Metal Shingle and Siding Co., Limited PRESTON, ONT.

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OTTAWA, ONT.,

September 16th to 24th, 1898.

Entries Close Tuesday, Sept. 13th.

Over \$75,000 expended since last Exhibition in extending and improving the Grounds and erecting New Buildings.

Prices increased in all the principal Live Stock Classes, including Poultry and Pigeons, also new classes added to the Horse, Cattle and Swine Departments.

Special Prizes for Milk Test.
32 Gold Medals as Sweepstake Prizes for Horses and Cattle.

New Main Building, 310 feet long, constructed of iron. Agricultural Implement Hall and Poultry Building enlarged. New Dining Halls. All buildings reconstructed and enlarged.

Live Stock accommodation unsurpassed. Evening Entertainments and "SPECTACULAR" as usual. Special low rates on all lines of travel.

For all information address
W.M. HUTCHISON, M.P., President. **E. McMAHON, Secretary.**

HELDERLEIGH FRUIT FARMS AND NURSERIES
400 ACRES

Situated at the base of the Mountain is a warm and sheltered valley where trees arrive at full maturity. Having over 125 acres planted in fruit, I have unusual facilities for knowing the value of the different varieties and establishing their purity. Everything is GUARANTEED TRUE TO NAME or purchase price refunded. I have for the fall of 1897, and the Spring of 1898, a complete list of Trees, Shrubs, Vines, etc., both fruit and ornamental. Write for a Catalogue which is furnished FREE, and which contains over ten pages of closely written matter about the various PESTS that trouble fruit growers and means of preventing their ravages. Buy CANADIAN GROWN STOCK only, and thus escape the dreaded San Jose scale so prevalent in the States. There is no more reliable, healthier, hardier, or more compact assortment than mine. Good reliable salesmen wanted in a number of the townships, to start work at once. Complete outfit free.

Address **E. D. Smith, WINONA, Ont.**

Ask for
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when you order matches. Then you will be sure of having the best.



THE **Prize=**
Winners

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Massey=Harris
Implements

They have achieved the highest honors in competition the world over, and are used by the most successful agriculturists.

MASSEY-HARRIS CO.,
TORONTO LIMITED

FLY FUMA

is a liquid preparation which, when applied to any animal in the form of a spray, or rubbed on with a brush or bath, will protect the animal from the attacks of flies of all kinds, mosquitoes, gnats, fleas, etc. It is a positive protection.



It has been thoroughly tested, and gives satisfaction. The time it affords protection from one spraying varies under different conditions of weather. If cows are treated in the morning before milking it affords an absolute protection during milking and the greater part of the day. Toward evening its effect will have diminished, so as to require another application before milking. Sprayed on a fly or other insect will not stay a moment, whether on a cow, horse, dog, or on inanimate objects. Sprayed on the stable walls and ceiling, the flies will all leave as fast as they can find a hole to get out. **PRICE, 40c. PER CAN OF ABOUT ONE QUART.** One-eighth of a cent a day protects an animal, and in the case of cows they will return the investment many fold by the increased flow of milk in fly time. Your horse will serve you far better and not try your patience. **FLY FUMA** may save a runaway and your life if used on your horse. **FLY FUMA** is a great disinfectant. It keeps your animal's healthy. Prevents spread of disease. Cures mange on cats, dogs, etc. Cures scratches and other leg and foot trouble in horses by are sufficient. Cures skin diseases. Heals sores. A few drops rubbed on a few times in the morning. Applied to the walls and ceilings of stables where there are myriads of flies, they will leave instantly. Use on fattening hogs in fly time. The best way to apply it is with the **ELECTRIC BUG EXTERMINATOR.**
ROBERT EVANS & CO., Seed Merchants, HAMILTON. Sole Proprietors for the Dominion

All Eyes are on this invention!

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The Genuine Tolton Pea Harvester with New Pat. Buncher at work

Harvesting in the most complete manner from eight to ten acres per day. Harvesters to suit all kinds of mowers.

EVERY MACHINE WARRANTED.

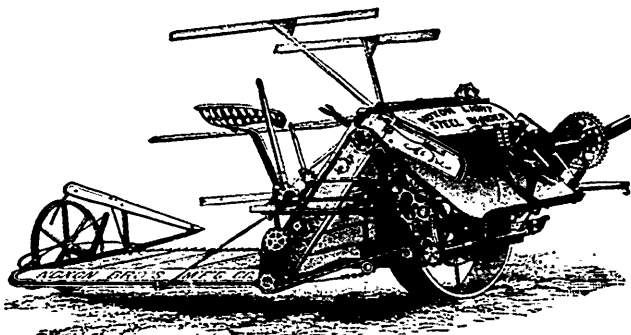
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Our Motto: "Not How Cheap But How Good."

No drilling holes in Mower Bar or Inside Shoe. A wrench is all that is required to attach it to any Mower. Give your orders to any of our local agents, or send them direct to

TOLTON BROS., - - - - GUELPH, ONTARIO

Noxon Steel Binder



The Binder THAT DOES IT ALL AND DOES IT RIGHT

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INGERSOLL, ONTARIO.

ALBERTS'
Thomas - Phosphate Powder

Puts strength into meadows and pastures, and doubles their production in feeding power. Give the soil the "Bone Earth" required for the proper production of hard wheat. All by the liberal use of

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THE CHEAPEST AND SUREST PHOSPHATIC MANURE KNOWN.

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