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Canadian Live Stock and Farm Journal

Vol. XII. No. 4.]

TORONTO, APRIL, 1895.

[WHOLE No. 137.

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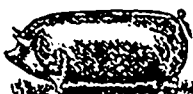
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RECORD FOR 1893

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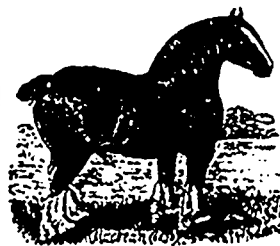


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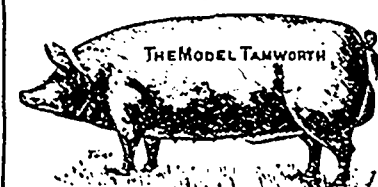
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SPRUCEDALE FARM Owen Sound, John Harrison, Prop., breeder of English Thoroughbred Horses (Registered in English Stud Book), and Shropshire Sheep. Stock for sale. 295

SHORTHORNS

ALEX. BURNS, Maple Lodge Farm, Rockwood, Ont., breeder of Shorthorn Cattle. Young stock for sale. 107

WM. DONALDSON, Huntingford, South Zorra P.O., Ont., breeder of Shorthorns and Shropshire Down sheep. 294

WM. DOUGLAS, Caledonia, Ont., breeder of Shorthorn Cattle. Young stock for sale at all times. 100

WM. TEMPLER, breeder of pure-bred Shorthorn Cattle and Berkshire Pigs, Wood Lawn Farm, Jerseyville P.O., Ont. Telegraph Office and R. R. Station, Copetown, G.T.R. Young stock for sale. 199

HENRY SMYTH & SONS, Chatham, Ont., breeder of pure Shorthorn Cattle. Young stock for sale. 204

J. & W. B. WATT, Salem, Ont., breeders of Shorthorns, Clydesdales, Berkshires, and Leicesters. 213

A. SMITH, Molesworth, Ont., breeder of Scotch Shorthorns. Young stock by Earl of Aberdeen. 12430 for sale. Write for particulars. 119

GALLOWAYS.

A. M. & R. SHAW Brantford, Ont., breeders of Galloway Cattle. Choice young animals for sale. 92

DAVID McCRAE, Janesfield, Guelph, Canada, importer and breeder of Galloway cattle, Clydesdale horses and Cotswold sheep. Choice animals for sale. 251

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T. GUY, Sydenham farm, Oshawa, Ont. breeder of Ayrshire cattle, Southdown and Leicester sheep. 104

J. McCORMACK, Rockton, Ont., breeder of Ayrshire Cattle, Foulouse Geese, and Colored and Silver-Grey Dockings. 252

W. M. & J. C. SMITH, Fairfield Plains, Ont., breeders of World's Fair prize-winning Ayrshires, Merino Sheep, Poland China Pigs, and Poultry stock for sale. 180

J. YUILL & SONS, Carleton Place, Ont., breeder of Ayrshire Cattle, Shropshire Sheep, and Berkshire Swine. 240

W. & J. A. STEPHEN, Brook Hill Farm, P.O. River, Que., breeders of Ayrshire Cattle and Yorkshire pigs. Young stock for sale at reasonable prices. 243

THOMAS IRVING, Montreal, Importer and breeder of Ayrshire cattle and Clydesdale horses. Choice young Ayrshire bulls and heifers bred from Chicago winners for sale. Write and get prices and other particulars. 206

WALTER NICHOL, Plattsville, Ont., breeder of Ayrshire Cattle and Leicester Sheep. Choice Young Stock For Sale. 190

JERSEYS.

WM. ROLPH, Glen Rouge Farm, Markham, Ont., breeder of Jersey cattle. Herd nearly all pure St. Lambert. Young stock always for sale at reasonable prices. 338

H. HAIG BROS., Menie, Breeders of Jersey cattle of the best prize-winning strain. Farm close to Board Station, G.T.R. 225

D. H. KITCHESON, Menie, Ont., breeder of A. J. C. Jerseys, Shropshire sheep, and Berkshire pigs. Stock for sale. Hoard's Station (G.T.R.). 140

JERSEY.

MESSRS. G. SMITH & SON, Grimby, Ont., breeders and importers of Pure St. Lambert Jerseys and Welsh ponies of choicest quality and breeding. Stock always for sale at reasonable prices. Correspondence solicited. 133

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J. H. SMITH & SON, Willow Grove Farm, Highfield, Ont., breeder of St. Lambert and St. Helen's cattle. Prize herd at the last Industrial. Young stock for sale. 78

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W. J. RUDD, Eden Mills, Ont. Breeder of Devon Cattle, Cotswold and Suffolk Sheep, Berkshire Pigs, Plymouth Rock Fowls and White Turkeys

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WM. SINCLAIR, Yarna, Ont., breeder of Poland China Swine. Stock for sale. Write or call. 126

JAS. A. GOULD, Woodstock, Ont., breeder of Poland China Pigs. Stock for sale. Write or call. 150

FOR the finest Tamworth swine correspond with H. FEARVAN, Hamilton, Ont. 266

M. H. Parlee, Sussex, N.B., breeder of Large Yorkshire and Berkshire Pigs, Light Brahma, Silver Laced Wyandottes, and Black Plymouth Rocks. Choice stock for sale. Write for prices.

W. H. O'DELL, Belmont, Ont., breeder of Registered Tamworth Pigs. Stock for sale.

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JAS. P. PHIN, The Grange, Hespeler, Ont., breeding and importing Shropshire sheep a specialty. 96

A. TELFER & SONS, Paris, Ont., breeders and importers of registered Southdown Sheep. Stock for sale. 241

JNO. A. MCGILLIVRAY, Q.C. Jerseyville Farm, Uxbridge, Ont., breeder and importer of Dorset Horned Sheep, Jersey Cattle, and Tamworth Pigs. 158

JOHN JACKSON & SONS, Abingdon, importers and breeders of registered Southdowns. Over 1000 prizes in ten years. 253

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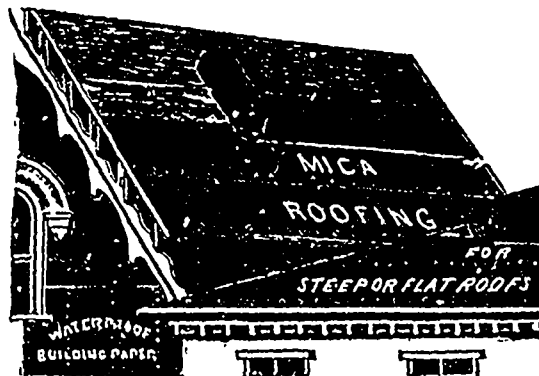
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(From The Farmer's Advocate, May 11th, 1894.) We have made a careful test of the Lewis Combination Spray Pump which is offered for sale by W. H. Vantassel, of Belleville, Ont. It is all made of brass, excepting three or four feet of strong hose, and the parts all screw together. It is handy, strong, simple, and will serve half-a-dozen different purposes. It throws a solid stream twenty-five or thirty feet high, large or small, which can be changed instantly, without stopping to a fine or coarse spray. There is a special nozzle for spraying low bushes, such as roses, currants, etc., and can be used to apply emulsion to cattle. As a veterinary syringe it is also very useful. Practically there is nothing about it to get out of order. Mr. Vantassel will express them to any one cheap. We can heartily recommend the Lewis Sprayer. P.S.—For 50 cents I will send by mail, postpaid, a complete Singer for singeing horses or cattle.

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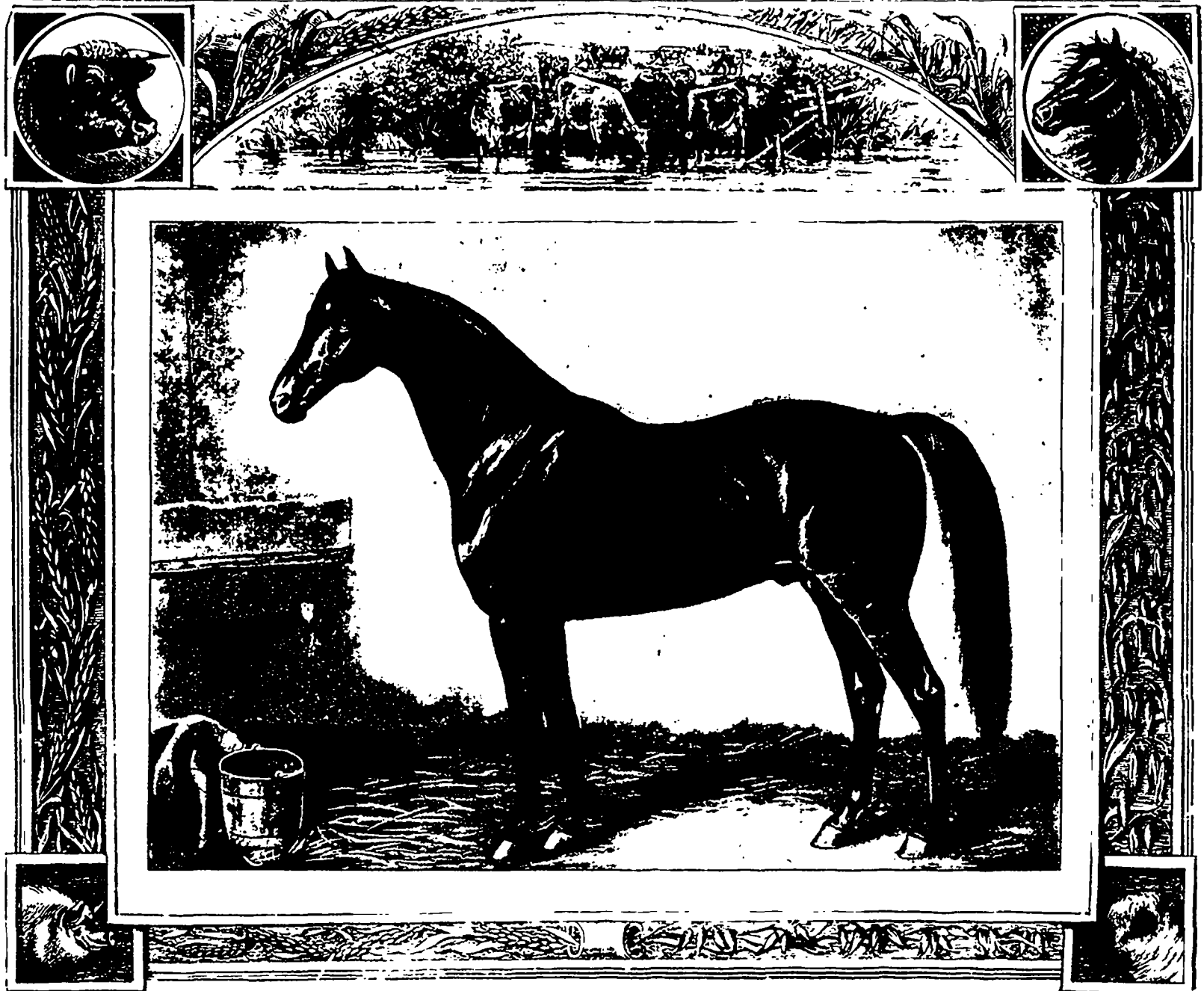
THE Canadian Live Stock and Farm Journal.

Devoted to the Interests of the Stock-Raisers and Farmers of Canada.

Vol. XII. No. 4.]

TORONTO, APRIL, 1895.

[Whole No. 137



The Champion Thoroughbred Stallion, Mikado.

The property of Mr. R. Davies, Thorncliffe Farm, Toronto.

Our Illustration.

Who has not heard of Mr. Robert Davies, champion Thoroughbred Stallion Mikado, a beautiful half-bred of whom embellishes our front page? Not only is he the champion thoroughbred of Canada, but also of America, having won first at New York and first at the World's Fair against all comers. Mr. Davies has not recently exhibited him for competition, as he is quite satisfied with his horse's successful career. He will, however, have him paraded in the ring at the great horse show

this month in Toronto, where those who have not previously seen him will be able to do so. Mikado is a beautiful rich brown in color, standing 16½ hands and weighing 1,300 pounds. He was specially imported by Mr. Davies with a view of improving the horses of this country for saddle and military purposes, for which his great quality and undoubted substance render him particularly serviceable. He is the model of a hunter-getter and his good paces at the walk, trot, and gallop and his good temper combined with his perfect shape have always caught the eye of the judges.

His breeding is of the best. His sire was King Ernest (imp.) a son of King Tom, and his dam Mimi by Eclipse (imp.). He has in his veins the blood of Touchstone from both sire and dam, while through his sire he traces to the distinguished Pocahontas, by Glencoe.

Mikado as a three-year-old won the great Omnibus stakes at Monmouth Park, 1½ miles, beating all the best horses of his year. In his only race at four years old, when only half-trained, he won the Harlem stakes at Jerome Park 1 mile and a furlong, carrying 118 pounds and defeating Duchess, Himalaya, Richmond,

and St. Louis. In fact, he was on all hands admitted to be the best horse of his year. Mr. Davies may well be proud of his horse and the stock that he is leaving, both in his own stud and throughout the country.

Our illustration is taken from a beautiful oil painting of Mikado, executed by that celebrated animal painter, Mr. Paul Wickson, Paris, Ont., who has put on canvas so many of the best horses in the country, and whose work has given such great satisfaction everywhere. The painting of this horse is certainly one of his best efforts.

THE CANADIAN Live Stock and Farm Journal

PUBLISHED ON THE
FIRST OF EACH MONTH BY

THE BRYANT PRESS,
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G. W. GREEN, - MANAGING EDITOR.
F. R. SHORE, - STOCK EDITOR.

Representative for Great Britain and Ireland.
W. W. CHAPMAN,
Fitzalan House, Arundel St., Strand,
London, Eng.

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Furnish 1 to subscribers to THE CANADIAN LIVE STOCK AND FARM JOURNAL as a free supplement.
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The Coming Horse Show.

The preparations for the great horse show to be held at Toronto in the new Armories on Thursday, Friday, and Saturday, April 18th, 19th, and 20th, are now fairly complete, and, judging from the interest taken in it by breeders, horsemen, and the general public, there should be a grand turnout of horses, and a large and appreciative crowd of spectators on the three days. The prize list drawn up is a very liberal one, and, though it might, possibly, have been improved in one or two particulars, yet, considering that it is the first one of its kind, it may be classed as an excellent one. Over \$5,000 will be given in prizes, some \$2,000 of which are offered by the Agriculture and Arts Association, and the kindred horse societies, and no pains will be spared to induce owners of fine horses to compete in the ring. His Excellency the Governor-General has signified his willingness to open the horse show, and, in addition to large numbers from the Province and Dominion, distinguished visitors are expected from New York and other large cities on the other side.

The new Armories cover a space of 300 by 100 feet, and in the main hall a ring of tanbark can be laid out 200 by 100 feet, ample for the purposes of the show, and nearly as large as the horse ring at Madison Square Garden, New York. Space will be left for the erection of a structure which, with the

present galleries, will seat 4,000 people, while a promenade will be laid out accommodating 2,000 more. There will also be rows of boxes along the arena.

We hope that all who take an interest in horses will try and attend this show. It will be a splendid opportunity for those who have good hunters and harness horses to dispose of them if they wish to, as there will be buyers present from Canada and the United States, and breeders would also do well to enter their stallions and show what they have. Prize lists can be obtained from Mr. Henry Wade, Agricultural Hall, Toronto.

Canadian Horses to Go to Belgium.

It is reported that a company has been formed in Belgium having for its object the importation of Canadian horses into that country. If the report is true, it will be welcome news to our breeders and farmers who have on hand horses of the kinds desired. If we can extend our export horse trade with Great Britain, and our horses find favor in Belgium, it will do much to lift the trade out of the depressed condition in which it has been for some time.

Prohibition of Importation of American Cattle into France.

The decree lately issued by the French government prohibiting the importation of American cattle into that country means the loss of \$18,000,000 worth, or more, of cattle and cattle products every year, according to Nelson Morris, the well-known packer of Chicago. That, at least, was the total worth of cattle and cattle products shipped last year. He says:

"The effect of the German and Belgium embargo has been to reduce the price of cattle of the classes shipped to these countries by \$10 a head, and this French edict will even more injuriously affect the stockyards. The effect on the product is even greater than the effect on the live cattle trade, especially so far as France is concerned.

"We were shipping 7,000 cattle a week, and as many or more in addition in the form of the product. France has been taking a great deal of lean cattle for soups, and this class of cattle will be very injuriously affected by the new edict, while as to dressed beef and pork, and products, the result will be even more far reaching."

Prime Cattle Scarce

We have more than once referred to the fact that really choice cattle are much scarcer than they have been for years, and have counselled our readers to raise better stock, as for such the demand and the prices paid are always more remunerative than for inferior stock.

Recent reports still point in the same direction, viz., a still further decrease in the number of choice beeves that are being prepared for market. It really seems as if it would not be long before such would sell at considerably increased figures. The Chicago Live Stock Report, through its correspondents, figures out a shortage of 40 per cent. of beef cattle throughout the corn belt, and predicts a firm, healthy market there for the next few months. In Canada we have no figures to go by, but the fact that a large number of our farmers have given up feeding cattle and gone into dairying, must mean a considerable difference in the number of beef cattle to be forwarded to market in the next few months.

It may be asked, in view of the fact that the number of choice beeves on this continent were greatly reduced last year, as compared with previous years, why the prices obtained for such did not improve in inverse ratio. There are, probably, many excellent reasons for this state of affairs, but one of the principal ones is the great depression which has been prevailing for so long and of which we have not yet seen the end, although the glimmer of dawn seems to be appearing. During this depressed time butchers have found their customers unwilling to give as good prices as previously for first-class beef, and they have, therefore, in order to make their profit, been content with inferior stock, and for this reason, the supply of really choice animals, though less than usual, was sufficient for all demands on it. With the advent of better times, however, all this will be changed, and then the want of first-class beeves will be quickly felt. Breeders and feeders should bear this in mind and govern themselves accordingly.

A New Outlet for Canadian Cattle.

We learn that the Grand Trunk Railway, in conjunction with the Vermont Central Railway, have obtained permission from the United States Government to carry Canadian cattle and sheep to Portland, Maine, to be shipped thence to Great Britain. The stock will undergo inspection from the U.S. authorities at Island Pond, and the certificate of Dr. McEachran, Montreal, will be required as to the freedom from disease of each lot shipped.

These privileges will be welcomed by dealers, as there will now be a competitive port of shipment with Montreal and Halifax, and the effect will be a cheapening of rates. At present, however, only the two railways mentioned are permitted to carry stock to Portland from Canada; and they thus have a monopoly of the carrying trade thither.

Under the new regulations all Canadian sheep must be shipped from that port, whereas, previously, they could be sent from New York, Philadelphia, and Boston as well.

We hope that the opening of this port may be the prelude to the entire removal of the quarantine embargo on our cattle by the United States.

Premiums for Essays on Poultry.

In order to encourage farmers to pay more attention to poultry raising, we have been enabled, through the kindness of Mr. W. J. Stevenson, of Oshawa, to offer prizes for the two best essays on the subject: "How to get the best results from farm poultry." Two prizes will be given. The first prize will be a trio of golden Wyandotte chickens, and the second a pair of white Wyandottes. These birds will be supplied from Mr. Stevenson's well-known poultry yards, and will be selected by him for show purposes. They will be delivered during the first week of September, 1895.

The conditions governing this contest are as follows: Only farmers are to compete, and all fancy breeders will be excluded. By fancy breeders are meant those who follow poultry breeding as a pursuit, independently of farming. All essays must be in this office on or before May 15th, and none will be accepted after that date. Only subscribers to THE JOURNAL will be allowed to compete. Essays must not contain more than 1,000 words. The prize essays and such others as possess merit

will appear from time to time in THE JOURNAL. We hope that a great many of our readers will take advantage of Mr. Stevenson's offer.

Illness of Mr. Shore.

Owing to the protracted illness of Mr. Shore, our stock editor, who has been laid up for about three months with inflammatory rheumatism, a great many visits to breeders, that had been arranged for, had to be cancelled. Mr. Shore, we are glad to say, is now improving in health, and, we hope, will soon be able to resume his trip at the point where he left off. We ask, in the meantime, for the indulgence of those breeders whom he was unable to reach on his last trip. It is with great regret that we inform our readers that Mr. Shore has also suffered a sad bereavement in the death of his excellent wife, which took place on March 15th, and which was, without doubt, caused by her untiring devotion and nursing of him during his severe illness. We are sure that those of our readers who are acquainted with Mr. Shore (and they are very numerous) will sympathize with him in his great trouble.

Burning of the Agriculture and Arts Building.

It is with deep regret that we announce to our readers the loss by fire of the Agriculture and Arts Association's building in Toronto, early on the morning of Sunday, March 3rd. The fire, which is supposed to have been started by an incendiary, originated in the fine departmental store of Mr. R. Simpson, across the street, and, owing to the lack of competent fire appliances, spread, burning all the four corners of Queen and Yonge streets.

While the loss of the building is to be deplored, it is made more serious by the fact that all the records of the association and all the documents and registration papers relating to the following herd and stud books were stored in the building, viz., the Shorthorn, Hereford, Polled Angus, Ayrshire, and Devon herdbooks; swine records (six different kinds); Clydesdale, Shire, Hackney, and draught horse studbooks, and Dorset and Suffolk sheep registers; as well as a valuable live stock and natural history library, including Brace's studbook, full sets of both the English and American herdbooks, bound volumes of agricultural papers, a complete set of the transactions of the Royal Society, a valuable collection of works secured in England at an expenditure of \$2,000, by the late Professor Buckland; the transactions of the Agriculture and Arts Association, minute books, the secretary's reports, and a large number of miscellaneous tomes. All the documents, records, registration papers, etc., were numbered, indexed, and filed, and, as they represented the accumulation by the association during half a century, it can be understood that the amount of labor represented was enormous, apart from the fact that they can never be replaced.

The Devon, Polled Angus, Hereford, Hackney, and Shire books were in manuscript and are a total loss, and can only be replaced by correspondence with the breeders and owners of stock, and it will be a work of time even then. Ten volumes of the Shorthorn herdbook had been published, and the eleventh had been compiled and would have been in the hands of the printers in a few weeks. Four hundred copies of each of the

first ten volumes are lying unbound at the offices of the printers, but the eleventh was entirely consumed. To replace the latter a vast amount of correspondence will have to be carried on with every breeder in the country. Seven volumes of the Clydesdale stud book have been published, and half the eighth was in the printers' hands. The other half, comprising pedigrees, descriptions, and records of the produce of mares, fed the flames.

The Agriculture and Arts building was built in 1861 by the late James Fleming, who was then, and for many years afterwards, a well known florist. He was a member of the Agriculture and Arts Association, and as that body was reaping a revenue of four or five thousand dollars a year at that time from the Provincial Exhibition he offered to advance money for a building, if the association would allow him to rent the lower floor for a seed store. An agreement was arrived at, and the site on the corner of Queen and Yonge streets secured at \$30 a foot, or thereabouts. A substantial brick building was erected at a cost of a little over \$15,000. This was the structure that was burnt. It consisted of three stories and a cellar. When the local government first formed an agricultural department it secured accommodation in the building, spending some \$10,000 in alterations, the accommodation extending up to the time when the new parliament buildings were opened in Queen's Park. From the erection of the structure until its destruction the Agriculture and Arts Association, of which Mr. Henry Wade is the secretary, had its offices, board rooms, and extensive library on the middle floor. The only insurances were: On building, \$5,000 in North British, and \$5,000 in Norwich Union; on Shorthorn herdbook, \$1,250 in Wellington; on Agriculture and Arts library, \$2,500 in North British.

Let Others Benefit by Your Experience.

There must be a great many of our readers whose methods of farming are far superior to those of the greater number of their neighbors, and who could, if only they would, enlighten them in many ways in the various branches of farming. Breeders who have been breeding for years could benefit the beginners in that business by giving them their experience, and those farmers who have superior methods of growing the various crops grown on a farm could tell them to their less fortunate brethren. It should be the aim of every one engaged in farming to do what he can towards benefiting his fellow-creatures, and in no better way can he do so than by using the columns of an agricultural paper. The pages of THE JOURNAL are ever open to receive letters on various subjects of interest from such as care to send them in. Let those of our readers who can supply us with anything of interest in farming occupations do so, and by so doing they will assist many others who have not the advantages that they have.

Shires and Clydes.

This issue contains the concluding portion of Mr. Alex. Macneilage's paper on "The present position of horse breeding in Great Britain," read before the Edinburgh University Agricultural Discussion Society. We have given the portion of the paper devoted to the requirements of contractors as regards heavy draught horses for street work, as we consider that in breeding this class of horse

our breeders would find in Great Britain a ready market for all they can raise for some time to come. Mr. Macneilage reports contractors as saying that such horses are scarce and hard to be obtained, and he urges Scottish breeders to cultivate that market. Let our breeders do the same.

In discussing the means by which breeders can most quickly produce the heavy draught horse required for commercial purposes, Mr. Macneilage somewhat astonished his hearers by advocating the crossing of Shire mares with well bred Clydesdale stallions. He, however, carefully guarded the position he took by stating that this crossing was for commercial purposes only, and that he would still preserve the characteristics of both breeds distinct. He also expresses the opinion that Clydesdale breeders can, if they breed carefully, in time produce sufficiently heavy geldings to suit the requirements of contractors from straight Clydesdale sires and dams.

It will thus be seen that Mr. Macneilage has somewhat modified the opinions he has previously expressed on this subject, though not to the extent that some of his critics thought he had. There is a good deal of agitation going on in Scotland at the present time in favor of the amalgamation of the Shire and Clydesdale studbooks, and there can be no doubt that Mr. Macneilage's address will do much to encourage those who are thus agitating. Our own views on the subject are in favor of this amalgamation, which we believe would be in the interests of both breeds, each giving fresh blood and renewed vigor to the other. Then the produce from Clydesdale sires out of Shire mares, instead of being only crossbred "commercial" horses, would be purebreds that could be used for the perpetuation of the breed, if so desired.

Rock Salt for Stock.

Most farmers nowadays are convinced of the advisability of giving salt to their stock both in winter and summer, but they are not all agreed as to the best method of salting them. The majority of them use ordinary salt, but a large and increasing number, having become convinced of the superiority of rock salt for that purpose, now will have no other.

Rock salt possesses numerous advantages over the common salt so generally used. When a lump of it is put in the manger in the winter time, it can easily be distinguished and left in when the manger is being cleaned out, and thus the animal has salt before it to lick whenever it feels inclined. When animals are at pasture, it is best to put a large lump in one or more boxes in the field. In this way, the animals will come and lick it when they feel the need of it, and, as they cannot take too much, there is not the purging that accompanies loose salt, when, as so often happens, animals take too much of it.

Rock salt is economical, too, and saves labor. It is now sold very cheap, and that fact ought to influence all to buy it in preference to the ordinary salt. It saves labor because, when one or more lumps are distributed in the pasturefield, there need not be so many trips made thither with salt for the stock. A good sized lump will last a good while.

With the common salt, it is, in many instances, the rule to salt the cattle once a week, Sunday being very often the day selected. The stock at once gorge themselves on it, and scour, in consequence, and it is nearly the end of the week before they recover from the effects, which are visible in reduced flesh and

lesser milk production. In a day or two more they get a fresh supply and the same results ensue.

With rock salt such a state of affairs cannot happen. The animals get a steady, regular supply sufficient for their needs, and are benefited accordingly. We have tested it ourselves on the farm and know what an excellent thing it is, and we have no hesitation in advising all our readers to do the same.

Feeding Skim-Milk and Whey to Pigs.

Ontario is a great dairy country. Of this fact we are all proud. Quebec is following nobly in the wake. The Maritime Provinces are also giving more and more attention to this great question, and even Manitoba is fast waking up to the great importance of dairying. Dairying is also associated very intimately with pork production, because much milk and whey mean much pork. Immense quantities of pork are already being produced in Canada, as in Denmark, largely by the aid of these by-products. But it is a fact, nevertheless, that very much of the food value of the skim-milk is lost, and also of the whey, by making too large a proportion of the ration to consist of these products, or, it may be, by feeding them in unsuitable combinations, or in an unsuitable condition.

One of the commonest mistakes in feeding these products is to feed them in proportions altogether too large. When thus fed much of the food is lost. It passes through the animal undigested. Great care, then, should be taken to feed the milk along with meal. The proportions that have been found very suitable are 100 pounds of milk and whey to 30 pounds of meal. Cornmeal is excellent as the meal adjunct. But peameal is also very good, as are all sorts. Rye meal is also valuable. When good skim milk is fed along with cornmeal or peameal, it has been affirmed that 100 pounds of it is worth a bushel of corn or a bushel of peas; that is to say, when the system of feeding, as a whole, is judicious. If these statements are true, these by-products are of great value, relatively, as a food for swine.

These products could easily be fed in unsuitable combinations; that is, it would be easily possible to feed them too largely along with nitrogenous foods. Skim-milk may be spoken of as a nitrogenous or flesh-forming food. Because of this, it is largely used in feeding calves to be reared for the dairy. It makes them grow without bringing them into a fat condition. Corn is a fat-producing food; hence, when fed along with skim-milk to swine, the combination is an excellent one.

One of the commonest mistakes in feeding these by-products is allowing them to sour before they are fed. This is a very great mistake. Sugar is one of the valuable elements of these products. When either becomes sour, the sugar is lost. The effects of feeding sour food in large quantities are also injurious to digestion; hence the aim should be to feed them before they become sour. Notice how rapidly young pigs grow when they are being nursed by the dam. One reason of the rapid growth is the sweet condition of the milk. When skim-milk and whey are fed to pigs, the conditions which surround them are oftentimes not of the best. In instances not a few, these products are conveyed to them by pipes which lead from the creamery or cheese factory, as the case may be, to a plot of ground with a trough in it. The place soon becomes very foul, and oftentimes muddy and miry in

rainy weather. Under these conditions there is grievous waste. There is, first, waste of food, owing to the too large proportion of milk given with the meal. Then there is waste of fertility. Thirdly, there is waste from the uncomfortable condition of the quarters. Where hogs are fed in a wholesale way, it would pay well to feed them so carefully that the best results could be obtained from the food given.

The plan of keeping the pigs in a field and changing the place of feeding every two or three days has its advantages. It may involve more labor in feeding, but is excellent for the health of the pigs, and it is also excellent for bringing fertility to increased areas of land.

Food and Care of Brood Sows in Summer.

After the pigs have been weaned in the spring, the food required by brood sows will be to some extent dependent upon the number of litters to be reared in one season. When but one litter is reared, they do not want so much food given to supplement the pastures. But in any case they should be kept in good flesh. It is a great mistake to conclude that brood sows bring forth superior litters when they are emaciated in flesh. If the sows are to do well for their young, they must be so fed as to nourish the fetus while it is in process of development, and they must also possess flesh to enable them to stand the drain on the system during the milk-giving period.

The brood sows that rear but one litter a year may be turned on to pasture after the pigs have been weaned in the spring. Any kind of pasture will answer that is juicy and succulent, but usually clover will be found to answer the purpose best, as, when a proper system of pasturing is adopted, it will generally be found to maintain its freshness better than other kinds of pasture.

But they should have some food along with the pasture. Where a number of sows are kept, there is no simpler mode of giving this food than in the form of corn or peas. But where only one or two sows are kept, they may be given swill where it can be spared, but it should have some body in it to build up and sustain the frame of the sow. The same kind of food would also answer quite as well for a large number of sows, but usually there would not be a supply unless it was specially prepared for them. To throw them a little corn in the cob, or to feed a few peas, would answer very well, and it is very easily given. After the stubbles are accessible in the grain fields, brood sows may not want any additional food for a time, and, if they can then pasture upon rape, they will not want much additional food other than the pasture. But in the absence of some such food, they should get more or less grain. The amount of grain, however, need not be large if they can have such food as pumpkins, squashes, or mangels thrown to them in addition to the pasture.

But when brood sows are to produce a second litter, they must be well sustained right along, for the first litter of the season is only weaned a short time before they have to nourish the embryo of a second litter. This they cannot do properly on pasture alone; hence they should get a goodly supply of meal right along from the time that the first litter is weaned. This meal should be largely nitrogenous in character, but some carbonaceous food may be fed, as the food gathered

in the pastures is largely nitrogenous. When a second litter is reared it should, if possible, come in September. The young brood are then weaned while the weather is still mild. After they have been weaned the dam should get a mixed ration, in which the carbonaceous and nitrogenous elements should be well blended, for her system must be well sustained in flesh and fortified against the cold weather of winter which is then approaching.

Brood sows should be given large liberty of exercise. It is not only good for the sows, but it is also good for their young. It is a mistake to shut a brood sow up in close quarters either in winter or summer for any length of time, but it would seem less justifiable in summer than in winter, for a brood sow can pick up a large proportion of her living in the pastures in the summer if only allowed to do so.

When the farrowing time draws near, the brood sow should be confined to a pen. She should be thus confined for a week or two to become accustomed to her new quarters. If not so confined she will be restive and uneasy, and will probably expend a good deal of energy in trying to gnaw her way to liberty.

The Pure Breeds of Cattle.

By PROF. THOS. SHAW, St. Anthony Park, Minn.

POLLED DURHAMS. THEIR TRAITS, CHARACTERISTICS.

The leading characteristics of Polled Durhams are essentially the same as those of the Shorthorns, with three elements or points of difference. These consist, first, in the absence of horns; second, in the blood elements imbibed from the muley foundation; and, third, in the superior milking qualities which, in consequence, they retain.

The attempt will not be made here to discuss the advantages of hornlessness as compared with the presence of horns. It will answer my purpose, at present, to cite the extraordinary revulsion of public opinion that has taken place with reference to the question of horns or no horns. Why, it is only yesterday, as it were, when men in all Christian lands were persecuting individuals for dehorning, on the ground that it was cruel. To-day men so kind and tender hearted that they would step aside rather than tread on a serpent, lest they should needlessly give it pain, are anxious to have the horns removed from their bovines, on the ground that it will prevent further cruelty. It has been affirmed, and it is probably true, that more than half the cattle reared in the entire West are reared without horns; that is to say, the horns are taken from them after they have appeared. This extraordinary revulsion in public opinion is a high tribute to the sagacity of the earliest breeders of Polled Durhams, in thus anticipating, as it were, this coming change before it had come, and, indeed, before the indications of it had got well above the horizon.

It may be that some persons would deprecate the presence of the percentage of muley blood now found in Polled Durhams. That is not my opinion by any means. I regard it as an element of strength rather than of weakness, a strong recommendation to them rather than a reproach. It is, to me, a source of regret, rather than the opposite, that efforts so persistent were made to get the muley blood elements so quickly reduced to a minimum. I speak thus for the reason, first, that, through injudicious and over-close breeding, the stamina of very many Shorthorns has been

impaired, and, along with impaired stamina, shy breeding and shy milking qualities have appeared; and for the reason, second, that healthful and vigorous blood elements of the muleys would tend to correct these unfortunate tendencies.

The muleys have all along been noted for their good milking qualities. In fact, it is owing to the possession of these that they have been enabled to survive the prejudice of centuries. Their meekness, too, the outcome of an unoffending disposition, has at last been recognized, and they are, in consequence, going to share in the inheritance of the earth.

There may have been commercial reasons which impelled the early moulders of Polled Durhams to try to obscure the glory of the muley blood as quickly as possible. They had to cater to tastes as they were, and not as they ought to be. They had to meet the prejudices of men, and these are strong and stubborn, and useless oftentimes, and supremely childish. We find evidence of this in the unceremonious rejection of Shorthorn bulls, because they are off in color, by those who are rearing beef cattle. But, if these things could be viewed in the light of common sense, and without prejudice, would it not be found that men would welcome the increment of muley blood, rather than despise it? Is it a fact, breeders of Polled Durham, that the pure Shorthorns recorded in your book are essentially superior in useful characteristics to their less aristocratic neighbors and brethren which possess the muley blood? And remember, please, that this question is asked by one who has a superlatively high opinion of the worth of undiluted blood.

It was mentioned that the essential qualities of Shorthorns were possessed by Polled Durhams, with certain points of difference that have been stated. But what are those essentials, it may be asked? I answer, size, adaptability to arable lands that are at least fairly productive, good feeding qualities, and good milking qualities.

In the size possessed by Shorthorns, we find another evidence of the sagacity of the pioneers in Polled Durham breeding. They could have got polled cattle in the Angus, Galloway, and Red Poll breeds, and good ones, as everybody knows who understands those excellent breeds. But in these they could not get as much size as they wanted. And they had also to consider the popularity of Shorthorns with the multitude, viewed from the standpoint of disposal. There is no denying the fact that the Shorthorns are the largest class of cattle found in the world to-day.

Because of their size the Polled Durhams, like the Shorthorns, will be best adapted to arable lands where food abounds. Of course, large size means abundance of food during the period of growth in order to make it. It does not mean, however, an undue consumption of food in proportion to the gain. But it means plenty of food to accomplish the end sought. Whether three animals weighing together 3,000 pounds at two years old will consume more food than two animals weighing the same at an equal age, the other conditions being the same, has not been determined; but it is certainly probable that the food of maintenance would be more in the three animals than in the two.

The Polled Durhams, like the Shorthorns, are good for meat-making; whether quite as good as the Shorthorns will depend upon those who handle them. Will the moulders of this useful breed tolerate a suggestion from an earnest admirer of their noble work? If so, the suggestion would read: Be content to

sacrifice something in beef-making, that you may gain something in milk-making. Let the breeders of Shorthorns win the prizes on the old beef lines. The Polled Durhams should stand on higher ground. They should milk well enough to satisfy the demands of the dairy at the present time, and they should have good beefing properties as well. In fact, they should occupy the position in America to-day which the dairy Shorthorns occupy in England. It was the desire to have good milking qualities with size and without horns that led the formers of this breed to the muley. They could have got milking qualities in the Red Polls without horns, but these were not possessed of the requisite size. Just a little over-anxiety to have the Polled Durhams lead in the beef show rings may soon bring them to exactly the same plane as is occupied by the average Shorthorn, viz., the possession of good beef-making qualities, but the milking qualities will be indifferent and impaired.

Manitoba Breeders' Convention.

The first annual live stock breeders' convention under the auspices of the Purebred Cattle Breeders' and the Sheep and Swine Breeders' Associations was held in the city hall, Winnipeg, on Thursday, February 21st.

Business sessions of both associations were held previous to the joint meeting, and the following were elected officers of the Sheep and Swine Breeders' Association: President, James Elder, Varden; vice-presidents, Wm. Kittson and J. S. McMillan; secretary-treasurer, Geo. H. Craig; representative on Winnipeg Exhibition Board, A. Graham; directors for sheep, D. Fraser, F. Menzie, James Bray, and John Oughton; directors for swine, A. B. Potter, J. Scott, F. L. Lang, and J. L. Mitchell.

The first address was by Mr. James Elder, Varden, on "The Care and Management of Breeding Swine." He was followed by Mr. Kittson, who took for his subject, "The Breeding and Management of Pigs from Birth to Market." Mr. Donald Fraser, Emerson, spoke on the sheep industry of Manitoba, and Mr. Walter Lynch, Westbourne, read a paper on "The Founding of a Herd."

The question of railroads charging half fare for the attendant in charge of stock and full fare return when they are shipped a distance over one hundred miles was discussed, and a resolution passed calling on the railroad companies to amend such regulations.

Mr. Angus McKay, superintendent of the Indian Head Experimental Farm, had prepared a paper on "Stockbreeding in the Territories," which was read by Mr. Leech. In it the writer criticized the practice so generally followed in the Northwest of allowing cattle to get so thin in winter time. Pure-blooded stock should always be used. A good sod stable, if dry and warm, was better than a more elegant one that lacked these features. He favored oats cut green as a suitable feed for stock.

Dr. Rutherford read a valuable paper on "Abortion in Cows." Among the causes of this trouble were accidents, hooking, slipping, or goring; violent muscular action, foul air or water, frozen food, and lastly, but most important of all, contagion. He laid especially stress upon this last cause, and advocated isolation and the most stringent disinfection. He could not speak positively of the efficacy of the internal carbolic acid treatment.

Mr. Bedford, superintendent of the Brandon Experimental Farm, spoke on "Corn as

compared with Roots." He recommended sugar beets as a food for calves. At Brandon it cost \$22.50 per acre to produce turnips. This included interest on land costing \$20 an acre. The cost of producing corn ensilage was \$18.30 per acre, and dry corn \$15.95 per acre. Besides this difference in cost of production, corn does not require frost-proof storage, as is the case with turnips, and the last named requires richer soil than corn. Taking all these facts into consideration, the speaker decided that he could do better with corn than with turnips.

Agriculture and Arts Association.

The fiftieth annual meeting of the Agriculture and Arts Association was held in the Parliament buildings, March 7th and 8th, President Wm. Dawson in the chair.

The members present were Messrs. N. Awrey, M.P.P., Hamilton; J. C. Snell, Edmonton; W. C. Edwards, M.P., Rockland; D. P. McKinnon, South Finch; John I. Hobson, Moshoro; Joshua Legge, Gananoque; Albin Rawlings, Forest; John E. Cohoe, Wellandport; Jonathan Sissons, Crown Hill; R. Mallory, Frankford; Henry Wade, secretary, Toronto.

The minutes of the last annual meeting were adopted as read. Prof. C. C. James, Deputy Minister of Agriculture, wrote announcing that the following members had been elected for the respective districts: For No. 5 district, W. J. Westington, Plainville, Ont.; for No. 6 district, J. C. Snell, Edmonton, Ont.; for No. 7 district, N. Awrey, M.P.P., Hamilton; for No. 8 district, John E. Cohoe, Wellandport, Ont.

The secretary's annual report was then read and adopted.

The recent fire that destroyed the association's offices on the corner of Yonge and Queen streets was discussed, and it was decided to pay off the mortgage of \$10,000 at present existing on the property with the insurance money. The Hon. Mr. Dryden, Minister of Agriculture, kindly consented to attend the meeting when the affairs of the board were thoroughly reviewed. A reduction in the membership was considered, and a proposition will be made to the Minister at an early date, including this and other matters.

Mr. John I. Hobson, on behalf of the Guelph Fat Stock Club, invited the association to hold their annual fat stock show at Guelph. It was eventually agreed upon to do so. The secretary was authorized to secure temporary offices, paying therefor not more than \$20 a month, until some more suitable location is obtained.

Mr. D. M. McPherson, M.P.P., Lancaster, addressed the board, and presented his scheme for the general benefit of farmers.

Mr. Jonathan Sissons was elected president and Mr. W. C. Edwards, M.P., vice-president for the current year, and the following are the standing committees:

Executive Committee—Messrs. Awrey, Snell, Rawlings, Edwards, and Legge.

Finance Committee—Messrs. McEwen, Rowand, Dawson, Cohoe, Mallory, and Westington.

Horse Show—Messrs. Snell, Awrey, McEwen, Legge, Rawlings, McKinnon, and Wade.

Fat Stock Show—Messrs. Awrey, Rowand, Snell, McEwen, Dawson, and Wade.

Dairy Show—Messrs. Legge, McKinnon, Edwards, Mallory, Westington, and Awrey.

Herdbook—Messrs. Snell, Dawson, Rowand, Cohoe, Westington, and Wade.

The report of the Herdbook Committee was adopted. The offer of Mr. Jamieson for the site of the burnt building was not accepted, and public tenders were called for, to be submitted not later than March 20th.

London (Eng.) Shire Horse Show.

(By Our Own Correspondent.)

Once again has this fixture, which lasted from February 27th to March 1st, come and gone, and it has been a successful show in every respect. The entries were about as numerous as last year, viz., 241 stallions, 226 mares, and in the new classes for geldings, 22—489 head in all, as against 475 in 1895.

The stallion classes were of a very even merit, but there were, perhaps, one or two of the classes that were not up to former years. The mare and filly classes were, indeed, truly

grand. The attendance was very satisfactory in every way, except that we had very few American or Canadian buyers. Heavy draft horses are always in demand here. A good Shire gelding, five years old, bred where you like, will always find a buyer nowadays at from \$350 to \$455; hence, your farmers should try to breed these heavy horses in preference to light bus or tram horses.

A novel feature was the introduction of a class for stallions over ten years old. This was a grand class of eight entries. Of these, one was kept at home by reason of an accident, one was not passed by the

veterinarians, and, of the other six, two were eleven, four were twelve, and two thirteen years old. Here the dual champion, Vulcan, came to the top of the class. He also won, afterwards, the champion cup for the best old stallion, and was reserve number for the challenge cup.

Class 2, for stallions 16½ hands and over, under ten years, had thirty-seven entries. Here a hitherto unexhibited horse, Vulcan of Worsley IX., by Vulcan, the winner in class 1, came to the front. He is a grand horse, and is full of go and quality.

Stallions under 16½, foaled in 1886, '87, '88, '89, or '90, were thirty-nine in number. This class was headed by a very useful horse, Scarsdale Rocket, and, generally speaking, was a class of general high merit.

In class 4, for stallions foaled in 1891, thirty-three entries came forward. Here, again, a son of the winner in class 1 came to

the front in Vulcan of Worsley XIII., brother to the winner in class 2. This was a grand horse, of fine quality, grand top and quarters, and a fine mover.

In the class for three-year-olds we had a very welcome reduction in the number of entries, which still, however, numbered forty-one, and, with that reduction of number, one is glad to note a perceptible increase in quality. There were few, if any weeds, and scarcely a second-rate one in the lot. The class was headed by that grand record-breaking and champion-winning horse who was dual champion of the Shire Horse Show at three years of age, Rokeby Harold. He won first in this class, the cup for the best young stallion, and was, for the second time, champion of the year. This colt has, as your readers will remember, won, as a yearling, first in his class, and the young stallion cup and

Class 8, mares 16 hands and over, foaled before 1891, thirty-one entries—1st, Minnehaha, who also won challenge cup for mares and cup for best aged mare.

Class 9, mares under 16 hands, foaled before 1891, twenty-one entries—1st, Jenny.

Class 10, mares four years old, twenty-one entries—1st, Dunsmore Cui Bono, a truly grand mare.

Class 11, mares three years old, forty-six entries—1st, Vulcan's Flower, who also won the challenge cup for young mares.

Class 12, fillies two years old, fifty-three entries—1st, Madge (Sir W. Gilbey).

Class 13, fillies one year old, fifty-four entries, a truly grand class—1st, Queen of the Shires, who also was reserve number for the young mares' challenge cup.

Two excellent classes of geldings finished up the catalogue.

year-old stallion classes only emphasize to a degree what a grand lot they were, and, though the younger classes were, perhaps, not so good as they have been, yet amongst them the writer fancies he could pick out some few who will be heard of in years to come. The mare classes were a grand lot, and one can only say that all through the competition was exceedingly keen. The yearling fillies, as a whole, were one of the best lots that we have seen in one class for many a day.

Ganymede, last year's champion, again won the cup, and thus secures it finally. He also won first in his class, and cup for aged stallion, the R. N. going to M. P., a former champion.

Rosador, a three-year-old, secured the cup for younger stallions.

For mares Mr. Walter Waterhouse swept the lot, his splendid mare, Kathleen, securing

the champion cup and cup for best old mare, and his Titama, a three-year-old, the cup for the younger mares.

The attendance of the public was very large, and the show was honored by the presence of the Duke and Duchess of York.

A sale was held on Friday, the 5th, but, up to the time of writing, details are not to hand.

CATTLE.

The 31st annual show and sale of Aberdeen Angus cattle took place on February 20th at Perth, Scotland, in bitterly cold weather. The entries were very large, but quite a number were absent.

The old bull class was a very strong one.

They were gradually weeded out to fifty, then to twenty-five, and then to nine, the coveted position finally going to Mr. Grant for Bion, a son of Equestrian, and he realized, when sold, \$900. The young bull class was a fair class.

The heifer class contained very useful animals, particularly the first and second prize winners, both belonging to Mr. Grant, of Advie Mains. Pride 4th of Advie, made \$230, the highest price for a female.

164 bulls averaged \$115; 8 cows averaged \$92.50; 22 two-year-old heifers averaged \$111; 15 yearling heifers averaged \$68; being a little below last year's averages.

The 27th annual sale and show of Short-horns took place at Birmingham on March 6th, 1895. Entries were not quite as numerous as usual, but there were representatives of most of the leading herds of the country present, and certainly a very good lot of cattle were entered.



A Typical Quebec Cow.

championship; as a two-year-old, first in his class and the young stallion cup, and the reserve number for the championship, and won this year, as described above.

Two-year-old stallions were a very useful lot, and quite a third of the class was noted one way or the other. Markeaton Royal Harold won here.

Yearling stallions were a weak class, the winner ultimately being found in Ruddington Harold.

Mares and fillies, as mentioned before, were a grand lot, as a whole, and each year clearly proves what a tremendous advance has been made since eight or ten years ago, in style, substance, and quality. Space at my disposal will not allow me to give one-quarter of the details one ought to do; therefore, as the whole lot was good, we need not go into details at all, except to give the names of the first-prize winners.

The annual sale of Shire horses that always takes place at the conclusion of this annual show was this year a very satisfactory one. One hundred and twenty-one head of stallions, mares, and two geldings were offered, and they met with excellent competition, realizing \$36,650, or an average of about \$302.50 each. The highest price made was \$1000 for stallions and \$875 for mares.

The Hackney horse show was held at London on March 5th, 6th, 7th, and 8th. We have again great pleasure in recording another grand success. Not only was the show good so far as entries were concerned, but it was excellent as to soundness. There were examined by the veterinary surgeons 412 horses and mares, and of this large number only four failed to pass as sound; an excellent showing, indeed, and one of which all breeders of Hackneys must be proud. The general closeness of competition in the aged and three-

There was a very good demand for cows, particularly those that looked like milkers or were of a milking strain. Prices ran from \$240 to \$90, the average being about \$150. For bulls there was a very brisk demand. Jasper was bought by Earl Powis for \$725, the highest price paid at the sale, another making \$525, with an average of nearly \$200 for about one hundred bulls of various ages.

A Typical Quebec Cow.

The illustration on the previous page is one that appeared in the excellent report of the Select Standing Committee on Agriculture and Colonization of the House of Commons at Ottawa, and represents a typical cow of the breed of cattle so commonly found in Quebec province.

These cattle are undoubtedly descended from ancestors akin to those of the Channel Island cattle, which they much resemble. Like Jerseys and Guernseys, they give a good allowance of milk of a high quality, although the neglect with which they have so often been treated has not been conducive to high milk production. Their ability to stand the severe weather of winter has too often led to their being kept in cold quarters with but poor food. In spite of this, they have shown their capabilities at the pail, and there is no doubt that, under more careful treatment, they would astonish their owners by the returns they would give in milk. Some of them have been brought up to Ontario, and those who have tried them report well of them. They can be bought very cheaply in Quebec.

Some time ago a herdbook for Quebec cattle was started by Dr. Couture, Quebec, and a good number of entries have been made. This has caused more attention to be paid to these cattle, and cannot fail to result in considerable improvement taking place in them throughout the province.

Encouragement to Shorthorn Breeders.

Address by MR. RICHARD GIBSON, Delaware, at the Dominion Shorthorn Breeders' Meeting.

It is with feelings of pleasure that I again welcome you to our annual meeting. It is a source of gratification that our finances are in as healthy a condition as they are, considering the general depreciation of values; and while announcing the continued prosperity of our association, it is owing to the fact that our breeders still cling to the old ship. While all other cattle organizations with which I am acquainted show a great falling off in membership and registrations, ours fails but little, comparatively, in those respects, an indication, I take it, that there is a practical utility about the breed that none of the others of the beef breeds possess. We all know that when the high tide of prosperity flows over our land, none command the admiration or are so worthy of being made idols of. So when the low-water mark is reached, and all the glamor and fashion removed, there is a something left of real everyday value that will ever keep them to the front.

I have sometimes pondered whether these dark days are not of value to teach us the true worth of our favorites when the gloss and glare of the artificial environments with which the breed is periodically afflicted are removed; I say, when these are removed, does not their real worth for practical everyday farm stock appear most conclusively? One thing has been practically demonstrated, that, just as long as cattle are

bred in Canada, Shorthorns will be the favorites. But here let me sound a word of caution. Because you are not realizing as big prices as formerly, do not think you can save in the manger. As Uncle Billy Smith used to say, the corn-crib cross was the best out-cross that he ever used. Recollect that no breed pays better for feed and careful raising, and none so badly for neglect. Again, be particularly careful in selecting bulls from strong-constituted families. In-breeding up to a certain point has worked wonders, but where it has been injudiciously carried out it has wrought much mischief.

Do not pin your faith upon any one family or strain to the exclusion of others. Recollect that they all spring from the same source, and the judicious blending of the various families will produce the best results as a whole. Remember that "a good Shorthorn is a good Shorthorn, no matter how come." Because you are not well laid in with the strain that is now fashionable do not feel discouraged. In the next deal you may hold the trumps. We all know what a fickle jade Dame Fashion is, and how quickly she changes. Remember that those former idols, Bates and Booth, Mason, Knightley, and Stephenson, all had their day. Each, by turn, have been fallen down to and worshipped; and while to some they have proved a veritable golden calf, to the majority they have been only a damage and a loss.

Breed for the animal and not so much for the pedigree, strive to make them good in the showyard and not on paper. Never was there a time when one could exercise his best judgment and show his skill as a breeder as at the present. Now no man's hand need be tied by fashion, and it is the healthiest sign for the good of the breed and its future usefulness that I've seen for some time.

Another suggestion. Notice how the dairy interest is developing throughout Ontario and Quebec. The Shorthorn breeder ought to have a slice of that trade, for without doubt the dairy habit may be cultivated to such an extent that Shorthorns need fear no rivals in that line. If you doubt my assertion, go with me to the London dairies and I will show you a dozen, aye, twenty Shorthorns to one of any other breed. Mind you, there is no fancy here; they are not kept for the romance of the thing, or that the battles of Bates and Booth may be fought over again, but on a strict pounds, shillings, and pence basis, and this is the experience of a shrewd and business-like lot of men as are interested in any industry. In this direction there seems to me to be a field open for great possibilities.

With these few remarks it now becomes my duty to place in your hands that gift which for four years you have unanimously tendered to me. For your confidence I thank you, and I can truthfully say that whatever I have attempted has been with the single view of what would benefit the breed at large. My own personal interests have been entirely subordinated to the general good. As your president, I have identified myself with no clique or particular strain, and I have no doubt that your future presidents will always sink their individuality for the welfare of the whole. It would be unseemly for me to note the changes that have been carried out since I have been your president; they have been important. Everything now is working smoothly, and is in good order, and with your efficient Executive Committee everything is being done to cut down unnecessary expense and steer the old ship through the troubled waters. I have but one regret, and that is

that we have not been able to reduce expenses sufficiently to cover cost of publication out of fees. I take the ground that registration fees should cover cost of registration, that we have no right to go outside of that fund for the purpose. Were that the case, we should then have the membership fees to devote to the interests of the breed, in giving prizes, or for whatever purpose you might decide upon.

To the directors I wish to return thanks for the kind assistance at all times rendered; to the secretary for his always genial help, and the cordiality with which he has carried out the necessary changes; and to the members, one and all, I wish to express my thanks for their good will, and I take this opportunity of wishing them all a very prosperous year. May 1895 be the milestone on our life's journey which marks the era of a return to better and more prosperous times!

For The Canadian Live Stock and Farm Journal.

A Few Facts about Herefords.

The serious depression which has spread over the whole world during the last two years, and which has had the effect of lessening the demand for cattle of the beef breeds, has not spared Herefords. For them no claims of being "general purpose" have been urged by their breeders, who have been content to rest the claims of their favorites to public attention on the undoubted merit that they possess of being grazers of the highest type. That these claims are not unfounded will be admitted by all who have ever tried them on pasture. For a hundred years or more they have had this reputation in England, and, from the earliest time of which we have any authentic record, drovers have visited Herefordshire and the adjoining counties in search of the white faced steers wherewith to stock the rich pastures of the Midland counties. The fine marbled appearance of the Hereford grass-fed beef, caused by the intermixture of fat and lean in great perfection, causes the beef to be much sought after by the meat-consuming public, while, on account of early maturity, smallness of offal, and compactness of form, they are quite as popular with the butcher. In addition to these valuable features, they are also possessed of hardy constitutions, which enable them to withstand extremes of heat and cold. They are to be found in our Northwest, braving the rigors of the winter there, while in South America and Australia they are equally at home.

I have, so far, only spoken of their merits as "grazers." I will now refer to them as feeders in the stalls. One requisite of an animal feeding well, and a most important one, is that it be of a quiet, easy-going disposition. This is a characteristic of most Herefords, as may be seen when one notices their mild, placid eyes, and in the history of the breed there is plenty of evidence to show that they stand out prominently as feeders. They have oftentimes won the championships at the Smithfield and Birmingham Fat Stock shows, and that they are still in the field for business is evident from the very sweeping victory that they won in the sweepstakes for all breeds at the Chicago Fat Stock Show last year where they won nearly everything for which they competed. This is something for Hereford breeders to be proud of. Again, at the Norwich Fat Stock Show lately held in England, the Hereford steer, King Robert, won the championship over all breeds of all ages and sexes.

The prepotency of Hereford sires is well known. As a general rule, the offspring of a cross on a grade cow comes marked exactly like the sire, and this fact has enabled unscrupulous dealers to pawn off such on unsuspecting purchasers as purebreds, to the great detriment of the breed. These Hereford grades retain much of the aptitude to lay on fat possessed by the sire and make valuable "grazers."

I have said that Hereford breeders have, and I think wisely, declined to class their cattle as general purpose. It is not that there are not some excellent milkers among them, for there certainly are, and a cross of a Hereford sire on a grade cow oftentimes results in one getting a heifer that proves a fine milker; but the general trend of late years has been in the direction of improving the beefing qualities at the expense of the milking. In consequence, the average quantity of milk produced by the Hereford cow is not large, but, at the same time, is of very good quality. There was a period in their history when they were noted for their milking qualities, and we read that in 1836, when the Royal Agricultural Society of England held their show at Oxford, first prize for dairy cows was given to a Hereford. Those days, however, are past, and it would take many years of very careful selection in order to win back for Herefords the right to be called "a dairy breed." Whether it would be worth while taking such steps is, at least, open to question.

As regards the future of Herefords, I think that breeders of the "Whitetails" need not be alarmed. When the price for beef cattle goes up, as it eventually must, then will the demand for Herefords most surely become brisk. Breeders are not likely to repeat the mistakes made during the boom a few years ago, when half bred Hereford bulls were sold as sires, by the hundreds, both buyers and sellers imagining, because the offspring resembled their sires in color and shape that, therefore, they would be as prepotent and serviceable as thoroughbreds. The folly of that proceeding was soon discovered, and the discovery did more to hurt the trade in Herefords than anything else.

Such things are not likely to happen again. Once let times improve, and beef cattle sell for remunerative prices, and, if Hereford breeders are alive to their own interests and keep up to the times, there is no fear but that they will do a brisk trade, to their own advantage and that of the country at large.

G. W.

Points in Selecting a Horse.

Out of the large number of people who have, at some time or other of their lives, to buy a horse, there are a great many who do so in a haphazard sort of way, without any definite idea of what the points of a good horse should be, the only thing they know being that the animal should possess four legs, a body and a head and tail. And yet the characteristics that a desirable horse should possess are most unmistakable, if only the intending purchaser cares to look for them. Among the most important points are the eye and head, and on these two points Henry Childs Merwin has a paper in the *Century*, from which we take the following:

What are the marks of a good, serviceable horse, such as most people want to buy? The chief points are the eye and head; for, whether on the score of safety or of pleasure in ownership, the essential thing is to have a horse that is intelligent and gentle, or one that is intelligent and vicious, rather than

stupid, for stupid horses are the most dangerous of all. Every horse shows his character in his head, and chiefly in the eye, just as certainly as a man shows his character in his face; although, as in the case of men, it is not always easy to read what is written in the equine features. But as to horses of positive character, positively good or positively bad, there need be no mistake. I once bought a mare of a dealer for a woman's use, without even taking her out of the stable. She seemed to be sound, and I felt sure from her eye that she was unusually gentle and safe, and so she proved to be. On the other hand, out of six or eight horses shown to me at a sale stable on another occasion, I rejected one—the best in the lot otherwise—because his eye, though not absolutely bad, was such as to arouse suspicion; and the owner afterward admitted to me that the animal was different from the rest in being a little "mean."

I mention these instances to show that any person of average intelligence can learn, by taking pains, to read the equine character. Horse dealers and trainers seldom make a study of this matter because they do not care about it. What you should look for is a large, clear, luminous eye; what you should distrust is a small eye, a protruding eye, a sunken eye, an eye that shows the white, glancing backward, which indicates bad temper; and, above all, a glassy, tremulous eye, which indicates stupidity. It is hard to describe, but easily recognized. There should be a considerable space between the eyes. The ears and the carriage of them are hardly less significant. Well-cut ears that move continually with a general tendency to be pricked forward indicate a good and lively disposition. Large ears, if well shaped, are better than very small or "mouse" ears. Lop-ears, coarse ears, ears planted either very far apart or very close together, are to be viewed with great distrust.

Next in importance to the head come the feet. They should be of medium size, neither steep like a mule's, nor flat, but sloping at a medium angle. The best feet are "cup-shaped," that is, so formed that when you pick them up they will hold water.

As to the other points of a horse I shall not attempt to go into details, because I fear that they would convey information only to those who do not need it. But this may be said generally by way of advice: Avoid a long-backed or thin-waisted, still more a long-legged, horse. Look for a compact, rather low-standing beast, with a good head, good eyes, and well-shaped ears, and you cannot go far wrong.

Feeding Standards for Different Kinds of Animals.

It will be remembered that the primary functions of food are to repair the waste of the body, to promote growth in immature animals, and to furnish heat and energy. And, for these purposes, only the digestible portion of the food is to be taken into account. The amount of digestible protein, fat, and carbohydrates in a ration is an indication of its fitness to fulfil these purposes. The next question is, How much of these materials does an animal require, and in what proportion should they be given? This differs with the purpose for which the animal is kept, whether it is growing, being fattened, used for work, or making milk. An animal standing in the stall requires less food nutrients than one which is worked hard every

day. That is, in drawing heavy loads the animal breaks down a certain amount of muscular tissue, which must be replaced by protein in the food and it uses energy or force which is also furnished by the food nutrients. In standing in the barn it still requires some protein, fat, and carbohydrates to perform the necessary functions of the body, as digestion, to maintain heat in winter, to grow a new coat of hair, etc. But if it is fed the same ration as when working hard the tendency is to get fat.

The cow requires not only material for maintenance, but must also have protein, fat, and carbohydrates to make milk from. The milk contains water, fat, protein (casein, or curd), sugar, and ash, and these are all made from the constituents of the food. If insufficient protein, fat, and carbohydrates are contained in the food given her, the cow supplies this deficiency for a time by drawing on her own body, and gradually begins to shrink in quantity or quality of milk, or both. The stingy feeder cheats himself as well as the cow. She suffers from hunger, although her belly is full of swale hay, but she also becomes poor, and does not yield the milk and

they are said to be better proof against fluke and footrot than most breeds of sheep. Their mutton is decidedly good, while the wool is of heavy weight, with a long, full, and decided staple.

Up to a short while ago there was no record book for this breed, and no decided efforts had been made to improve them to any extent. Now, however, an association has been formed, with Mr. W. W. Chapman, London, as hon. secretary, which embraces both Romney Marsh sheep and Kentish sheep, the latter a somewhat larger variety of the former. There is every reason, then, to believe that in the future this breed will be more widely known and will be found in many parts of this continent, as they deserve to be.

The accompanying illustration is one of a ram of the breed mentioned. This is Prince, sire of the Ashford lambs, and whose owner is Mr. H. Page, Walmer Court, Walmer, Kent, England. The flock to which this ram belongs was established in 1852, and has always been one of the leading flocks of Kentish sheep. Numerous prizes have been won by Mr. Page at the Royal and elsewhere, and the flock will well repay a visit to it.



The Kentish Ram, Prince.

The property of Mr. H. Page, Walmer, Kent, England.

butter she should. Her milk glands are a wonderful machine, but they can not make milk casein (curd) out of the carbohydrates in coarse, unappetizing, indigestible swale hay or sawdust any more than the farmer himself can make butter from skim-milk. She must not only have a generous supply of good food, but it must contain sufficient amounts of the nutrients needed for making milk. Until this fact is understood and appreciated, successful, profitable dairying is out of the question. The cow must be regarded as a sort of living machine. She takes the raw materials given her in the form of food and works them over into milk. If the supply of proper materials is small, the output will be small. The cow that will not repay generous feeding should be disposed of at once and one bought that will. There are certain inbred characteristics which even liberal feeding cannot overcome.—From Bulletin of United States Department of Agriculture.

Kentish or Romney Marsh Sheep.

The October number of THE JOURNAL last year contained an article on Romney Marsh Sheep, which very fairly described the many excellent points of this breed, which has hitherto been kept rather in the background. They are hardy, and of strong constitution, and will live and thrive on very poor land, while

The Present Position of Horse-Breeding in Great Britain.

By ALAN MACMILLAN.

(Continued.)

"The first cause of the scarcity of heavy draught horses during the past decade was the extensive exportation of the very animals which would have gone to swell the ranks of commercial geldings for street traffic. This trade, as we have seen, only reached its zenith in 1890, and it is impossible therefore that the balance can have righted itself in the years which have intervened. Any one who attended the shows of 1894 will, however, admit that the number of big, growthy geldings is on the increase, and that within the Clydesdale breed horses can be produced as heavy as the most glutinous contractor can desire, combined with beauty of form and wearing qualities which are not to be found in the representatives of any other breed or in any cross. The second cause of the scarcity is the tendency in showyard judging to prefer beauty to strength, quality to size. This is a tendency in the judging of every class of stock. It is the cause of a standing quarrel

between commerce and fancy, and the contractor and dealer do not more eloquently denounce it in the horse world than do the butcher and the cattle dealer in the bovine world. Without the showyard and the pedigree register no breed of animals has ever been improved; but both the show and the register are good servants, but bad masters. The defence of fancy points in showyard judging is that the judges give prominence to those points which are most essential in the breed judged. Feet and legs are the most important points in draught horses, and in the show ring this is emphasized. The milk vessel and teats are the most important points in a dairy cow, and therefore in the show ring these are most insisted on when Ayrshires are being judged. Similar remarks may be made about other classes of stock. The skin is of first-rate importance in a breed of mountain sheep, and so some judges go all for skin and no frame. The defence here sketched may be good as far as it goes. Whether it is sufficient is another matter. This is certain, alike in breeding and in judging, fancy points can only go a little way to determine the value of the draught horse. While not forgetting the main points, judges should remember that they are judging cart horses, not ponies—and strength is all-important in an animal whose life work is drawing loads. The first cause of scarcity we have seen is in a fair way of being removed; and the second, judging by the class of horses favored by district committees this year and last and the tendency in showyard judging last year, is also likely soon to be mollified, if not altogether dispensed with. We have quoted Wordie & Co.'s opinion in full, because they are a representative firm. Horses from 10 cwt. up to 20 cwt. in weight, when matured at five or six years old, are always in demand by such men, and for these horses they are willing to give from £70 to £100, according to merit. It is because we are firmly convinced that the Clydesdale breed can supply such horses that we have taken up this subject. With Wordie & Co. we are at one in thinking that the shortest way to breed such animals is to take big, open, rough Shire mares—we would not mind how coarse they were, if only they were sound and clear of side-bones—mate these with a sound-footed, broad-boned, short-legged Clydesdale stallion. The produce would, in most cases, be an animal of the kind desired by the contractors. The speediest way to breed commercial stock of any kind is by crossing two distinct breeds. But yet it is true that the best commercial horses, the best geldings on record, have, with but few exceptions, been raised within breed limits. This leads to the discussion of the last point.

WHAT THE HOMEBRED HORSE MIGHT BE.

"Three of the principal horse dealers describe what they want in these terms. No. 1 says: Farmers must breed bigger horses, and let us have them practically sound. For a strong animal of this stamp, even although a little coarse, we will give £80 apiece at five years old. Size and soundness, with good feet and legs, and weighing up to 18 cwt. when in working condition. There is no difficulty in selling any number of such horses. No. 2 says: Let farmers go in for breeding big, sound-constituted horses, with good feet, and look more for substance and weight and less for pasterns than of late years, as near to one ton in weight as possible. In my opinion, this is a class of horse foreign competition can never put out of the market.

No. 3 says: Try to breed them to sire suitable for heavy lorry work, and, although they would not have so much quality, they will always find a ready market at any age, and they are the only class that foreign horses cannot interfere with. Such are the demands of the Scottish market. In his chapter on the London work horse in 'Heavy Horses, Breeds and Management,' Mr. Dykes describes an actual dray team in London regarded as one of the best in the city. The horses weigh respectively 16 cwt. 3 qr. and 18 cwt. 3 qr., while the former girths 98 inches and the latter 96 inches. The purchase price of these horses was £85 apiece. The average weight of 162 Shire geldings in Watney & Co.'s stud is 16 cwt. 2 qr., and the average in-putting price of the horses in this stud during the years 1884-94 was £84.

"The Clydesdale can supply this market and its home market as well. Mr. William Clark's sensation, the best Clydesdale gelding of recent years, was bred, we understand, by a farmer near Wighton, Cumberland, and was bought by Mr. Clark from Mr. John Crawford, Bruntshields, Kilbarchan. His sire was the well-known Darnley horse, Gartsheire (2800), and he cost Mr. Clark £120. That should pay the breeder. He has been wintered outside and fed on soft food, and last week he was measured and weighed for us. His height is 17 hands, and his weight 19½ cwt. It may be said by some, with a gluttonous eye for a big, loose horse, that he does not look it; but that proves a truth well known in Scotland. It is not the ugly, coarse horse which measures or weighs best; it is the compact, short-legged, dense-boned animal that does so, and only the Clydesdale or the Clydesdale cross can fill this bill. A Clydesdale gelding—bred by Lord Cawdor, and bought by Mr. W. Taylor, rising 7 years old—has within the past three months been sold by public auction for £75; re-sold to an Edinburgh dealer for £85; and by him sold to a London buyer for £120. These facts prove conclusively that there is a market for Clydesdale horses at our door. Neither Shires nor crosses can compete with the pure-bred animal, if only breeders keep weight and substance as well as quality in view. They have heard what contractors and dealers have to say about the horses of the past ten years. We have tried to learn what class of horses are wanted both for Glasgow, Edinburgh, and London; the examples shown have proved something of the resources of the Clydesdale breed; and while we say again that useful commercial horses can be most speedily produced by a first cross, there is abundance of evidence that the resources of the breed itself, when rightly guided and applied, will always produce the heaviest, and soundest, the most durable, and the highest priced horses."

Clydesdale Horses at Orchardmains, Tonbridge, Kent.

(By Our Own Correspondent.)

Early in February I was very highly gratified at receiving an invitation to visit and inspect the famous stud of prize-winning Clydesdales owned by Lords Lionel and Arthur Cecil. It was a grand clear, frosty morning that found me at Hildenborough station, just such as you have in Canada, with the thermometer about 6 to 8 degrees below zero. A sleigh with a pair of excellent ponies met me, and then, with the bells ringing, away we went some two miles or so. His lordship, Lord Arthur, met me, and at once told me that the reason why he had sent this sleigh to meet me was that he thought it quite proper and right that a representative of the leading Canadian live stock paper should be met and brought up in a Canadian sleigh which had in former years been the property of one of the Governor-Generals in Canada. But enough of this introduction.

The first thing that strikes one, after one gets over the truly English welcome one receives at Orchardmains, is the excellent range of stables, loose boxes, and farm buildings. They were all built recently (i.e., within the last twelve years), chiefly of red brick and iron, from designs drawn by his lordship, and very good they are, being warm, well ventilated, free from draughts, and roomy, the whole being constructed in capital form, allowing

for no waste of space, but not crowded, yet all being handy for feeding.

The first horse we saw was the principal stud horse, the noted, and, we might almost say, world-renowned, Claymore (3522), now twelve years old, a truly grand specimen of a draught horse, full of fire and go, and, although unshod, moving like a Hackney. His sire was Macgregor (1437), and his dam was by Bonnie Scotland (1076). I understand that \$5,000 has been refused for him.

Crown of Royalty, by Garnett Cross (1662), out of a Blantyre mare, is another of the stud horses. He won the championship last year at Tunbridge Wells show, in strong competition.

Another stud horse, and a good one, Prince Eddie (9637), was then seen, and he needed only to be seen to be liked. He is just what one would expect to find him from his pedigree, being descended on both sides from Darnley (222), who was, of course, from Darnley (22). Prince Eddie's sire, Prince of Albion, was sold as a two-year-old for \$15,000, and his dam was Lady Gallant, by Top Gallant (1850). This horse has already won a considerable number of prizes, and will certainly, all being well, be heard of many times in the future.

The females of the stud are indeed a grand lot. Among them are Darnley, by Paisley Jock (551), now in foal to Curfew, and dam of Trafalgar, and Chastlar, whose stock is so well known in America; Cynthia, by Claymore (3522), dam Darling (1093), by Topspan (886), a champion winner, besides carrying off numerous other prizes; Flower of Kilbride (11253), by Lord Erskine, dam by Lucks All (510), and others of equal note and breeding. A grand lot of two-year-old, three-year-old, and yearling fillies were also to be seen, whilst this year's produce of the stud, from outward appearance, looked like being very large. I have given but the briefest possible account of this really grand stud of animals, and I need hardly say, should any of your countrymen require Clydesdales of the right stamp, hardy, and thoroughly reliable in every way, that they will, I feel sure, find the time spent in viewing this stud well spent in every way. A hearty welcome awaits all who visit Orchardmains, and they will find that both of the noble owners are not only English noblemen, but practical as well as actual stockbreeders and farmers.

Questions and Answers.

Trotting Record. C. P. Cochrane, Alta. Do you know anything about a stallion called Valentine D, out of Old Valentine, whose record was 2:10? Valentine D was foaled in May, 1884, and is said to have trotted a mile in 2:40 on the Owen Sound track. As I own the horse now, I should like to be sure of that record.

Ans.—We have tried to find out some particulars about the record you speak of, but have not been successful so far. If you could tell us in what year Valentine D is supposed to have made the record we may be able to trace it up. The year book takes no note of any records over 2:30.

Special Stock Reviews.

Woodside Clydesdales and Coaches.

Catching the early train at Montreal, we landed at Howick shortly after eight, and a few minutes later we were at Woodside, the farm of Mr. Robert Ness, who has done so much for the horse interests throughout the Province of Quebec and all through Eastern Ontario. Not only has Mr. Ness employed his time and expended his capital in importing purebred Clydesdales and French coaches, but he has also exported a number of work horses and light harness horses to Glasgow, Scotland, and, through his energy and enterprise, the farmers have reaped a benefit that it would be difficult to estimate.

Although the stables at Woodside do not contain the large number of stallions that could have been seen there when business in horsebreeding circles was more brisk, yet we were much pleased with the right good ones that graced the stables in the spacious barn that was just being finished when we last paid a visit to Howick.

The grand six-year-old Clydesdale horse, Lawrence Again, was looking fresh and well, and in fine fettle for the approaching spring season, or the Toronto Stallion Show, at which he made many friends last year. For it will be remembered that there Lawrence Again carried third prize in the strongest class of Clydesdales ever brought out in Canada. It takes enterprise, judgment, and *siller forby* to bring out horses that are in demand in breeding circles in Scot-

land, and, doubtless, Lawrence Again would have netted many times over the money paid for him had he remained in the stud from which Mr. Ness selected him, for he has all that superb quality that Scotch breeders have and are determined to secure. Lawrence Again is a horse that will take in any country. He lacks slightly in the scale of the two sweepstakes horses of the last four years, which were placed before him last spring, but his beautiful conformation, jaunty action, grand legs and feet, and handsome finish, none can discount. He is sired by that capital breeding horse, Prince Lawrence, while his dam is by the noted horse, old L. d. Lyon. Mr. Ness has another fine horse in Life Guard, by the Prince of Wales horse, Duke of Hamilton. This is a bright, fresh young horse that should be claimed for some district that requires the services of a good one. At Woodside there is no lack of brood mares, a number of which are imported, while a capital lot of young fillies and yearlings show that Mr. Ness is lying on his oars, ready for the first signs of the turning tide, which all conversant with the business claim is not far away.

The two French coaches, Malto and Busnel, are also in fine form. Malto was third and Busnel fourth at the last Toronto Spring Show. The first-named horse is the first that Mr. Ness brought out. He was imported in 1891. He is a horse of good character and capital action, while Busnel is more the type of an English coacher, but has more trappy action than the English coach horses generally have, but does not go as high as his stable companion.

Ayrshires at Burnside.

A few minutes' walk brought us to the buildings of Messrs. Robertson & Ness, whose herd of Ayrshires carried away such honors from the Columbian Exposition at Chicago. At Burnside, the practice is to ship the milk to Montreal, which, we were told, paid very well, although the system is hardly as suitable for stock-raising as making the butter, or shipping the cream. However, the young things are not neglected at Burnside, and milk enough is kept for raising calves that gain their share of winnings, as any one who has frequented the show rings of Sherbrooke, Montreal, or Ottawa knows. In the stables we found a particularly business-like lot of cows that looked every inch like paying their feed bill and leaving a goodly surplus to be put to the credit side of the ledger.

Among the matrons of the herd that have done good service is Nancy 384, a cow bred by Mr. David Benning, Glenhurst. She has produced some right good ones. Of these a yearling heifer and a bull calf of last September are exceedingly promising. Jessie of Burnside by the famous prize-winning bull, Golden Guinea, is a beautiful young cow. She carried first as a three year old at Chicago, and is giving a good account of herself in the breeding herd. Two of her produce, Wilhelmina of Burnside by Lord Nelson, and a fine heifer calf by that noted prize-winner, Tom Brown, are exceedingly choice young things. Eva of Burnside is an own sister of the above. She won fourth as a two-year-old at Chicago, while the two sisters won first as a pair from one dam, and formed two of the four that won first premium for a group of four from one sire.

There are a beautifully matched lot of yearling heifers by Golden Guinea. One of these is Hud of Burnside, that won first at Chicago, and made one of the second-prize group of four by one sire. She was again first at Sherbrooke and Ottawa last year as a yearling.

Queen of Burnside, Marian of Burnside, and Belle Hamlin were her companions at Chicago in the prize group.

Pure Gold, which stood second as a calf at Chicago, we did not see, as she had been sold to Mr. John Sloan, Prince Edward Island, where she has since taken many honors.

Among the heifers a year younger, we noticed Silver Maid of Howick by imported Silver King, that won first in the calf class at Sherbrooke and Ottawa. Several good young things by the noted bull, Tom Brown, are looking promising for another year's campaign, and are likely to do credit to their illustrious sire. There are two bulls in use on the herd this season. One of these is Noble Roy, bred by Messrs. David Morton & Sons, Hamilton. He was sired by their breeding bull, Monarch, his dam being Flora, a noted prize-winning heifer in the Morton herd. The other bull is Derby Tom, bred by Mr. Reford, of St. Anne de Bellevue. He was sired by the Columbian prize-winner, Tom Brown, while Derby Tom's dam is (imp.) Derby of Bogside, a winner at the Royal.

The herd at Burnside, which was founded by Mr. Robert Robertson, well known as an excellent judge of Ayrshires, is now under the management of Mr. R. Ness, Jr., his partner, Mr. Robertson having assumed the management of the Quebec Government farm at Compton.

Mr. George J. Mair's Yorkshires.

Mr. R. Ness, Jr., kindly drove us to the farm of Mr. Mair, who resides about four miles northwest of Howick. Here it was evident that the proprietor had not been idle, for a fine brick residence, handsome large basement barn, and commodious piggery, all quite new, having been built within the last few years, testified to the fact that considerable work had passed through his hands, and building on the farm is attended with labor in the house as well as outside. Mr. Mair has gone more heavily into dairying the last two years, and is grading up his herd by using a Guernsey bull in order to secure a larger percentage of butter fat in the milk of his herd. Making gilt-edged butter is being done here in the dairying line, and the prizes won at the leading shows of Quebec and Ontario are a proof that proper knowledge and management are being put in practice.

Like many other successful dairymen Mr. Mair finds that the by-products can be very profitably utilized by feeding them to a herd of purebred swine, and, doubtless, the herd of Improved Yorkshires do their share in building up the farm profit account. The Yorkshire herd was formed by the purchase of a pair of pigs of Messrs. Orlinsby & Chapman's breeding. These were Royal Duke, sired by the noted imported prize boar, Pat, and Vittoria, sired by Holywell A 1 (imp), dam, Hilda (imp.), by Holywell Duke, the pair being directly of Sanders Spencer's breeding. Since the first purchase a number of important additions have been made by drawing from several of the best Canadian herds, and a short time ago Mr. Mair imported Holywell Sol, and at the same time some sows, these all being selected from the herd of Mr. Sanders Spencer. Holywell Sol is a grand, good individual. He has great length, with deep ribs, good heart girth, smooth shoulders, and carries a capital coat of hair. Another boar by Holywell Prince, dam, Holywell Flash, as their names denote are also of Sanders Spencer's breeding. Two useful sows had recently arrived from the herd of Messrs. Fletcher Bros., Oxford Mills, Ont. These are by a son of Kinross Hero, out of a daughter of Marion (imp.), and are of Mr. J. E. Brethour's breeding. There are several sows imported in dam out of Holywell Flash, and in a pen adjoining we were shown a number of young sows out of Holywell Princess 3rd (imp.), and yet another family descended from Daisy (imp.) and Sultan (imp.), that originally came from the herd of Messrs. Green Bros., Innertip. The foregoing shows that Mr. Mair has been especially careful in breeding from a variety of strains, whereby his patrons are assured of fresh blood when they require it, and non-related pairs should they order such.

Brook Hill Ayrshires.

Taking a drive of some six miles west from Huntingdon, we arrived at the farm of Messrs. W. F. & J. Stephen, Trout River, whose herd of Ayrshires is of some twenty-five years' standing, the late Mr. James Stephen, the father of the present proprietors, having purchased two cows and a bull from Mr. Thos. Irving, of Montreal, as far back as 1869. From these the majority of the stock now on the farm are descended. The dams of the cows first purchased were from Spotted Greig 1751, while the bull purchased at the same time was Sir William, sired by Volunteer, dam by Fusilier, descended from Stately 1250 (imp.). In determining what crosses were to be used, it has been the aim to use such bulls as have been bred from families noted as being milk producers, in order that the herd should gain a reputation for yielding as regards dairy qualities.

Among the names of the sires that have been purchased are Lord Dufferin, bred by Mr. Gibb, Compton, who was sired by Mars (imp.), Duke of Argyle, bred by Mr. Thos. Irving, Montreal, and sired by Sir Walter Scott, and Allan Gordon, bred by Mr. James Drummond, Petite Côte, and sired by Lord Cardigan, a son of Rob Roy of Parkhill.

Uncle Sam of Trout River, the present stock bull, was bred by Mr. Daniel Drummond, Petite Côte. He was sired by Baron Rensford of Mansurra, his dam being the celebrated imported show cow, Nellie Osborne. This is a remarkably fine young bull, which should improve the character of the stock, and undoubtedly add to their sire.

The herd has been tested as to the capabilities of many of the individuals, and we were assured that a number of the cows gave over 50 lbs. of milk per day, while one gave as high as 63 lbs.

Messrs. Stephen have a nice herd of Yorkshire swine, which are principally descended from Mr. Joseph Featherston's stock.

The boar now chiefly in use is Purity, sired by Mr. Joseph Featherston's Columbian prize-winning boar, Plymouth Prince. Purity is a rare good pig, with plenty of length and thickness. Several good sows of Mr. Mair's breeding were to be seen, while Jewel Boy, by that gentleman's Holywell Sol (imp.), is also in use in the herd.

Ayrshires at Riverside.

Between Howick and Huntingdon lies the village of Ormstown, and, after a short run on the morning train, we arrived at the Ormstown station, from which we were driven to the farm of Mr. James Cottingham, who lives a short distance south of the village. Here we found a splendidly appointed farm, equipped with buildings conveniently laid out for work, as well as for the comfortable housing of stock. "A place for everything, and everything in its place," is evidently a maxim that Mr. Cottingham has written down in his directory and put in practice ever since. In the implement house, stables, and each department of the building, every convenience is right at hand, which not only materially lessens the labor, but adds much to the appearance, while labor, under such circumstances, is a pleasure instead of an arduous task. As there was a heavy coat of snow on the fields, we had no opportunity of judging of the capabilities of the farm itself, but we were shown a medal that Mr. Cottingham won in the competition among the farms of Quebec in 1894, which speaks more loudly than any words of ours. The herd of Ayrshires was founded twenty-five years ago, from selections made from the best of the earlier importations, the first cows having been purchased from Mr. Andrew Allan, their dams having been imported by that gentleman. Among these was a daughter of Lily, bred by Mr. Mitchell, of Glasgow, in early days, whose dam won first at the Royal Agricultural Show at Glasgow, as well as other exhibitions. The descendants of the above, and also those of Lady Theresa (also from the Allan importation), comprise the excellent foundation on which the herd has been built up.

Mr. Cottingham has been particularly careful in the selection of sires, with the result that he has a herd that has not only been successful at such shows as those at which he exhibited, but the cows, one and all, give evidence of being especially large milk producers. Most of the young things were sired by Sir James of Parkhill, bred by Mr. James Drummond, of Petite Côte, whose herd has supplied so many stock bulls. Sir James has been used for several years, and with very good results, as several young bulls and heifers from him amply prove. A bull, just about a year old, that has carried the red ticket wherever exhibited, is especially fine, and is deserving of a place at the head of some good herd.

The most recent purchase is White Prince, bred by Mr. Reford, St. Anne de Bellevue. This is a most promising young bull. He will keep on improving all the time, and bids fair to make a bull of great substance, while he is also very handsome. He was sired by Glencoe, a bull of Mr. Thomas Brown's breeding, whose sire was Robby Dick and his dam Nellie of Barcheskie (imp.). White Prince himself is out of Annie of Barcheskie (imp.), a cow that won second in Montreal and Ottawa in 1892.

Altogether, Mr. Cottingham has a farm and stock that are in a most flourishing condition, and he is likely to keep on improving them, as he is one of those men who never do things by halves. Of Mr. Cottingham and his fine herd we hope to have more to say later on.

Ayrshires at St. Anne de Bellevue.

One of the good signs of the times for the future of agriculture is the number of wealthy business men and gentlemen of means who are taking an interest and gaining a taste for fine stock breeding and high-class farming. Not only do we find this the case in Canada, but across the line in the adjoining republic numbers of men engaged in commercial pursuits are taking up one or more of the departments of purebred stock-keeping. In fact, the best buyers, the most enthusiastic and enterprising breeders are often to be found among men of this class. This is as it should be, for it is these men that encourage the professional breeders, who have often invested all their capital in this way.

Business men can find no more wholesome recreation or fascinating vocation than breeding fine stock, and by bringing in business methods they generally contrive to make it pay, while they find it a profitable means of investing their surplus capital.

Close to the station of St. Anne de Bellevue, where runs on both the G.T.R. and C.P.R. are hourly driving from Montreal and departing to Montreal. Mr. Reford, of Montreal, has acquired a farm containing nearly 300 acres, 80 acres of which lie along the St. Lawrence river. Doubtless, later on, its beautifully situated property will be found covered with gentlemen's summer residences, for which it is in every way suitable.

The farm proper lies north and south of the railway tracks, and almost within a stone's throw of the station are the handsome and commodious new farm buildings which Mr. Boden, the farm manager, informed us were erected two years ago. The buildings

are the finest and most finished that we have yet seen, and we hope to give a full description of them in a future issue. To Mr. Boden was entrusted the choice of what breed of cattle the farm was to be stocked with, and, doubtless, it was through his influence that Mr. Reford was induced to start the grand herd that now adorns the handsome quarters with which the farm is provided. The foundation of the herd was laid by purchasing several choice individuals at the dispersion sale of the late Mr. Thomas Brown, at Petite Côte, and later eight head were selected from the long-established herd of Mr. David Benning, Glenhurst, while several other additions have been made from time to time, until the present stock bull and a heifer were imported during the autumn of 1893.

That the bull is half the herd is a pretty well established axiom among all cattle breeders, and it is evident that this principle was in view when Glencairn 3rd, the present stock bull, was selected from one of the best herds of Scotland, for no better individual, and certainly no better bred one, has been brought over. Glencairn 3rd is a bull of wonderful substance, straight and handsome on top, and well let down in the flank, while his full fore flank, wide chest, long, level hindquarters, beautifully finished shoulders and chine, and, above all, his grand character and superb quality stamp him as one of the best bulls we have yet seen, and, should his proprietor see fit to enter the arena for showyard honors, no safer candidate could be chosen than he. Glencairn 3rd (8202) is a bull of royal breeding, as he comes from such a long line of illustrious showyard winners as the herdbook can hardly duplicate. He, as a yearling, in Scotland, was first at Stewarton, also gaining sweepstakes as the best bull at the show. The same year he won second at Stone and Coyline. As a two-year-old he won third at Ayr, first at Coyline, and at Galston won first and sweepstakes at the best bull at the show. His sire, Glencairn of Bonshaw (1890), was first at Stewarton both as a two-year-old and as a three-year-old. His sire, Lord Glencairn (1818), was first at Cumock, Ochiltree, Ayr, and the Windsor Royal, and the year following won first at Ochiltree and Glasgow and second at the Highland Society's show at Dundee, while his ancestors further down the line were equally successful. Such is the breeding of Glencairn 3rd, now at the head of the herd.

The cows have been selected to answer the purpose of good performers at the pail and high producers of cream, while breeding is at the same time the chief aim, for no cow is retained unless she is a first-class breeder.

Among the prominent cows in the herd are Jessie Osborne (imp.), that was a winner before leaving Scotland, and Annie Barcheskie, imported by the late Mr. Thomas Brown, that won second prize at the Montreal and Ottawa shows in 1893.

Imported Derby of Hogshead, another of Mr. Brown's importations, is a grand type of a breeding cow. She is very large, with great substance, and like most of her stable companions, is a deep milker.

The young things by Glencairn 3rd are showing up remarkably well; they show excellent growth and character. We were also shown several capital young bulls and heifers by that noted bull and celebrated Chicago winner, Tom Brown; these are also very choice. Mr. Boden is evidently after size and substance, and it is determined that there shall be no lack of these essentials, when he has anything to do with introducing fresh blood, as he very properly contends that constitution is a necessity in the dairy cow if she is to produce milk and cream to advantage from a given amount of food. To make this farm pay as an investment is evidently something kept in view by the manager, and when, on consulting the books we found nine cows credited with nearly \$100 per month for cream shipped to Montreal, it looked to us as though an Ayrshire man might be excused for boasting of what his pets could do, and we came to the conclusion that they were regular business cows.

We also found a nice herd of Yorkshire pigs in the neatly arranged piggery, while horses and other lines of stock, including the poultry, all gave evidence of good and careful feeding.

Veterinary.

How to Prevent Abortion.

Some of our British exchanges give the experience of Mr. James Peter, Berkeley, Gloucestershire, England, with carbolic acid administered internally to cattle to prevent abortion. His method of treatment is as follows: "Commence by mixing with sufficient hot water to make a bran mash $\frac{1}{4}$ oz. or

ordinary carbolic acid, then add the bran, gradually increasing the carbolic acid up to $\frac{1}{2}$ oz., which is the maximum quantity I can get a cow to take in a bran mash. For a number of cows I measure out the requisite number of half-ounce doses, and mix with the water and bran in a fodder barrow, and then give a good broad shovelful to each animal.

"Before I got rid of the disease I administered the carbolic washes three times a week. I find it equally safe to give an animal a half-ounce dose daily."

Mr. Peter adds: "I have regularly used carbolic acid in this herd for the last three years as a preventive against bacterial diseases, and in all my experience I never had animals keep so healthy and well as they have since I have done so. My opinion is that its use internally is a valuable remedy, and a preventive against microbic diseases."

It is worthy of mention that carbolic acid, given internally, has also been found a preventive in cases of anthrax in cattle and of tuberculosis in the human race.

Foot Puncture in Horses.

One of the most common causes of lameness is puncture of the sole of the foot. It is caused by the animal stepping on a nail or other sharp object. The puncture is most likely to occur in the neighborhood of the frog, or where the sole and the wall of the foot join, but it may occur in any part of the sole. When the nail comes in contact with the horn of the sole, it is likely to glance until it meets the projection of the wall, or the softer tough frog; hence the greater frequency of puncture in these localities.

Since the nail usually pulls out and the horn springs back to its former position so as to close the opening the nail made, there is sometimes difficulty in locating exactly the seat of the wound. As a result of this many an animal has been made to stand on the lame foot by a stiff shoe having been put on the well foot. Locating this sort of lameness in the stifle joint is a common but inexcusable error, as the action resulting from lameness in the two parts is entirely different. The so-called "gravel" which is said to enter the sole of the foot and then "work out" at the heel is usually the "working out" of the pus or the matter resulting from a nail puncture or a bruise. If an animal becomes suddenly and severely lame, and there be no evidence of anything in any other part of the leg, such as swelling, heat, and pain upon pressure, it is always well to look for puncture in the foot. If the animal stands with the lame foot extended, and, when walking, places the lame foot well forward and brings the well foot up to it, the evidence of puncture is still stronger. To examine the foot properly the shoe should be removed. It is not sufficient to merely scrape the bottom of the foot clean, for, if the nail has pulled out and the horn sprung back in position, all trace of its entrance may have been obliterated. To examine the foot properly a pair of large pincers or a hammer is necessary. The former is the better, as, by compressing the hoof, the exact spot may be found, while tapping the sole with a hammer may cause the animal to evince pain, even though the tapping is not directly over the injury; but, with a little care, the spot may be definitely located with either instrument. If the injury is of a few days' standing, additional heat in the hoof and, perhaps, slight swelling in the pastern may also be present.

When the point of the puncture has been ascertained, the horn should be pared out so

as to leave an opening for the escape of all matter. This opening need not be larger than an ordinary-sized lead pencil. The practice of burning out this hole with a hot iron, or by the use of caustics, is very objectionable and useless. A solution of carbolic acid (one part of acid to twenty-five of water) may be used to wash the wound. If the animal be kept in a clean place, and the wound washed once a day with the same solution, a rapid recovery is usually the result. In cases where the lameness is severe, a poultice of wheat bran or linseed meal may be applied for a day or two, but should not be kept up for a longer period.

In those cases where the lameness subsides, but luxuriant granulations of "proud flesh" spring up and fill the opening in the horn, they may be cut down by a hot iron to a point level with the inner or deeper surface of the horny sole. Then the cavity should be filled with balsam of fir, a pad of cotton placed over it, and over all a piece of good, firm leather, which may be held in place by a shoe. The main point in the treatment of nail puncture of the foot is to give free exit to all matter that may collect, and keep the part as clean as possible. If this be done, the matter will not be compelled to work out at the heel, and no separation or loss of hoof will occur. — *Bulletin Mississippi Experiment Station.*

Questions and Answers.

Lame Cow.—G. H. K., Rodney, Ont.: I have a fine Jersey cow which, before Christmas, had a swelling in her left hind leg at the thigh. She was lame for two weeks, and then got better, but about three weeks ago she got bad again. She seems stiff all over, and cannot get up without help. I have her in a sling, and have to lift her up every time in order to milk her. She eats well, and seems to be healthy in every other respect. Her water is all right, and so are her bowels. Kindly let me know what to do for her, as she hardly gives any milk now.

Ans.—We should advise you seeing a veterinary surgeon, if one is near you, as at this distance we could not tell for certain what is the matter with the cow. It may be a direct injury to the leg, rheumatism, dislocation of the stifle, or injury to the hip joint.

Pigs Stiff in the Legs.—J. F., Arthur. I have some pigs that are crippled in the legs. First they get stiff in all four legs, and draw their hind legs under them. They refuse to eat, and lie down most of the time, and do not make any growth. Their feed is a mixture of four parts barley, two of oats, and one of peas ground together. We feed it partly wet and partly dry. Can you tell me the reason why they get stiff and give me a remedy?

Ans.—As all four legs are affected we should say that your pigs are suffering from rheumatism, caused either by their sleeping in damp or cold quarters, or on account of their having been penned up too closely. Give them doses of a tablespoonful of baking soda in milk three or four times a day for a few days. If it should physic them too much give less of the soda. Any liniment, such as turpentine, can be applied to the joints affected.

If only the hind legs had been affected, the causes might have been cold, damaged food, or kidney worms. When this is the case, a teaspoonful of turpentine given in milk is often effective, also rubbing of liniment on the loins. The best way to prevent such diseases is to give the pigs plenty of exercise, to keep the pens clean and well littered with bedding, to feed once a week in the food a little sulphur and saltpetre, and to let the pigs have access to ashes.

The Farm.

A Correction.

In our report of the Good Roads' Convention, in our last issue, we inadvertently misrepresented some remarks made by the Hon. John Dryden on the subject of broad tires, making it appear that he favored legislation abolishing narrow tires. What Mr. Dryden said was that the legislature had always objected to passing such a law, which would practically compel farmers to dispose of their

old wagons and buy new ones with wide tires. He had never felt that it was wise to bring this change about by legislative enactment. The association, however, might do good, not merely by agitating in reference to the matter, but by communicating with wagon manufacturers with the view of inducing them to put wide tires on the market. In some sections this had already been done, and the results were very satisfactory.

The Ontario Government and Agriculture.

The estimates for agriculture brought down last month by the Hon. John Dryden, Minister of Agriculture, show that he is as alive as ever to the wants of agriculturists. The excellent work done in the past by the travelling dairy school has encouraged him this year to put in a sum of \$1,800 for three travelling spraying outfits, which will visit thirty electoral districts the first year, and give practical instruction in fruit spraying to all who care to be present. The work will be done very thoroughly both as regards time and labor, and should demonstrate in a practical manner the value of spraying.

This new departure of Mr. Dryden's is one that must be greatly commended. The number of insects and fungi that assail fruit trees, and that seem to be constantly increasing, are a serious menace to the fruit industry, and must be stoutly combatted with spraying. Hitherto this has been much neglected, but now the time has come when spraying must be seriously taken up. The travelling spraying outfits will convince many doubters of this fact.

Among other items in the vote on agriculture we notice an extra \$1,000 for experimental fruit stations, \$250 more for the Experimental Union, and \$2,000 for lectures for farmers' institutes. To partially offset this latter the vote of \$800 for the Central Farmers' Institute has been dropped, that organization having, apparently, passed its usefulness, and Mr. Dryden considering that more useful work is done by the local institutes, with which claim those who attended the last two meetings of the Central Institute will generally agree.

Wheat Stocks.

We have heard so much lately about wheat of a nature to discourage wheat growers, and so little to arouse any enthusiasm, that anything tending to encouragement will be welcomed.

In the *New York Price Current*, C. L. Hyde, Pierre, South Dakota, attacks the United States Government's estimate of the wheat crop of 1894, which, he declares, is far too high. In previous years the government estimates have been fifty or one hundred millions too low, and this fact has led many to hold that the estimate for 1894 is as much too low as those for the three previous years. As a matter of fact, Mr. Hyde says that South and North Dakota, Minnesota, and California, as well as other states, are credited far too high.

A feature that has greatly reduced the stock of wheat in farmers' hands is the feeding of it to live stock. Unbiased authorities admit that at least 75,000,000 bushels have been thus fed, and it is probable that 100,000,000 may be nearer the truth. In South Dakota alone several million bushels have been fed since last August.

A smaller acreage of winter wheat, too, was sown last fall, and it is likely that the area of spring wheat will be largely curtailed. This will certainly be the case in localities where bad crops have left many farmers without seed grain.

Mr. Hyde believes that wheat will be 100 per cent. more valuable in the United States before next July, simply from the law of supply and demand, regardless of the price in Europe and the rest of the world, and gives figures to bear him out in this. We certainly hope that this may be the case, but we fear that Mr. Hyde is a little too sanguine.

Fodder Corn in Prince Edward Island.

The idea was long prevalent among farmers in Prince Edward Island that fodder corn could not be grown there so as to mature properly, and, consequently, no attention was given by farmers and stockmen towards growing it for feeding in winter.

A change, however, is now coming over the scene. Thanks to the persistent efforts and teaching of Prof. J. W. Robertson, the Dominion Dairy Commissioner, several of the most advanced farmers have now given corn a trial, and the results have been so satisfactory that others will follow suit this year. It has been found that corn will mature sufficiently for the silo, if only suitable kinds are planted, and they are planted early enough and harvested before frosts occur. It is said that none who have tried fodder corn have been disappointed, or announced their intention of giving it up this year. The fact that corn can be grown for the silo will improve the possibilities of Prince Edward Island in the dairy business.

Supplementing Pastures.

For many years *THE JOURNAL* has been advocating the practice of supplementing pastures by growing green crops. Although the advice has been heeded by many of our readers, yet too few follow out the practice, as witness the fact that the supply of milk to the cheese factories and creameries of our Dominion decreased to an alarming degree last season when the dry weather set in. Doubtless, a variety of causes contributed towards the producing of this effect, yet it cannot be denied that amongst the most important of these was the actual want of supplementary feed when the pastures failed. Whilst yet there is time, and before all plans for the coming season's crop are laid, we would direct the attention of our readers to the absolute necessity of making some provision for this emergency, and would urge upon them to make arrangements to set apart a few acres for the purpose of growing green crops, such as peas and oats, or corn.

It is unnecessary to state here in detail the benefit that will accrue from the growth of such crops, as they are already well known to every reading agriculturist; and, while there may be many who have for years past been proving in actual practice the truth of these words, and who would not think of endeavoring to put their stock through the summer without such provision against dry weather, yet to these we can only say that many of their neighbors have not been following their good example. They should turn agricultural missionaries, and endeavor to get them to try the experiment during the coming season. The country would be made much wealthier by a more general provision on the part of our

farmers of such supplemental feed, and, if thereby our country is made richer, then will all the individuals who live in it be also benefited.

How to Increase the Yield of Crops.

The question of large yields is always one of vital importance to the farmer. Where the yield per acre can be increased by improved methods and without too much outlay, it will be wise to study the plans that are likely to secure such an end, and, so far as at all practicable, to adopt them. The extra bushel or two per acre may bring a profit where without it there would be no profit, and where the yield can be run up several bushels per acre beyond the cost of production, the profit then becomes a substantial one.

Various methods may be adopted to increase the average yields per acre. Some of these relate to rotation, others of them relate to cleanliness, and yet others to live-stock keeping in one or the other of its branches. In fact, they are various, and we shall now aim to show how they conduce to the end sought.

A varied rotation does not draw upon one particular element, or upon two or three of these, as the case may be, as much as a narrow rotation. This arises from the fact that some plants draw more largely on one kind of plant food than others; hence, when plants varying somewhat in their necessities are grown, they draw more regularly on the varied elements in the soil. A varied rotation has the effect also of keeping lands cleaner, and cleanliness has a favorable influence on productivity, since the fewer the weeds in the soil, the less do they consume of the plant food which is present in the soil for the sustenance of the crops.

The growing of hoed or cultivated crops has a favorable influence on productivity. This is owing, first, to the cleanliness which it brings to the soil; second, to the liberation of plant food in the same, induced by the cultivation given to it in conjunction with weathering influences; and, third, to the greater moistness which it brings to the land. The added moistness may not always be beneficial, but in the case of light lands it is beneficial. It should be remembered, however, that hoed crops generally take a good deal of fertility out of the soil; hence, when they are much grown, it must be fed.

When grasses, and more especially clovers, are introduced frequently into the rotation, the yield of cereals is pretty certain to be increased. These crops aid the land very much. They aid all kinds of land. They help to bind light lands and to hold them together. They help to loosen up stiff lands and to bring them into a better state of cultivation, and they bring vegetable matter to all kinds of soil, which has the effect of furnishing food for the crops, and of holding moisture.

Leguminous crops grown on land bring nitrogen to it, and therefore render it more productive, whether these are plowed under or not, as these crops usually have a salutary influence on the texture of the land; and as they are nearly all first-class foods for live stock, the aim should be to grow them as frequently as possible. The best of these crops for practical uses is clover, either the common red or the mammoth, according to the ends sought in growing them, and according to the adaptability of the land.

Plowing land in the fall tends to increase the yield of cereal crops. This is true of all, or nearly all, kinds of land, and it is more

especially true of stiff soils. The reasons, at least some of them, grow out of the liberation of plant food that goes on in the late fall, and in the spring, through weathering influences, and out of the early warming of the surface of the soil as soon as winter has gone.

But more than anything else, probably, the keeping of live stock tends to increase the average yields of farm produce. When the produce which is raised on a farm is fed on it, and when leguminous crops are freely grown at the same time, the improvement in fertility, and, therefore, in ability to produce, goes on quickly; and, if some foodstuffs are purchased and fed at the same time, the fertility of the land is still further increased.

One more way of increasing fertility requires to be mentioned. We refer to the purchase of artificial fertilizers. In some sections this will pay if judiciously done; in other sections it will not pay. These fertilizers require no little knowledge to enable us to handle them aright. Sometimes an application of some fertilizer, as, for instance, nitrate of soda, applied at the right time, will effect great good; whereas, if ignorantly applied, it would probably be lost.

Nitrogen Utilized.

Nitrogen is the most valuable element in soil fertility, and, therefore, it should be looked after with a careful eye and husbanded to the greatest possible extent. It is valuable because without it plants cannot grow. In fact, it enters very largely into their growth. It is valuable because it is only present in most soils in limited supply, and it is valuable since, notwithstanding its great utility, it is so easily lost. Every care, then, should be taken to get this valuable fertilizer wherever it can be cheaply obtained, and to utilize it to the utmost before it leaves us.

We get nitrogen from the soil. Some of it is there in the active form, and some is inert. That which is inert is being unlocked or changed gradually. That which is in the more active and easily accessible form, as, for instance, in the form of decaying vegetable matter, is easily lost. It is easily washed out of the soil, hence every legitimate and reasonable means within our power to save it should be resorted to.

We get nitrogen from the air. In fact, the air is the great storehouse of nitrogen. Our energies, therefore, should be lent, first, to getting it out of the air, so far as we can, and, second, to making a good use of it when we do get it from the air, and when stored in the ground. We can get it from the air by growing as frequently as possible such crops as clover, lucerne, peas, beans, and vetches, and then we can use it to good advantage by growing such crops after them as require large quantities of nitrogen to complete their growth.

We get nitrogen in our stables, and in large quantities, but it is easily lost. It is easily lost in the form of ammonia. Go into a horse stable in the morning and a strong smell of ammonia will be at once noticed. The same is true in cow stables, but not in the same degree. This ammonia is simply nitrogen escaping into the air. Its escape can be arrested by the free use of land plaster, and even earth, where land plaster cannot be got. But the nitrogen is very easily lost out of the manure, even when it is lying in the yard, or when it is piled up in heaps in the field to which it has been drawn. In the yard, every rain that falls is liable to wash some of the nitrogen out of the manure, and, while it is

lying in large heaps in the field, decomposing, the danger is very great that much of the nitrogen will be lost through over-decomposition.

When the manure is put upon the soil, we should be careful to so manage that it will be utilized before the nitrogen is lost. If manure is plowed under deeply on sandy soil, and rains fall heavily soon after, then much of the nitrogen will be washed down before the plants get to it, and, in consequence, is lost to the crop. And, if the plowing under of the manure is done in the autumn, the loss will be much more than when it is done in the spring.

The plan of allowing ground to lie much of the time bare and idle is attended with much loss of nitrogen. And the greater the rainfall and the warmer the climate, the greater the loss of nitrogen through leaching. When a summerfallow is manured early in the spring, and no crop grown on it until fall, or even until the following spring, and if, during the time while the land is bare, there should be a good deal of rainfall, there will be a serious loss of nitrogen. It washes out of the soil in the form of nitrates.

Again, when we apply nitrogen in the form of commercial fertilizers, we should take heed lest much of it should be applied to no purpose. It is very easily lost. Suppose we put it on as nitrate of soda or sulphate of ammonia before we sow a crop, and rain falls in the meantime, the more soluble portions of it will wash down into the soil so as to keep beyond the reach of the roots, and, if there is much rainfall, the crop will not get any benefit.

Combinations of Grasses.

Years are moving on and discoveries are being made from day to day, but as yet no combination of grasses has been discovered equal to that of timothy and common red clover for all-round uses, more especially when we take into consideration wide areas of the country. But we must not conclude at the same time that such a combination would be best for all conditions. We must not decide that there are no places where other combinations would not be an improvement.

Common red clover and timothy do not mature together, and yet there is no more popular combination of grasses to-day. The explanation very probably lies in the fact, first, of their general adaptability to soils and to soil conditions; second, their suitability to general feeding; third, the assistance in growth which the dead clover roots give to the timothy the second year; and, fourth, to the favorable influence which the one exerts on the other in feeding.

In some instances, however, timothy and mammoth clover should rather be sown than the first-mentioned combination. These two mature together. The mammoth clover is decidedly preferable to the common red on soils where the latter does not make a sufficient growth, as, for instance, on tenacious and hard-run clays. But on soils which produce a luxuriant growth the mammoth would be so coarse as to lose its suitability for ordinary feeding.

Again, on low soils where black loam lies on a clay subsoil, a combination of timothy and alsike clover answers well. The two ripen together, and both are adapted to such soils. When sown thickly, they produce hay of a fine quality. Alsike clover is naturally fine, and when it grows thickly on low lands it also keeps the timothy from growing coarse. The two make an excellent combination, as

both are perennial in their growth. If not pastured too closely in the autumn, and if other conditions are right, they may be grown profitably for hay on such lands for several years in succession.

In all combinations of grasses, it is well to have some regard to the time when the different varieties mature. If the period of difference is a long one, there would be loss with some of them while waiting on the others to ripen, if they were cut late, and some would not be properly matured if cut early. For good upland soils small red clover, tall oat grass, and lucerne make a good combination. All three are ready to be cut about the same time. And it is important, more especially with the lucerne and the clover, that they be cut sharply on time, for both soon take serious harm when they get overripe. They all sprout up again readily after cutting, and in consequence make excellent pasture. The lucerne comes up the most quickly after its cut.

Another good combination on average soils where all the kinds of clover grow well would be timothy, common red clover, alsike clover and white or Dutch clover. The red clover in this mixture should not be very prominent, or it would crowd the others. This combination makes hay of a fine quality. It is particularly excellent for sheep.

In the low lands white clover and red top may be added to the alsike clover and timothy. The combination will thus be further refined, and it will probably produce a heavier yield per acre.

Some kinds of grasses grow very well in permanent pastures, and also singly in some instances, which do not give a good account of themselves in meadows. Orchard grass is one of these, as it has some tendency to crowd the other grasses out. Meadow fescue would also do well, but it does not establish itself quite as quickly as some varieties. Meadow foxtail takes even longer to establish itself; meadow fescue may be used with some advantage as a part of the combination in upland meadow.

When grasses are grown in combination we usually get increased yields. This seems true of many kinds of crops. They more completely fill the soil, and, in consequence, the crop is not only more abundant, but it is finer in quality, which is a matter of no little importance. The combination also furnishes more suitable food, on the principle, first, that a variety is good, and, second, that one kind is, in a sense, more or less the complement of the other. The finer the foods the greater the palatability; hence a thick stand of grass is more important than a thick stand of cereal grains.

The Uses of the Oat Crop.

No cereal crop is grown in the Dominion the feeding value of which exceeds that of oats, all things considered. No single crop can be put to so great a variety of uses, nor is there any crop which can be fed in so great a variety of ways.

No better grain food can be found for horses. That fact has been recognized the world over wherever the oat crop can be grown in good form. Oats are excellent even for feeding to colts, but where large frames are wanted, and good, large bone, wheat may profitably be fed along with the oats. For full-grown horses oats are excellent food. They are not only muscle-producing in a fair degree, but they sustain the animal heat and give staying qualities to horses when at work. And when other grain is substituted in part

for oats, it will generally be found that they will be satisfactory or otherwise in proportion as the oats are plentiful or lacking in the mixture fed.

Oats furnish an excellent food for calves. It would be possible to feed them too early to calves; that is to say, while the calves are still quite young. But, if the hull is removed and the other portion of the meal used, there is no kind of meal that can be fed to calves when quite young with so much safety. And, as they grow older, oats may be fed as the sole meal ration. They may be given ground or whole. If thought best, bran may be added, and with manifest advantage, when it can be obtained cheaply. And oats may be fed very freely to calves without danger of any harmful results following.

They also furnish an excellent food for dairy cows. They may be fed alone or along with bran and other meal adjuncts. They are usually too costly to feed alone in this way; and when they are fed, the relative cost should be carefully considered. Oats are excellent for milk production. They are also very healthful. They may be fed very freely without any serious hazard.

Oats are also good for beef cattle. Where bran cannot be obtained, oats may be made to take the place of bran; and where bran is plentiful, both may be used as factors in the meal portion of the ration. When fed along with peas or corn, they give excellent returns. The difficulty in feeding them for beef is similar to that which meets us in feeding them to cows. They are usually too costly to justify feeding them with that freedom which would otherwise be both proper and advantageous.

For sheep, oats make a grand food; in fact, they have no superior in the line of grain. They are good for young and old. They answer equally well for rams and ewes. They may be fed to young lambs in the early spring. They are excellent for lambs at the weaning season, and they answer well for fattening lambs or old sheep in the winter. When fed together with peas, they furnish a splendid ration during the fattening season.

For swine, oats do not answer quite so well. The large amount of hull possessed by the oats is not exactly suited to the digestion of swine. But they furnish a good food for brood sows. And along with other food, as corn or peas, they are good for growing swine. But here, again, they may be found too costly for such a use.

Oats, too, may be grown alone, and fed unthreshed, in some instances, with manifest advantage. All dairymen who have tried it know very well the value of oats cut a little green, and fed directly to dairy cows. For this use they can be cut with the binder. If run through a cutting box, the results will be advantageous, as then other foods may be easily added. When oats thus grown are fed to sheep, they make an excellent food. If grain is added, such as peas, or wheat, or corn, or wheat screenings, the oats will answer very well for fattening sheep. If peas and oats are grown together and cut a little early, they make a grand food for sheep. Under some conditions, they will answer for the sole ration for sheep; under other conditions, they might be too strong a food. The ration could then be balanced by feeding straw of some kind, or hay, during a portion of the time. The same mixture is also excellent for cows, and it is good for beef cattle. We do not mean that the mixture should form the sole ration in either case.

Oats may also be used, in certain instances, in producing soiling food and pasture. They

may be sown with barley to furnish pasture for swine. They may be sown along with peas to furnish green food for milch cows, and along with vetches to furnish green food for sheep. In the Northwest they may be grown with wheat for a variety of uses, and when so grown the results are very beneficial.

The value of the oat crop, therefore, is very great. Our country is well adapted to its growth, even from sea to sea. Let us duly value this great heritage; for our neighbors to the south of us cannot grow them as we can, if statistics can be relied on. Let us grow oats freely, and let us carefully discriminate as to varieties, for each section has its favorite kinds.

Why Do Young Men Leave the Farm?

It is to be feared that many young men who have left the farm could not give satisfactory reasons as to why they have done so. And thus it is, probably, with many of those who still desire to leave it. Some of them will answer that the work was hard and the hours were long, but have those who have left the farm improved their condition in this respect? Have they not found hours quite as long in their new sphere of labor, and have they not found their labors quite as exacting?

The truth is that, in very many instances, they have left the farm actuated by a spirit of morbid restlessness, a spirit which seems to come to all young men in a greater or less degree as they push onward to a stronger and a higher manhood. They want to see the world. They want to grow bigger in it, to shine somewhere in some sphere or another, and to grow great just for the sake of greatness in itself, without any ulterior object in view.

Now, young men, are not these things true? Look down deep into your own hearts, if you are anxious to get away from the farm, and answer, Are not these things true? And, if they are, allow us to ask you to think twice, yes, three times, four times, five times, six times, before you leave the farm.

You know, young men, that things are not always what they appear. The fine dress of the business man, and his quick step and sprightly manner only show one side of the man. These things don't lay open his brain. They don't show the worry that so often accompanies him into his bedroom and drives sleep from his eyes. Long hours cannot be measured by the actual time that we spend in the fields or behind the counter. They take into the account the hours of thought spent upon the business, whatever it may be, and these may far outnumber the hours actually spent upon the work within the hours of active labor. Thus it is with the lawyer, frequently, and so it is oftentimes with the teacher. But when the farmer's work is done, his worry is done also, as a rule. It may not be always done with the cessation of the labor of the day, for the farm has its worries, but these are light compared with the worries that beset the business man. We have evidence of this in that longing desire on the part of business men who commenced life on a farm to get back to the farm again during the declining years of their life.

Of those who leave the farm, only a few ever attain great wealth. It has been computed by those engaged in conducting mercantile agencies that, of all who engage in business, at least two out of every three fail some time or another while thus employed. The failures among farmers are comparatively rare, not more, probably, than one in a score. It may be that very many of them only make a

bare living, but who would not prefer lying down in a grave, poor, but owing no man anything, than to lie down therein owing money which can never be paid?

And, if we gauge prosperity by average wealth, here, again, the comparison is largely in favor of the farmer. The average wealth of the farmer is far greater than that of men in other callings which give employment to the many. In a certain town in the country, we were told not long since that of \$600,000 deposited in the banks, no less than \$500,000 were owned by farmers, and represented earnings made upon the farm.

And, then, think of the character of the work. It is certainly pleasant, except at certain seasons when the weather is adverse. And we know very well that as there is more of day than night, there is more of sunshine and brightness than of shade and darkness. This work is performed very much of the time in the open air, and beneath the glorious sunshine of heaven. In the bright days of spring, and in the early days of autumn, what other calling under heaven can furnish employment so delightful? True, the farm has its stormy days, and it has its troubles, but what calling under heaven has not? And, as a rule, the farmer is not compelled to work in the storm. He is not like the motorman on the street car, the engineer on the railway, or the delivery man of the house of merchandise. He is not bound to go, rain or shine, but he is in a position to control his own work; hence, when the weather is forbidding, he may work in comfort and indoors.

Nothing has yet been said about the opportunities furnished for study and experiment. The opportunities for these will never cease on the farm. They are like the story that will never end. So that, in addition to making a living, there is a chance for every man upon the farm to immortalize himself by working out one or other of the ten thousand problems that are yet unsolved. In the face of these truths that have been said, and of the very many that have not been said, though of kindred import, why should young men so much desire to get away from the farms?

Methods of Applying Manure to Fields.

In applying manure to the field, three methods are pursued: (1) The manure is placed in larger or smaller heaps over the field and allowed to remain some time before being spread; (2) it is broadcasted and allowed to lie on the surface for some time, or plowed in immediately; and (3) it is applied in the hill or drill with the seed.

The first method is objectionable because it increases labor of handling and chances of loss by fermentation and leaching, while uniform distribution of the manure is not likely to be secured. The spots on which the heaps stand are strongly manured with the leachings of the manure, while the rest of the field receives the coarse parts of the manure largely deprived of its valuable constituents. Another disadvantage of this method is that proper fermentation is interfered with by the leaching out of the nitrogenous matter and the drying action of the wind. The practice of storing manure in large heaps in the field is subject, to some extent, to the same objections. If, however, the heap is not allowed to lie too long, and is carefully covered with earth, the loss may be greatly reduced.

Spreading the manure and allowing it to lie on the surface should be practised only on level fields where there is no danger from sur-

face washing. It has been claimed that when manure is spread broadcast and allowed to lie on the surface there may be a serious loss of ammonia into the air, but experiments have shown that, in case of properly prepared manure, loss from this cause must be very small. On a leachy soil there may be a loss of soluble constituents in the drainage if the manure is spread a long while before the crop is planted, but, in ordinary practice, the loss from this source is also likely to be insignificant. In this method of application the fertilizing constituents of the manure are uniformly distributed, the liquid portion being gradually and thoroughly incorporated with the soil particles. One serious disadvantage, however, of the method is that the manure, before being plowed in, is leached, to a large extent, of its soluble nitrogenous compounds, which, as we have already observed, are necessary for fermentation, and that, for this reason, it does not so readily ferment in the soil. It is highly advisable, therefore, in the case of light or sandy soils, not to follow this practice, but to plow the manure in as soon as spread.

As to the depth to which it is advisable to plow the manure in, the general rule should be observed that it should not be so deep as to prevent the access of sufficient moisture and air to insure fermentation and nitrification and to permit of rapid washing down of nitrates to the drain. In very compact soils the depth should not exceed four inches. In light soils this depth may be considerably increased, although in such soils there is more danger of loss by drainage than with heavy clay soils.

Application in the hill or drill is useful where the supply of manure is limited and the full, immediate effect is desired. For forcing truck crops this method is especially valuable. Well-rotted manure is best suited to this method of application. It has been claimed, however, that manure applied in this way sometimes injures the appearance of root crops, especially potatoes, by increasing the amount of scab.

The so-called parking system, or feeding animals on the land, is a method of application which has many advantages, but the distribution of the manure by this system is irregular, and, if practised in autumn or winter, the manure is subject to loss by drainage.

The application of liquid manure has certain obvious advantages, and is largely practised, especially in Europe. Manure leachings is a quick-acting, forcing manure, and is especially valuable for grass. The expense of cisterns for collecting the leachings and the trouble of hauling and distributing, together with the care which must be exercised to prevent loss of nitrogen from the readily fermentable liquid when it stands for any length of time, render it doubtful whether this method is practicable, except for special purposes and under peculiar conditions.

As to the rate at which manure should be applied, no fixed rules can be given. The rate will depend upon the character of the soil, the quality of the manure, the nature of the crop, and the frequency of application. Cold, moist soils should be manured lightly and often. Thær, a German writer, states 17 to 18 tons per acre to be an abundant application, 14 tons good, and 8 to 9 light; other German writers consider 7 to 10 tons light, 12 to 18 tons usual, 20 tons (or more) heavy, and 30 tons very heavy. Stephens suggests 8 to 12 tons for roots, and 15 to 20 tons, supplemented by commercial fertilizers, for potatoes. Sir Henry Gilbert considers 14 tons per acre, annually, excessive for wheat and

barley. In New England the rate varies from 6 to 12 tons. Twenty tons is a frequent application in New Jersey, as well as in other regions where truck farming is practised. As a general rule, it is more scientific to apply small amounts of manure frequently than to apply large amounts at longer intervals.—*Bulletin of U.S. Department of Agriculture.*

Facts for Canadian Farmers.

The American agricultural papers are well supplied with standing advertisements of dealers in Canada hardwood ashes, writes W. F. Massey, of the North Carolina Experiment Station, and to us at a distance the question occurs, "Where do all these ashes come from?" Not from the marts of trade, because the fact that they are ashes indicates a large destruction of the products of the soil of Canada. They must come from the farms of Canada; but one can hardly understand why the Canadian farmers should thus sell for present advantage the fertilizing elements from their soil, which, sooner or later, they must buy back at a much greater cost; for, although the Canada ashes cost the consumer at a distance far more than their percentage of potash is worth, we are told that the price received by the Canadian farmers for these ashes from the collectors is very low. We once bought a carload of these ashes, which analyzed much higher than the samples now offered for sale. They were delivered to me for \$15 per ton. With the freight taken off, the actual price paid to the importers was not over \$5 per ton, at which price the actual potash they contained was cheap enough. But if the importers were satisfied to get this price, for how little a sum must the Canadian farmer have parted with the fertility of his soil, for the expense of the collection and storage and importation of these ashes must be very heavy. So I have figured out in my mind that the Canadian farmer got not over two cents per pound for the actual potash sold in the ashes, to say nothing of the lime parted with. Now, when he finds his cultivated soil getting deficient in potash, as he inevitably will, he must buy back that potash at four and a half to five cents per pound. At the same time, the purchasers of the Canada ashes, as now sold at a guarantee of five per cent. potash, are paying exceedingly dear for the whistle. It looks to me like a hard bargain for the farmers on both sides of the line. The farmer on this side can buy his potash in the form of potash salts much cheaper than in the ashes, and the Canadian farmer is parting with his potash for less than half what he or his children must pay to get them back. In selling off these mineral elements of fertility—lime and potash—the farmer sells what he *must* buy back in some shape. We lose enough of these matters in the crops we sell, which is unavoidable; but when we add to this the sale of the products of combustion, by-products, that should go back to the land, we are burning our candle at both ends, and will reach the point of exhaustion sooner. Canadian farmers, as we look at it, cannot afford to sell these ashes at the price they are paid for them, and American farmers can buy their potash at vastly cheaper rates. Out of the difference the importers grow rich, while the farmers pay the bill. While we have had good results from the use of these ashes, we have become satisfied that we got the results at a far greater cost, even considering the value of the lime, than we could have gotten the same results by purchasing lime and potash in other forms. When these things are transported by rail long distances, the freight

becomes the chief item in the cost. We once freighted ten tons of ashes, at a cost of \$80, and got 1,200 pounds of actual potash (more than the average amount). We could have freighted 10,000 pounds of potash, in the shape of muriate, from a nearer point for half the money. And this is the very point we should like to impress upon the producers of potash on the other side of the Atlantic, the immense saving of cost of potash to the American farmer living far from the sea coast by relieving him of the necessity for freighting so much useless material to get the potash he is after. They should send us more of the concentrated article, for the freight over the Atlantic is but a small part of the inland freight in very many instances.

Fertilizers on Potatoes.

The Ohio Experiment Station has begun a series of experiments in which the three crops, wheat, clover, and potatoes, are grown in rotation, with and without fertilizers of different kinds. The experiment is being carried on both at the central station, in Wayne county, and at the northwestern sub-station, in Fulton county, and was begun in Wayne county in 1894 by planting potatoes on land that had been two years in corn, following grass, and on newly-cleared, yellow sand of the oak opening region in Fulton county.

The soil on which this test is being made at the central station is a light clay. It was thoroughly drained in the fall of 1893, with three-inch tile drains laid thirty-six feet apart. The planting was done in good season in 1894, and the fertilizers applied broadcast. The potatoes started off well, but their growth was seriously retarded by the excessive drouth of the summer.

The general results of the experiment were that, while partial fertilizers, containing only one or two of the three essential elements of fertility, produced some increase of crop, that increase was irregular and uncertain; but, when a complete fertilizer was applied, there was an increase of crop in every case, and the increase rose regularly with the quantity of fertilizer applied, the largest yield, and in Wayne county, the largest net profit, after paying the cost of the fertilizer, coming from an application of 480 pounds of dissolved bone black, 320 pounds of nitrate of soda, and 300 pounds of muriate of potash, a total of 1,100 pounds per acre, costing about \$20. This application increased the total yield by 65 bushels per acre over the total yield of the unfertilized plots adjoining.

On the yellow sand in Fulton county, where the unfertilized yield was much smaller than in Wayne, the increase from the fertilizer was much smaller than on the better land in Wayne, and where incomplete fertilizers were used it was still more irregular, in several cases failing to pay the cost of the fertilizer; but the complete fertilizers paid their cost in every case, with potatoes at 60 cents per bushel, the largest total increase here being 47 bushels, from the same mixture that produced the largest increase in Wayne.

This mixture carried, approximately, 50 pounds of nitrogen per acre, equivalent to 60 pounds of ammonia, 75 pounds of phosphoric acid, and 150 pounds of potash.

It appears that, in this test, nitrogen was less essential than either phosphoric acid or potash, and it is probable that, if the land had been a clover sod, the amount of nitrogen might have been very considerably reduced. Phosphoric acid appears to produce equally good results, whether applied in the form of

dissolved bone black, Carolina rock, basic slag, bone meal, or wheat bran.

Potash was apparently almost or quite as necessary as phosphoric acid.

Barn Building.

Comfortable quarters for stock have become a prime necessity on every farm on which stock feeding or dairying is to be practised. It is also quite as necessary to get all buildings under one roof, and thus save labor and roofing. Again, in these days of diminished profits it is of vital importance that the most economical means be made use of in designing farm buildings, as in these expenditures may be overdone as easily as in any other apparently needed improvement. In many cases building is deferred until the owner feels that he can afford to build a barn as large and as handsome as some richer neighbor, and, when an improvement of this kind is contemplated, we often find that old buildings are valued at very little, although they may have served their purpose in the past. Now, inasmuch as lumber is exceedingly dear, and building timber scarce and difficult to obtain, it would be the height of folly to discard any building that is sound and in a moderate degree of preservation, and the purpose of this article is to show

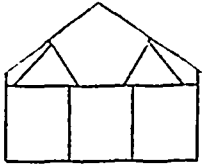


FIG 1

how readily a small barn may be enlarged and laid out to quite as good advantage as an entirely new structure.

The mode of procedure is as follows, and will be better understood by looking at the accompanying illustrations: Fig. 1 shows the end elevation of a frame 36 ft. wide, Fig. 2 the mode of reconstruction, and Fig. 3 when it is enlarged to 52 ft. wide, outside measure, which will allow a convenient width for laying out the basement, in which two rows of cattle may be tied, running lengthways, and one row of box stalls built, leaving ample room for cleaning out with a horse.

In laying out the frame there are two plans generally adopted by which the desired purpose may be attained, and whichever one is best suited to the old barn and its surroundings should be selected.

A favorite plan which is very frequently pursued in some localities in Ontario where

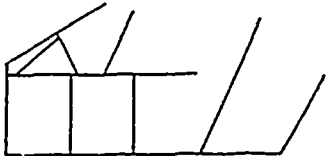


FIG 2

much building is now being done is particularly applicable when the barn is on the ground. If the barn is upon the intended site, it is raised to the desired height with screw jacks. Cribs of cordwood form the best supports for blocking, and are built up as the barn is raised. One of these cribs is built on each side of the sill, under which a stick of timber is placed, which rests on these cribs, which must be built far enough away to allow the basement walls to be built, for the barn must rest on these supports until the walls are ready to receive it. When the barn is at the proper height take off one side of the roof, take down the purline bent, also the wall

plate, and let down the side posts, as shown in Fig. 2. Then frame another purline bent with posts of the proper length running from the centre of the long cross beams so as to catch the end of the rafters, as shown in Fig. 2. Next frame long posts to be placed on the old tennons. Then frame and place tie beams and girts, and place the old posts on these. Put up the old purline bent as before, place the plate on the top of the long

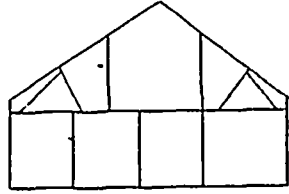


FIG 3

posts, and the old wall plate upon the old posts, and your frame is complete when the rafters are put up.

In the other plan proceed as follows: Frame two long sills the length of the barn in which gains are to be cut for joists. Then frame two long posts, as in Fig. 4, to each cross beam; let them project four feet above the peak of the old roof. Halve the first pair into the cross beam and bolt firm, next enter your girts that run lengthways of the building, and support the end of the old rafters. Then put up your next pair of posts until all are in place. Then place the plates on the top of the long posts, take a crosscut saw and cut through the cross sills and cross beams between, and your barn is cut in two and one side is ready to be moved out. When this is finished, put in your new tie beams and girts; place your rafters on the new centre addition, and the job is finished, leaving all the old siding and sheeting intact, and even the shingles, if these are sound. By this means you can spread your 36-foot barn to 66 feet if you wish, as shown in Fig. 4. If 18 feet are added to

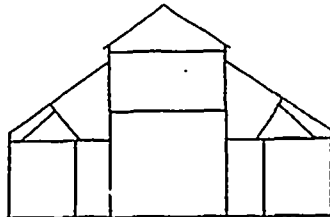


FIG 4

the centre of a 36-foot barn, as here shown, you double the capacity of the barn. If a still larger barn is required, and you have two old barns that you wish to enlarge and form into one, this can also be done, even should they be of different widths. The floors may be run either lengthways or across the barn, as is most suitable.

In our next issue we intend to show how concrete walls may be best placed under these barns, and also how the basement should be laid out; also how to build concrete floors.

Questions and Answers.

Mammoth Clover.—Subscriber, Millbrook, Ont.: Which growth of Mammoth Red clover is the best for seed, the first or second?

Ans.—If seed is to be taken from the Mammoth variety, it must be from the first cutting.

A Large Crop of Mangels.

Editor Canadian Live Stock and Farm Journal:
SIR,—A large number of farmers take your paper to learn something about farming, and would like to learn how to grow large crops of different kinds of grain, roots, and grasses. Last season I had a very good crop of improved yellow mangel-wurtzels. The land was black, sandy loam, underdrained, manured late in the fall with coarse barnyard manure, plowed

just before winter set in, harrowed down well in April, then drilled in on the flat, as I can grow larger crops that way than any other. I sowed from two to three hundred pounds of salt per acre.

The mangels got a good start, and were hoed the second time the last few days in May. The very dry summer kept them back somewhat. The latter part of October I measured one rood square (16 2/3 ft.); we pulled and topped them and took all the dirt off them, and drew them to the town weigh-scales, and the rood weighed 1,170 pounds. I would like to know if any of your readers had a much better crop.

Last year several farmers in this county had eighty bushels of oats to the acre, of the ordinary sorts, but the land was very rich.

Two years ago, one of our best farmers in the township of Plympton grew five hundred bushels of shelled corn on five acres. The land was a rich clay, well underdrained. The corn was the ordinary yellow and Dent variety. I might say that Mr. William Gammon, the gentleman who grew it, lives only three miles from Lake Huron, and in a good locality to grow corn.

ALBIN RAWLINGS.

Forest, Lambton county, March 5th, 1895.

[We are very pleased to give Mr. Rawlings' experience with mangel growing, and should be only too pleased if many others of our readers would let us hear from them as to their experience with mangels, or any other crops, or with live stock. By so doing they would greatly assist others who have not so much experience, and that is what we should all do in these times of depression and low prices. Let us hear from those who know of any methods likely to be of service to their less fortunate brethren.—E.D.]

Distribution of Samples of Grain from the Experimental Farm at Ottawa.

Editor Canadian Live Stock and Farm Journal:

SIR,—During the past eight years samples of those varieties of grain which have succeeded best on the Experimental Farms have been distributed on application in 3-lb. bags to farmers in all parts of the Dominion, free, through the mail. The object in view in this distribution has been to improve the quality and character of these important agricultural products throughout the country. This work has met with much appreciation and a considerable degree of success.

Last year I was instructed by the Honorable Minister of Agriculture to forward, as far as practicable, two samples to each applicant, but the applications received were so numerous that on this basis of distribution all the available stock had been promised by the middle of February, and all later applicants could not be supplied.

This year my instructions are to send one sample only to each applicant, with the hope that with this limitation every farmer in the Dominion who so desires may share in the benefits of this useful branch of the work of the Experimental Farms.

The distribution now in progress consists of some of the most promising sorts of oats, barley, spring wheat, peas, field corn, and potatoes. Already more than 7,000 applications have been filed. All farmers desiring to participate in this distribution should send in their applications early, and state which of the above-named samples they would prefer, and their wishes will be met as far as practicable, until the available stock is exhausted. The grain can be sent early, but the potatoes will not be distributed until the danger of being injured in transit by frost is over. Letters addressed to the Central Experimental Farm may be sent free of postage.

WM. SAUNDERS,

Ottawa, Director Experimental Farms.

Orchard and Garden.

A Much Needed Measure.

Hon. John Dryden, Minister of Agriculture for Ontario, has introduced a bill into the House for the prevention of fraud in the sale of fruit. The bill provides for the classing of apples and pears into two grades, and the marking of the grade upon the packages. A penalty is provided for selling fruit without a mark and for forging a mark, and also for dishonest packing. All persons receiving fruit of any kind for sale in bulk on commission are required to send to the consignor, within a week after the sale, written notice of the prices received, and a penalty is provided for should this be neglected.

California Oranges.

The disastrous cold wave which reached Florida last December, and destroyed the greater part of the orange crop, did also great damage to the trees, and it is estimated that it will be four or five years before Florida growers recover from the blow, and stand where they were before as regards their orchards.

The absence of Florida oranges has caused attention to be centred on the crop in California, and large deals in this have been already reported.

The California orange crop is a very good one this year, and it is estimated that 6,500 cars will be required to move it away. Prices are firm, and advancing, and the growers of Riverside, San Bernardino, Orange, and Los Angeles counties, which comprise the orange-growing district of California, will reap great benefit from the calamity that has overtaken their fellow growers in Florida.

Increasing Difficulties of Fruit Raising.

Without any doubt, the difficulties attending fruit raising are increasing. The time was, and not very long ago, when leaf blight had not yet made its appearance in our country. The yellows had not yet affected the peach tree. The codling moth had not yet done much harm. And very many of the pests that now harass and perplex the orchardist were unknown. Some of those diseases now prevail to such an extent as to render fruit raising in some of its lines hazardous, if not positively unprofitable. To so great an extent has leaf blight prevailed that in some instances apple orchards which should be coming into bearing are being torn out, and the lands on which they grew are being devoted to other uses.

Under these conditions what is to be done? Is the orchardist to be driven off his ground? Will fruit growing have to be given up? Never, in a country such as ours. The soil is too well adapted to fruit raising. The climate is far too congenial to the industry for us to think thus for a moment. Our country will more and more want fruit as it grows older, and as its population increases. And, as the population of the provinces of the Dominion other than Ontario increase in population, the demand for Ontario fruits will also increase, for many of these provinces cannot grow the more tender fruits as Ontario can. The demand for fruits, too, in the prepared form will also increase. There will always be wisdom, therefore, in many of our farmers turning their attention to fruit growing.

But what about the insect enemies that must be fought and vanquished if we are to succeed? Why, fight them and conquer. Deal death to the various fungous diseases that are doing so much harm. This may mean that much labor will have to be expended and constant vigilance exercised in order to succeed. But in all departments of life the price of success is seldom much less, if it is to be a marked success. Had those pests prevailed to such an extent years ago as they do now, the industry would have completely failed: it would have been wiped out of existence. What saved it? Why, the discoveries of science saved it; that is to say, it furnished the means of saving the industry.

But it should be remembered that the means that enable us to do a thing are one matter, and the turning of these means into use is quite another thing. Hence, if the teachings of science and its discoveries are to be made to

do their work, they must first be understood and then applied.

Men have railed against science, and its teachings. They have ridiculed some of its discoveries as applied to agriculture and horticulture. But what, we ask, would the condition of the fruit industry be to-day had not science come to the rescue? Our agriculture, and more especially our horticulture, owes science a debt which it would be difficult to estimate.

This fight, or this war, as it may more properly be called, has no discharge in it. The insect and fungous foes must be given no quarter. If given any quarter one season, they are likely to be more numerous the next; and, in addition to the increased labor of fighting them the second year, there is the increased loss from the greater present injury which they would work.

It may be possible in some instances to find the labor of the conflict more costly than the value of the fruits that grow out of it. It has been thought that so it is in some instances with the blight that has affected apple orchards for some years past, and more especially has this been found true in seasons of frequent showers in the summer. The spraying materials are thus washed off the leaves to so great an extent as to be measurably ineffective. Under these conditions it may be wiser to cut down the orchards, more especially when they are old or of kinds that are not highly remunerative, even though good crops should be secured. The increased energy required to fight the blight successfully would probably give better results expended in growing other kinds of fruit.

The Dairy.

The New System of Paying for Milk

In previous issues we have called our readers' attention to the new system of paying for milk proposed by Prof. H. H. Dean, of the Ontario Agricultural College, Guelph. This system consists in adding two per cent. to the butter-fat reading, which Prof. Dean claims is a fairer method of paying for milk for cheese-making than by its butter-fat value alone. We notice that the Dominion Cheese and Butter Manufacturing Co., Elma, Ont., which was the first factory to adopt the system of paying for milk according to its butter-fat value, as indicated by the Babcock tester, has, at its annual meeting, decided to adopt Prof. Dean's system during the present year, so that we shall learn, after awhile, whether the new system proves satisfactory or not to those concerned.

The Oleo Combine in the United States

Our cousins in the dairy business in the United States have been feeling keenly the effect of the competition of oleomargarine against the pure article of butter. The oleo men are organized, and have been able to defeat what few attempts have been made by friends of dairymen to introduce bills into Congress to prevent the oleo fraud. The dairymen, on the other hand, have no organization, and are unable to withstand the determined stand taken by their opponents. The National Dairy Union is now appealing to dairymen all over the United States, asking for contributions of one dollar apiece in order to continue the war against the oleo men. It would certainly be a wise move on the part of the dairymen to do so, as, if the Grou-

bill, which is aimed against oleo, should pass, it would mean a good many dollars in the pockets of dairymen, inasmuch as it would prevent oleo entering into competition with butter, and would thus raise the price of the latter. We in this country should be thankful that we have a law on this subject already on the statute books.

How the Prize Butter Was Made at the London, Eng., Dairy Show.

In a late issue of *The Dairy*, Miss Elsie G. Cook, who won the champion cup at the London Dairy Show for making the best butter in the fastest time, relates her method of making on that occasion: "We entered the dairy," she writes, "to prepare utensils about 11 a.m., after doing which ice was given to us, and then a little before 12 o'clock 10½ lbs. of sweet, rather thick, cream, to which I added about three pints of cold water and strained into the churn at a temperature of 57° Fah., to which the churn was already cooled, the temperature of the dairy being about 60°. I then commenced churning, turning rather quicker than the usual rate for Bradford's end-over-end diaphragm, the churn I was using. In twenty-five minutes my butter came, having risen in temperature 1° Fah., when I added cold water, to reduce the temperature and prevent the grains gathering. I then churned rapidly for two or three minutes, till the grain was of the right size. The temperature was now 54°. I drew off the buttermilk, added cold water, turned the churn a few times, drew off the water, and added brine (made of 1 lb. of salt to 1 gallon of water), turning the churn again and drawing off the brine before I took the butter from the churn, the temperature of which was 45° Fah., when I placed it on the worker (one with a straight-grooved roller). The butter was of an even grain, if anything, a size too small, but very dry and firm, falling apart like wheat. I felt quite satisfied with it, though it was not quite as good as on the evening before, when I believe I had the most perfect grain on the worker I have ever had. Being firm, it allowed of all superfluous moisture being expressed without injuring the grain. I believe the steward gave my weight at 6 lbs. ½ oz., or 6 lbs. 1 oz., which I made up into 1 lb. and ½ lb. prints, all of different but neat patterns. Putting them on the board, with muslin wrung out of iced water under and over it, I placed pieces of ice about, taking care that they did not lie on or close to the butter, as undoubtedly it destroys the flavor to freeze it, and many judges object to our laying ice near our butter; and, although I do not advise it at other times, still, in a competition, if laid around properly, it protects the butter from the warm atmosphere, so that I think its merits outweigh its faults. My butter was finished and on the table at five minutes past one (ten minutes before the expiration of the time allowed), and by twenty minutes past one I had cleaned all utensils."

For *The Canadian Live Stock and Farm Journal*.
Bossing the Cow.

"Whilst in Latin," said Prof. Robertson, at the Central Farmers' Institute, "the cow is always spoken of as *bo(s)*, too often she might properly be thus designated in our own phraseology." On many a Canadian farm the cow is boss of her owner, and exactly in proportion as he is overbearing in his treatment of her is she strenuous and hard in her dealings with him. The art of bossing the

cow is one that is as yet far from being generally understood and further from being generally practised. When a man undertakes, in the commonly accepted sense of the term, to boss a cow, the latter invariably comes out ahead. Every time he abuses her his pocket suffers, for if he has her so under subjection that to bring her from the pasture on the run he only requires to whistle for the dog she retaliates by obliging him to give her six months' board during the winter for which she pays him not a single cent. She, as it were, has the money bag, the strings of which are relaxed or tightened according as her treatment is intelligent and kindly, or thoughtless and abusive. Intelligence, and not brute force, is the power by which man must rule in bringing the cow under subjection and compelling her to comply with his will.

But at what period should he commence to exercise his authority? A minister once said, in speaking of the authority of a parent over a child, that it should commence about twenty years before the child was born. Thus it should be with the case under consideration. A man, to rule even a cow, must have first learned to rule himself well.

The ungoverned temper of the owner is often as disastrous to the milk flow of his herd as are the parching droughts of July or August. Intelligent persuasion is the power, above all others, by which the dairy cow is to be ruled. He alone who is capable of running this milk-making machine, the cow, up to her fullest capacity can properly be said to be her master.

Dealing, then, with the treatment which the animal should receive at the hands of her owner, it may be said that the aim to be ever kept before him from the day the heifer calf is dropped is that he is rearing her to make of her a milker. With this end in view, all his dealings with her must be of the most kindly nature. If cattle look upon their caretaker as a friend, and are always glad to see him come into the yard or stable, then is his management in this regard good; but, if this be not the case, money is being squandered through the mismanagement of the herd.

Regarding the feed, suffice it to say here that during the period of growth this should ever be nourishing and sufficiently moderate in quantity to stimulate proper physical development without giving any tendency toward fleshiness.

A most important point, however, is the handling. Early in the life of the heifer handling should commence, and, as the udder is the most important organ in milk production, it should receive the greatest amount of attention. Odd minutes may be spent in grooming or rubbing the young heifers, taking care never to neglect to rub and work with the teats and the loose skin which must ultimately form the milk vessel. Heifers receiving such treatment will never require to be broken into milking, as they will enjoy rather than dread the operation. While the handling during early life may be done simply as the attendant finds it convenient, when the udder properly commences to form it should be carefully handled twice a day up to the period of calving, and after each milking for between two and three months from the time of coming in. It is scarcely necessary to say it, except for the sake of emphasis, that the milking should be performed as regularly as the clock strikes, and should be performed thoroughly, and that the time of milking ought to continue for ten months, whether the heifer is inclined to favor the practice or not.

A small bite of feed of a desirable character supplied at a regular hour is a much more profitable means of bringing the herd from the pasture than the use of a dog.

Pages might be written upon the subject of this article, as it naturally embraces feeding and breeding, as well as general management; but, to put it in a word, nothing but the most careful, intelligent, kindly treatment will bring the cow under subjection to the owner's will so as to be profitably productive. By a blue beech she may be driven through a gateway, but only by the treatment we have mentioned can she be made to act as a machine paying a goodly dividend upon the capital invested. D. B.

The Dairy School at the Ontario Agricultural College.

Dairying being one of the most important industries of this country, a short description of the Dairy School at Guelph and its work may prove interesting to your numerous subscribers.

The main dairy building is solidly built of red brick, and is two stories in height. On the first floor is the live-stock class room, testing room, store-room, refrigerator, and the separating and churning room.

The live-stock class room is so arranged that animals can be brought in and lectures delivered on them by Prof. Dean before the class.

The furnishings of the separating and churning room consist of five separators, five vats for whole milk, a skim-milk vat, and one for buttermilk, three power churns, two butter-workers, two cream vats, and all of the necessary appliances for buttermaking. A gallery runs along one side of this room, where a score of visitors can be comfortably seated, and watch the various operations of the school. Judging by the numbers who avail themselves of this sight, we must conclude that it is very interesting indeed. The students, while in this room, become expert at running the different kinds of separators under the superintendence of Mr. Sprague, while Mr. Rogers gives them a thorough drill in the complicated methods of manufacturing first-class creamery butter. An average of 4,000 lbs. of milk is daily received for use in this room.

The milk-testing room is in charge of Mr. Miller, who spares no pains in making this branch as clear and interesting to the students as possible. This room is furnished with all of the modern machines and instruments that are commonly used in testing milk, cream, whey, etc. There are seven Babcock testers of different manufacture, with which the students daily test whole milk, buttermilk, cream, whey, and cheese. The lactometer is used in connection with the Babcock test. Cream is also tested in the oil-test churn. The Russian Babcock tester in this room is worthy of special notice. It is driven by a jet of steam. The bottles are graduated finer than usual, which gives a closer reading; the bottles are more easily cleaned, and the water can be added while the machine is in operation, thus a considerable saving of time is effected in making tests.

The second story contains a class room capable of seating 120 students, Prof. Dean's office, the library, sitting-rooms for ladies and gentlemen, with cloak rooms, lavatories, and bath rooms attached. There is also a Pasteurizing room where milk can be Pasteurized (heated to a temperature of 130° to 150° F. for a short time, and then rapidly cooled), in order to

kill any germ life that it may contain, and thus improve its keeping qualities. Mr. Harrison has charge of this department, and delivers lectures bearing on the subject.

I will now ask you to accompany me to the cheese room in a neighboring building, where we shall meet with a cordial welcome from Mr. A. T. Bell, the instructor in cheesemaking, who is busy instructing a number of students in the art of cheesemaking. Mr. R. W. Stratton is assistant instructor in this department. There are seven 300 pound vats and one 2,000-pound vat in this room, in which the cheese is made. A student is put in charge of each vat for the day, and is responsible for the quality of the work. He is usually assisted in the work by two or more students. In one end of this room there is a class room with seventy-two chairs, where the students meet in the afternoons to listen to and take part in discussions on cheese and butter making, separators, milk testing, etc. Occasionally experts meet the class here and judge samples of cheese or butter before them.

The home dairy room contains one power and three hand separators, three Daisy churns, two lever butterworkers, etc. The home dairy course is intended for those who want to spend a short time in order that they may gain that knowledge of buttermaking which will enable them to return home and manufacture butter of a high quality. A few hundred pounds of milk are separated here each day, and the students become acquainted with the relative merits of the different separators.

The boiler room contains a twenty-five horse power boiler, which supplies the different rooms with hot water; also a seventy-five horse power boiler used for heating the buildings and for power.

In the engine room there is a twenty-five horse power automatic steam engine, used for driving the machinery.

About eighty students attended the school this winter. They came from all parts of the province, and many of them are experienced cheesemakers, who have come up for a term for the purpose of becoming versed in the principles underlying their work and getting hold of the latest improvements in methods. Thus you can easily understand that the outcome will be the production of a better and more uniform quality of dairy products through this province. As these students return home and put their increased knowledge to practice in their own factories, better butter and cheese will be produced, and they will become centres for disseminating information on dairying through their own locality.

Camperdown, Ont. WM. KENDALL.

Questions and Answers.

Values of Feeding Stuffs.—H. J. M., The Ridge: Having pigs to keep in good heart while on grass, and cows to keep up for the factory, I would like to know the relative values for this purpose of cotton-seed meal at \$1.30 per 100 lbs., ground flax seed at \$1.20, and ground oil cake at \$1.20. Which would be the most profitable single, or would it be to advantage to mix them? Mill stuff is hard to get and dear, fully equal to cotton-seed meal. Bran it is almost impossible to touch, so I want to be posted in what I can buy.

By Prof. H. H. Dean, Guelph: In answer to your correspondent's query about the values of cotton-seed meal, ground flax seed, and ground oil cake for pigs and cows, I would say that I have never heard of these foods being fed, to any extent, to pigs. We have used them in small quantities along with other foods. I should be very careful in feeding these to pigs, especially the cotton-seed meal. For cows, where their milk is made into butter, they should be fed in small quantities, not over 2 lbs. per day to each cow, as they have a tendency to injure the flavor of the butter. Cotton-seed meal to the extent of one pound per day to each cow will have a tendency to make the butter *stewy*, and it will "stand up better" in hot weather. **Stewart** places the following feeding values on these foods per 100 lbs.: Cotton-seed meal (decorticated), \$2.30; linseed cake, \$1.61; flax seed, \$2.47.

Poultry.

How to Get the Best Returns from Farm Poultry.

On the second page of this issue will be found an announcement of prizes, consisting of purebred poultry, which are offered for the two best essays on the above subject. The question of the farmer getting the best returns from his poultry is a most important one, and, therefore, we hope that a great many of our readers will take part in the contest. The birds are to be selected for show purposes, and so can be shown at the coming fall shows. They will be delivered to the successful contestants about September 1st. Essays must be in by May 15th. Only farmers or members of their families can compete, and they must be subscribers to THE JOURNAL.

Fowls for Farmers.

By JOHN J. LINTON, Oshawa.

Nearly all the poultry raised on farms, as well as the eggs produced, come from but a small acreage. When the amount of the land occupied by poultry is compared with the area required for large stock, it should be possible to make poultry pay still better by devoting more room to it.

It is a progressive farmer who can succeed in making one acre support a cow, and he is then perfectly satisfied with a profit of \$50 from her. If an acre of land can be made to yield any kind of a crop that will pay a profit of \$50, the success attending such a result would be considered worthy of notice. Profit means, of course, all that portion of the gross receipts which remains after the full expenses are paid, and a profit of \$50 an acre is very large.

It is easy to figure on paper the possibilities of an acre of land, but there are abundant facts to demonstrate that \$50 is but a small sum to derive from one acre of land devoted to poultry. It is rare to find a case, when a large flock has been given the space of one acre, where the hens did not pay well, although due credit is not always allowed for the "home" market for poultry and eggs, which, when they are kept for the family table, are not taken into account.

One hundred hens can be accommodated on an acre of ground without any crowding, and on farms devoted to poultry as many as 500 hens are quartered on an acre. On the boiler farms the building and yards that supply 1,000 broilers do not occupy a greater space than 25x75 feet, or less than one-eighth of an acre. The space for foraging can be easily supplied on some farms, and the farmers should consider the matter from a financial standpoint.

It is, no doubt, a mistake to confine flocks of hens in small yards. By judicious management, hens can be made profitable even in confinement (and the yard is the proper place for all hens at certain seasons of the year), and so can the cow be staked on a small plot, or confined to the stable, but it may not be best for her. She is really confined when in the pasture, but is given plenty of room. The question is, whether the hens do not deserve as much room as the cow, provided that they pay a larger profit. The most careful experiments have demonstrated that each hen in a large flock should give a profit of \$1 per year. Some of the hens will pay nearly twice as much, while some will not pay at all. The cost and the profit are regulated by circumstances, as is the case with all industries. All risks must be encountered, including losses from disease and mismanagement; but, with all the allowances for drawbacks, a hen will give a profit of \$1 per year in eggs and chicks. There is no more labor required to

manage a flock of fifty hens than in managing a cow, or in plowing, seeding, cultivating, and harvesting a one-acre crop, and the larger the crop the smaller will be the cost proportionately for each hen or bushel of produce.

When plenty of room is given to a flock of hens the expenses are lessened, though more land is occupied. If but fifty hens are allowed on an acre of ground, and the space is so divided as to allow the hens to occupy but half an acre, while the other half is permitted to grow some kind of green food, they will secure a greater variety of food and not only lay more eggs, but be more thrifty. The gain to the farmer will be in the insects secured, and during the summer season he will be required to feed but little. It is a curious fact that the "intensive" system of farming is applied to poultry, and not in other directions, when the case should be really reversed. If a whole acre of land is given up to fifty hens, as they lay as well, or even better, than anything else on the farm, why should not the farmer resort to raising poultry himself, instead of leaving that branch of work to women on a limited area near the dwelling house?

While one hundred hens are not too many for one acre of land, better proportionate results will be secured with fifty hens. If the farmer finds that fifty hens pay on one acre, he can use more acres in the same manner. Few farmers have even really tried to make poultry pay. As a general rule, if hens have paid at all on the farm, they deserved all the credit. There are no fabulous profits in poultry, nor is the capital required much less than for other stock, but the losses are sooner recuperated, and better prices are obtained. There is another advantage which is important. The returns from the sale of poultry and eggs are constant. There is no waiting until harvest time for crops to mature, and no condition of being governed and regulated by "corners" or speculators. There is always a retail demand which the farmer can himself regulate and supply. During every season of the year poultry and eggs are in demand. The farmer who sells strictly fresh eggs need have no fear of competition.

The keeping of hens on the "garden" plan is not necessary. Even if land is valuable, hens will pay as much per acre as a cow. It is the nature of the hen to forage. She does not thrive in a yard. She lays the greatest number of eggs when she can scratch and select a variety of food from the insects, seeds, grass, and tender weeds. She can supply her wants better than the farmer can, and her instinct prompts her to select the foods that produce eggs. Even in the winter she delights to exercise herself, and she will pay well for the land she occupies.

The Apiary.

Beekeeping and Its Place on the Farm.

By R. F. HOLTERMANN, Brantford.

(Continued.)

If you have no means of studying beekeeping with a practical apiarist, get one or two of the best standard works and one or two bee papers. After reading them carefully, get not more than two colonies. Keep on reading and working, and increase your apiary as your knowledge and experience increase. I have spoken very emphatically of the farmer's right to embark in beekeeping. Does the specialist claim any more than his right if he rents or purchases a small piece of land in the country village or town, and locates an apiary? Certainly not, unless he locates where another is already operating pretty extensively. In that case he is doing a moral injury, just as the one who begins in the specialist's territory injures another. Where would beekeeping be to-day if it were not for the men who have devoted a great deal of their time and energy to its advancement? The specialist is really working with the farmer and horticulturist, the interests of both being advanced. One year, perhaps, the latter comes out ahead by securing a large fruit crop, while the beekeeper gets little

or no surplus honey. Another year the opposite condition of affairs may exist. One, as it were, supplies the capital and the other the labor.

The specialist has suffered much in localities where, from the number of bees kept, there are reasonable grounds for saying that they are overstocked. He has gone into the business and made it pay through good management, attention, and knowledge of his business. His neighbors have seen the quantities of honey secured, and have decided to try to do likewise, the result being disastrous to all. During a poor season, the specialist and the beekeeper become discouraged, having lost money. Then the bee fever gradually dies out; and to such an extent, under such circumstances, does it sometimes die out that not even the flowers are fertilized as fully as they should be.

I think the specialist, on account of his understanding the question better, is seldom foolish enough to start beekeeping in a field already occupied. He knows too well that his all depends on beekeeping, and that he must choose well his location before he embarks in the business. Of course, there are instances in which it is a difficult matter to say where one's right begins and another's ends. For instance, take a case where a farmer keeps a few bees. The specialist comes in, and, after that, the farmer gradually enlarges his apiary. So here, as in every business, one must be prepared to enter into all kinds of competition; and here, as in almost every sphere in life, it is in our own best interests to consider the interests and rights of others, and do to others as we would be done by.

In taking up the question of keeping bees on the farm, it will be well to look into the advantages that the farmer has over the specialist. The farmer, not having all his eggs in one basket, does not need to entirely despair should his honey crop fail and he be unable to draw on a reserve bank account. He can arrange his fields without injury to his farm by sowing like clover and buckwheat, and, in waste places, he can sow plants from which the bees will gather honey. In his bush, he can take the precaution to allow all basswood trees to stand. If a son or a daughter make a business of beekeeping on the farm, what time there is at his or her disposal can be profitably employed on the farm; being near the bees, he or she can arrange, at any time, to give them all the attention they may require. A horse and pig is sometimes needed to get beekeepers' supplies from the station or factory, or to market honey. The farmer, or some one on the farm, can take the horse to do this when not busy. The specialist cannot always afford to keep a horse for such a purpose, and has to hire.

Now, let us look at the advantages for the specialist. If he is in a country village or on the borders of a city, we must take it for granted that he has sacrificed everything else in order to locate himself to the best advantage, and that he has all the necessary machinery for carrying on his business successfully. The farmer has to locate his apiary where his farm is, the specialist can select the best locality. He has the advantage of being able to give his undivided attention to gaining a theoretical and practical knowledge of his business, the former through reading and attending conventions, the latter through extensive operations in the apiary. He can give his bees every little or great attention as they need it, and can, by careful watching, prevent inferior grades of honey being mixed with better, and take his comb honey away from the bees as soon as ready, thus preventing the travel stained yellow appearance that too much comb honey has at present when marketed. Let me explain. It is not meant that the honey produced by specialists is always superior. I know of numerous instances to the contrary, but he certainly has superior facilities for securing a better article. For wintering he has marked advantages over the farmer. With a large number of colonies he can afford to go to an outlay which will give him the conditions under which he is more likely to winter with success.

In this country there is no doubt that an inside repository may be better than any outside wintering resorted to, and, further, that

the best constructed repositories for bees during winter are quite different from the cellar the farmer has under his house. By wintering bees in a properly constructed cellar a saving of, probably, fifteen pounds of honey per colony can be effected, to say nothing of the feeling of security one has that his bees will come out not only alive, but vigorous. There are, of course, many cellars under farmhouses the atmosphere of which is dry, and the temperature not quickly changed by changes in outside temperature; but, as a rule, they contain other stores, such as root crops and apples, to which frequent visits have to be made. Bees dislike both odor and disturbance, and the farmer is at a disadvantage in this respect, unless, by keeping a large number of colonies, a special outlay is warranted. The next best thing to this is to run up a partition to separate the bees from other goods in the cellar.

Jottings.

Notice.—New advertisements, notice of which is desired in the Jottings or Stock Notes columns, must reach us by the 20th of the preceding month. Items for Stock Notes, to secure insertion, must also reach us on the same date.

Empire State Potatoes.—Mr. James Bowman, Guelph, Ont., has a limited quantity of seed potatoes of this very superior variety, which he is offering at \$1 a bag on board the cars at Guelph.

The Southdown Sheep Club.—We have received from Mr. Garrett Taylor, Norwich, Eng., hon. secretary of the Southdown Sheep Club, Vol. 2 of the association's report, which contains reports of meetings, a list of members, table of prize-winning sheep, and ramssent in for registration.

Of Interest to Breeders.—In a few weeks horses and cattle will be put on grass, and the greatest care is necessary to prevent the sudden change of diet having very serious effects. Dick's Blood Purifier tones up the whole system, and the animal goes on thriving instead of being set back by a change.

The Farm and Dairy.—Mr. Henry Wallace, who for ten years was editor of the Iowa Homestead, has now become editor of *The Farm and Dairy*, published at Ames, Iowa. Mr. Wallace is well known as an authority on "clover," and will, no doubt, in his new field, greatly enlarge the usefulness of *The Farm and Dairy*.

Injurious Insects.—We are indebted to Miss Eleanor A. Ormerod, late consulting entomologist to the Royal Agricultural Society of England, for a copy of her report of observations of injurious insects and common farm pests during 1894, with methods of prevention and remedy. It is needless to say that the report is a very valuable one, the pests are fully described, and the methods of prevention and the remedies suggested are such as can be used by any one.

Simmers' Seed Oats.—We desire to call our readers' attention to the advertisement of Mr. J. A. Simmers, Toronto, where will be found advertised three first-class oats, viz., the Siberian, Challenge, and Peerless. These oats have given great satisfaction, are heavy yielders, and are good for feeding or for grinding into meal. Mr. Simmers will mail a package of the new crimson or scarlet clover seed and a package of seed of the new fodder plant, sacaline, for 25 cents, postpaid. Both of these should be tested by farmers at first on a small scale, and the above offer enables them to do so cheaply.

Victor Incubator.—The Victor is absolutely self-regulating, is built by first-class mechanics, and of the very best material throughout. It is strong, neatly constructed, and very durable. Its manufacturers claim that it is the easiest to operate of all incubators without any exception. Every one is guaranteed, and from the excellent list of testimonials from users of the Victor, we are sure that our readers who are desirous of securing an incubator will do well to correspond with the manufacturers and patentees, Geo. Ertel & Co., London, Ont. Their illustrated catalogue, full of valuable information, can be obtained by sending four cents in stamps.

The Humane World.—This paper, which its name indicates, is published in the interest of the Society for the Prevention of Cruelty to Animals. It is doing a good work that should be encouraged. It is largely the result of a lack of proper training of children in their early days, and such publications as the above-mentioned one are the kind that should be circulated everywhere among the rising generation. Nor is it less suitable for those of riper years. The number before us contains several good articles on the care of the horse and other animals. Send to the Humane World Educational Association, St. Paul, Minn., for a sample copy.

Thorncliffe Farm Sale.—Mr. Robert Davies, proprietor of Thorncliffe Stock Farm, Toronto, on 16th May next, will hold a special sale of his entire herd of Shorthorn cattle, consisting of twelve bulls, among them being the celebrated imported Cruickshank bull, Northern Light (57801) = 11111, and the celebrated young Bow Park bull, Lord Outhwaite, who took first prize and sweepstakes for best bull, any age, at Toronto show last fall; also a lot of choice cows in calf and young heifers by the above bulls. This will be a great opportunity for buyers to purchase some of the best stock on the continent. He will also offer for sale, on the same date, some of his fine registered thoroughbred Shropshire sheeps. Catalogues will be forwarded upon application.

Jottings—Continued.
Lewis' Combination Spray Pump.—In our columns will be found the advertisement of Mr. W. H. Van Tassel, Belleville, Ont., who advertises the above-mentioned pump, 6000 of which are now in use. This pump is all of solid brass, except at the few feet of hose required, and can be used as a spraying pump, agricultural syringe, and veterinary syringe. The parts all screw together, and are easily taken apart and cleaned. It will throw a stream some thirty feet high, and the spray can be altered from coarse to fine, or to a solid stream instantly, without stopping work. The cheapness of the pump is also in its favor. It will be expressed to any station prepaid for \$6.50.

American Shepherd's Year Book. This very good manual of sheep husbandry is published by the American Wool and Cotton Reporter, 135 Franklin street, New York. It contains illustrated descriptions of the various breeds of sheep, directories of members of the leading sheep breeders' associations and lists of wool growers, with numbers of sheep owned in various sections of the United States, numbers of sheep in all the countries of the world, comparisons of the tariff of 1894 with the tariffs of previous years, and much other information for the use of American sheep breeders, wool merchants, manufacturers, and others concerned in the great wool industry of the United States, from the fleece to the finished fabric. Sent postpaid upon receipt of \$1.

A Valuable Report.—The Report of the Select Standing Committee on Agriculture and Colonization of the House of Commons, Ottawa, for 1894 is a very valuable one, not only as regards the matter contained in it, but also as regards the arrangement. This has been got out in a very convenient form for reference to any given subject, there being a table of contents and also an index. The analytical index, which was not attached to former reports, is another commendable feature, and the secretary, Mr. J. H. MacLeod, must feel proud of his work. The whole book is a complete record of the committee's work, and contains sundry recommendations made by them for the current year and in regard to other matters.

Guernsey Herd Register.—There comes to our table the first issue of the *Herd Register and Breeders' Journal*, a 60-page quarterly issued from the office of the American Guernsey Cattle Club, Wm. H. Caldwell, secretary and treasurer, Peterboro, N.H. It is a magazine, carefully edited, in the interests of the Guernsey breed. It gives, in easily-accessible form, such records, news, tests, and illustrations as are of interest to Guernsey breeders, and, at the same time, the entries and transfers as recorded.

Horse Owners! Try
GOMBAULT'S
Caustic
Balsam
A Safe Speedy and Painful Cure



The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Hooves and Feet. **SHARPENS THE CUTANEOUS OR FIRING.** Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. **THE LAWRENCE-WILLIAMS CO., Toronto, Ont.**

BUSINESS IS BUSINESS.

But it is not very good business management to keep on salting stock with loose salt when by using

Rock Salt

You can salt them for one-half the money. Besides, by placing three or four large lumps in your pasture, your stock get as much salt as they want and when they want it.

We ship 400 lbs., or over, at 50c. per 100. (Cash with the order.)

TORONTO BALT WORKS,
138 Adelaide Street East, - Toronto

FOR SALE.
AYRSHIRE BULLS - YORKSHIRE PIGS

A good chance to secure a first-class two-year-old bull, with registered pedigree; color, red and white, very nicely marked; good disposition. Will be sold for half his value. Also a fine bull calf.

A few Boars fit for service, and some nice young breeding sows at half price. Orders now booked for spring pigs, at \$5.00 each, with pedigree. All stock shipped guaranteed as described, or no sale. Write for prices, etc.

W. H. CREWS, Box 932, Trenton, Ont.

Shorthorn Heifers
Southdown Rams

If you are thinking of purchasing either of the above it will pay you to write to me, or, if possible, come and inspect stock. The heifers are all in calf to "Aberdeen," and all stock is of the very finest breeding.

JNO. MILLER, Markham, Ont.

Seed Oats for Sale.

A quantity of Texas rust-proof oats never before offered in this country. They are ten days earlier than other oats, and ripen before attacked by rust. They have branching heads, reddish color, very thin hull, stool out enormously, have medium height of straw, stand up well, and have yielded fully seventy-five bushels to the acre by test for four years. Three fully matured oats and one small one will be found in nearly every chaff, thus ensuring an abundant yield. Samples sent on application. One bushel, \$1; five bushels, 90 cents; ten and over, 75 cents per bushel, F.O.B. at Stouffville. Bags free.

C. J. BRODIE, Bethesda, Ont.

For Sale
(without reserve) in
August, 1895.

STALLIONS.

3 French Coach
3 Glydesdale
15 Percherons

All purebred and registered. Every one guaranteed as a sure foal getter.

The balance unsold, if any, will be sent to the United States in September.

For particulars apply to

THE HARAS NATIONAL CO,
30 St. James Street,
MONTREAL.

SHORTHORN STOCK SALE.
Thorncliffe Stock Farm, TORONTO.
ROBERT DAVIES, Proprietor.

Entire Herd of Shorthorns will be sold by Public Auction on May 16th, 1895, at 12 o'clock noon.

Among the bulls are the celebrated Imported Cruickshank Bull, Northern Light (57801) = 11111, by Standard Bearer (55096), dam Nonpareil 20th (46144); also the celebrated Bow Park Bull, Lord Outhwaite, = 18787, by Butterfly Duke 10th = 14278, dam Lady Isabel (Imp.) = 5156, by Crown Prince (38661); and several young bulls and heifers sired by the above. Also a lot of grandly bred cows in calf.

Write for catalogue.

FIRST ANNUAL
Canadian Horse Show
\$5,000 IN PREMIUMS.
To be held in the
NEW ARMORY, TORONTO
ON
APRIL 18, 19, and 20, 1895.
Under the auspices of
The Agriculture and Arts Association of Ontario and the Country and Hunt Club of Toronto.

Entries to be in by April 3rd.

Large prizes will be given for all the recognized breeds of stallions, and for all kinds of Driving, Saddle, and Jumping Horses.

Reduced rates on railways are granted. Prize lists and information can be procured from the joint secretaries.

Evening Entertainments as well.

H. WADE, Agriculture and Arts Ass'n, Toronto.
STEWART HOUSTON, Country and Hunt Club, Toronto.

FOR SALE.

Three very fine young SHORTHORN BULLS, from twelve to eighteen months old, sired by the imported Scotch bull Invincible, and from good recorded cows. Also a few heifers and a number of improved large White Yorkshires and Large Berkshire pigs for sale at reasonable prices.

H. J. DAVIS,
WOODSTOCK, ONT.

FOR SALE.

Ayrshire Bull Calf by the silver medal bull, Prince of Byron, dam Florence, by Leo of Norval, an extra good individual; also a fine lot of Berkshire Pigs, sire by Knowlton, all direct from imported prize-winning stock, and all registered.

A. TERRILL, Wooler, Ont.

FOR SALE.

Nine choicely bred Scotch Shorthorn Bulls, from eight to twenty-four months old, at prices and terms to suit the times. Come and see them.

DAVID MILNE,
ETHEL, ONT.

Special Sale of
JERSEY CATTLE.

I will sell, to go any time before 1st of May, singly or in lots to suit purchasers, at reasonable prices the following Jerseys:

- 5 Young registered cows, due to calve in April and May.
- 6 Purebred, unregistered cows to calve in April and May.
- 5 Yearling heifers in calf due Oct. and Nov.
- 5 Heifer Calves.
- 2 Yearling Bulls.
- 2 Bull Calves.

All solid color, richly bred and in fine condition. Come and see, or address.

J. C. SNELL,
R.R. Station Brampton. **Edmonton, Ont.**

FOR SALE.

FOR SALE Imported Shire Stallions

Blagdon Marquis, foaled 1894. Bay, 16 1/2 hands. Dismouth Blue, foaled 1889. Bay, 16 1/2. Fylde King, foaled 1888. Brown, 16 1/2. These horses were exported in 1893 by Clement Keevil, Blagdon Stud Farm, England, and entered in both English and Canadian studbooks, and will be sold at low prices, and on liberal terms. Address: GEORGE GARBUTT, Thistle town, Ont.

FOR SALE

Coach Stallion Londonderry

16 1/2 hands high; weight, 1450 lbs.; 7 years old. Times' price and liberal terms. Address: ROBERT ATKINSON, Thistle town, Ont.

FOR SALE.

Two yearling Shorthorn bulls. Good animals. Will be sold at prices to suit the times. JOHN DAVIDSON, ASHBURN, Ont.

FOR SALE

Seven young red Shorthorn Bulls at very low prices. Also the Bull "PRINCE ROYAL," used three years in the herd. J. & W. RUSSELL, Richmond Hill, Ont.

SIMMONS & QUIRIE, IVAN, ONTARIO.

Breeders of Shorthorns and Berkshire Pigs

The herd is headed by the Matchless bull, Royal Saxon - 10177, by Excelsior (imp.) - 2693 - (51233), with Hampton M. - 18400, sired by Hampton Hero - 3740, as reserve. Among the females are representatives of the Strathallan, Almas, Goldenrods, Mysias, Elvira. They are mates, with Scotch crosses. The herd of Berkshires includes many prize-winners, and are an exceedingly choice lot. Farm 7 miles from Ilberton Station, G.T.R. Stock of all kinds for sale. Apply to C. M. SIMMONS, Ivan P.O., Ont., or JAMES QUIRIE, Delaware, Ont.

GLENBURN STOCK FARM.

For sale. A very choice lot of Berkshire pigs (from large litters), farrowed in February and March. Write for prices. JOHN RACEY, Jr., Lennoxville, Que.

"THE BRIARS"

SUTTON WEST, ONT.

84 Head of Registered Shorthorns.

Including bulls of various ages, incorporating the best blood of the Scotch and English Herds. Also HORSES AND PIGS. Inspection invited. F. C. SIBBALD.

H. I. ELLIOTT BREEDER OF

Scotch Shorthorns and Southdown Sheep Imported King James at the head of herd. Riverview Farm, Danville, Que.

AVONDALE STOCK FARM.

Dominion Chief, by (imp.) Royal Chief, dam (imp.) Jess, at the head of the herd. Among the cows are imported Fairy Queen and Amy, the 1893 silver medal cow at the Industrial. From these I now have young bulls for sale, also a number of superior young bulls and heifers of different ages. Heifers always on hand. JOHN H. DOUGLAS, Warkworth, Ont.

W. C. EDWARDS & CO., Breeders and Importers.

ELMHURST STOCK AND DAIRY FARM, Clarence, Ont.

Shorthorns of milking families with imported Grandeur at the head of our herd. Our Shropshires are all imported from the best flocks in England. Berkshire Pigs. Young stock for sale. Post office and telegraph office, Clarence, Ont. Railway station and steamboat landing Thurso, P.Q., on the C.P.R. HENRY SMITH, Manager.



PINE GROVE STOCK FARM, Rockland, Ont.

Special bargains on young bulls of superior merit and select Scotch breeding. Also thick young heifers at right prices. Post Office, Telegraph Office, and Steamboat Landing, Rockland, Ont., on the C.P.R. JOS. W. BARNETT, Manager.

LAURENTIAN STOCK AND DAIRY FARM, North Naton Mills, P.Q.

Ayrshire, imported and homebred; herd headed by imported Emperor of Dromore 5431 CA H R and 1868 S A H B Jerseys, all of the celebrated St. Lambert family herd headed by Legar Poga of St. Anne 25704, A.J.C.C. Berkshire Pigs. Young stock of all the above breeds for sale. Post Office, Telegraph Office, and Railway Station, North Naton Mills, P.Q., on the C.P.R. GEORGE CARSON, Manager.

Jottings.—Continued. in the office of the club. Such a publication, of its nature and make-up, will not only be a credit to the breed, but of great value to breeders in their endeavors to give the breed the recognition due it. It will be a valuable means of preserving the history of the breed. It deserves the support of all interested in Guernseys, and is published at a subscription price of \$2 a year.

Handbook of the Turf.—A treasury of information for horsemen, embracing a compendium of all racing and trotting rules; laws of the states and their relation to horses and racing; a glossary of scientific terms; the catchwords and phrases used by great drivers, with miscellaneous information about horses, tracks, and racing. By Samuel L. Boardman. To the lover of racing, of trotting and running horses, and to all who are interested to any extent in racing and horse matters, this book is really indispensable. It gives in a concise, handy form, a mass of information on these and allied topics, and in such a shape that no time need be lost in referring to them. Those especially who have been, in times past, puzzled by the somewhat bewildering nomenclature of the track and its devotees, this book will be most welcome. It should be in the library of every horseman and of every writer on horses and racing. Cloth. Price, postpaid, \$1. Orange Judd Company, 52 and 54 Lafayette Place, New York.

Farmer's Guide. This is the title of a new book which has just been issued by the German Kali Works, 93 Nassau street, New York, and which treats of the fertilization of farm crops. The main portion of the publication comprises an enumeration of most farm crops and horticultural crops raised in this country, from the Gulf of Mexico northwards, setting forth briefly upon what kind of soil these crops should be planted, what place they should have in their rotation with other crops, and what kind of fertilizers should be applied to them, together with the average amounts per acre. A few valuable suggestions are also given with each crop. An introduction to the pamphlet, the principles of artificial fertilization are presented in a concise manner, embodying just such information as every practical farmer and consumer of artificial manure will seek. In connection therewith, the average composition of fertilizer materials is given and some valuable tables are appended, showing the distances recommended for planting various crops, and the number of plants per acre at various distances. In the set of illustrations which conclude the pamphlet the results of practical and scientific experiments, illustrating the use and effect of artificial fertilizers, are given. We understand that this book can be obtained free of any cost by writing to the above mentioned firm.

Vienna International Exhibition.—The Imperial Agricultural Society of Vienna will hold in that city on May 4th, 5th, 6th, and 7th, 1895, an international exhibition of agricultural machinery, to which we beg to call the attention of our manufacturers. All exhibitors whose machines need power must supply their own motors, but these will be considered part of the exhibit. The exhibitors will be privileged to sell machines, but none can be removed from the exhibition until its close. The lists for applicants for space from America will remain open until April 15th, 1895; those from European countries close March 15th. Reception of exhibits will begin April 22nd and end April 30th. Arrangements will be made concerning the entry of all exhibits free of duty, and the privilege of transportation over the Austrian railways. The exhibition will be divided into the following departments: Agriculture and agricultural industries; forestry and forest industries; fruit and viticulture; animal industry; dairying; fish culture; veterinary work and horseshoeing; electricity as applied to agriculture and forestry; and an annex for seeds and artificial manures. Transportation, unpacking, and setting up is to be at the expense of the exhibitor, but will be under the general charge of the commissioner of the committee. At the close of the exhibition all exhibits must be removed at the expense of the exhibitor by May 14th. All communications should be addressed to the Committee of the Imperial Agricultural Society of Vienna, No. 13, Herrengasse, Vienna.

A Successful Shorthorn Sale.—The dispersion sale of the herd of Shorthorns belonging to Messrs. Thos. Ballantyne & Sons, Stratford, Ont., on Wednesday, March 13th, was a great success, considering the hard times. A great many breeders were present, and, as announced, every animal in the herd was sold. The highest price, \$180, was brought by Missie of Neidpath 6th, with calf at foot, while Missie of Neidpath 3rd, also with a calf at foot, sold for \$175. We give a list of the animals sold with prices and names of buyers: Cow, Missie of Neidpath, and calf, James Grear, Shesapeake, \$175; cow, Marchioness 7th, and calf, John Brydome, Millerton, \$120; cow, Marchioness 10th, and calf, David Milne, Ethel, \$105; cow, Meadowsweet 2nd, Thomas Ellis, Clifford, \$100; heifer calf, Meadowsweet 4th, William Oliver, Avonbank, \$51; cow, Missie of Neidpath 10th, and calf, F. Martindale, York, \$48; cow, Missie of Neidpath 12th, and calf, James Riddell, Beeton, \$35; cow, Missie of Neidpath 8th, Thomas Stacey, Cromarty, \$118; heifer calf, Missie of Neidpath 18th, William Menzies, Kirkwall, \$84; heifer, Missie of Neidpath 15th, Fred. Martindale, York, \$76; cow, Marchioness 4th (imp.), Robert Struthers, Poole, \$64; heifer, Mar-

Isaleigh Grange Farm

has two very fine Guernsey bull calves to offer that will be fit for service in spring, sired by the celebrated Bull, Adventurer, winner of 23 first prizes in Britain previous to importation.

IN SHROPSHIRE SHEEP

we have still a few ram lambs of choice breeding. Sold out entirely of yearlings, but would spare a few choice ewes, bred to imported rams, and a beautiful lot of ewe lambs fit for any flock.

IN IMPROVED LARGE YORKSHIRES

we have a fine lot of young pigs for sale, of all ages. Young sows, fit for service, and young sows served to an Ayr bar, if wanted. Also our imported stock bear, Holywell Prince.

Apply to T. D. MCCALLUM, Manager.

Isaleigh Grange Farm, DANVILLE, QUE.

SHORTHORNS.

FOR SALE.

Seven Shorthorn Bulls and twelve Heifers, forty (registered) Southdown and Leicester Rams and Ewes and a lot of Berkshires. All first class Stock, at hard-time prices. Come and see us or write for prices. E. JEFFS & SONS, BOND HEAD, Ont.

SCOTCH SHORTHORNS AND BERKSHIRE PIGS FOR SALE

Choice young cattle of both sexes of the most select breeding. Also young Berkshire pigs from sows selected from the herd of Mr. J. C. Snell, Edmonton, Ont. Write for prices. W. WARD, Hinchon, P.Q. Farm one-half mile from station C.P.R. 246

AMPLE SHADE STOCK FARM HAS FOR SALE

Shorthorn Bulls, 4 to 16 months old, of the best breeding, large size, thick and well fleshed, grand quality, at reasonable prices. Address: E. GAUNT & SONS, St. Helens, Ont.

FOR SALE. PURE SCOTCH SHORTHORNS.

Young bulls and heifers, some from imported sires and dams. Also a lot of fine young Berkshires, pairs mated that are not akin. Prices to suit the times. Valley Home Farm is one mile from Meadowvale Station, C.P.R., six miles from Hampton, G.T.R. Visitors welcome. Address: S. J. PEARSON & SON, Meadowvale, Ont.

SHORTHORNS

I have for sale two nice yearling heifers, red, and red and little white, good ones. Also two bull calves, well bred, and well grown. All are from first-class stock, and at reasonable prices. D. ALEXANDER, Brighton, Lambton County, Ont.

FOR SALE. SHORTHORN BULL

An extra good roan calf, eleven months old, from the unbeaten show heifer Vanity, winner of firsts at Toronto, Montreal, and London; also cows and heifers, good ones. H. & W SMITH, Hay, Ont.

HOLSTEINS.

FOR SALE.

Three Registered Holstein Yearling Bulls, fit for service. Dams Heavy Milkers. Terms Reasonable. Address, JAMES RAE, Avonton, Ont.

REGISTERED HOLSTEINS

FOR SALE BY

ELLIS BROTHERS, BEDFORD PARK P.O., ONT.

3 miles north of Toronto, on Yonge Street. Electric cars bring you to our gate. Inspection Invited and Correspondence Solicited.

Brookbank Holsteins Won Milk Test at Toronto, both 1st and 2nd prizes. Silver medal for best female, any age. Prizes in every female section, from cow to calf inclusive.

At the Great Fairs, first and diploma, best bull, any age; also first prize and diploma, best herd, at Ottawa.

All our Prize Winners in the two-year-old, one-year-old and calf sections were bred at Brookbank. All ages for sale. Special bargains in choice bred bulls and heifers from prize winning stock.

Also Poland China pigs, sired by a World's Fair prize winner. Write for particulars. Visitors welcome

A. & G. RICE,

Currie's Crossing P.O. and Station Six miles south of Woodstock, Oxford Co., Ont.

THE GREAT MILK AND BUTTER HERD OF HOLSTEIN-FRIESIAN CATTLE.



75 head, young stock of excellent quality, prices to suit times. Send for catalogue.

SMITH BROS. Credit Valley Stock Farm, Churchville, Ont.

A subscription to THE JOURNAL is the best \$1 investment any farmer or stock-raiser can make.

JERSEYS.

JERSEY COWS.

Heifers in calf, heifer calves, and bull calves. Handsome, richly bred, good color, and in fine condition. Come and see, or a litter.

J. C. SNELL, Edmonton, Ont.

11 R. Station, Brampton, G.T.R. and C.P.R.

JERSEYS FOR SALE.

TWO extra finely bred registered young bulls, fit for immediate service. For pedigrees and prices, apply to

A. McLEAN HOWARD, JR., Glen of Duart Farm, Box 3601, Toronto, Ont.

A.J.C.C. Jerseys For Sale.

Heifers in calf, heifer calves and bulls, young and old, all registered stock, being of the best strains of breeding viz., Tormentor, Pedro, Stoke Pogis and Ida's Stoke Pogis, etc. None better.

Write for what you want to H. FRALEIGH, 223 St. Marys, Ont.

FOR SALE. A.J.C.C. JERSEY BULL

ERIC KING OF REVERVIEW, No. 3646, dropped Dec. 4, '91. SILVER JACK. FAVORITE OF RIVERVIEW. Gave 31 lbs. of milk a day at a 2-year-old.

He is a pure St Lambert, solid color, black tongue and switch; also a great-grand-son of Ida of St. Lambert, whose record was 30 lbs. 2 oz. of butter in seven days.

For price and pedigree address A. T. MACARNEY, Dunnville, Ont.

A chance for the best bred from winners. JERSEYS FOR SALE.

Six grand young bulls, six to eight months old, out of tested cows of the purest St Lambert breeding. Also a few fresh cows. Prices right.

WM. ROLPH, Markham, Ont.

FOR SALE. Two Jersey Bulls, one two-year-old, registered A.J.C.C., 50 per cent. St. Lambert, 50 per cent. Victor gets solid colored calves. Also bull calf, 10 months old, at farmers' prices. Apply to R. W. FRANK, Kingsbury, Que.

JERSEY BULL CALF FOR SALE.

Calved 25th July, 1894, handsome, solid, dark fawn, black tongue and switch. Sire, Exciter, 3670. Dam, Matrina of St. Lambert, 87304, the dam is grand-daughter of the famous Canadian John Bull, 8385. Also some fine registered Berkshire pigs.

234 WILLIAM CLARK, Meyersburg, Ont

SHEEP.

1881 SHROPSHIRE 1881



157

Our flock, the oldest Shropshire flock in Canada, was founded in 1881. Importations made from time to time, selected in person from best English flocks. This season's lambs are a strong lot, dropped in January and February. Orders can now be taken for pick.

J. COOPER & SON, Kippen, Ont.

A Choice Lot to Pick From.

Consisting of Ram and Ewe Lambs, and Ewes in Lamb. The finest lot of Shropshire Lambs ever bred, and you cannot object to the prices we ask. Let us hear from you.

Allen McPherson, 219 Forest, Ont.



SHEEP.

FOR SALE

SHROPSHIRE RAMS, AND YOUNG SHORTHORN BULLS (Registered)

Also a few females. Apply to C. H. IRVING, Box 288, Newmarket, Ont.

MONTROSE STOCK FARM

Breeder of Shorthorns (Waterloo Booth strains), Shropshires, Berkshires, Bronte Turkeys, and Fancy Plymouth Rocks. I make a specialty of raising Swede Turnip Seed, warranted fresh and 1/2 lb. sufficient per acre. The best quality of turnips grown. Write for prices.



218 HORACE CHISHOLM, Paris, Ont.

T. W. HECTOR, The Cottage, Springfield-on-the-Credit, Ont. Breeder and Importer of DORSET HORN SHEEP. And dealer in Saddle and Carriage HORSES. Stations: Springfield, C.P.R., and Port Credit, G.T.R. 179

LEICESTERS.

In strong competition at leading fairs our flock won high honors. We will dispose of a number of choice ewe and ram lambs. Also good breeding ewes in lamb. Write us for particulars.

E. ARCHER & SONS, 212 Warwick, Ont.

SPRINGBANK STOCK FARM

SHORTHORN CATTLE, OXFORD SHEEP, BERKSHIRE PIGS, AND BRONZE TURKEYS. 14 Shearling Oxford Rams, imported and homebred, for sale; also a number of shearling ewes. 50 Ram and ewe lambs ready for the fall trade, mostly raised by Young Nobby (imported) No. 7703. First prize shearling ram at the Bath and West of England Show in 1892.



115 JAS. TOLTON, Walkerton, Ont.

The Largest Lincoln Flock in Canada!

Our breeding ewes, 150 in all, are from the best English flocks. Our last importation was made from the flock of Mr. Henry Dudding, and were all personally selected. If you want a ram or a few ewes, send along your order. If you want shearlings or lambs of either sex, we can supply you with the very best.

J. F. GIBSON, Denfield, Ont. W. WALKER, Ilderton, Ont. On London, Huron & Bruce Railroad. 148

FAIRVIEW'S SHROPSHIRE.

I can now book orders for lambs sired by the Columbian champion, Newton Lord. Many of them have for dams first-prize winners in Canada, England, or at the great World's Fair. A few late 1894 lambs of similar breeding are now offered for the first time. Among them is a ram by Newton Lord, and out of the two-year-old first-prize ewe at the World's Fair, which won, in all, four firsts at that great show. No one wanting something choice will be disappointed in paying Fairview a visit. A personal selection preferred. Come or Write.

JOHN CAMPBELL, Fairview Farm, WOODVILLE, ONT. CANADA. 213

Whiteside Bros., The Glen, Innzkip, Oxford Co., Ont.

Shropshires—Yearlings and lambs. Berkshires—Breeding stock, both sexes. Ayrshires—Three excellent bull calves for sale.

In writing mention this journal. 128



Stock Notes.—Continued.

Toronto, Montreal, and Ottawa in 1892. She is a very promising heifer, in calf to our Tiraniam and's Prince Castine, whose dam, Tiraniam 2nd, made 22 lbs. 8 oz. of butter in a week as a two-year-old, the highest two-year-old butter record in America. Mr. John Kelly, of Red Rock, has purchased Baroness Clothilde, of the famous Clothilde breeding, Daisy Teale's Castine Queen and Lansdown Mercedes King. The dam of the heifer gave 9,085 1/2 lbs. of milk in eight months, and the bull is from a World's Fair prize taker, and should produce fine stock. Mr. James Dick, Holcaygeon, obtained Siepkie's 4th's Mink Mercedes, whose sire is our Mink Mercedes Baron, whose six half sisters as two-year-olds averaged 16 lbs. 5 oz. of butter in a week, and was Pride 2nd's Queen, a very promising young cow, and one of the most persistent milkers in our herd. Mr. Lee Williams, of Lambton Mills has secured Flossie Tensen, a daughter of Cornelia Tensen, whose record was given above. She is a grand young cow. This makes twenty-three head sold since January 1st. People recognize that good stock is profitable, and to give us a call, and in a year or so afterward come and get some more. We have calves and young bulls of excellent quality as well as cows and yearling bulls for sale, and our prices are cut to suit the times.

Swine. Mr. W. ONELL, Belmont, Ont., has Tamworths for sale.

MESSRS. HICKON & DAVOR, Avon, Ont., change their advertisement.

Mr. JOHN RACKY, Lennoxville, Que., has Berkshires for sale.

MR. JOE CAIRNS, Camlachie, Ont., will dispose of some Chester Whites at reasonable prices.

Mr. W. WESLEY W. FISHER, Renmiller, Ont., has a number of fine Poland Chinas for sale.

CAPTAIN A. W. YOUNG, Tupperville, Ont., wishes to call attention to his advertisement in this issue.

MR. J. C. NICHOI, Hubrey, Ont., has Tamworth boars on hand fit for service, also rows and spring pigs.

Mr. JOHN BELL, Amber, Ont., the pioneer importer of Tamworths into Canada, advertises in this issue.

MESSRS. THOMAS DOLLIN & SON, Chatham, Ont., will sell four choice Chester White brood sows, as well as a number of younger stock.

MR. J. G. CLARK, Woodroffe Farm, Ottawa, Ont., writes that he has a few very choice Yorkshire pigs on hand, both prize-winners and from prize-winning stock, and can furnish breeders pairs, not akin, at moderate prices. His Ayrshires have wintered well, and heifers that came in when two-year-olds last fall are milking like mature cows. His young stock never looked better.

MESSRS. CALDWELL BROS., Orchardville, Ont., report: Since last writing you have sold out our Yorkshires, and are breeding Tamworth pigs only. We have a grand lot of sows to come in this spring. Our Ayrshires are also doing nicely, and at present our herd numbers thirty. We have sold recently a pair of Tamworths and an Ayrshire bull to Mr. John Wright, Hazelton, Ont., a bull to Mr. S. J. McElroy, Hazelton, Ont., and a Tamworth sow to Mr. J. Hoffarth, Carleton Place, Ont. Feed about here is rather scarce, and we find our silo a great help, as we have over a hundred tons, which came out in good order.

Mr. J. E. BERTHOUD, Burford, Ont., writes: I am having a good active demand for choice breeding stock, and particularly for boars. Where a good class of Yorkshire boars have been crossed upon sows of either purebred or grades, the produce are as near perfect from a feeder's standpoint as any pigs that I have seen, and they are just the kind that command the top price in the market. I have two hundred and fifty purebred Yorkshire pigs on hand, and I am able to furnish stock of all ages. I am offering twenty-five extra choice young sows in pig, at prices to suit the times. Visitors are always welcome, and if they do not purchase, they will be treated just the same.

MESSRS. H. GEORGE & SONS, Crampton, Ont., report as follows: Our herd of Improved Chester White and Tamworth swine are coming through winter in fine condition. Five sows have farrowed forty-eight strong pigs, which are doing well. Two of the litters are from full sisters to Chester Queen, the sweepstakes sow over all breeds at the Fat Stock Show, Guelph, 1894. We have also added to our herd a choice imported boar, U. S. King, from the noted herd of Messrs. S. H. Todd & Sons, Wakeman, Ohio, who won the lion's share of the prizes at the World's Fair in 1893. Sales have been remarkably good for such hard times, and we have several orders already booked for spring pigs. Our sales for the past few weeks are as follows: To Mr. G. W. Glover, Nottawa, Ont., a pair; to Mr. David Rudy, Tavistock, Ont., one boar; to Mr. F. A. Folger, Kingston Ont., one boar; to Mr. Thomas Beckton, Glencoe, Ont., one sow; to Mr. W. J. Bell, Angus, Ont., one sow; to Mr. Alex. McLean, Carleton Place, Ont., one boar and two sows; to Mr. J. W. Callbeck, Augustine Cove, Prince Edward Island, one boar; to Mr. W. E. O'Brien, Dunham, Que., one boar; to Mr. William A. Rice, Brucefield, Ont., one boar; to Mr. J. H. Shaw, Simcoe, Ont., one sow; to Mr. J. H. Chalk, Colton, Ont., one boar and a sow; to Mr. T. R. Lyons, Waterville, Nova Scotia, three sows; to Mr. John Elliott, Derwent, Ont., one sow; to Mr. H. A. Channell, Stantead, Que., two boars and two sows; to Mr. H. J. Gibson, Bowmanville, one sow; to Mr. John McDiarmid, Lucknow, one sow; to Mr. John Wallior, Owen Sound, one boar; to Mr. D. B. Scott, Fergus, one sow; to Mr. I. Burnett, Greenbank, Ont., one boar; to Mr. John A. Hardy, Kent Bridge, Ont., two sows; to Mr. George Patterson, Ingersoll, one boar. We also have still a choice lot of fall boars

SHEEP.

SYLVAN AND BRANT STOCK FARMS.

We have a very choice flock of Oxford Down Sheep from which we have a very superior lot of ram lambsy imported rams.



Flock is registered. Personal inspection solicited. Turner & Jull, 125 Burford, Ont.

BUENA VISTA FARM, - HARRISTON, ONT.

Breeders of improved large Yorkshire Swine, milking Shorthorns, Oxford Down sheep, and Plymouth Rock fowl. Some fine young Yorkshires now for sale. Write for prices.



JOHN COUSINS & SONS. 71

SMITH EVANS, GOUROCK, ONT.,



BEKEDER and IMPORTER of Registered Oxford Down Sheep. Importation for 1892 arrived August 4th, selected from some of the best flocks in England. Stock for sale at reasonable prices.

LORRIDGE FARM.

Southdown Sheep. Flock established 1857. Commenced exhibiting 1867. Since then have taken over 1,200 prizes, including a large number of medals and diplomas. Imported Rams used only. Stock for sale. ROBT. MARSH, Proprietor, Richmond Hill, Ontario. 149



SHROPSHIRE FOR SALE

A choice lot of shearling rams, ewe and ram lambs. A few rams two and three years old. Also young Yorkshire pigs, all ages.

T. H. MEDCRAFT, Sparta, Ont. 127

SWINE.

The PINE GROVE HERD OF DUROC-JERSEY SWINE

I have a few choice boars fit for service; also a few choice young pigs of either sex, ready for shipment. Can supply pairs not akin. Pairs reasonable, and satisfaction guaranteed. Inspection invited and correspondence solicited. Address, CHARLES ANSTICE, Springfield, Ont. B. & T. Railway.

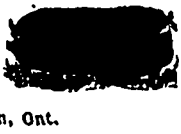
FOR Chester Whites

All ages, and at prices in accordance with the times, write to

JOS. CAIRNS, Camlachie, Ont.

YOUNG REGISTERED BERKSHIRES

Bred from imported stock, for sale at right prices. Now ready for shipping. All stock guaranteed as represented. Write, or come and see the stock.



H. G. CLARK, Brampton, Ont.

- Large English Berkshires for Sale -

Three sows in pig, also young stock, both sexes. Address R. J. DIXON, 273 Gleneden, Ontario.

SWINE.

ASHTON GRANGE FARM.

 Improved Yorkshire and Berkshire Swine.
 Young stock from prize winners at leading shows or pairs of either breed now ready for shipment.
WM. TAIT,
 St. Laurent, P.O. Near Montreal.
 175

MEDAL HERD OF 1894.
 Chester White Swine and Dorset Horned Sheep of all ages, for sale at prices to suit the times.
R. H. HARDING, Thorndale, Ont. Middlesex County.
 222

POLAND CHINAS.
My Herd
 Is composed of the most popular strains of imported prize-winning blood. I now have a number of

Superb Young Sows
 due to farrow in May or June. Others ready to mate. Also young boars. Satisfaction guaranteed, and prices to suit the times.

OLIVER DRURY,
 FARGO, ONT.


JOSEPH FEATHERSTON, Pine Grove Farm,
STREETSVILLE Post Office and Telegraph (late Springfield-on-the-Credit, Ont.), importer and breeder of Improved Large White Yorkshire and Essex swine. This herd obtained twenty first, nine second, five third, and four fourth prizes at the World's Fair, Chicago, 1893. I have now on hand a choice lot of Yorkshire sows, from the first prize boar, and out of some of the sweepstake sows; also a limited number of first-class young boars fit for service this fall, and fifty breeding sows, which I am breeding to Hasket (1892), Halton King (1894), and the boar Holywell (see bred by Sanders Spencer, England, just imported in July last, selected for me by J. G. Snell, Edmonton, as the best boar in all England.
 23

FRANCIS RUSNELL,
 Mount Forest, Ont.
 Breeder of Improved Large Yorkshire pigs, and boars and sows of good breeding for sale. Prices to suit the times.

 201

BERKSHIRES FOR SALE
 My Berkshires have secured a large number of the most important prizes at Toronto, Montreal, and London exhibitions in 1893; also several prizes at the Fat Stock Show in Guelph, including sweepstakes for best purebred sow of any age or breed.
 A choice lot of all ages for sale.
 Please mention THE LIVE STOCK JOURNAL.
GEO. GREEN, Fairview P.O.,
 261 Stratford Station and Telegraph Office.

Ohio Improved Chester and Tamworth Swine.
 Our herd of Improved Chester Whites have won more sweepstakes for the past five years at the large exhibitions of Ontario and Quebec than all other herds combined in the Dominion, also including the sweepstakes sow over all breeds at Fat Stock Show, Guelph, 1894.
 Our Tamworths are selected from the best herds in England, and winners of several of the best prizes at the large exhibitions of Ontario, including the sweepstakes, Ottawa, and Fat Stock Show, Guelph, of 1894.
 Have thirty imported and homebred sows of the above herds, bred to imported boars, for spring trade, also a few boars fit for spring service. Orders booked for spring pigs in pairs or trios, not akin. Reduced rates by express. Prices away down for the next 30 days.
H. GEORGE & SONS,
 101 Middlesex Co. Crampton P.O., Ont.

POPULAR HILL HERD OF REGISTERED Poland China and Tamworth Swine.
 A few good September and October pigs for sale. Also one good P. C. sow, one year old last September. The sows that I bred for March and April pigs are first-class aged sows, and nothing but good pigs will be shipped on order. Prices reasonable.

WM. KOW, Aron P.O., Ont.
 281

SWINE.

The HURON HERD OF REGISTERED POLAND CHINAS.
 Young stock from prize winning strains at the leading shows. Have a number of first class young boars and sows, six weeks old. Can supply just not akin. All stock registered or eligible. All stock guaranteed as described. Prices to suit the times. Write for particulars and prices, or call.
WESLEY W. FISHER,
 221 Benmillier, Ont.; Goderich Station.

RED TAMWORTH PIGS.
 Red Tamworth Pigs of the best strains. Stock of my breeding has taken highest honors at the Industrial and other shows this season. Young boars and sows of all ages now on hand. Pairs furnished not akin.

LEVI MASTER,
 229 Haysville, P.O. New Hamburg, G.T.R.

HORSES.

ROBERT NESS
 IMPORTER AND BREEDER OF **CLYDESDALES**
 FROM THE BEST STUDS IN SCOTLAND.
 English and French Carriage Horses, Shetland Ponies, and Ayrshire Cattle.

WOODSIDE FARM,
 HOWICK P. O., Que.
 172

POULTRY.

W. J. STEVENSON,
 OSHAWA, ONTARIO.
 BREEDER OF
 GOLDEN AND WHITE WYANDOTTES,
 WHITE LEGHORNS,
 WHITE PLYMOUTH ROCKS.
 I have been at it for 30 years, and will cheerfully give my experience to beginners who send stamp for reply. One pen of white Plymouth Rocks for sale.
EGGS, \$1.00 for thirteen.

CANADA'S BEST
 ARE IMPORTED, BRED, AND SOLD BY
JNO. J. LENTON,
 Park Farm, - Oshawa, Ont.

EGGS FOR HATCHING, from grand pens of White, Silver, and Golden Wyandottes, Barded and White Plymouth Rocks, at only \$1 per nine, or \$1.50 per fifteen. Also Bronze Turkeys of immense size; eggs, 25 cents each, or \$3 per thirteen. My birds are bred for use as well as fancy so if you want to be sure of success, you need eggs from this stock. No birds for sale until after July 1st.
 I am Canadian agent for the celebrated **WEBSTER & HANNUM BONE-CUTTER.**
 Send to me for catalogue.
 311

POULTRY BUSINESS FOR SALE.
 Thirty acres of good land, with farm buildings and twenty apple trees (later bearing), together with my breeding pens of Bronze Turkeys, Toulouse Geese, Dark Brahma, S. C. Brown and R. C. White Leghorns, thirty-five birds in all. At the three last Ontario Poultry Shows my turkeys and white Leghorns won more first prizes than all other exhibitors combined, and my sales of turkeys alone since January 1st, 1890, amount to \$1,000. Price for the whole business, \$1,700, half cash, balance on easy terms.
W. J. BELL,
 Angus, Ont.

Mammoth Bronze Turkeys, . . . Silver Grey Dorkings, . . . Brown Leghorns, . . . Black Minorcas, . . . White Wyandottes. . . .
 Still a few grand bronze Tom left. Eggs from our best mated pairs, at farmers' price.
T. & H. SHORE,
 White Oak, Ont.
 281

POULTRY.

PINE TREE FARM
JAMESBURG, NEW JERSEY.
 2,000 Land and Water Fowl.
EGGS
 For hatching, from our noted strain of Mammoth Pekin Ducks.
 \$1.50 per 13; \$2.50 per 25;
 \$4.50 per 50; \$8.00 per 100.

EGGS
 From Light and Dark Brahmias, Barded and White Plymouth Rocks, White, Silver and Golden Wyandottes, Barred Minorcas, and Buff Leghorns.
 \$1.50 per 13; \$3 per 30.
EGGS
 From White and Brown Leghorns
 \$1.00 per 13; \$2.00 per 30.
 Send for large Catalogue of other varieties.

D. A. MOUNT, W. H. ORDWAY,
 Superintendent. Proprietor.

EGGS for hatching from White Plymouth Rocks, \$1 for 13; White Holland Turkeys, \$1 for 13; Aylesbury and Rouen Duck \$1 for 9. My fowls took a first, and a second prize at Toronto; a first, and second at London, and a first, a second, and a third at the Ontario Show. Address
JAMES MCKEE, Norwich, Ont.

WHITE LEGHORNS EXCLUSIVELY.
 I have made a specialty of this breed for fifteen years. A choice lot of cockerels for sale. My breeding pens for '95 will be headed by two grand imported cocks of the "Royal" strain, direct from the pen of Dr. John W. King. Eggs \$1.50 per thirteen. Correspondence a pleasure.
GEORGE E. LEE, Highgate, Ont.

FOR SALE
 Eggs for hatching from thoroughbred Light Brahmias, Black Langshans, Black Hamburgs, White Wyandottes, white Plymouth Rocks, Redcaps and Pekin Ducks. Write for prices. Eggs guaranteed fertile.
C. J. WRIGHT,
 Dixville, P. Q.
 P. O. Box 114
 103

Barred Plymouth Rocks.
 Fowls of best strains and color.
EGGS FOR SALE - - \$1 per 13.
 Guaranteed fertile. Full particulars on application.
E. DUNSMORE,
 St. Paul's Station, Ont.

EMPIRE STATE POTATOES
 This variety has headed about one hundred varieties for an average of four years. Also ahead in 1894 when tested all over Ontario by the Experimental Union. Have a limited quantity for sale, which I will put on board cars at Guelph at \$1 per bag, bags free.

JAMES BOWMAN,
 GUELPH, ONT.

EVERGREENS!!
 Headquarters for all varieties and sizes of Hardy Nursery grown evergreens and ornamental trees. Prices the lowest. Six \$0.50 and \$1.00 trees extra. Illustrated catalogue free. Want good local agent **D. HILL,** Evergreen Specialist, DUNDEE, ILL.

HOLLOWAY'S PILLS AND OINTMENT.

THE PILLS
 Purify the Blood, correct all disorders of the LIVER, STOMACH, KIDNEYS & BOWELS, And are invaluable in all complaints incidental to Females of all ages.

THE OINTMENT
 Is the only reliable remedy for Bad Legs, SORES, ULCERS, and OLD WOUNDS.

FOR BRONCHITIS, SORE THROATS, COUGHS, COLDS, GOUT, RHEUMATISM, Glandular Swellings, and all Skin Diseases, it has no equal.

Manufactured only at 78 NEW OXFORD STREET, LATE 111 OXFORD STREET, LONDON.
 And sold by all Medicine Vendors throughout the World.

The Only Live Journal

ON agriculture published in Canada is THE CANADIAN LIVE STOCK AND FARM JOURNAL. We want good agents in every locality to canvass for it. Young men who have energy can make money at this work. Write us for all particulars.

The CANADIAN LIVE STOCK AND FARM JOURNAL,
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GOLD MEDAL NURSERY STOCK AT HARD TIMES PRICES

To direct purchasers, and satisfaction guaranteed.
 Full lines of Trees for fruit, Trees for shelter, Trees for shade, Trees for street, Trees for decoration, Berry bushes, Hardy Grape Vines, Flowering Shrubs, Roses, etc. The largest stock of Ornamental Trees in the Dominion. Price Lists free. Enquiries requested. Filling letter orders a specialty. Get your order placed early.

GEO. LESLIE & SON,
 7 Years Established TORONTO NURSERIES

RENNIE'S SEEDS.
 Illustrated 'Guide' for 1895
 Do you grow Flowers, Vegetables, Field Roots or Grains? If so, see \$190.00 IN CASH MAILED FREE. SEND PRIZES. FOR IT TO-DAY.
WM. RENNIE, - **TORONTO, CAN.**

MISCELLANEOUS.

Feed the land,

And the land will feed you. The best way is to use

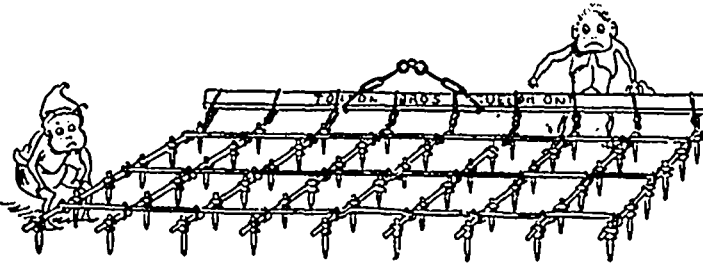
Harris' PURE ANIMAL Fertilizers

Once tried, always used. Sold by Toronto Salt Works, 118 Adelaide E., Toronto. Steele, Briggs & Manon Seed Co., Front and Jarvis streets. J. A. Simmers, 147 King St. E. W.M. HARRIS & CO., Manufacturers, Danforth Ave., Toronto.

Why In these hard times is there such a great demand for this All Steel Flexible Harrow?

Because

the flexibility of the Harrow enables it to adapt itself as readily to rough and uneven ground as to smooth, and the oscillating motion produced by its flexibility pulverizes the ground, and leaves it in a loose and more porous condition than any other Harrow, and it is made of the very best material money can buy for the purpose. The bars are made of HARD SPRING STEEL, very stiff and strong, the Hinges and Teeth being of SOLID STEEL, all of which are of a higher grade than is possible to use in any other make of Harrows, being too hard to permit of the bars being punched; also, the Clips are malleable and Staples Low more iron, highly refined, with special forced nuts, making the Harrow first-class in every respect, therefore we can guarantee more than double the strength and wear in this Harrow than there is in any other make.

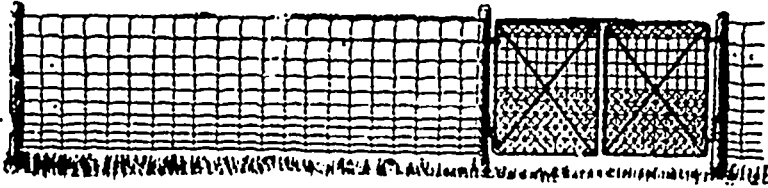


Parties wishing a first-class Harrow will do well to write us direct, or apply to the local agent.

TOLTON BROS., - Guelph, Ont.

Trafalgar, January 11th, 1894.

Messrs. Tolton Bros., Guelph: Gents, It is with pleasure I send you the amount of your note, sixteen dollars, for the Harrows. I am very well pleased with them; they exceeded my expectations in a wonderful way, being thorough pulverizers. I have been farming over thirty years, and they are the best Harrows I have ever followed or seen run on land. They are exactly the kind adapted for our soil, and were greatly admired by my neighbors, who made enquiries as to the maker. I will do what I can for you in my neighborhood. I am, yours truly, JAS. STEPHENS.



A SPRING IN EVERY FOOT. POSTS TWO OR MORE RODS APART. ELEVEN HORIZONTAL WIRES. BARS THREE INCHES APART AT BOTTOM. CROSS WIRES EVERY FOOT.

IT WILL NOT SAG BETWEEN POSTS. IT IS CHICKEN TIGHT AND BULL STRONG. SHIPPED FROM FACTORY READY MADE. THE CHEAPEST STOCK-PROOF FENCE. IT WILL LAST A LIFETIME.

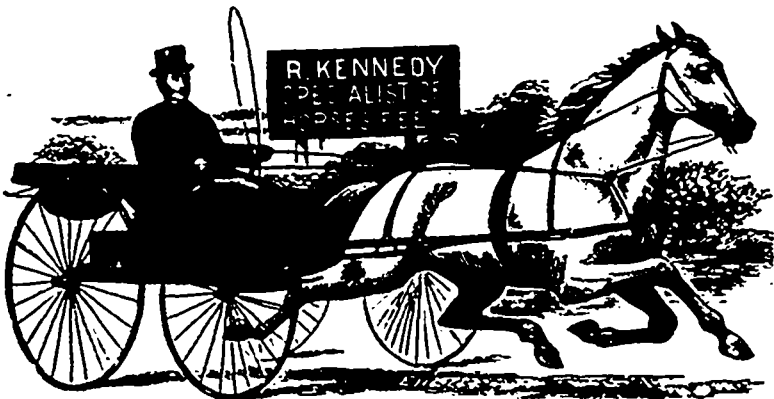
THE PAGE is the only ELASTIC fence made, and requires special wire. Our contracts for the manufacture of this wire cover many hundreds of tons, all GUARANTEED to suit the purpose. This wire costs more than the common article, which could not be used if furnished free. Our complete fence costs the farmer less than he can buy the wire of which it is made, and is the cheapest in the end.

THERE is no substitute for ELASTICITY in a wire fence. Ever since the Page became generally known, men have been racking their brains to discover one, and hundreds of devices have been brought out with extravagant claims, run their short course, and dropped out of the race. If it were possible to make a good, durable, efficient fence of common, cheap, soft wire, the Page Company would use it. Every pound of our wire is made to order. Its quality, combined with the COIL, gives the only elastic fence.

USE our fence and you will have one on which you can depend—one that will hold any and all of your stock. Set good, solid end posts, and you will not have to bother with that fence as long as you live. It costs no more than any, and less than most fences. Ask our local dealers for prices; or send to us for prices and our illustrated free monthly paper.

THE PAGE WIRE FENCE CO. OF ONTARIO, Ltd., Walkerville, Ont.

PLENTY OF TIME TO REST for the man who owns a "Planet Jr." All Steel HORSE HOE AND CULTIVATOR. Light, strong and easily controlled. Has attachments for all kinds of hoeing, cultivating and furrowing. Guaranteed superior to any. Our free catalogue tells all about it and 25 other tools. W. L. ALLEN & CO., Philadelphia, Pa.



TO ALL OWNERS OF LAME HORSES

A Cure Guaranteed or No Charge.

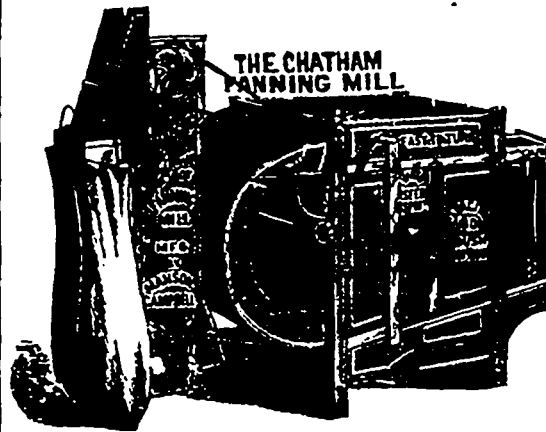
NOTICE, My cure is permanent. I guarantee every horse I operate on for two years. Do not be deceived by people telling you your horses cannot be cured. I can refer you to horses all over the city. I have cured Contracted Feet, Quarter Cracks, Corns, Thrush, and all Lameness of the Feet.

15 Years' Experience. SALVE Hundreds of Testimonials. The Most Wonderful and Quickest Healing Mixture in the World. Can be used with perfect safety on the most valuable animals. If once used will never be without it. Guaranteed to cure scratches, sore shoulders, cuts, bruises, proud flesh and old sores of the worst kind in less than seven days. Also try R. KENNEDY'S FAMOUS HOOF OINTMENT. Guaranteed to grow Hoof quicker than anything in the World. Price 35c.

R. KENNEDY, Specialist of Horses' Feet.

INFIRMARY AND FORGE: 223 Church Street, Toronto; also INFIRMARY AND RESIDENCE 118 65 Bloor Street East N.B.—No charge for examining horses.

40,000 CHATHAM MILLS NOW IN USE!



2,000 MILLS SOLD IN 1886 1,300 MILLS SOLD IN 1887 2,500 MILLS SOLD IN 1888 2,800 MILLS SOLD IN 1889 4,000 MILLS SOLD IN 1890 4,600 MILLS SOLD IN 1891 5,000 MILLS SOLD IN 1892 6,000 MILLS SOLD IN 1893

Cleaning Alike Clover and Black Eye and Marrowfat Peas a special feature.

It stands at the Head. Over 14,200 Bagging Attachments now in use.

Bagging Attachment is run with a chain belt that cannot slip. The elevator cup is also attached to endless chain belt that cannot slip nor clog.

The mill is fitted with screens and riddles to clean and separate all kinds of grain and seed, and is sold with or without a bagger. Satisfaction Guaranteed.

Send for Circular.

MR. MANSON CAMPBELL:

East Whitley, Ontario Co., April 12th, 1897.

Your mill which I bought from your agent, Mr. J. H. Tremear, works very satisfactorily. I take great pleasure in recommending it to my fellow farmers. Turns easily, cleans fast. Your bagger is something that every man should have; could not do without it; saves labor, and that means money.

Wm. BATTY, Foley P.O., Ont.

I have added to my plant a factory for weaving Wire Cloth and Perforating Zinc. Orders for zinc for Threshing Machines or Clover Mills will receive prompt attention. Can furnish all sizes of holes in zinc or iron, also Wire Cloth of all kinds.

Orders solicited.

MANSON CAMPBELL

CHATHAM, ONT.

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Send us one new subscriber and one dollar in payment, and we will send you The Journal for six months free of charge.

For two new subscribers we will extend your subscription one year.

It will cost you nothing to speak a word in favor of The Journal or to hand a sample copy to a neighbor, and you may profit by so doing.

We can allow you a cash commission if you wish. We have also a number of valuable books in the different departments of Agriculture which we allow as premiums. Write us for particulars and sample, etc.

THE CANADIAN LIVE STOCK

AND FARM JOURNAL,

20 BAY STREET, TORONTO.

Our Stock of Sleighs Is Nearly Exhausted.

They have had an **IMMENSE SALE** this season. No more **POPULAR SLEIGH** built anywhere.



Acknowledged by all who have used it to be the best working sleigh in the market. Built in two styles—one with two knees, the other with one bench, as here shown. Hind box has free motion under heaviest load without the least strain on the sleigh. Secure one, and you will have the best. Call on our agents or write us direct.

Bain Bros. Manufacturing Co., Ltd.,
(HEAD OFFICE) **BRANTFORD, ONT.**

226

THE PEOPLE'S Wholesale Supply Co.

35 COLBORNE STREET, TORONTO,

Is one of the most reliable houses in Canada to send your orders to for all kinds of Farmers' Supplies.

For \$14 we will send you a set of Single Harness; regular price \$18 to \$20.

For \$16 we will send you our Patron Singer Sewing Machine, and, if they are not the best values you ever saw, return them at our expense, and we will refund you your money at once.

We are the leading Wholesale House for Teas. Try our Japan at 25c., Special Blend at 30c., and Kaora Tea at 35c. No. 1 Granulated Sugar, \$3.65 per cwt.; Light, refined, \$3.10 per cwt.; Dark Yellow, \$3.00 per cwt.

For other Prices send for our Catalogue. Mention this Paper. Freight paid on \$10 orders within limits.

ADDRESS ALL ORDERS TO

The People's Wholesale Supply Co.

35 COLBORNE STREET,

R. Y. MANNING, Manager, TORONTO, ONT.

(Manager of the Orange Supply Co. from 1884 to Oct., 1891)

ADVERTISE

IN

The Canadian Live Stock and Farm Journal

If you want to reach the farmers all over Canada and some of the neighboring States.

Complete Fertilizers

for potatoes, fruits, and all vegetables require (to secure the largest yield and best quality)

At Least 10% Actual Potash.

Results of experiments prove this conclusively. How and why, is told in our pamphlets.

They are sent free. It will cost you nothing to read them and they will save you dollars.

GERMAN KALI WORKS, 33 Nassau Street, New York.

Do You Contemplate Remodeling Your Stable?

IF SO

Write us for Illustrated Catalogue and Price List

WE KEEP THE MOST EXTENSIVE LINE OF

Iron Stable Fittings

IN CANADA.

The Tisdale Iron Stable Fitting Co.

(LIMITED)

6 Adelaide Street East, TORONTO.

No Stable is Complete without a "Slow-Feed Box."

Have you seen our Oats Cleaner? It is just what you want. Let us send you one on approval, and if not satisfactory return at our expense.

DO YOU KEEP HOGS? We have the best Hog Trough in the market. Write us for prices, etc.

Home Grown Seed.

Our farmer friends, you know you greatly lessen your risks when you buy seed directly from the grower. We raise seeds of the earliest Sweet Corn, the earliest and best Pole and Bush Beans, the best earliest and best late market Beets, the best Cucumbers, the best of the earliest and latest Drumhead Cabbage, the earliest of all the Wrinkled Peas, the best Dwarf and decidedly the best of the Marrowhats, the best early and late Turneps, the best market Carrot, the earliest Pea and the very best of all the Yellow Turnips. We offer these and numerous other varieties including several valuable new Vegetables in our Vegetable and Flower Seed Catalogue for 1905. Sent free.

J. J. H. GREGORY & SON, Marblehead, Mass.

SEE THAT OFF HORSE?



Only three weeks ago we began mixing a little of Dick's Blood Purifier in his feed, and now look at him! I tell you there is no Condition Powder equal to Dick's. Am going to try it on the high one now.

Dick's Blood Purifier, 50c.
 Dick's Blisters, 50c.
 Dick's Liniment, 25c.
 Dick's Ointment, 25c.
DICK & CO.,
 P.O. BOX 482, MONTREAL.

BOYS FOR FARM HELP

The Managers of Dr. Barnardo's Homes desire to obtain good situations with farmers throughout the country for bright, healthy little boys from ten to twelve years of age, who will be arriving from the London Homes in several parties during the present season. There are at present nearly 5,000 in these Homes receiving an industrial training and education to fit them for positions of usefulness in life, and those who are sent to Canada will be selected with the utmost care with a view to their moral and physical suitability for Canadian farm life. Farmers requiring such help are invited to apply to

MR. ALFRED B. OWEN,
 Agent Dr. Barnardo's Homes,
 214 Farley Avenue, TORONTO.

DOWSWELL WASHERS



Best Washing Machine in the Market.
 10,000 in use.
 Ask your
HARDWARE MERCHANT
 FOR THE
DOWSWELL WASHER

Or write to manufacturer for catalogue and prices. We also manufacture Churns, Wringers, Mangles, and other household specialties, and want good agents in every county.

DOWSWELL BROS.
 Hamilton, - Ontario.

ONTARIO VETERINARY COLLEGE,
 Temperance St., Toronto, Can.

Patrons: Governor-General of Canada and Lieutenant-Governor of Ontario. The most successful Veterinary Institution in America. All experienced teachers. Classes begin on Wednesday, Oct. 17th. Fees, \$65 per session. Apply to the Principal,

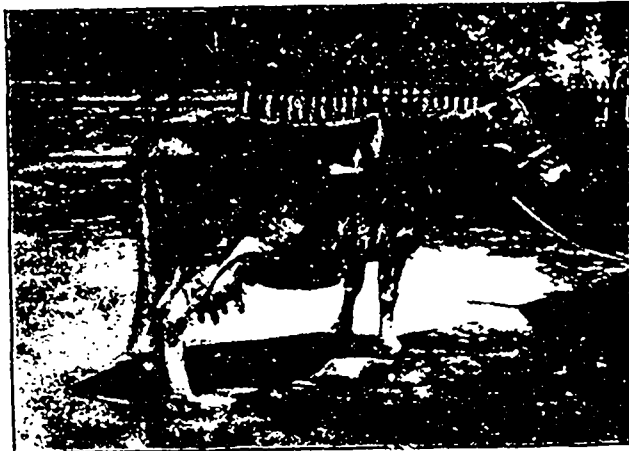
PROF. SMITH, V.S., EDMUNDSBURGH,
 TORONTO, CANADA.

CHAMPION EVAPORATOR

FOR MILK, BUTTER, CHEESE, AND FRUIT JELLIES. Has a corrugated pan over boiler, doubling boiling capacity; small interchangeable syrup pans (connected by siphons), easily handled for cleaning and steaming; and a perfect automatic regulator. The Champion is as great an improvement over the Cook pan as the latter was over the old iron boiler hung on a fence rail.

THE G. H. GRIMM MFG. CO.,
 HUDSON, Ohio, & MONTREAL, Quebec.

Have you read "Dairying for Profit," by Mrs. E.M. Jones, Judge of Butter at World's Fair, Chicago? If not, you miss a treat, which would save you hundreds of dollars. Only 50c. by mail. **ROBT. BROWN, Agent, Box 324, Brockville, Ont., Can.**



JERSEY COW MASSENA, PROPERTY OF MRS. E. M. JONES, Brockville, Ont., Can.
 8,000 lbs. Milk, which made 654 lbs. Splendid Butter, all within her sixteenth year. My herd has won thirty medals—gold, silver, and bronze; over 400 cash prizes, besides diplomas, etc. Solid Silver Cup, value \$340, given at the Kellogg sale in New York for highest price on animals sold there; also Silver Tea Set at London, Ont., for three best Dairy Cows of any kind. Grandsons and granddaughters of this great cow for sale; also from Canada a Sir George, whose dam made 36 1/2 lbs. butter a week, and gave 57 lbs. milk a day; also from my Sign-al ball, whose dam made 20 lbs 6 oz. butter a week on second calf. Chicago tests have proved the Jersey to be the farmer's best paying cow.
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When dealers should make their selections of **GOOD PAYING** and **GOOD SELLING** articles for 1895.

If you want excellent returns write for particulars of our

- GEM STEEL WINDMILLS
- GEM STEEL TOWERS
- CANADIAN (STEEL) AIR MOTORS
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- HAYING TOOLS
- IRON AND WOOD PUMPS
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- SAW TABLES, Etc., Etc.

We manufacture a full line of both pumping and Geared Windmills and the greatest variety of Pumps of any firm in Canada. Our Haymaker car and patent Steel track is leading them all, and our prices are made to suit the times.

Ontario Wind Engine & Pump Co.
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WILSON SCALES.
 Highest Award at **WORLD'S FAIR.**
 31 prizes in Canada.
 Special prices this month.
C. Wilson & Son,
 131 ESPLANADE ST. EAST,
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SHOEMAKER'S POULTRY ALMANAC

It positively the best ever... (text partially obscured).
C. C. SHOEMAKER, Box 61 Freeport, Ill. U.S.A.

HATCH CHICKENS BY STEAM
 With the improved Excelsior incubator.
GEO. H. STANLEY, Guelph, Ill.

400 ACRES. FRUIT AND ORNAMENTAL TREES
400 ACRES. GRAPE VINES AND BERRY PLANTS.



Planters will find it to their interest to patronize a Canadian Nursery. Varieties are offered most suitable to our climate; useless sorts discarded. My stock is graded with scrupulous exactness, and is true to name. Everything new and old in the nursery line deemed worthy of distribution. Having one hundred acres in fruit here, from which scions, buds, and cuttings are taken, I can offer stock that I know is true to name.

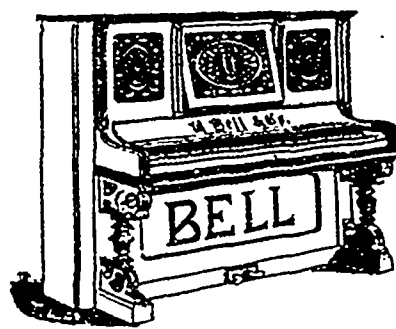
Agents wanted in every township.
HELDERLEIGH FRUIT FARMS AND NURSERY,
 400 ACRES IN EXTENT.
R. D. SMITH, Prop., - WINONA, ONT.



Anderson's Double-Acting Force Pump.
 Pumping apparatus submerged, and constantly primed and lubricated, and cannot freeze; two rods connected to two cylinders do the work and balance each other so that there is no weight of rods to lift. Result, work reduced to minimum.
 Send for Circulars.
J. W. Anderson,
 Aylmer West, Ont.



ESTABLISHED 1884.



75,000 IN USE.
BELL
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Recommended by leading musicians as superior in tone and touch. Elegant in finish and durable.
 Send for catalogues and copies of testimonials to

THE BELL ORGAN & PIANO CO. (LTD.)
 GUELPH, ONTARIO.

Branch Warerooms at Toronto, Hamilton, London, Etc.

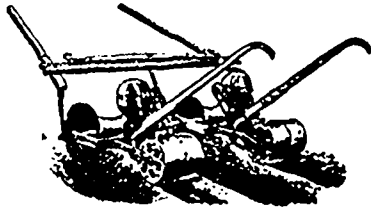
A BOOK FOR EVERY FARMER.



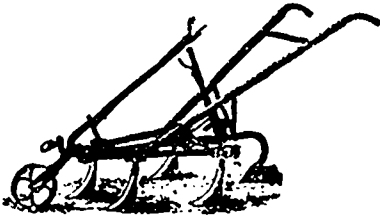
The "Business Guide," by J. E. Handford, of Osgoode Hall, is a complete Handbook of Legal and Business Forms. It tells all about Notes, Receipts, Mortgages, Cheques, Drafts, Orders, Deeds, Wills, Leases, Contracts, Landlord and Tenant, Ditches and Watercourses, etc. It gives the Law on Peddling, Opening Letters, Line Fences, etc. It contains the Interest, Lumber, Grain and Wage Tables, also a Ready Reckoner and a Complete Exposition of the Great Swindling Schemes. In short, it is a Storehouse of Knowledge, and no farmer should be without it.
 Fourth Edition ready. Over 35,000 copies sold. Over 125,000 people have read it, and praised it. In one vol., 1200 pp., 32 pages. Beautifully bound in cloth. Price, \$1.00 postpaid. Money promptly refunded if not satisfactory. Mention this journal, and address, **J. L. Nichols & Co., Wesley Building, 227-229 Agents Wanted, Toronto.**

In Some Cases

Three of a kind beat two pair, but here's only one pair, and it will beat any two of a kind made!



Sows the seed sure and packs it.

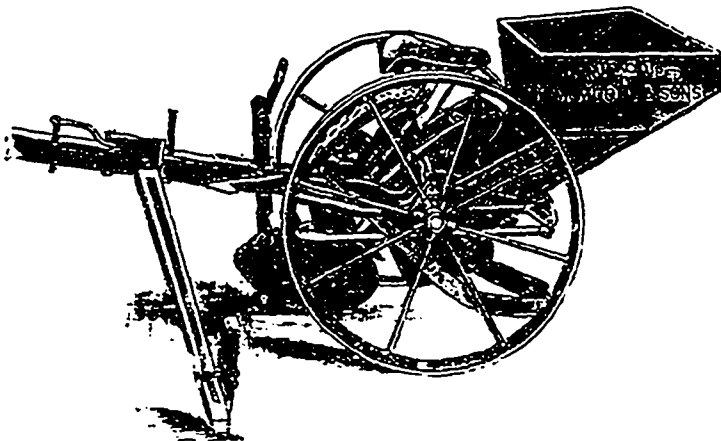


Cuts the woods sure and kills them.

What's Left? A Fine Root Crop!

B. BELL & SON,
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POTATO PLANTER



A perfect machine. Guaranteed not to miss. Plants 10, 13, 15, 17, 21, or 26 inches apart. You may plant any depth desired from 3 to 9 inches. It will plant from 5 to 9 acres per day. Worked with two horses and driver.

WRITE FOR PRICES.

AGENTS WANTED.

M. MOODY & SONS,

Montreal Office,
10, 12 and 14 Le Roy St.

TERREBONNE, QUE.

SIMMERS' RELIABLE SEEDS

ARE EVERYWHERE KNOWN AS THE BEST
WHY RISK POOR ONES WHEN THE BEST COST NO MORE

NEW CHALLENGE WHITE OATS. This variety possesses long upright stout straw, with neat panicle, covered with close set grains, very plump and heavy.—\$1.00 per bushel, two bushels \$1.80, ten bushels \$8.00.—(bags included.)

BLACK JOANETTE OATS. A good variety of Black Oats, bearing long, well-filled heads.—80c. per bushel, two bushels \$1.50, ten bushels \$7.00.—(bags included.)

PEERLESS WHITE OATS.—As the name implies is an extra choice variety.—\$1.00 per bushel, two bushels \$1.80, ten bushels \$8.00.—(bags included.)

LINCOLN OATS. White. Immense yield and excellent for milling purposes.—80c. per bushel, two bushels \$1.50, ten bushels \$7.00.—(bags included.)

NEW CANADIAN BEAUTY PEAS.—\$1.10 per bushel, two bushel \$1.90, ten bushels \$9.50.—(bags included.)

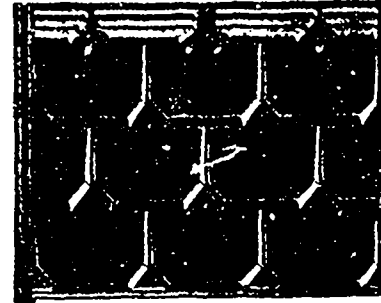
Send for SIMMERS' general Seed Catalogue for 1895—richly illustrate. It describes everything of merit old and new.
Farmers' Special Price List goes with every Catalogue.

J. A. SIMMERS, TORONTO, ONT.

Steel Shingles.

FIRE PROOF

STORM PROOF



LIGHTNING PROOF

DURABLE
AND CHEAP

The "EASTLAKE" is the old reliable Shingle that has stood the test of time, and given universal satisfaction everywhere. The Best Constructed, Tightest, and Quickest Laid METAL SHINGLE on the market. Made only from the Finest Quality of STEEL PLATE, and will last a lifetime.

Mention this Advertisement and send for Special Prices.

THE METALLIC ROOFING CO (LTD.)
MANUFACTURERS,
TORONTO.

There are

MATCHES and Matches.
But when you are through experimenting, come back, as most people do, to the reliable and well-known

E. B. Eddy's
Matches

Successful Farmers
use Freeman's
High Grade
Bono
Fertilizers

They produce large crops of Grain, Roots, Vegetables, and Fruit of superior quality.

Wheat One-Third Larger Yield.

Having used your Sure Growth Fertilizer for the past three seasons, it is with pleasure I recommend its use to others. I commenced with one ton the first season, and two years ago purchased from you two tons, and last season two and one-half tons. Always used it on fall wheat at the rate of about 200 pounds per acre, and am fully convinced I had at least one-third larger yield and finer sample than where no Fertilizer was used. Thanking you for your prompt delivery, I remain, RICHARD SELDON, Township Clerk, N. Oxford.

Pushing agents wanted in unoccupied territory.
Send for catalogue.

The W. A. Freeman Co., Ltd., Hamilton, Ont.

STAMMERING

Stuttering, and all other impediments

PERMANENTLY CURED
to a distinct articulation.

OUR SYSTEM IS STRICTLY EDUCATIONAL
No Advance Fees Write for Circulars.

THE ONTARIO INSTITUTE
65 SHUTER ST. - TORONTO.

Formerly the Linton Institute.

THE HIGH SPEED FAMILY KNITTER



Will knit ten pairs socks per day. Will do all work any plain circular knitting machine will do from home-spun or factory yarn. The most practical family knitter on the market. A child can operate it. Strong, Durable, Simple, Rapid. We guarantee every machine to do good work. Beware of imitations. Agents wanted. Write for particulars. PRICE, \$8.

Dundas Knitting Machine Co., Dundas, Ont.

DEALER IN GRAIN AND PRODUCE Established 1855.

JAMES HERR,
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Shippers' Headquarters for Live Stock Supplies.
Pressed Hay a Specialty.
370

THE JOURNAL covers the whole field. If you are a Canadian farmer, you will find it the medium.