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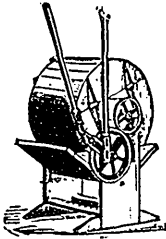
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The Best Machine In the United States or Canada.



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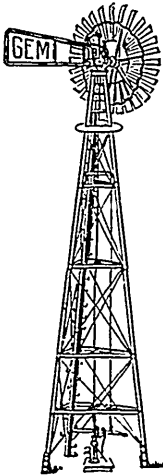
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Write for prices and terms to

**Dowswell Bros. & Co.**  
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Manufacturers of  
Washers, Wringers, Churns, Mangles, etc.

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## GEM - STEEL - WINDMILLS



Gem Steel Towers  
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We manufacture a full line of both Pumping and Geared Windmills and the greatest variety of Pumps of any firm in Canada. Our prices are made to suit the times. Send for full descriptive catalogue, or make known your wants and we will supply them.

**ONTARIO WIND, ENGINE,  
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367 Spadina Avenue  
TORONTO - - ONTARIO  
466

### DON'T GET IN THE MUD

If you can help it. You can help it if you get one of Widdifield's attachments. You pull the string, we will do the rest—we will swing the gate away from your horse, and close it after you.

### IT'S NOT NECESSARY

To get out of your wagon or buggy when you get to your gate if you have one of Widdifield's Attachments.

### WE WANT

you to see one of our Patent Gates because we know you will buy one. Township and County rights for sale.

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## AMERICAN AND CANADIAN HORSES

EXPORT TRADE TO SCOTLAND.

GLASGOW, as a centre for the disposal of American and Canadian horses, has proved by far the best market in Britain during the past season, and it is likely to continue so, as from its central position it commands buyers from all parts of Scotland and England.

**MESSRS. MACDONALD, FRASER & CO., Ltd.**  
Livestock Salesmen, Glasgow,

have sold this season, either by private bargain, or by public auction, several thousand American and Canadian horses, consigned by all the leading exporters of the States and Canada. From their wide connection among buyers, and the central position of their stables and sale-yard, they are in a position to make the best market value for all horses entrusted to their care.

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**D** ID you ever see or hear of anyone that thoroughly understood the feeding of stock but what they said that salt is one of the things stock of all kinds should always have access to? Loose salt soon wastes, and your stock go without until you find time to replace it.

## Rock Salt

can be laid out in the field or put in the manger and they always have it. It does not waste. Try a shipment.

430 lbs. or over at 50c. per 100 lbs.

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**T**HE 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

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Agent Dr. Barnardo's Homes,

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Temperance St., Toronto, Can.

Patrons: Governor-General of Canada and Lieutenant-Governor of Ontario. The most successful Veterinary Institution in America. Experienced teachers. Classes begin in October. Fees, \$65 per session.

PRINCIPAL PROF. SMITH, F.R.C., V.S.,

TORONTO, CANADA

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# Farmers Stockmen and Dairymen

We have a complete stock of

**Seed Oats**

**Barley**

**Peas**

**Best Half-Long Carrot  
ever grown.**

**Mangel,**

**Turnip, and**

**Rape Seed**

**Ensilage and Fodder Corns**

**ALEXANDER**

**SEPARATORS**

**Dairy, Cheese Factory  
and Creamery Apparatus**

of every description.

**Parchment Paper Butter  
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Boxes, etc.**

UP TO DATE IN EVERYTHING

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## YOU MAY NOT WANT A FENCE JUST NOW

But it is a good time to invest a cent in a postcard and ask us to send you our circulars and illustrated paper. They will be of interest to you, even if you never use wire fence. Address

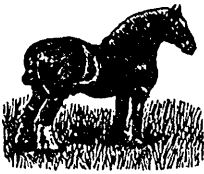
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**THE PAGE WIRE FENCE COMPANY, WALKERVILLE, ONTARIO**

HORSES AND SHORTHORNS.

**THORNCLIFFE STOCK FARM.**

I have on hand the best young **Clydesdale Horses and Mares** on this continent. Bred from the well-known sires, Prince of Wales, Darnley, Macgregor Energy, Lord Montrose, The Ruler, Caruchan Stamp, Knight Errant, and other celebrities.



**SHROPSHIRES.**  
Orders can now be booked for Shearling Rams, Ram Lambs and Ewes, sired by the celebrated prize-winning English ram, Bar None. Also rams and ewes of this year's importation.

**SHORTHORNS.**  
Choice young Heifers and Bulls by the celebrated Cruickshank bulls, Northern Light and Vice-Consul.

My stock in the above lines were very successful at all the large shows last year. Call and examine stock before purchasing elsewhere. Terms reasonable.



**ROBT. DAVIES, PROP., TORONTO, CANADA.**

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**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, Que.**

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**CLYDESDALE STALLIONS**

DIRECTLY IMPORTED FROM BEST SCOTCH STUDS

**SURE GETTERS**

Guaranteed Sound  
Reasonable Prices  
Geo. G. Stewart, Howick, Que.

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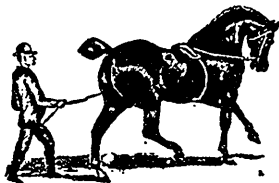
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**BLACK NOBLEMAN**  
For Service.

Hackney Stallions for Hire or Sale.

**G. H. HASTINGS,**  
The Pines, Deer Park, Ont.

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**1864 Hillhurst Farm 1896**

Oldest Stud of Hackneys in America.

**Reduction of Stock**

**FOUR HIGHLY-BRED YOUNG HACKNEY STALLIONS**  
Three out of Champion Princess Dagmar

Prize-winning Imported Mares and Homebred Fillies of the most fashionable breeding, in harness and saddle show condition. Prices low. Write for particulars or come.

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**SHORTHORNS.**

**SHORTHORNS**

Of both sexes for sale at prices to suit the times. Herd founded in 1855, by the late Mr. Douglas. 13 young Bulls. Also stock bull, Baron Evenlode = 16705=. Write for particulars. Address

**JAMES DOUGLAS**  
CALEDONIA, ONT.

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**SHORTHORNS.**

**"THE BRIARS"**

**SUTTON WEST, ONT.**

100 Head of Registered Shorthorns Including bulls of various ages. Chance for breeders to buy colts to finish. Inspection invited.

**F. C. SIBBALD.**

J. CARSON, Agent, Yorkton, Assa.



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**SHORTHORNS AND BERKSHIRES FOR SALE**

Four choice young Bulls, and a number of young Cows and Heifers. A few good young Boars and Sows fit to breed. Write for prices, or, better, come and see.

**H. B. JEFFS, Bond Head, Ont**

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**H. I. ELLIOTT**

Breeder of Scotch Shorthorns and Southdown Sheep

Imported King James at the head of herd.

**Riverview Farm, Danville, Que.**

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**SHORTHORNS**

Four bull calves of finest Booth breeding. The dams are imp. Lady Ann, daughter, and granddaughter, Lady Ann sired by Mr. Booth's renowned Paul Potter, her daughter by a Warlaby bull, her granddaughter by a Booth bull. The sire of these calves is of finest Polwarth and Warlaby blood. Two roans, two red and little white. Price, \$700 each. Also several heifers.

**D. ALEXANDER,**

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**GOOD Young Shorthorn Bulls and Heifers FOR SALE**

**W. J. BIGGINS**  
Elmhurst Farm - - OLINTON, ONTARIO

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**SHORTHORN BULL CALVES**

By the same sire as SCOTTISH LEADER, who won first prize at Toronto, Montreal, and Ottawa fairs. If you want a really fine animal, good color, fit for service, see these.

**JOHN DAVIDSON,**

**ASHBURN, ONTARIO**

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**For Sale** Eight particularly good Shorthorn Bulls from 8 to 16 months old. They are large, smooth, sappy fellows in fair condition. Got by pure Cruickshank bull Perfection = 9000 =. Terms and prices to suit the times. **DAVID MILNE,**

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Ethel, Ont.

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

**PINE GROVE STOCK FARM,  
Rockland, Ont.**

Special bargains on young bulls of superior merit and select Scotch breeding. Also thick young heifers at the right prices. Two Imported Cruickshank Bulls for sale; also Ayrshires, Jerseys, Shropshire Sheep, and Clydesdale Horses.

Post Office, Telegraph Office, and Steamboat Landing, Rockland, Ont., on the C.P.R.

703 **JOS. W. BARNETT, Manager.**



**LAURENTIAN STOCK and  
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North Nation Mills, Que.**

Ayrshires, imported and homebred; herd headed by Imported Tam Glen 2nd, No. 1310 D. A. H. B. Jerseys all of the celebrated St. Lambert family; herd headed by Lisgar Pogs of St. Anne's 25704, A. J. C. C. Berkshire Pigs. Young stock of all the above breeds for sale. Post Office, Telegraph Office, and Railway Station, North Nation Mills, P.Q., on the C.P.R.

**A. E. SCHEYER, Manager.**

**- CARGILL HERD of SHORTHORNS -**



This herd has now at its head the imported Nonpareil bull, **Royal Member**, and the Lancaster bull, **Rantin' Robin**, by Roan Robin. The cows consist of importations from the herds of **Duthie, Marr, Crombie, Campbell, Main**, and others, numbering eighteen. All are of choicest Scotch breeding, and good individuals. We also have a number of good Canadian-bred cows, **Strathallans, Isabellas**, and others. We have a number of good young heifers for sale at reasonable prices, together with a few young bulls.

For particulars, address

444

**H. CARGILL & SON, Cargill, Ont.**

**SHORTHORN CATTLE  
AND BERKSHIRE PIGS  
FOR SALE**

A magnificent lot of

**11 EXTRA FINE  
MASSIVE**

**YOUNG SHORTHORN BULLS**

All fit for service, and an equally fine lot of

**YOUNG COWS AND HEIFERS.**

Also a number of

**REGISTERED BERKSHIRE PIGS**

of the best English strains, all at greatly **REDUCED PRICES.** Must be sold to make stable room. Send for catalogue.

**ARTHUR JOHNSTON,  
GREENWOOD, ONT.**

696



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**SCOTCH SHORTHORN CATTLE  
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 **J. C. Snell, Edmonton, Ont.** Write for prices. **W. WARD, Broughton, Quebec.** Farm one-half mile from station, C.P.R.

**BULLS FOR SALE.**



I have for sale two good young Shorthorn Bulls. Color, red. One 24 and the other 10½ months old. Registered in D.H.B. Principally Booth blood. Price reasonable. **OXFORD DOWN SHEEP** always for sale, of all ages, and both sexes, of best type. All registered.

The oldest established flock in Canada.

**HENRY ARKELL, Arkell, Ont.**

Telegraph—Guelph. Ont.  
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**SIMMONS & QUIRIE  
Shorthorns and Berkshires.**

The herd is headed by the Matchless bull, **Royal Saxon =10537=**, by **Excelsior (imp.) =2693=(51233)**, with **Barmpton M. =18240=**, sired by **Barmpton Hero =324=**, as reserve. Among the females are representatives of the **Strathallans, Minas, Golden Drops, Mysies, Elviras**—all pure Scotch breeding, except the **Elviras**, which are Scotch crosses. Farm 7 miles from Ilderton Station, G.T.R. Stock of all kinds for sale. Apply to

The herd of Berkshires includes many prize-winners, and are an exceedingly choice lot.

**O. M. SIMMONS, Ivan, Ont., or  
JAMES QUIRIE, Delaware, Ont.**

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## JERSEYS.

**Brampton Jersey Herd**

FOR SALE—Pure St. Lambert Yearling Bull, \$40.  
Also purebred and high-grade cows and  
heifers bred to Sir Ollie.

**B. H. BULL & SON, Brampton, Ont.**  
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**JERSEY COWS AND HEIFERS.**

The highest testing strains.  
Rich breeding and good colors.

454 **ALSO TAMWORTH PIGS.**  
**JOHN PULFER, - Brampton, Ont.**

**CATTLE CLUB JERSEYS**

Of the richest breeding. The most popular strains  
and highest testing families are represented. They  
have also made a record in the show ring during the  
last three years. Come and see them, or write for  
prices. We have grand bulls and heifers on hand. 637

**HUMPIDGE & LAIDLAW, London, Ont.**

**THE MANOR FIELD FARM  
OF JERSEYS**

Combines blue blood with vigorous constitutions, and un-  
deniable dairy qualities. The St. Lambert bull, Kaiser Fritz  
21173, bred by D. S. Dodge, Connecticut, U.S., heads the  
herd. Write for prices on young stock.

**WILLIAM BACON,**  
543 **Orillia, Ont.**

**HEREFORDS.****Ingleside  
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THE BEST ALWAYS CHEAPEST

**CHOICE BULL CALVES  
FOR SALE****YORKSHIRE AND TAMWORTH  
SWINE**

All Ages and the Right Sort.

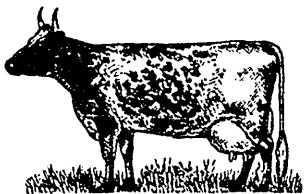
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**ALEX. HUME & CO.,**  
HOARDS STATION, G.T.R., BURNBRAE P.O., ONT.,  
IMPORTERS AND  
BREEDERS OF

**AYRSHIRES  
AND  
YORKSHIRES**

Young stock from  
prize winners for sale.  
My present herd is  
bred from extra milkers. Description and Pedigrees  
furnished on application.



Orders for young pigs filled in turn.

**Book your orders early**



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**AYRSHIRES.**

A RARE CHANCE TO SECURE

**A Stock Bull**

I have decided to sell my stock bull,  
"Dominion Chief," 1214. Sired  
by imp. "Royal Chief," dam imp.  
"Jess." "Dominion Chief" is a grand  
bull, and fit to head the best herd in  
Canada. Will sell cheap, taking qual-  
ity into consideration.

Also a number of young Ayrshire  
bulls, fit for service.

Write for particulars and prices.

**JOHN H. DOUGLAS,**

WARKWORTH, - - ONTARIO.

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**DOMINION PRIZE HERD  
PUREBRED****AYRSHIRE CATTLE**

RECORD FOR 1893

**54 Prizes 54**

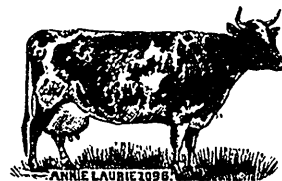
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WITH  
Gold, Silver and Bronze Medals  
**MONTREAL, TORONTO, LONDON AND OTTAWA**

This herd has always taken the lead; they are  
of large size, and of good milking strains.

**JAMES DRUMMOND & SON,**  
Pétite Cote, Que.

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**Menie Stock Yard**

Ayrshire Cattle  
and Berkshire Pigs.  
First-class pedigreed  
stock always on hand  
and for sale.  
First-class milking  
stock a specialty.

**Wm. Stewart Jr.**  
**Menie, Ont.**  
Hoard's Station,  
G.T.R. 534

**AYRSHIRES** Bulls for sale. Two fit for service, one  
from Jessie Osborn, (Imp.). Also three fall calves, one  
from White Floss cow, which won silver medal at Toronto.  
All fine calves and sired by Imp. Glencairn. Also  
**EGGS**—Silver Laced Wyandotte eggs. The best American  
strains. Prices right.

**James Boden,**

Tredonnock Farm,  
ST. ANNE DE BELLEVUE, QUE

719

**AYRSHIRES FOR SALE**

Six young bulls, fit for ser-  
vice; also a choice lot of  
young calves, from deep  
milkers, sired by White  
Prince II, and Earl of Percy;  
bred by J. H. Douglas,  
Warkworth, and a few cows  
and heifers at prices to suit  
the times.

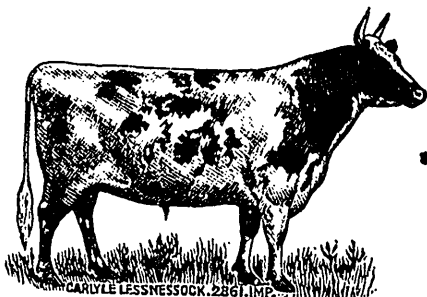
**F. W. TAYLOR,**

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**Wellman's Corner s. On**  
**Hoard's Station, G.T.R.**

AYRSHIRES.



MAPLE GROVE AYRSHIRE STOCK FARM

R. G. STEACY - Importer and Breeder - LYN, ONT.

Largest importer in United States and Canada of the most noted Milk, Butter, and Prize Record Ayrshires procurable in Scotland. Head of herd is Carlyle Lessnessock, whose grand dam was never defeated in a milking contest in England and Scotland, competing against all other dairy herds for years in succession, and awarded more prizes in gold medals, cups, and money, than any Ayrshire ever exhibited with the 20 head of imported females of noted individual records. I am in a position to offer none but performers at reasonable prices.

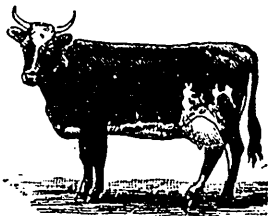
Registered rough-coated Scotch Collies from imported stock. 477

JOHN NEWMAN & SONS

LACHINE, QUE.

Breeders of High-Class Ayrshires

We have a number of choice imported prize-winning cows in the herd, together with the best milking strains obtainable. A number of choice young bulls by our prize-winning bull, Glencoe, which we will sell at reasonable prices. Call and see our extensive herd. Immense choice. First-class quality. 560



AYRSHIRES FOR SALE

Four cows, grand milkers, and a heifer; all are in calf to Grand Duke, a son of last year's Toronto sweepstakes bull and cow, also two bull calves.

549

R. E. WHITE, Perth, Ont.

AYRSHIRES

A few fine young stock bulls for sale. One by the same dam as the Columbian winner (Tom Brown).

Also some good young females.

565 Come and inspect our stock. Prices to suit the times.

ROBERTSON & NESS - Howick, Que.

AYRSHIRE BULLS from Imported Cows

FOR SALE

Two, calved in August, from heavy milking dams of show-rd individuality.

712

THOS. BALLANTYNE & SON,  
Neldpath Farm, Stratfrd, Ont.

GLENGARRY STOCK YARD.

My herd traces direct to stock imported by the late Thomas Brown, of Montreal. I have now for sale four very fine young Bull Calves, from six to eight months old. One of these calves is from my prize cow Glen Rose, and Glen Rose has proved herself to be as good in the show ring as her brother, (Tom Brown), who took First Prize and Sweepstakes at the World's Columbian Exposition, Chicago. Write for prices.

478 JOHN A. McDONALD, Jr., Williamstown, Ont.

Choice Ayrshires.

My stock bull is Imported SILVER KING; the dam of Silver King is Nellie Osborne (imported), who took 1st as milk cow and champion medal at World's Fair, and his sire is Traveller, the champion Ayrshire bull of Scotland. Young stock of both sexes for sale, sired by this famous young bull.

Please address D. McLACHLAN,  
Petite Cote, Que.

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CORNWALL STOCK FARM

AYRSHIRE CATTLE

BERKSHIRE PIGS

Traveller of Parkhill at the head of herd, while my herd is descended from cows purchased of Mr. David Benning, are modern in type, and are of the choicest milking strains. Write for prices of young bulls and heifers.

DAVID LEITCH,

CORNWALL, G.T.R. 578 Grant's Corners, Ontario.

J. YUILL & SONS

Meadowside Farm, CARLETON PLACE

Breeders of  
AYRSHIRE CATTLE  
BERKSHIRE SWINE  
SHROPSHIRE SHEEP

Our herd is headed by LEONARD MEADOWSIDE, winner of the first prize at World's Fair, 1893. Choice young stock of both sexes always for sale. Visitors met at Queen's Hotel. 725

AYRSHIRES

Purebred, of different ages and both sexes. No inferior animals. Write for particulars.

A. MCCALLUM & SON,  
Spruce Hill Dairy Farm. 566 DANVILLE, QUE.

JAMES COTTINGHAM, Riverside Farm,

Orms town, Que.

Breeder of

AYRSHIRE CATTLE.

My herd is headed by the prize-winning bull, Sir James (5051); sire, Rob Roy (3971). Stock of both sexes for sale at all times, including some choice young bulls and heifers. 707



AYRSHIRES

Always for sale. Some choice young bulls and heifers bred from the Glenhurst herd.

479 John Sandilands, Williamstown, Ont.

FOR SALE

Choice young Ayrshires, of both sexes, sired by imported bulls Silver King and Glencairn. Write, or come and see them.

DANIEL DRUMMOND

538

Petite Cote, Que





# Isaleigh Grange Stock Farm

OUR STOCK OF PUREBRED  
**AYRSHIRE AND GUERNSEY CATTLE,  
 SHROPSHIRE SHEEP, AND  
 IMPROVED YORKSHIRE SWINE**

are now in the pink of condition, and having at our recent annual auction sale disposed of a lot of our surplus stock we are better prepared to attend to our correspondents. Our list of prizes, medals, and diplomas, together with the Gilt Edged Stock which have merited the honors granted them at all the leading exhibitions, places Isaleigh Grange Stock Farm at the head of all competitors. Our farm is 1,000 acres in extent. Visitors will be welcomed at all times. Correspondence invited.

**J. N. GREENSHIELDS, Proprietor.**

**T. D. McCALLUM, Manager.**

539

**DANVILLE, - - QUÉBEC.**

## AYRSHIRE CATTLE.

The bull Tom Brown and the heifer, White Floss, winners of sweepstakes at World's Fair, were bred from this herd. Young stock always for sale.

Also Leicester Sheep and Berkshire Pigs.



**DAVID BENNING, Breeder,**  
 WILLIAMSTOWN, ONT.

506

**THOMAS GUY**  
 Sydenham Farm, Oshawa, Ont.



**AYRSHIRE CATTLE LEICESTER SHEEP  
 BERKSHIRE PIGS**

Four Young Bulls from prize-winning stock, now for sale. Closely related to winners at the World's Fair. Write for particulars. 757

### MAPLE CLIFF STOCK AND DAIRY FARM

**AYRSHIRE CATTLE, BERKSHIRE AND TAMWORTH SWINE FOR SALE.** Five young bulls, sons of such noted animals as Nellie Osborne (imp) 2018, and Gold King 1387. One bull calf, just dropped, for \$15, if taken before one month. They are good ones. Write for prices.

729

**R. REID & CO., Hintonburg, Ont.**

### HOLSTEINS.

FOR PRICES ON  
**HOLSTEINS**

WRITE TO

**F. A. FOLGER,**

**RIDEAU STOCK FARM**

393

**BOX 577 KINGSTON, ONT.**

### HOLSTEINS

#### THE GROVE HILL HERD OF HOLSTEINS

Headed by a son of the famous silver-medal bull, Netherland Statesman's Cornelius. Our motto: "The best are none too good."

**B. MALLORY, Prop.,**  
 Frankford, Ont.

554

#### HOLSTEINS WIN <sup>IN</sup> THE PUBLIC TEST

The winning kind are the sort we keep. We can sell you descendants of cows that have won in public tests, making large records. We own cows that have made the largest records of any in the country--public records, too. Young stock for sale, all ages, both sexes, and pairs not akin. State the age and sex you require, and we will give full description and records.

Poland Pigs for sale, 1 month and 6 months old. First quality.

**A. & G. RICE,**

490

Brookbank Stock Farm,  
 Currie's Crossing, Ontario, Canada

### MAPLE HILL

## Holstein-Friesians.

Am offering the finest lot of heifers to be found in Canada. At the recent Industrial my herd won first in every section for heifers, and sweepstakes for both male and female. These heifers will be bred to Sir Pietertje Josephine Mechthilde, the richest bred bull in Canada, and Netherland Consul, the silver medal bull of 1895. Write, or, better still, come and see them.

550

**G. W. CLEMONS, St. George, Ont.**

#### SPRING BROOK STOCK FARM Holstein-Friesian Cattle and Tamworth Swine.

Have a choice selection of young bulls ready for service. For individual merit and breeding are unsurpassed. Excellent choice in females of all ages. A fine lot of Tamworths on hand. Write at once for prices.

**A. C. HALLMAN,**

Waterloo Co.

413

New Dundee, Ont.

#### A SWEEPING REDUCTION IN HOLSTEINS. . . .

In order to bring the herd down to a desired size, I will offer any animal in the herd at just half the usual price for same quality of stock. A special offer of **Bull Calves** at \$12 each if taken at once. Write for description of anything you want. I can supply you with the very best.

709

**H. BOLLERT, Cassel, Ont.**

**HOLSTEINS.**

**HOLSTEIN-FRIESIANS**

Richly bred Netherland, Peel, Johanna, and Moore strains. Stock of all ages, male and female, for sale at lowest prices.  
519 JOHN MCGREGOR, Constance, Ont.

**HELBOON STOCK FARM**



Holstein-Friesians of the highest producing strains, founded on the best imported families of NORTH HOLLAND.

A few choice females of different ages and a yearling bull on hand at reasonable prices and easy terms. Also Improved Large Yorkshires of Sanders Spencer and Walker-Jones' breeding. Also choice Oxford Down rams.

**J. W. LEE,** 430 Simcoe, Ont.

**GEM HOLSTEIN HERD.**

**6 MONTHS' CREDIT GIVEN**

BULLS all registered Holsteins, quality the best, and fit to head any herd. We have them all ages. Write for particulars to

**ELLIS BROS.,**

690 Bedford Park P.O., Ont.



**CHOICE HOLSTEIN-FRIESIANS.**

Bulls, heifers, and cows all ages of the best milking strains, which I will sell at reasonable prices. Drop a card for particulars.

**S. K. BECK,**

502 South Cayuga, Ont.

**PUREBRED HOLSTEINS**

AND

**TAMWORTHS**

Carmen Sylvia, the sweepstakes cow over all breeds in milk tests at Toronto and Gananoque, was bred by me. Pietertje, Jewel, Sir Henry of Maplewood, and Mercedes strains. Catholine 5th's Sir Aggie Clothilde at the head of the herd. Tamworths from imported stock.

Brockville, on **THOS DAVIDSON,**  
G.T.R. and C.P.R. 577 Spring Valley, Ont

**GUERNSEYS.**

**GUERNSEYS**

THE GRANDEST OF ALL DAIRY BREEDS.

**FOR SALE**—Two choice bull calves; also some grand **IMPROVED YORKSHIRE BOAR PIGS**

Fit for service, showing stock pedigrees. Prices are right. Come and see, or write.

**W. H. & C. H. McNish**

Elm Grove Farm, 511 - LYN, ONT.

**SHEEP.**

**FAIRVIEW SHROPSHIRE.**

Late sales having reduced my flock to the number I wish to carry over, orders for the coming season only can now be booked. A fine lot of lambs (ewes and rams) are growing well, so that customers can be supplied as usual with typical animals in a few months from now. Breeding flock also is in good shape. Once more I must thank many customers for their kind words of appreciation of ordered stock sent them, and promise to deal fairly when you come, or send again.

606 **JOHN CAMPBELL,** Woodville, Ont., Can.

**SHEEP.**

**LINCOLNS.**

The Largest 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.

520

**Oxford Downs.**

We can suit you. Drop us a card for prices and particulars.

**TURNER** Burford  
& **JULL** - Mt. Vernon

448



**41 FIRST PRIZES 41**

Won by our flocks, and 5 by our ponies at Toronto, Montreal, Ottawa, and Markham. Shorthorn bulls and heifers, ponies, and Shropshires of the highest class for sale. Write us

**JOHN MILLER & SONS**

497 Brougham, Ontario

**WHITESIDE BROS.**

The Glen, Innerkip, Oxford Co., Ont.

Shropshires—Yearlings and lambs. Berkshires—Breeding stock, both sexes. Also Ayreshires

In writing mention this journal  
531

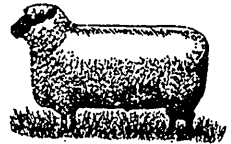


**OXFORD DOWNS**

**FOR SALE.**—A fine lot of ram and ewe lambs, bred from imported sire and dams. Prices to suit the times.

**SMITH EVANS,**  
491 GOUROCK, ONT

BREEDER AND IMPORTER



**Oxfords** - - -

Fine rams, shearling and 2 shears and ram lambs. Yorkshires sows due to farrow in a few weeks. Also Plymouth Rocks. We can suit you. Send card for particulars and prices.

**John Cousins & Sons,**  
693 HARRISTON, ONT.



**SHROPSHIRE**

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, along with a number of shearling rams and ewes of this year's importation, for sale. Orders can now be taken for pick.

**JAMES COOPER & SON,**  
492 Kippen, Ont.



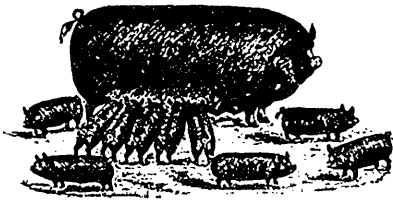
**LINDEN OXFORDS**

Our flocks are composed of imported sheep, or directly from imported stock; all sired by winners at English Royal.

**HINE & FINLAYSON,**  
Dutton, Ontario, M.C.R. 414 Glencoe, G.T.R.

## SWINE.

## MAYFIELD HERD OF BERKSHIRES.



Young boars and sows and sows in farrow for immediate delivery. Pairs supplied, not akin, of January litters, sired by imported Queen's Own and General Jackson. Herd has won a very large number of first and other prizes at the leading shows in Ontario, Quebec, Manitoba, and the Northwest Provinces. I guarantee satisfaction.

686

S. COXWORTH, Whitby, Ont.

## Berkshires AND Yorkshires

I am now receiving orders for spring pigs. Some choice sows of both breeds due to farrow in March and April. Pairs supplied not akin.

Three choice young Ayrshire bulls for sale

Write me for prices. Satisfaction guaranteed.

Also some choice Light Brahmas, S. L. Wyandotte, and B. P. Rock fowls. Eggs in season \$1 per setting. 666

M. H. PARLEE, Sussex, N.B.

## ELMDALE HERD OF TAMWORTHS



One yearling boar, a prize-winner at the Western Fair, 1893. Has proved himself a good stock-getter. Also September '95, boars and sows from prize-winning sires and dams; pairs not akin. Write for prices.

JOHN C. NICHOL - 623 - Hubrey, Ontario.

## F. Rusnell CEDARVILLE, ONT.

Has 40 Young Yorkshire Pigs, from two to seven months old. Some of them prize winners. Prices from \$8.00 to \$15.00. 568

## IMPROVED LARGE YORKSHIRES

Choice young sows due to farrow during winter and early spring. Boars fit for service, and pigs from fall litters for sale. Our herd is headed by Dominion Sweepstakes Boar at Toronto, '94 and '95.



J. M. HURLEY & SON. Belleville, Ont.  
Box 442. Kingston Road Stock Farm. 332

## IMPROVED CHESTER WHITE and TAMWORTH SWINE

We have now ready for sale 60 choice young boars and sows, not akin—from four to six months old—from the choicest blood in Canada. Prices very low for the next 60 days. Pedigrees furnished. Reduced rates by express. Write for prices.



395

H. GEORGE &amp; SONS, - Crampton, Ontario

## Yorkshires • Berkshires

Prime lot of YORKSHIRE PIGS, fit to ship. Also BERKSHIRES, farrowed March 1st, at hard-times' prices. Orders booked now.



433 Dennis Hawkins, - Woodville, Ont.

## SWINE.

## MAPLE LEAF FARM. IMPROVED LARGE YORKSHIRES

Markham Baron, the sweepstakes barrow over all breeds at Fat Stock Show at Guelph in 1892, was bred by us. A choice lot of young sows old enough for mating. Also young boars. Pairs furnished not akin. Only first-class stock shipped. 569

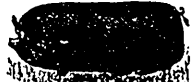


JOHN PIKE & SON,  
Locust Hill, Ont., C.P.R. Markham, Ont., G.T.R.

## D. A. GRAHAM, - PARKHILL, ONT.

IMPORTER AND BREEDER OF LARGE  
ENGLISH BERKSHIRES.

I am prepared to book orders for Spring Pigs Pairs and trios furnished not akin. Dams weighing 300 to 600 pounds, sires 400 to 800 pounds. Prices right. Poultry, choice breeding pens of B. P. Rocks, S. L. Wyandottes, Brown Leghorns, and Pekin Ducks. Eggs in season, 13 for \$1. Bronze Turkey eggs 15 cents each. 553



## DURGO-

Two good boars, ready for service, for sale Also lot of good fall pigs. Prices right. Only good pigs shipped. Address

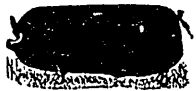
## JERSEYS

643

PETER LAMARSH,  
Wheatley, Ont.

## GOLD MEDAL HERD OF BERKSHIRES

Young boars and sows of fall litters, bred straight from imported stock. Sires weigh from 650 to 840 lbs. Size and quality combined. Orders booked for spring pigs at eight weeks old. Jersey cows, heifers, and calves for sale.



426

J. C. SNELL, Snellgrove, Ont.

## LARGE ENGLISH BERKSHIRES

The sweepstakes herd at the Western Fair, London, 1895. Headed by my famous boar, Bright Prince, assisted by two grand yearling boars. Some choice sows and boars for sale. Am booking orders for spring litters. Write me for prices before you order. My motto, "A good pig at a fair price." Also choice Shropshire sheep and Silver-Laced Wyandottes for sale. Sunnyside Stock Farm. 453 T. A. COX, Brantford, Ont.



## BERKSHIRES

Our Berkshires made a clean sweep of all the first prizes at the late Toronto Industrial Exhibition, including first prize for boar and two sows; boar and four of his get; and sow and four of her produce. We have some fine young pigs for sale farrowed this fall; also boars and sows about five months old. Write for prices.



J. G. SNELL & BRO., Edmonton, Ont.  
Brampton and Snellgrove Stations. 455

## POLAND-CHINAS

at Williscroft.

ARE THE RIGHT KIND.

Brood sows for sale. Boars ready for service. Young sows ready to breed. Lots of pigs two to three months old; good long pigs with heavy bone. Price right. Mention FARMING.



493

R. WILLIS, Jr., Glen Meyer, Ont.

**BIG BARGAINS** For thirty days in Chester White Swine of the choicest breeding. Also Dorset Sheep, at greatly reduced prices.

R. H. HARDING, Mapleview Farm, Thorndale, Ont.

423

SWINE.



**E. D. GEORGE**  
PUTNAM, ONT.

Importer and Breeder of  
**Ohio Improved Chester White Swine**

The largest and oldest established registered herd in Canada. I make this breed a specialty and furnish a good pig at a fair price. Write for prices. 667

**OAK LODGE HERD**

**IMPROVED LARGE YORKSHIRES.**

**ONLY ONE BREED KEPT**

But the very best of that breed. A large herd to select from, and prices very moderate. Write for prices.

**J. E. BRETLOUR,**  
Burford, Ontario.

668



One mile north of Claremont, on C.P.R.

**MY COTSWOLDS** won in 1895 at eight provincial and county fairs 39 firsts, 29 seconds, and 3 diplomas, nineteen times being first and second. **Berkshire Boars**, fit for immediate service. January and February litters, not akin, ready to ship. **Plymouth Rock Hatching Eggs** of the best imported hatching obtainable. 40 eggs for \$2. All stock guaranteed as described. Visitors welcome. 632  
**C. T. GARBUTT,** Box 18, Claremont, Ont.

**CANADA WILKES**

A first-class specimen of the most fashionable strain of Poland-Chinas in the world at head of herd.



Send for illustrated catalogue of breeding stock of all ages, sexes; 8 sows yet for sale, safe in pig, at a bargain. Eggs for hatching of the following varieties: Silver Gray Dorkings, Black Spanish, Brown Leghorn, per sitting of 13 \$1.00, 30 eggs for \$2.00 (any assortment same rate). Pekin Duck Eggs for sale (Hallock strain), \$1.50 for sitting of 11; 25 eggs for \$3.00. Plants (Raspberry). Bees and Honey in Season. Three Pekin Drakes for sale.

Describe what you want, and we will do our best to please you.

**CAPT. A. W. YOUNG,**  
Tupperville, Ont.

399

**Pine Grove Herd** Duroc-Jersey SWINE

My pigs are of the best imported stock. Am now booking orders for spring pigs. Pairs furnished not akin, and nothing but first-class stock shipped. Prices low and satisfaction guaranteed. Address



**CHAS. ANSTICE,** Springfield, Ont.

**REGISTERED POLAND-CHINAS**

For sale, cheap, young pigs of different ages and both sexes. Orders booked for spring pigs. Also eggs for hatching of the Barred Plymouth Rock and Black Minorca varieties. Satisfaction guaranteed.



**R. B. McMULLEN,** Goldsmith, Ont.

649

**TAMWORTHS FOR SALE**



Special offers for 60 days. The entire herd will be sold at bargains. 7 May sows bred to 3 May boars, 5 Sept. sows, 5 Sept. boars. 4 year-old sow bred, 2 three-year-old bred. Pedigrees in all cases.

All stock guaranteed.

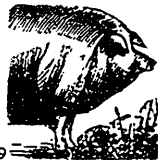
**J. L. REVELL,** - - Putnam, Ont

**G. BENNETT & PARDO,**  
CHARING CROSS, ONT.

Breeders and Shippers of O.J.C. Chester Swine.

A choice lot of young stock from 2 to 6 months old. All are prize-winners, and registered stock.

Also a choice lot of White Leghorns, White, Golden, and Silver Laced Wyandottes; Plymouth Rocks, Partridge Cochins, Brown, Red, and Indian Game; Bronze and Wild Turkeys. 409



**PLEASANT VIEW HERD**

of REGISTERED TAMWORTHS



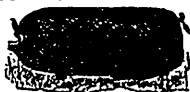
For sale, a few yearling sows, young sows ready to be served, and two young boars fit for service, and one imported boar, Birmingham Hero. Very low prices. Write for particulars.

412

**E. R. KOLB,** Berlin, Ont.

**NITHSIDE FARM HERD of BERKSHIRES**

Three choice young boars, eight months old, with registered pedigrees. Price, \$15 each. Four young sows, seven months old, bred to a No. 1 boar, with registered pedigrees. Price, \$15 to \$18 each. These are No. 1 sows from prize-winning sire and dam. Also young boars and sows, three months old. A few Silver Grey Dorking Cockerels left. Satisfaction guaranteed.



**E. E. MARTIN,**

Paris Station, G.T.R. 464 Canning, Ont.

**RIVER BOW STOCK FARM**

Six Shorthorn bull calves by Chief Captain, a son of Indi Chief.

Poland-China Pigs of all ages, of the best winning strains.



**Duroc-Jersey Pigs** from the best imported stock. Pairs furnished not akin, and nothing but the best stock shipped.



**B. SNARY & SONS**  
Croton, Ontario.

601

SWINE.

**POLAND-CHINAS**



My herd is composed of the most popular strains of prize-winning blood from imported stock. A choice lot of spring pigs from imp. Black Joe ready to ship. Also a twelve-months-old sow due to farrow in August (a show sow).

**OLIVER DRURY,**  
Fargo, Ont.

710

**Chester Whites**

Sows in farrow, and Mammoth Bronze Turkeys. AT ROCK-BOTTOM PRICES.

375 **JOS. CAIRNS, Comlachie, Ont.**

**MOUNT PLEASANT STOCK FARM**

Large English Berkshires

Herd took 21 firsts, 10 seconds, and 4 third prizes in 1895. **Queen Esther**, 4 1/2, the famous prize-winner, is due to farrow in March by Cressman's Bagpate 3400. This boar took 7 firsts and 1 second in '95. Choice boars and sows of all ages for sale. Registered pedigrees. Satisfaction guaranteed. Write for prices.



602

**W. H. SPENCER, Morpeth, Ont.**

**LARGE ENGLISH BERKSHIRES**

I have a large number of pigs of good length and fine quality, bred from the best imported families. Send order for a pair not akin, or a single pig of this most profitable breeding sort.



673

**GEO. THOMSON,**  
Bright, Ont.

Best Strains of

**LARGE ENGLISH BERKSHIRES**

Selected from the herds of J. G. SNELL & BRO., Snellgrove, and T. TEASDALE, Concord.

Boars and sows of all ages, not connected. Sows in farrow. All first-class stock. Address,

**Wm. McALLISTER,** 650 **VARNA, ONT.**



**RED TAMWORTHS.**



My breeding pen is almost all imported. The noted English herds are represented. Young stock of both sexes for sale at all times. Also some aged boars. Prices to suit the times. Parties wanting Tamworths should write.

**ANDREW DUNN,** - - **Ingersoll Ont.**

471

**MAPLE LEAF STOCK FARM...**

Improved Yorkshire Pigs

of the best strains of breeding.

Large English Berkshires

Large thrifty pigs are my type, that is the way I breed them. All ages now on hand.



503 **THOMAS WATSON, Springvale, Ont.**

**THE SWEEPSTAKES HERD OF**

**TAMWORTHS**



has won the highest honors for the last three years. Boars and sows of all ages by the Industrial and London first prize-winner, **Glen Sandy.**

**WALTER. T. ELLIOTT, Hamilton, Ont.**

SWINE.

**OHIO IMPROVED CHESTER WHITES AND ENGLISH BERKSHIRES.**

My stock of Ohio Improved Chester Whites are imported from the celebrated herd of L. B. Silver & Co., Cleveland, Ohio. I also have a choice stock of registered Berkshires.



504

**GLEDON SNYDER, Jarvis, Ont.**

**LARGE ENGLISH BERKSHIRES**

A choice lot of sows, one year old, to farrow in April; also nine boars fit for service. All will be sold cheap to make room for other lots coming on. If you want a bargain write at once for prices. Satisfaction guaranteed.

698 **C. R. DECKER,**  
Bright Station, Chesterfield P.O.  
Please mention FARMING.

**FOR SALE.**

We cannot supply any more orders for Bronze Turkeys. All sold.

For this month, however, we have something better. An **ENGLISH HACKNEY STALLION**

Registered, beautiful color, gentle to drive, fine action, sure getter. There is no doubt whatever that there is a great scarcity of horses, and prices are already advancing. Shrewd breeders are getting hold of good stallions wherever they can. Every mare in the country will be bred this year.

541 **LEVI S. BOWLES, Box 760, Peterboro, Ont.**

**FOR SALE.**

A first-class Jersey Bull bred from Mrs. E. M. Jones butter herd. Registered in A. J. C. C., No. 6473, 16 months old, for only \$50. Also a few choice Duroc-Jerseys and Chester White boars now ready for service. Write for particulars.

382 **WM. BUTLER & SON,**  
**DEREHAM CENTRE, Ont.**

**2 Holstein-Friesian Bull Calves**

for sale, at low prices. Apply to

692 **WM. SUHRING,** - **Sebringtville, Ont.**

**Jersey Bulls For Sale**

King of Glen Duart 35749, 4 years old, a very fine animal, took first prize at 16000 Industrial, 1892; very quiet and sure; dam imported from Island of Jersey; Cathula of Glen Duart; also a young bull one year old now, by Dan St. Lambert's Dolly 94542, which tested 6 per cent. butter fat. A young bull fit to head any herd. Will sell cheap.

**WILLIAM WILLIS,** PINE RIDGE FARM,  
NEWMARKET, ONT.

**GOOD SEEDS**

given away with Free Catalogue of Garden, Flower, and Farm Seeds, Roses, Plants, etc. Quality the best. Prices the lowest. 30 new varieties of potatoes retailed at wholesale rates. Address **ENTERPRISE SEED CO., Seed Growers, Newark, Wayne Co., N.Y.**

680

When writing mention FARMING.

**For Sale**

Choice Fruit Trees, Roses Shrubs, etc. Write us for our 1896 Catalogue, and we will send you one free. Do it now. **GLOBE NURSERY CO.** Rochester, N. Y.

697

**Black Prince Oats**

A new variety imported from France, 1893. Black oat, good long stiff straw. Yielded 70 bushels per acre past years. Price, including bags, 60c. per bushel, F.O.B. London. Prussian Blue Peas, 85c. per bushel, with bags.

**A. ELLIOTT, Pond Mills, Ont.**

POULTRY

DUFF'S . . . .

WHITE AND BLACK MINORCAS.

BARRED PLYMOUTH ROCKS.

My birds have won highest honors at the largest and best exhibitions in the United States and Canada, including *Madison Square Gardens*, New York, 1895, and the Ontario at Port Hope, 1896. No man in America has stock superior to mine. My Plymouth Rocks have also won highest honors at the Crystal Palace, Dairy, and other large shows in England. Send for illustrated catalogue and price list Eggs \$3.00 per setting; two settings \$5.00.

THOMAS A. DUFF,  
Toronto, Canada.

518



**PROFITS IN POULTRY!** Our Eleventh Annual Poultry Guide and combined catalogue tells how to earn these profits. What others are doing you can do. One hundred and forty-eight pages of valuable, practical matter.

**INCUBATORS AND BROODERS!**

The Improved Reliable is Warranted to Hatch 80 per cent. of the fertile eggs. Hundreds of recent testimonials. Sixteen popular kinds of THOROUGHBRED FOWLS FOR SALE, also full line of Poultry Supplies. Price of Guide 10c. in stamps—worth one dollar.

Reliable Incubator and Brooder Co., Quincy, Ills.

671

**Fairview Farm,  
Plainfield, N. J.**

The stock of poultry formerly at Pine Tree Farm, Jamesburg, N. J., has been removed to above address. Send for Circular.

W. H. ORDWAY.

BARRED PLYMOUTH ROCKS  
LIGHT BRAHMAS  
INDIAN GAMES  
LANGSHANS

Winners at Toronto Industrial and Ontario show

Orders booked now for eggs for setting, from choice mated pens, at \$1 for thirteen. Stock for sale.

546 W. T. GIBBARD, Napanee, Ont.

**WHEN  
IN WANT OF**

Barred Plymouth Rocks, Silver Gray or Colored Dorkings Black Spanish, and Pekin Ducks, of the HIGHEST quality at the LOWEST figure, write

**J. L. CORCORAN,**

TORONTO, ONT.

N.B.—EGGS, \$2 for 13; \$3 for 26. 508

**For Sale . . .**

Eggs for hatching from M. B. Turkeys, Aylesbury Ducks, Light Brahmans, Houdans, S. S. Hamburgs, R. C. White Leghorns, and S. G. Dorkings. Eggs guaranteed fresh and fertile, and from first-class stock. For prices, write to

**JAMES A STEWART, Jr.**

MENIE, Ontario.

575

**GOLDEN** Can give you a dandy Cockerel at \$2.00.  
Young Stock For Sale. **WYANDOTTES**

767 Eggs, \$1.00 per 13.

W. J. STEVENSON, Oshawa, Ont.

Get the Best

EGGS \$1 per 13. From high-class purebred Barred Plymouth Rocks, Red Caps, Silver Laced Wyandottes, and Silver Gray Dorkings. 20 grand B. Rocks and 1 S. Wyandotte cockrel for sale 713 W. H. KIRBY, OSHAWA, ONT.

The "Toronto"  
**INCUBATOR AND  
BROODER . .**

Won the SILVER MEDAL, the highest prize awarded, at the Toronto Exhibition, September, 1895, hatching more chickens in the showroom than all other competitors combined. Three American and three Canadian machines competing.

Catalogue and price list mailed on application. Address the manufacturer,

T. A. WILLITTS

542 Manning Ave. 513 Toronto, Ont.



**Don't Read This!  
CHAMPION'S GUIDE**

to success in POULTRY CULTURE Contains 36 pages of Highly Illustrated Poultry Literature, recipe, suggestions on rearing and fattening poultry. Twelve varieties of fowls and eggs for sale. Guide sent postpaid for 5 cts.

S. CHAMPION, Cass City, Mich.

716

**EGGS FOR HATCHING** from Upland Poultry Yard, C. J. Wright, proprietor. Breeder and shipper of thoroughbred Light Brahmans, Black Langshans, White Plymouth Rocks, White Wyandottes, Black Minorcas, Red Caps, White and Brown Leghorns, Black and Silver Spangled Hamburgs, Buff and Black Leghorns, Silver Gray Dorkings, and Golden Polish. These birds have been exhibited at four fairs last fall and have taken all the principal prizes, and two years in succession have won the diploma for largest and best collection owned by any one exhibitor. For prices of eggs, and further particulars, address **C. J. WRIGHT**, Box 114, Dixville, P. Q. Lice on poultry conquered at last. Send 25 cents for Wright's "Death to Lice," put up in tin cans, and positively the only way you can keep poultry free from lice. 385

**MAMMOTH BRONZE TURKEY EGGS**

FOR SALE—Choice stock. Tom weighs over 30 lbs. Hens from 15 to 20 lbs.—25 cents each; 5 \$1; 10 \$2. Also **JERSEY and DURHAM BULL CALVES.**

752

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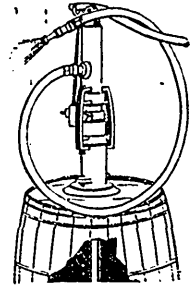
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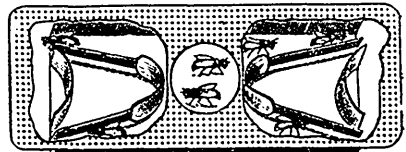
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**THE CHAMPION CLYDESDALE STALLION, GRANDEUR [1724] (6814).**

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# FARMING

Vol. XIII.

APRIL, 1896.

No. 8

## A Permanent Embargo.

The bill before the British House of Commons to make the embargo on cattle and sheep a permanent one, thus compelling the slaughter of all cattle and sheep at the port of entry for all time to come, will probably become law in spite of the opposition of the Scottish members to it. The Irish members will, of course, vote for it, as the Irish cattle will largely benefit by the exclusion of all outsiders, and many of their store cattle will be required for feeding purposes in Scotland and England, now Canadian stores are shut out. We never had any great hopes from the beginning that the embargo would be removed, knowing the important influences at work in England and Ireland to compel its maintenance, and, therefore, have always urged that Canada should adapt itself to the new state of affairs as being permanent. Now that there is every probability of the bill becoming law, we shall, at least, have the satisfaction of knowing where we stand, and we can adjust our methods accordingly.

---

## Live Stock Freight Rates.

It is doubtful if there is anything that the Canadian railway companies have done of late years which will work more disastrously against the interests of the stockraisers than the new classification of live stock in small shipments which was inaugurated at the new year. The new rates can only be defined as most outrageous, and are, naturally, calling forth the condemnation of all those affected thereby. To classify a colt or calf at six months old at 4,000 lbs. shows that those who arranged this classification either knew very little about the weights of animals at various ages, or else were so determined to make up for unprofitable through rates by taxing local traffic that they cast conscience to the winds. Would that we could get horses and cattle to reach those weights at one year old! Our farmers would make more money at the business of stockraising.

We are aware that the railway companies claim that an entire car has to be reserved for a single animal, and that, in consequence, the former

rates were unremunerative; but, in a large number of cases, the car used for conveying the animal has been one that had been shipped with freight to the station whence the animal was sent, and would, if not used for carrying it, have had to have been hauled back empty to some central point. In such cases, surely, there was no loss to the companies. In other cases the car used for collecting local freights has been used. We do not see why this local car should not be generally used, by employing a movable partition such as Mr. T. C. Patteson suggests in a letter to the *Toronto Globe*. When the animal has to be transferred to a branch line, the attendant in charge would merely have to remove it from one local car to another. Of course, we can expect no assistance from the railway companies in this matter. They will passively look on and reject all suggestions; but if all interested in stockraising will unite and compel their representatives at Ottawa to bring pressure on the government to remedy this evil, something will be done. Among other points, it remains to be seen whether the railway authorities have the right to raise their charges without referring them to the government at Ottawa. This question needs thorough investigation in the interests of agriculture.

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## Cheap Rates for Farm Produce.

The question of cheaper rates for home farm produce has been agitated for some time by the British farmer. Exposed, as he is, to competition in what he produces with all parts of the world, the freight rates charged by the home railways compared very unfavorably with those charged on produce brought from outside places, on which a cheap through rate was paid. The excuse offered by the railway companies for this discrimination was that the larger quantities of foreign goods handled at one time enabled them to load and unload cars more cheaply than where (as was usual) local shipments were made in smaller quantities. It was also pointed out by them that foreign produce was nearly all shipped in packages easy to be handled, a thing which

could not be said of those shipped by the home growers.

While there was a good deal of truth in the contention of the railway companies, still there was no doubt that the local freight rates, like those in this country, were out of all proportion to the through rates. The agitation has been so far successful that one railway company, the Great Eastern, is experimenting with the carrying of parcels of produce at a cheap rate, whereby it is hoped to put the producer and the consumer into as close contact as possible.

The company has a large number of stations on its line, and there are at least eighty rural centres in Essex, Suffolk, and Norfolk, from any one of which a package of twenty pounds weight can be forwarded to London for fourpence. This includes delivery within the London limits. A package of 60 lbs. can be sent for a shilling. The company, if the shippers wish, provides boxes at a charge varying from 1½d. to 5d., so that the carriage and delivery of a package weighing 20 lbs. will not cost more than 5½d., or about a farthing per pound. There are thousands of persons in London who will be only too ready to place themselves in direct business contact with the producers, and if the latter only carry out their part well, and ship only first-class produce, a very difficult problem will have been solved. Other railways are following suit, the latest to lower rates being the Great Western, which company has made considerable reductions in its tariff on milk shipped from certain distances, the rates being now as follows :

Distance.	Per imperial gallon at owner's risk.
Up to 20 miles.....	½d.
Above 20 miles and up to 40 miles.....	¾d.
"    40    "    100    "    .....	1d.
"    100    "    150    "    .....	1¼d.
"    150 miles    "    .....	1½d.

As regards the old rates, there is a reduction of 20 per cent. in some cases.

It is only a question of time when all of the railways will have to fall into line. When will our railways begin to show some consideration in their dealings with the local producer and cease to tax him in order to give cheaper rates to those living further west ?

### The Winnipeg Immigration Convention.

It is a recognized fact that one of the most serious obstacles to the progress of Canada to-day is the great lack of population. We have a splendid country, rich in resources of nearly every

kind, lying practically undeveloped, waiting for settlers. The great republic to the south of us has hitherto absorbed the greater flow of emigration every year ; but, with the practical absorption of free lands in that country, settlers must seek homes elsewhere. South Africa has been the favorite ground for emigrants of late, owing to the discoveries and development of the gold mines there ; but, owing to the unsettled state of affairs there and the fact that as regards agriculture, it is not a particularly suitable country, the tide of emigration, especially for the desirable class of emigrants, will have to turn in another direction.

Cannot we attract it hither ? Here we have large quantities of fertile, vacant lands, a goodly proportion of which are free lands, waiting for the settler, and it would be hard, indeed, to find a country in which the conditions are more favorable to the settler, provided he is made of the right material. He can, if he wishes, and has the means, invest in a home in the older sections of the country ; he can take up land in the north-western part of Ontario, where there are large tracts of excellent soil ; or he can go further west, and secure free lands in Manitoba and the Northwest, while the fertile soils in the valleys of British Columbia will attract many more.

There have not been wanting efforts in the past to induce settlers to come to Canada, but they have been rather spasmodic and ill-directed. The various provinces had agents, the Dominion Government maintained other agencies, and so did the Canadian Pacific Railway. The literature circulated through these mediums was considerably rose-colored, and, probably, did more harm than good ; and, besides this, these agencies overlapped one another, and lacked the authority that they would have possessed had they all been directed from one central executive.

It was to try to remedy the mistakes made in previous years and to start an energetic immigration crusade on behalf of the great Northwest that the important Immigration Convention held at Winnipeg during the last few days of February was held. The meeting was well attended by delegates from all over Manitoba, the Northwest, and British Columbia, while Algoma was also well represented. There was great enthusiasm shown ; but, what is more important, there was a determination all through to run things on a common-sense basis. Thus, every one who spoke insisted on the need of careful selection of immigrants. "Quality, not quantity," was their theme. The aim of the association that was formed at the meeting, under the title of the Western Canada Immigration Association, is to

become an immigration bureau, and to encourage settlement, at the same time giving a truthful description of the various districts suitable for settlement.

A number of resolutions were passed. One, in particular, which recommended the encouragement and formation of co-operative and commercial colonies, points to what promises to be a very important factor in the settlement of the country. It is also proposed to inaugurate a plan whereby the immigrant's passage can be prepaid, and, also, a house built, land broken up, and some stock purchased for him; all these outlays to be repaid in certain sums every year till the whole is paid off.

Altogether, the scheme is a most promising one, and we should be glad to see its scope extended to take in other parts of the Dominion. The great Northwest, of course, with its numberless acres of fertile land, calls most loudly for settlement; but there are large districts further east where free grants of good land can be obtained, which are only waiting for development at the hands of the industrious settler. Let us get all the settlers we can; and, when we get them, let us make their conditions such that we shall be able to keep them.

### Signs of Spring.

At the time of writing signs of spring seem by no means in evidence, and this year winter seems determined to linger as long as possible in the lap of spring. March has well kept up its reputation as a boisterous, cold month, and, therefore, it is to be hoped that the old proverb that "March winds and April showers bring forth May flowers" may come true this year. It is also to be hoped that another old saying that "when snow lies till late in March it means bountiful crops" may be fulfilled. It is, of course, impossible to say, at the present, how the wheat crop and the clover have come through the winter; but it is reasonable to expect that except, possibly, in low-lying spots, they have wintered well, although there is the danger of the wheat having been smothered by the excessive weight of snow. The snow, so far, has been disappearing slowly, and, should it continue to do so, there will be no danger of floods, but a sudden thaw would cause widespread devastation.

The blockades on the railways during last month, in consequence of the drifts, have been such as have not been for years, and the bad condition of the country roads have been very discouraging to business all over the country. It is, however, but reasonable to expect that we have

seen the end of storms this winter, and that with the advent of spring and warm weather a better state of affairs may be inaugurated. At any rate, we are sanguine enough to predict better times in sight for those engaged in farming.

### Canadian Horse Show.

The spring show to be held in Toronto from the 15th to the 18th of this month should, with favorable weather, prove a greater success even than the excellent one held last year. The prize list is very largely increased, and a number of new classes have been added, including three for standard-bred roadster stallions, mares, and fillies, the prizes for which are given by Mr. Harry Webb, Toronto. A second prize has also been added for the best combination saddle and harness horse, and a second for the best unicorn team.

Through the instrumentality of Mr. Henry Wade, it has been resolved to set apart Thursday, the 16th, as farmers' day, and on that day a number of the breeding classes, and others of special interest to farmers, will be judged. The tickets of admission on that day will be fifty cents for the morning and afternoon tickets, and one dollar for an all-day ticket. Our friends from the country would, therefore, do well to arrange to be present on the Thursday, and, in order to secure the best rates, they should leave home on Wednesday, as on that day alone can tickets good to return until the end of the week be secured from the railway companies at single fare, while on all other days those travelling by rail will have to pay a fare and a third. Another attraction on Wednesday is the fact that Lord Aberdeen, the Governor-General, will be present at 2 p.m. to open the exhibition. On another page we give a good view of the outside of the Armouries' building in which the show is to be held.

### Dominion Cattle Breeders' Association.

At the fifth annual meeting of the above association, to be held in Shaftesbury Hall, Toronto, on April 17th, two questions very important to live-stock breeders and farmers will be brought before the meeting, with a view to taking united action for the redress of the grievances complained of.

The first is the intolerably excessive rates now charged by the railway companies on shipments of cattle, singly or in small lots, to which we have referred in another article; and the second is the present quarantine regulations between

Canada and Great Britain, and Canada and the United States. As regards the former, the railway companies have, it is true, just made considerable concessions, but even now the rates are too high. As regards the quarantine question between Canada and the United States, we are, as we have stated before, in favor of its abrogation if both countries will consent to so doing, as we see no benefit to either country in continuing them when both countries can show such a clean bill of health.

These are the questions to be discussed, and it is hoped that all interested, who can attend, will do so, and make their influence felt on these points, which are so vital to the interests of all concerned in live stock.

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### Our Butter Trade.

In conversation, the other day, with the Hon. Thomas Ballantyne, the well-known cheese and butter exporter, he stated that the best market his firm had found for their butter this winter had been in England, and, in confirmation of this statement, he showed us a letter from the dealer in Manchester who handles their butter, which, by permission, we give here for our readers' benefit:

Messrs. Thomas Ballantyne & Son, Stratford, Ont.

DEAR SIRS,—We have received delivery of 45 packages ex *Mongolian*. AC 5S is correct in both color and saltness, and has been sold at 106 shillings. AC 14 and 15 are not quite such fine butter, and both lots have been cleared at 104 shillings, as per our cable to you to-night.

Choice Australian is selling at 100 shillings, London. As we pointed out before, we can make more for your butter than for it; the only fault is you don't ship enough.

In reply to yours of February 5th and 6th, we may say, with regard to the lot referred to, that it was both too salty and too high-colored, and we got into trouble about it. The correct amount of salt to use is 3 per cent., which is practically five-eighths ounce to the pound. If you add coloring, you take 4s. per cwt. off the price. You cannot do better than go on as you are doing; don't alter it in the least. . . .

Yours, etc.,

ANDREW CLEMENT & SON,  
4 Greenwood street,  
Manchester.

February 19th, 1896.

The prices quoted are, of course, per 112 pounds; 106s., in Manchester, being equal, Mr. Ballantyne informs us, to 21½ cents net in Toronto, while some sales were made as high as

112s., and none were lower than 102s. As regards the color, the popular demand varies according to the district, Manchester calling for a natural, or uncolored, butter; while London needs about the same amount of color as Toronto. It is worth noticing that the finest Australian only brought 100s., as against 106s. for the best of the Canadian lot. This is enough to show that it only requires an effort on our part to obtain as high a position for our butter as we have for our cheese in England.

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### Prince Edward Island Correspondence.

(From an Occasional Correspondent.)

The winter has so far been mild, and the ground, since the New Year, well covered with snow. Should this state of things continue until the latter part of March, we shall be pretty sure of good grass next season.

Fodder is somewhat scarce, as last summer was too dry for either hay or grain to do its best. Silos are scarce yet, but they are growing in favor. A few more dry seasons will convince most farmers of their necessity.

Pasturage has not been as good of late years as formerly, neither does hay turn off to the acre nearly as much as it used to. Farmers are finding out that they have been selling off too much of the fertility of their farms in exporting grain and potatoes so largely.

The low price now obtainable for oats and potatoes is not an unmixed evil, as it is fast hastening that change which it is imperative that our farmers should and must make in order that agriculture may be lifted out of the old ruts and placed on a sound scientific basis. Professor Robertson, Dominion Dairy Commissioner, acting under instructions from the Minister of Agriculture, has contributed largely towards such a change by inducing the farmers to engage in co-operative dairying.

Previous to 1892 a few cheese factories had been in operation on the island. They were owned and run by private enterprise. They were short-lived, for the reason that the farmers were suspicious that the owners were getting the best of it.

In 1892 dairying on the co-operative plan was introduced. In that year Professor Robertson started an experimental dairy station at New Perth, in King's county. The people of the locality formed a company, and put up a factory. The government put in the plant, and conducted cheesemaking at the station, charging therefor one and a quarter cents per pound of cheese.



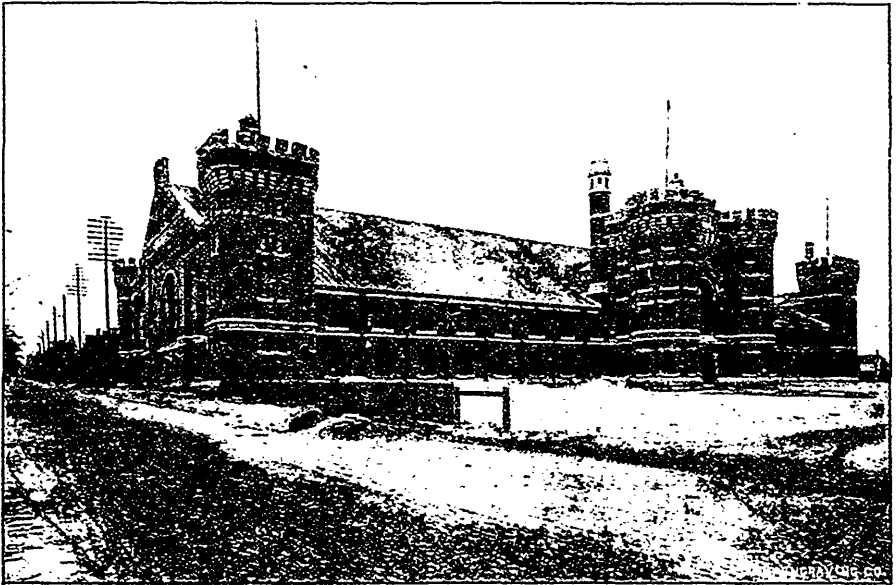
The company paid for drawing the milk. The patrons were well pleased with the experiment, and voted it a success.

The establishment of this station, which was managed by Mr. T. J. Dillon, now our popular dairy superintendent, was a great means of educating our farmers up to and inducing them to engage in dairying.

From this small beginning the business has grown, till now we have thirty co-operative companies, two of which make butter, and the rest cheese. From an output of 1,000 boxes in 1892, the make has increased to an output this year of about 30,000 boxes, besides the produce of the two butter factories, which would at least average

milk which farmers deliver at the central station, is made into butter. The government charge for manufacturing is three and a half cents per pound. During the last week, ending February 22nd, 3,000 lbs. of butter were made at this station. We think this good, as only a very few of our farmers were prepared for the business. This is, we believe, the largest output of any winter dairy station in Canada, and we look forward to a great extension of the business in the near future, when our farmers shall have provided themselves with nutritious, succulent food for their cows in winter, so that they will be able to carry on the dairy business all the year round.

Dairying here is yet in its infancy, but it is fast



The Armories' Building, in which the Horse Show will be held.

as much in value as any two of the cheese factories.

This business is all owned by the farmers in co-operative companies. The government have put no money into factories or plant, except buying the plant of the experiment station first started. True, there has been a small deficit from running the factories each year till this. But this year there is likely to be a surplus. The dairy commissioner has put in operation in Charlottetown a winter creamery, which has already proved a grand success. Many of the dairy companies have put separators in their cheese factories, where the milk of the patrons is separated. The cream is gathered to the central creamery, and, together with cream from the

taking a foremost place, and will, we think, in a few years, be our principal business.

The great want in connection with our dairy business now is cold storage warehouses to hold our summer makes, and facilities for shipping direct to the English market in steamships having cold storage compartments.

### The Armories' Building.

It would be hard, indeed, to find a more suitable building than the Armories' building, Toronto, in which to hold the Canadian horse show, which will be in full swing on the 15th of this month. In point of capacity it is only a little smaller than the famous building in Madison

Square, New York, which is the domicile of all the big shows held in that city. The ring in the Toronto armories is 70 x 222 ft., or just 6 ft. narrower and 24 ft. longer than the New York ring. This year the seating accommodation has been considerably extended, and there will be more private boxes than last year, as well as more ordinary seats. In all, about 3,000 persons can be comfortably seated, while the space for the promenade on the north side has been greatly widened, so as to make room for the many who prefer to be near the ring to get a better view of the horses.

Our view is taken from the southwest corner of the building.

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### Notes from Great Britain.

(By Our Own Correspondent.)

The winter, up to the end of February, has been, taken as a whole, one of exceptional mildness. Feed is plentiful, and the prices of store cattle and sheep are far above that which they ought to be, having regard to the price of beef and mutton. These commodities are very cheap, particularly the coarser and heavier qualities, principally owing to the very large importations from all countries of immense quantities of meat, which seriously affect the value of any that is first-class. Our home feeders grumble loudly, and say that it ought to be stopped, but the majority of consumers, as well as all thinking men, agree that it is a good thing; hence there is not the slightest possibility of any protective or other hindrance being put upon a trade that is of so great a value to the consumers of these commodities. One important feature in connection with the dullness of the meat trade is that for small joints and first-class quality the price is high and the demand firm, thus once more again proving that it is not the producers of first-class meat that suffer, but those that produce the second-rate and coarser qualities. Hence it is of the utmost importance for your feeders and shippers to remember that if they want high prices they must send to this market that which will command them, *i.e.*, meat from bullocks weighing about 1,100 lbs., and sheep weighing about 100 to 120 lbs., well fattened and carefully dressed. Such meat as this will be sure to find a good market and meet with ready sale.

With reference to the selling of imported meat here, I must once more repeat the lesson I trust my last communication made clear, *i.e.*, that arrangements must be made whereby Canadian produce is sold as *Canadian*. This is of paramount importance to every breeder and

feeder in your country; hence it is a question that ought to be kept clear ahead of all others, until it becomes an accomplished fact. The efforts of your competitors to get into a position to supply us with better qualities of both beef and mutton are enormous, and it certainly is needful to warn your breeders and feeders of the need there is to keep their herds and flocks up to the highest standard. During the past month or so I have been in receipt of numerous enquiries for pedigree stock of various kinds, but not one has come from Canada. Are your herds and flocks, taking your entire territory, in such an excellent state that they need no further improvement? Have your breeders of pedigree cattle, sheep, and pigs such a supply on hand of such quality that they need no further help from home? I think not. At any rate, although I know full well that there are many valuable herds and flocks in Canada, I know, on the other hand, taking the sheep sent here last year, that there is a very large amount of room for improvement; and, therefore, I think it will not only be found beneficial, but needful, that importation of registered sires of the various breeds should be continued.

The fact that Mr. Andrew Montgomery has imported from America to Scotland three colts and a filly, all bred by Colonel Holloway, is of the greatest importance to all concerned in the Clydesdale breed. This importation of American-bred stallions, bred on purebred lines, will surely be of vastly more use to the breed at home than the adoption of crossbreeding which some seem to advocate for the purpose of getting some point or other that the individual fancies is needful. Surely these stallions, being purebred, and bred upon the best foundation they could be, will, from the very nature of things, act on the home-bred mares at home as an entirely new line of blood, not necessarily because they are of different lines of blood, but because they and their parents have been located, for a time, at least, in an entirely different country, and under different climatic influences; and thus one will certainly watch with great interest the future, not only of these welcomed strangers, but also of their produce when at the stud.

The annual Shire horse sale at Elsenham can hardly be called a draft sale; perhaps it would be better to say a sale to reduce the stud to its proper limits, and to make room for the usual increase of numbers. Shire horse-breeders were welcomed by Sir Walter Gilbey not only to a grand sight, but also to an instructive one as well; for few, if any, breeders could put before an assemblage such a grand collection of animals as were sold absolutely without reserve here on

February 6th. The selection offered consisted of all the three-year-old, two-year-old, and yearling fillies, nine brood mares, and four young stallions. The sale was a very successful one in every way, as the following will show: Nine brood mares averaged \$885.50, the highest prices being \$2,750 for Dunsmore Dora and \$2,150 for Mother Hubbard. Nine three-year-olds averaged \$911.50, the highest prices being \$2,150 for Madge and \$1,300 for Saxon Girl. The average for ten two-year-olds was \$750.50, the highest prices being \$1,500 twice for Rokeby Hostess and Her Grace. For yearling fillies the average was \$394, the highest prices being \$600 for Saxon Empress and \$525 for Saxon Baroness. The stallions sold as follows: One three-year-old, \$509; one two-year-old, \$341; and the two yearling colts averaged \$344. The total average for thirty-nine animals was \$715.42.

Breeders of Hackneys will receive with great regret notification of the death of the world-renowned stallion, Danegelt 174, who died on January 29th. This stallion was, perhaps, without exception, the most noted sire of the present day, so far as regards the Hackney breed, and it is needless to remind breeders of Hackneys of his meritorious showyard record, or of those of the very numerous sons and daughters of his get. He was purchased in 1892 by Sir Walter Gilbey for \$25,000, and we are informed that upwards of one hundred applications for nominations to him had been received for the present season at a fee of \$100. Thus his death is a great loss, not only to his owner, but to Hackney breeders at large.

### Glasgow Clydesdale Stallion Show.

(By Our Own Correspondent.)

This annual fixture took place February, 1896. The entries were more numerous than last year, and it is a pleasant feature to note that the absentees were very much fewer. As to quality, one may safely say that, generally speaking, it was very much better than has been the case for the last few years.

There were quite a number of deputations from horse societies present, with a view of hiring or buying stallions, and a very brisk demand existed for the best.

For the Glasgow Society's premium there were no fewer than sixty entries, most of them being forward. Mr. C. Simpson's Lord Colin Edwin was a popular winner. He is by Prince Gallant 6176, out of Hatton Belle 626, by Old Times 579. This horse has great quality of bone and feather, which is such a leading characteristic of the Clydesdale, and he moves well. Amongst

the numerous others in this class were many most meritorious animals, but it would be useless, in the space at my command, to attempt to do justice to them.

In the three-year-old class we found another large entry (thirty-one). This class is described as being for the best Clydesdale stallion foaled in 1893, and it was decided that the premium should be awarded to Mr. James A. Wallace's Prince of Clay, who was certainly the best horse in the class, but, strange to say, he is not eligible for entry in the Clydesdale studbook. His sire was Prince Alexander 5236, out of Lockhart's Pandora, by Darnley, and, on the dam's side, is third in direct descent from a Shire horse. There are some breeders who say that such crosses should be allowed registration, but I, for one, cannot agree with this unless it is proposed to make Shire and Clydesdale into one breed, and surely this cannot be attempted or wanted.

The open class for best Clydesdale stallion had thirty-five entries. The famous Prince of Carruchan was an absentee, and Mr. Peter Crawford's Royal Gartly took the first premium, whilst Mr. David Riddell's Moneycorn was placed second, and Mrs. C. Simpson's Lord Colin Edwin, winner of the Glasgow Society's premium, third.

The open class for three-year-olds was a good one, and the awards were as follows: Prince of Clay, first; Mr. David Riddell's Good Gift, second; Prince of Craigie, third; Mr. John Crawford's Kirkmabreck, fourth; Mr. David Riddell's My Laddie, fifth.

The two-year-old class brought in fourteen entries, and a very nice, useful colt, Mr. James Kilpatrick's Cawdor Cup, won first, whilst Alexander Scott's Sir Visto, a big and useful colt, took second honors.

The Cawdor Cup, for the second year in succession, went to Royal Gartly.

February 6th was the date of the Clydesdale sales at Glasgow. Mr. David McGibbon's eight entries made an average of \$238, the highest price being \$505, given for Annie, a four-year-old mare which won the championship at Campbelltown last year.

Mr. R. Sinclair Scott's twenty-nine entries made an excellent record, the average for fifteen brood mares, some of them being well advanced in years, being \$395, the highest price, \$850, being given for Scottish Rose. One three-year-old filly made \$305. Four two-year-old fillies averaged \$200. Two yearling fillies were sent. Scottish Beauty attracted great attention, and there was keen competition for her, Mr. Herbert Webster securing her for \$650. The other yearling filly made \$130. The demand for stallions

was not so good. The whole consignment of twenty-nine made \$9,166.50, an average of about \$316.

Mr. A. B. Mathews' consignment was only three mares, but one of these made the top price of the day, \$1,000, paid by Mr. W. H. Lumsden for Princess May, by Top Knot. The two other mares made \$390 and \$235, respectively.

### Shire Horse Show.

(From Our Own Correspondent.)

The Shire Horse Show, in London, Eng., was held February 25th to 28th, 1896. There was a capital entry in all classes, numbering 503 in all.

The class for yearling stallions had forty-nine entries, the premier position going to Sir James Blyth's colt, Blythwood Hero, by Hitchin Conqueror, a colt of great promise, with bone and substance. P. A. Muntz's Dunsmore Gaffer made a good second.

Two-year-old stallions formed an excellent class, numbering sixty-three, and amongst those present being the first, third, fourth, and fifth yearling prize-winners of last year. Rokeby Portland was clearly and rightly placed at the head of this good class, followed by P. L. Mills' Ruddington Harold, a first-prize winner last year.

Three-year-old stallions were a capital class. Stonewall, a massive, powerful horse of dash and quality, worthily took first place, and Nailstone Harold second, whilst Monkeaton Royal Harold had to be content with third.

The four-year-old class was of especial merit, for no less than seventeen out of the thirty-four entries were noticed by the judges. Here without a question Lord Belper's grand colt, Rokeby Harold, was clear first. He is a grand mover, and has beautiful conformation, type, and character. He has kept on improving all round since he won the challenge cup in 1893 as a yearling. Mr. Chadwick's Seldom Seen, another grand young horse, made an excellent second.

Stallions over four years and under ten years, under 16.2 hands, made a good level class of merit, there being twenty-nine entries. J. Forshaw's Downham Ben was selected for premier honors, and he was, no doubt, rightly placed, being a horse of very great merit, with substance, action, feather, and bone. Scarsdale Rocket, which was first in the same class last year, was put second. Amongst the other entries were several of great merit.

A similar class as to age, but for horses over 16.2 hands, brought together a very strong class of thirty-nine entries, a class in which many noted winners of bygone years and shows came into competition.

J. Forshaw's Orchard Prince was worthily placed here in the first place—a position which his great weight, substance, quality of bone and feather fully deserved. P. A. Muntz's Dunsmore Wellington Boy made an excellent second.

A class for stallions of over ten years made a fitting conclusion to the male section. There were but six out of ten entries present. However, with a horse of the stamp and character of Hitchin Conqueror to head it, it was far from being, though small, the least interesting of the section. Hitchin Conqueror was champion in 1890, and has been for many years at the head of Mr. Freeman-Mitford's stud, from whence he was sold in the spring of this year for a very long price to his present owners, Messrs. Thompson. The second place was filled by Fear None (Mr. Sutton Nelthorpe's), and County Councillor took third honors for Mr. J. B. Hill.

In the champion contests for stallions the cup for the best stallion one, two, or three years old went to Messrs. Thompson's Stonewall, and that for the best stallion in the older section to Lord Belper's Rokeby Harold.

The challenge cup for the best stallion in the show was then awarded to Rokeby Harold, who has thus achieved the unique distinction of winning this coveted trophy three times—as a yearling, as a three-year-old, and this year finally winning the cup for his owner, while as a two-year-old he was reserve number for it.

Generally speaking, the whole of the classes for mares and fillies were well filled, and the majority were of very excellent quality.

Yearling fillies were a meritorious class of fifty-three entries, and worthily headed by Lord Egerton's beautiful filly, Tatton Regina. Mr. P. A. Muntz was second with Bonny Mistress, another good filly. The Prince of Wales' Cyclamen made an excellent third.

Two-year-old fillies showed up well, both in regard to quality and to numbers, there being no less than sixty-four entries. Here Mr. A. Grandage's truly handsome mare, Queen of the Shires, deservedly went to the top of her class, a place similar to that which she occupied as a yearling last year. She is, indeed, a grand mare, with excellent bone and feather, and has fine action. Mr. P. A. Muntz's Dunsmore Fleur-de-Lys was second, being in the same place as last year, as she was second to Queen of the Shires as a yearling. Mr. P. L. Mills came next with Ruddington Lady Harold, a capital mare of good quality.

Three-year-old mares, numbering thirty-nine entries, were a very good class. Lord Rothschild went to the top with a very good mare of considerable quality, Princess May. Next came

Mr. D. P. Cross' mare, Rokeby Esther, a fine mare of great promise. Then came Sir W. Gilbey's Madge, a very good mare, whilst another exhibit of Lord Rothschild's, Harold's Flower, made an excellent fourth.

For four-year-old mares there was a capital entry of twenty-two. Here there was no question as to where the premium honor would go, for in Calthorpe Naxos we have a mare as near perfection as can be, and on whom the highest honors of the show were afterwards most deservedly bestowed. Mr. W. Greenwell's Vulcan's Flower was placed second, and Lord Egerton's Tatton Baroness third, there being but little to choose between these two most excellent mares.

Mares under 16 hands, five years old and upwards, were a small class. Lord Egerton's Jenny, a very useful stamp of a brood mare, was placed first; next came W. Greenwell's Balham Fan, a very useful mare; whilst Mr. F. Crisp's Bluetail made an good third.

A grand class, indeed, was the class for mares over 16 hands in height and over five years in age, for which there were twenty-six entries. The class was headed by Rokeby Fuchsia, a mare that has often been described, and which is as good as ever. She has already twice before won the challenge cup, and here she again headed her class. Next came another grand mare, Calthorpe Manilla, owned by J. P. Cross; then Dunsmore Cui Bono, who last year went first as a four-year-old; while Mr. P. A. Muntz's Melody had to be content with fourth place.

In the champion contest for mares, in the younger classes, Mr. A. Grandage secured an easy victory with his grand mare, Queen of the Shires, whilst the cup for the older mares went right away to Mr. J. P. Cross for Calthorpe Naxos, and to this grand mare went also the challenge cup for the best mare in the yard, with Mr. W. Greenwell's Vulcan's Flower as reserve, which place she was lucky in getting in preference to Mr. Grandage's mare.

FOR FARMING.

## Our Birds and Their Uses: The Woodpecker.

By W. J. STEVENSON, Oshawa.

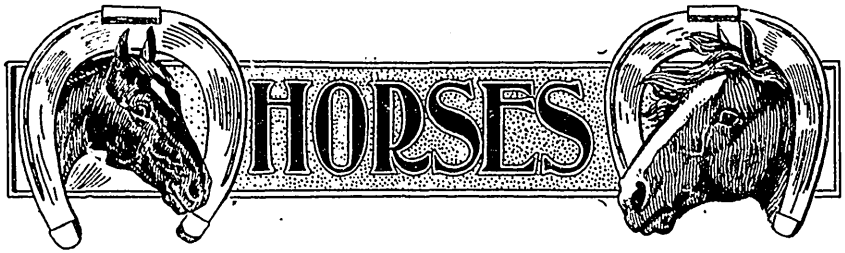
Except the crow, no birds are subject to more adverse criticism than woodpeckers. Usually no attempt is made to discriminate between the numerous species, and little account is taken of the good they do in destroying injurious insects. The species that are well known here are the downy woodpecker, the hairy woodpecker, the flicker, or golden-winged woodpecker, the red-

headed woodpecker, and the red-bellied woodpecker. The downy woodpecker (*Dryobalis pubescens*) is the smallest, but stands at the head in point of usefulness. It is also one of the most familiar, but is quiet and unobtrusive, and the first notice one has of his presence may be a gentle tapping or scratching on the limb of a tree within two or three yards of one's head, where our little friend has discovered a decayed spot inhabited by wood-boring larvæ or a colony of ants. Busy little fellows they are, ever at work for our good.

The United States Department of Agriculture has had 140 stomachs of the downy examined, and they were found to contain 74 per cent. of insects, 25 per cent. of vegetable matter, and 1 per cent. of mineral or sand. The insects were of the following orders: Ants, beetles, bugs, flies, caterpillars, grasshoppers, spiders, and myriapods. Ants constituted almost one-third of all the animal food, or about 23 per cent. of the whole, which indicates a very decided taste on the part of the birds for this rather acid and highly flavored article of food. Beetles stand a little higher—about one-third of the entire insect food, or somewhat more than 24 per cent. of all. One-fifth of the animal matter, or 16 per cent. of the total, consisted of caterpillars, many of which, apparently, are of the wood-boring species; others were of the kinds that live on foliage and stems.

The hairy woodpecker (*Dryobalis villosus*) is quite as common as the downy, and, to the ordinary eye, can only be distinguished by its greater size. Its color and markings are almost the same. It is noisier, and goes with rapid flights from tree to tree. Its food habits are somewhat similar to those of the downy, only the hairy eats a smaller percentage of insects than it does. Of 82 stomachs examined, the contents stood as follows: 68 per cent. animal, 31 per cent. vegetable, and 1 per cent. mineral. The insect material was made up of ants, beetles, caterpillars, bugs, grasshoppers, and spiders.

These figures and notes are from a report by F. E. L. Beal, assistant ornithologist of the United States Department of Agriculture, and are highly important, as they concern us all in respect to the protection of our trees from the depredations of insects. It is high time that the farmers put a stop to the destruction of our feathered friends by putting up notices around their farms, and preventing boys and others who find pleasure on holidays and at other times from shooting everything that flies. It is a well-known fact that our birds are fast disappearing, and have to be replaced by the spray-pump. Let every reader seriously think this matter over, and then do everything in his power to protect the birds.



THE Haras National, of Quebec, recently sold ten stallions by auction. They brought \$3,110. The prices varied from \$110 to \$675.

ELLARD, the fastest trotting stallion ever exported from America, died at sea on his way to Germany. His record was 2.09 $\frac{3}{4}$ .

AN agent from Germany has been instructed to purchase 6,000 horses in the United States for the use of the German government.

DURING the past year—1895—it is reported that Mr. Leopold de Rothschild won, on the turf, \$101,525, while Lord Rosebery got about \$60,000. The Duke of Westminster was also a very large winner.

IRISH horses came well to the front on the English race tracks during the past year. Laodamia in the Derby Cup, Rockdove in the Cesarewitch, Gazetteer, Kilsallaghan, Hebron, Lesterlin, and Red Heart, have all done very well.

FIDOL, the noted pacing stallion, with a record of 2.04 $\frac{1}{2}$ , died recently at Cedar Falls, Iowa. He won last season a lot of money for his owners, A. Rivenburg & Son. He was a level-headed, reliable horse, and always game. His death, at nine years old, is a heavy loss to his owners.

THE leading winner amongst English jockeys is again Mr. Mornington Cannon. He has 184 wins to his credit with 712 mounts. T. Loates is second with 761 mounts and 166 wins; and F. Allsopp third with 751 mounts and 112 wins. These jockeys are paid large salaries, and often become very wealthy when they can take care of the large sums paid them for their services.

DANEGELT (174) died recently in the possession of Sir Walter Gilbey, Elsenham Hall, Essex. Danegelt was one of the best Hackney stallions in England, and cost his owner \$25,000 in 1892. He was a prize-winner at leading shows, and his stock have done exceedingly well in the prize ring. His death is a loss, not only to his owner, but to Hackney breeders all over the world.

BREED to the best, and only from good, likely mares. Never use a stallion unless his breeding be good and pure. The same is true of all male animals. It never pays to use anything but a purebred male. With care in breeding, there ought to be as much money to-day in horse-breeding as in any other branch of farming.

ANTHRAX rarely attacks the horse, but recently in London, England, fifteen horses died from this disease. The outbreak was traced to some Turkish oats used in the stables. These oats had been shipped loose in the hold of a vessel, and upon them were placed a lot of hides, from which the microbes were, no doubt, derived. The seller of the oats had to pay the damages, which were assessed at \$1,650.

IMPORTS from Britain have been small the past year. The British trade returns showed that only 16 stallions were exported to British North America during 1895. In the same period the United States took only 22. Considering the prices paid for some Hackney stallions for the United States during the year, it seems strange that the average export price is put at \$125. This was the average for 21,734 animals, of which 590 only were stallions.

THE British returns for 1895, under the Diseases of Animals Act, have been published. There has been no pleuro-pneumonia nor foot-and-mouth disease in Great Britain during the year. Swine fever has been common, 10,917 animals having died from this disease. Glanders showed 975 cases, about the same number as in the previous year. The report is a favorable one, and shows a steady decrease in losses suffered from this cause by British breeders.

THE *Breeder's Gazette*, in an article on the 2.10 list, gives 153 as the number now in that list. Six years ago there were but three, viz., Maud S., Jay-Eye-See, and Johnston. Of the present 153 there entered the list in 1894 forty-three, and in 1895 sixty-three. "In all, during 1895, eighty-three horses trotted or paced heats in 2.10 or better, the full number of these heats

being 345. Speed no greater than 2.30 is now a back number, barely a good stiff road gait, and it is absolutely labor and money wasted to take even a three-year-old to small \$200 purse meetings if he cannot go from five to ten seconds faster."

PRICES are very slowly tending upwards. The writer recently saw a lot of forty young mares and geldings that averaged a fraction over \$100 a head. These were good chunky Clyde grades and crosses. Other lots brought rather under that figure, but heavy, desirable animals are becoming scarce, and the prices are tending upwards. Farmers should secure the best young breeding mares, as every prospect points to better prices for good draft horses in the near future.

WHERE skim-milk is available, it makes good food for foals. It should be fed sweet and warmed, and it is much improved by adding a quantity of linseed jelly. The linseed is first boiled in from six to ten times its bulk of water, and then strained for very young animals. At first only use a couple of spoonfuls for each meal, but gradually increase the quantity. This is the best known substitute for butter-fat in the milk. The skim-milk thus fed is almost equal to new milk. The same food may be used for strengthening old or weak horses.

THERE have been some notable sales of trotters at Madison Square Garden, New York, recently. John R. Gentry (2.03 $\frac{3}{4}$ ) sold for \$7,600 to William Simpson, of New York. Patchen Wilkes (2.29 $\frac{1}{2}$ ) was said to be the most superb piece of horseflesh ever offered at the Gardens. He brought \$10,025. His buyer is W. E. D. Stokes, of New York. Henry Jewett sold out his entire stock of 105 head, and got an average of \$422. The sales lasted three days, and brought together 2,500 representative trotting men from all over the United States and Canada.

RECENTLY the railways in Canada have doubled the rates for the transportation of horses in small lots. This is unjust to the farmer who may wish to send a single horse or team by train. The reason assigned is that a single horse will occupy a whole car, but this is the fault of the railways and not of the farmer. Movable partitions could be cheaply made that would answer every purpose, and make the transport of the animal much safer. Every farmer who reads this should write to his representative at Ottawa to have this glaring injustice remedied. The doubling of the rates also applies to cattle shipped in small lots.

SHIRE horse sales have this year opened well in England. At Batsford Park part of the stud of Mr. Freeman Mitford, C.B., was offered at auction. 42 animals averaged \$605. The well-known champion stallion, Hitchin Conqueror, 13 years old, was bought by Mr. Thompson, of Leicester, for \$3,625. A filly, three years old, brought \$1,650. The dam of this filly went to Sir Walter Gilbey for \$1,350. The highest priced yearling filly was Peeress of Batsford, for which \$1,100 was paid by Lord Verulam. The Prince of Wales bought a yearling filly for \$750.

THE import of horses into Great Britain is steadily increasing. In 1894 the total number imported from all countries was 23,106. Of these Canada sent 5,424, the largest number from any one country. Those from the United States numbered 4,823. In 1895 the latter country sent 10,351, while Canada again headed the list with 12,908. The total number imported in 1895 was 34,147. This year is likely to see a large increase in the number sent. Already buyers in Canada are busy buying on a gradually stiffening market. One firm in Buffalo has already an order placed from London for 6,000 head. The greatest demand is for good heavy draft geldings.

THE sale of Shire horses at Elsenham Hall, Essex, the property of Sir Walter Gilbey, resulted in the very high average of \$715 for 39 animals sold. There were only two stallions sold, and they brought prices much lower than those obtained for the mares and fillies—\$325 and \$480 being the prices. Dunsmore Dora, a four-year-old gray mare, brought \$2,750. She combines Premier and Harold blood, and won the gold medal at the Bath show last year. Her buyer was Mr. John Bowker, The Grange, Bishop Stratford. Mr. Garrett Taylor paid \$2,150 for the three-year-old mare, Madge. She was a winner at the Royal last year. These were the highest prices of the sale, which was a most successful one.

### The Horse Show.

The second annual Canadian Horse Show will be held in the new Armory, Toronto, on the 15th, 16th, 17th, and 18th of April. It is under the joint auspices of the Country and Hunt Club of Toronto and the recently organized Canadian Horse Breeders' Association. The Committee of Management has as chairman Mr. Robert Davies, president of the Clydesdale Association. It was this Clydesdale Association which first originated

the Toronto Spring Horse Show. Organized in 1886, they at once went to work, and in 1887 held the first show in the old drill shed at the back of the city hall. This, while not largely attended by the general public, had a fine turnout of heavy horses, and was the means of bringing our Canadian Clydes prominently before the Americans, who were at that time largely in evidence as buyers of our best heavy draught stallions. Since then the shows have gone steadily on. After a few years light horses were added, and last year the show was much improved by adding harness horses, and remodeling it after the style of the New York Horse Show.

Horse-racing and race meetings, it is claimed by their supporters, are intended to keep up and improve the breeds of light horses, especially first the Thoroughbred, and, secondly, the whole range of hunters, saddle and other horses used for speed and pleasure. With horse-racing are associated more or less objectionable features. The modern horse show is free from these, and does more for the advancement of horse-breeding along popular lines than does the horse-race. Love of the horse and of horsemanship has been well implanted in the Anglo-Saxon nation, and most of us very much enjoy the sight of a good horse. At the horse show this feeling may be gratified in the best manner, and amongst enjoyable and unobjectionable surroundings.

Since the horse shows have become so popular in New York, that city has become a better market for first-class harness horses. The show is an educator, and society people who patronize it have, as a consequence, learned to know and appreciate a good horse. The result is a greatly increased demand for a really good animal, and that from a class of people who have ample means to purchase what they want. From admiring a graceful animal at the horse show the way is not far to buying a stylish team. Knowing the points of a good horse, and owning a good team, result in more driving, more air, more exercise, and more pleasant, wholesome enjoyment for the owner and his family.

Farmers should attend the horse show, if for nothing else than to learn the type of animal most in demand, and, therefore, the one that it will pay best to breed. Styles change in the horse market as in every other. At the horse show may be seen just what styles are most fashionable. Here may be seen the type which is most in demand. Here may be compared the animals

shown, and it is a well-known fact that we learn much quicker through the eye than by the ear. Here may be seen animals with the size, substance, and style needed to bring the price. Attendance at the horse show should be of great value to any farmer engaged in horse breeding.

Harness horses have been specially alluded to, but to-day, while there is a good demand and big prices for well-gaited harness horses, there is also a good prospect for the admirers of the heavy draught breeds. Prices for really good heavy horses are steadily going up. There will be some good heavy horses at the coming show. Here may be seen lessons in feet and feather that should not be lost. Never before has quality been more needed in heavy horses. Good feet, fine sloping pasterns, good, clean bone, and nice fine hair is more in demand than ever, and with these good things are wanted a good top, fine front, deep chest, and well-sprung ribs. Size, weight, and quality are in the front, and will repay in the near future the efforts of the heavy horse-breeder.

### A Shire Champion.

When Rokeby Harold, as a youngster, carried off the championships at English shows for Shire stallions over matured horses, there were not wanting many who asserted that he was not entitled to it. These critics must surely now confess themselves in the wrong when they find this grand young horse again carrying off the championship at the London Shire Horse Show for the third time in succession, thus winning the cup for his owner, Lord Belper. He is now four years old, was sired by the famous Harold, and is in excellent form. One of his best points, and a most important one, is a grand set of feet and legs.

### A Notable Clydesdale.

Grandeur (1724), an illustration of whom is given as a frontispiece, is a good type of a draught horse. He has been a winner both in Scotland and Canada, and has twice been first at the Toronto Spring Show. In 1893 he won first in his class, and the Prince of Wales' prize of \$50, and in 1894 he repeated this exploit, and was again champion and winner of the gold medal. He was bred by Mr. William Hunter, Garthland Mains, Stranraer, Scotland, and foaled in 1887, his sire being Darnley (222), and his dam by Farmer (286). He was imported in 1891 by his present owners, Messrs. D. & O. Sorby, Woodlands, Guelph.





The Champion Saire Stallion, Rokeby Harold.  
The property of Lord Belper, Kingston Hall, Nottinghamshire, England.

### Horse Breeding.

A few years ago horse-breeding was booming. Farmers and ranchmen were breeding from all sorts of mares. The result was over-production, a glutted market, and low prices. There were thousands of small, weedy, unsaleable horses. The whole horse market was demoralized. Farmers stopped breeding, and an export trade has been developed as a result of the abnormally low prices. Already good horses are scarce. The prospects are good for fair prices in the near future, and this without any cause but the natural one of supply and demand. There are now three classes of horses in good demand.

*High-steppers.* The most popular horse in the cities to-day is the high-stepping harness horse of the Hackney type. These horses are quick, sprightly, with plenty of snap and go. They should be stout and compact in build, with straight, true, and high knee and hock action; in height, ranging from 15 hands to 15.2. Color may be variable; white socks or stockings are fashionable. Chestnut, roan, bay, and black all find admirers. When well schooled these horses bring fancy prices.

*Carriage Horses.* These are in demand for the carriages of society people. They should be stylish and attractive, with a steady, stately appearance, have a clean-cut head, nice long, slim, arched neck, oblique shoulders, deep, well-rounded body, quarters full and long, tail set high, well carried, and long, good, clean, cordy legs, and sound, open feet. Solid colors are preferred. In height they should be 16 hands and over. The pace required is about eight miles an hour; this is fast enough for the family carriage. Beauty of form, size, and staidness of action are what is wanted. They must be sound and clean both in wind and limb. No horse in any way blemished will bring a big price in either of these classes.

There are numerous good, smooth mares suitable for breeding these horses in Canada. Those should be chosen that are over 15 hands high, and have good heads, hard, cordy legs, and roomy bodies. They must be free from any hereditary blemish. They are all the better if they have a good deal of either standard or thoroughbred blood.

*Heavy Draft Horses.* In a first-class heavy draft horse we look for three things—weight, quality, and action. There are fewer risks in breeding this class than the light-legged horses. A small blemish does not stop a sale. They may, therefore, be used while young on the farm to help in light work and earn their keep. They should have: (1) Weight. Size is needed in the

draft horse. Careful feeding with exercise while young will help their growth. They should weigh 1,600 lbs., and as much over 1,800 lbs. as we can get them. The price that can be obtained for them goes up rapidly when they are over these weights. (2) Quality. Good bone, broad, hard, and flinty, making clean, flat legs. Long, strong, nicely sloping pasterns. Big, sound feet. The upper story as good and comely as we can get, with nice head, wide between the eyes and narrow at the crown. (3) Action. Good knee and hock action, both at the walk and the trot. The hocks should be carried well under them, and they should be especially free and active at the walk, which is the true pace of the draft horse. These are needed on our farms, and good geldings are already scarce, and are bringing better prices than a year ago.

All these three classes of horses are in active demand, and the prospects are bright for bigger prices in the near future.

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FOR FARMING.

### The Outlook for Horses.

In three years' time there will not be enough horses in the Province of Ontario, or America, to supply the demand. So far as I have been able to observe, breeding has almost ceased in many localities, and, while there is a present surplus of horses ready for work, few are coming on to take their places. When we come to think that during the month of January nearly 10,000 horses were sold upon the Chicago market, and how few one-year, two-year, and three-year-olds are coming on to take their places (most of these being heavy draft bus horses, vanners, and a few good drivers), within three years' time there will be a shortage of horses, especially of good, heavy horses. The life of a good dray horse is short, for he has such heavy loads to move from place to place, at rather a quick pace. It requires six years' time to put a serviceable horse upon the market, and the present prices promise to keep so many out of the business that there will be a marked advance in prices before many are ready to reap profit therefrom. There is another reason why we should expect an advance in the prices of horses. When breeding became unprofitable the best mares were converted into money, and those mares which should be on the farm to-day for breeding purposes are being worn out on the streets of cities. It will be no easy matter, in many localities, to find animals fit for breeding when wanted. Amid the surplus horses there are comparatively few that are fit for breeding. We have learned that there are no satisfactory

results from breeding small, ill-formed mares to large, beefy sires. The colts are big-headed, loose-jointed, and unserviceable. It does seem that the owner of a choice brood mare has as good a prospect of profit from raising colts as he has in any other line of breeding. There is no reason to expect big prices for horses again; but what other stock offers great profits? There is very little money in cattle for Ontario stockmen now. Choice cattle are selling for a very low price; sheep and hogs are doing no better, although some expect to see an advance in the wool trade.

Just as soon as the present surplus of horses wears out we may expect to see a readier sale for horses than for any other kind of stock. Invention is reducing the demand for horses in some lines, but it cannot seriously hurt the demand for first-class horses, at least. Some have been knocked out of employment by street-cars, but there never were so many buggies manufactured and sold as at the present. Invention will never do away with horses on the farm. It is the vast number of scrubs that have ruined the market for horses and all other kind of stock. These scrubs are now decreasing in number.

Coach, park, and saddle horses of the right sort will sell more satisfactorily than heavy drafts. When we compare the cost and risk of bringing these classes to a saleable condition, the difference in profit is not much in favor of the light horse.

Out of a dozen farmers who attempt to raise a high-priced light horse, not more than one out of twelve will succeed, while eight or ten out of the twelve would probably succeed in the heavy horse business. To make well out of light horses, these must be as near perfection as possible. Then one wants a matched team, to stand about sixteen hands high, have good life, carry high heads, and be high steppers and well matched, to make a good sale, and it is one of the hardest things in the world for the general farmer to raise a span of well-matched drivers to be near to perfection, without a fault or a blemish. Then it takes a great deal of training and breaking and handling to fit up a blood colt, and the average farmer has not got the time; besides, very few farmers have the right sort of mares to breed from.

In carriage horses what is wanted is style, and not speed. In the city and parks it is a showy horse, and not a racehorse, that is wanted.

A draft horse, though he may be a bit plain, if he is not blemished, will sell. He does not require so much handling and training. All that is wanted is to teach him to draw and walk off at rather a quick pace. The fastest trotting horses are often the slowest walkers. What is wanted for the farmer is a fast walker on the plow and machinery. Draft horses are generally good walkers. A draft colt will be fit for light work at two years old, when a blood colt is hardly fit for a bit of light driving.

Shires are supposed to be the biggest breed of horses, but are not supposed to have as good feet and legs as the Clydesdales, which are somewhat smaller, with generally good ends, feet, and legs, but generally poor, slabby sides. Why the Percheron and Suffolk, two clean-legged breeds, are not more extensively bred, I am at a loss to say.

It is not for feet and legs we are breeding, but for the market. Clydesdales and Shires have so much long hair on their feet, which makes them look bigger, which is quite necessary in selling; but this hair makes it harder to keep them clean in muddy weather. In breeding, be sure to get them big.

Vandeleur.

HARRY DOUGLAS.

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### Cotton-Seed Meal for Horses.

G.O., Walker's: Is it safe to feed cotton-seed meal to horses? I thought of mixing it with cut oat sheaves.

ANS.—Chaffed oat sheaves are good horse feed, but the meal had better be left out. Oatmeal stirred into a bucket of water is a safe food for horses, and linseed meal in small quantities may be used, but all other meals had better be left out of horse rations.

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### Ground Oats or Whole.

Subscriber: Do you think that there is any gain in feeding ground oats to horses in preference to whole ones?

ANS.—For old horses, ground oats are preferred; but where a mixture of bran or other feed is used with the oats, ground grain is used by many. For young colts, whole oats are largely used, and for horses in hard work good, clean, whole grain is used by the best horsemen.



THE loss among cattle imported into Great Britain from Australia has been very heavy, amounting to about one in every seven head shipped. Among cattle shipped from South America, the losses amount to one in every twenty-five, while among American and Canadian cattle they are only about one in every two hundred shipped.

JOHN CLAY, JR., writes in the *Live Stock Report* an account of the feeding of three Shorthorn and crossbred steers, fed near Kelso, Scotland. The article is accompanied by a very good picture of the three. The best, a black half-bred Galloway, fed on grass in summer, and on turnips, straw, and a little hay in winter, at thirty-five months old killed 1,200 lbs. of dressed beef, selling at Newcastle-on-Tyne for \$160. The roan grade Shorthorn made about 980 lbs. dressed, and sold for \$130.

WHEN commencing to feed oil cake to young calves begin with a very small quantity, and increase the amount very gradually, watching carefully to see whether they eat it up clean. For a calf eight months old, one-half a pound daily would be sufficient at first, till it gets accustomed to the taste of it. It is well to mix it with the meal or cut hay, especially if it is ground fine, as we have noticed that fine oil cake "gums" in the mouths of the animals when it is fed alone, and some calves will not take it readily on that account.

THE *London Live Stock Journal* thus speaks of tuberculin: "Most people who know the history of tuberculin regard it with considerable suspicion, and possibly with not unnatural prejudice. It was trumpeted forth, on its introduction, as a cure for consumption in the human race, but experience soon showed that for that purpose it was both dangerous and useless. Rejected as a cure for consumption, some scientists contrived to convert it into a decoction to diagnose tuberculosis in cattle, and an attempt was made on the continent of Europe and in the United States to make its employment compulsory, and to deci-

mate the cattle of these countries by slaughtering every animal that reacted. This folly did not last long, and the cool and careful investigations which should have preceded the use of the specific are now being carried out. Many new facts are being discovered concerning tuberculin and its effects, and the scientific world is evidently in a fog on the subject, if we are to judge by the contradictory statements that are made by experts."

WHEN young or dry farrow cattle are running on pasture during the summer time, they are oftentimes not as closely examined and looked after as they ought to be. It is well, therefore, to be able to recognize at once symptoms of sickness during the few minutes spent in looking over them from time to time. When any of the following symptoms are present, it is a certain sign that an animal is sick: If an animal that is used to feeding with the others is seen by itself, perhaps covering in a fence corner, with its back up. If an animal fails to stretch itself when quietly made to rise. If the hair stands up "staring," as it is called. If the animal does not lick itself occasionally, or show signs of licking on its coat. If there is saliva running from the mouth. If it does not chew the cud, or fails to feed. If it is thin in condition. If it moves its head or limbs in a peculiar manner. If it breathes quickly, or emits a distressing cough. If it is hoven or swollen out with gas. These are some of the principal symptoms that are unnatural to healthy cattle feeding at grass.

### Spaying Heifers for Beef.

In these days of close competition, when the profits derived from the sale of beef cattle are none too large, it is well worth while for feeders to consider whether they cannot increase the profits made from feeding heifers by having these spayed at an early period of their existence. The spaying of heifers has not yet received the attention that it should, but it is probable that it may become an important question in the near future, because the spaying of animals generally tends to the production of a better quality of meat than

can be got from unspayed females, especially if these latter are killed when in season.

As regards the increased profits that would be made from feeding spayed heifers, these would arise from (1) the steadier growth made in early life before feeding began; (2) from the greater growth made during the feeding period; and (3) from the better quality of meat. Taking these three points into consideration, the operation should be a profitable one, probably, in many cases, sufficient to turn a small deficit into a fair profit.

I should like to see experiments on these lines conducted by the experiment stations of the country, taking a pair of heifers and spaying one at as early a period as feasible and leaving the other unspayed, both to be fed and treated alike in every way. The results would be very instructive.

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### Turning Cattle Out to Grass.

The shortness of winter feed over so large a part of this country will have the tendency to encourage stockowners to turn their cattle out to pasture earlier than usual this spring. With many this will be a stern necessity, and, though it is to be deplored on account of the damage it will do to the pasture, yet no other course will be available. Even in the best stables this winter, where the silo is a recognized institution, feed is being fed more sparingly than we have known it to have been for years, while it is to be feared that in some cases, where no special provision was made for them, cattle are being fed far below their requirements, because, otherwise, the supplies in the barns would run out before spring came.

The practice of turning out cattle on the pastures in the spring before these are fit to receive them is one largely followed, even in ordinary years, by the shiftless farmer, but it is not a wise one. The cattle poach the soft ground, and in their hungry quest for food clip off the tender sprouting grasses and clovers before they get fairly started, thus oftentimes giving them a setting back from which they do not recover all the season. When this takes place the damage done to the pasture far outweighs the value of the food saved in the barn through turning the cattle out to grass.

In my own experience we have never been able to let our cattle out much before the second week in May, although one year I remember that we got them out on the last day of April, but that was an exceptional year. Our farm, too, is an

exceptional one. Besides having fine river flats, we have an excellent, dry, upland pasture, with a great deal of cocksfoot or orchard grass in it. It is on this latter that we turn the cattle first, Orchard grass is the fastest grass to grow in the spring that I know of, its growth being about three inches in a given time as compared with one inch of the ordinary grasses. By the time the orchard grass is eaten down the flats are generally dry enough for the cattle, and they are put down there for a change. If the weather gets wet and stormy later on, as sometimes happens towards the end of May, we change the cattle back to the uplands till the flats get in order again. I am, of course, writing about our own section of country, as I know that in some portions of Western Ontario cattle cannot be let out much before May 24th, as the pasture is not fit before that time.

When we first let the cattle out to grass, it is only for a couple of hours or so in the afternoon, so as to make the change of feed a gradual one. Perhaps the next day they are left out all the afternoon, and this may be kept up for a couple of days more, or even a week. After that time they are let out all day, but are brought in at night till the weather gets warm and settled, and we feed them dry feed and roots, if any are left in the stables, in the morning and evening. They will not take much of this, it is true, after they have tasted the grass, but what they do take serves as a check to diarrhoea, which is apt to result from too sudden a change to the succulent grass.

Such is our method in spring. I should be glad to hear from others how they manage. In the old times in Wales, it was customary to bleed every animal before turning them out to grass (which bleeding was to prevent humors of the blood), and where there were rivers the farmers would make the cattle swim backwards and forwards a couple of times, which was also supposed to be very beneficial. Of course, at the present time, with the improvements in veterinary science, such extraordinary proceedings are quite out of date.

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### Dutch Belted Cattle.

Of the breeds of cattle indigenous to Holland, the Dutch Belted cattle are one of the best, though they have not spread as largely over this continent as the Holstein-Friesians, which they somewhat resemble, the markings, however, being different. The Belted cattle are quite a distinct family, and are so called from the wide belt of white which encircles their bodies, which

distinctive marking has become fixed through years of careful breeding. They were established in Holland before the seventeenth century, are owned and controlled by the nobility, and present a very novel feature in the landscape, grazing in the lowlands in Holland. In color they are black, with a continuous white belt around their bodies, the white being pure white, the black a jet black, making a beautiful and imposing contrast. Their form is usually very fine, and their hardy and vigorous constitutions enable them to stand sudden changes in the climate, and thrive on any variety of fodder. They are very productive as milkers.

Our engraving is one of a herd of these cattle which has taken prizes at all the State fairs wherever exhibited. They are owned by Mr. Orson D. Munn, Llewellyn Park, Orange, N.J.

### Raising Calves.

There are three methods of rearing calves in general use. The first and most expensive way is allowing the calf to suck its mother or some other cow till it is about nine months old, or even older. The second way consists of removing the calf and feeding it new milk by hand, and the third is to feed it on skim-milk, enriched with shorts or other fattening food, or, where no milk can be obtained, feeding it on some other substitute such as hay tea, or linseed tea.

The first method is that generally followed by breeders of purebred cattle, especially of beef cattle, and, more especially, when the calves are intended for the show ring. The breeders of purebred dairy cattle also followed the same method till a few years ago, when it was found out that the practice was detrimental to the milking qualities of the cows, and so, in the majority of cases, the breeders of those cattle have discontinued it, and now rear the calves by hand.

It is conceded by most people that finer calves can be reared by allowing calves to suck than in any other way; but, undoubtedly, in addition to its being injurious to the milking qualities of the cows, it is also the most expensive way. In some parts of Scotland, the cows are always milked after the calves have sucked for some time, and before they have got their fill, and, as the last milk is the richest, this plan obviates some of the objections to the system of allowing calves to suck.

The second and third methods necessitate weaning the calf either immediately after birth, or in two or three days after. If weaning is left longer than that time, there is proportionately more diffi-

culty in teaching the calf to drink. In my opinion, weaning immediately after birth is the best way, involving least trouble with both cow and calf. I have found that calves which were taken directly from the cow, without being allowed to suck, would drink without any trouble, while everyone who has had to teach calves to drink, which had been allowed to remain with the cows for a few days, knows what a troublesome and wearying process that sometimes is.

Always let the calf have its mother's milk for the first two or three days, at any rate. It will thus get the benefit of the first milk, called "beastings," or "colostrum," to which nature has given an aperient property, in order that the black and glutinous dung that has accumulated in the calf's intestines during the later months of the foetal stage may be carried off. If this is not done, constipation may follow. When this is the case two or three ounces of castor oil should be given in a little milk, or mixed with a raw egg, and the addition of a trifle of ginger will also be beneficial. A quart of new milk three times a day is a good allowance for the first day or two, for a calf fed with the pail, and the quantity should be increased gradually. When skim-milk is to take the place of new, a little should be mixed with the new at first, so as to accustom the calf to the change. It is very important that the skim-milk should be sweet and properly warmed, as otherwise scouring may result. The best remedy for this I have found to be a couple of ounces of castor oil with a little ginger added. If the scouring is very bad, it may be necessary to stop the milk diet till the trouble is checked.

Where stable room is limited, it is necessary to place several calves in one box; but, if this is done, they should be carefully watched, because they are very apt to suck one another's navels, or ears, and make them sore. It is troublesome, too, feeding a number together with pails, unless you have the loose box specially fitted up for this purpose. Some stockmen have holes cut in the doors or sides of the boxes large enough for a calf to get its head through, and place a pail outside each hole, thus insuring that each calf gets its proper allowance.

As regards other foods, I always hang a bundle of long hay in a corner of the loose box for the calves to pick at when they get old enough. I also tempt them with a little chopped oats, and, later on, with a little oil cake, in order that they may get into the way of eating as soon as possible. I am a "beef" man, and this is all right for beef cattle, but, where the calf is to become a dairy cow, no such forcing should be practised. It is better to let it grow naturally, without putting



A Herd of Dutch Belted Cattle.  
The property of Mr. O. D. Munn, Orange, N. J.

flesh on it. A few chopped oats, however, will be all right, but care must be taken not to induce a tendency to beefing qualities in the young animals.

The method of allowing calves to suck is, as I have said above, the most expensive one of the three, but there are times when such a course may be advisable. I mean when a man has a cow that gives a good mess of milk, but is a hard milker. When this is the case, it may be the most profitable way to let a calf suck her, either a purebred one, or one intended for the butcher. This latter practice is sometimes done in the old country, where a single cow will feed calf after calf (sometimes, indeed, a pair of calves) for the butcher, and, when any are to be raised, she will be employed for the same purpose. It would be worth while for those who have hard milkers to try this plan and see how it will work, for a hard milker is the bane of the milker's life.

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### How Farmers Should Treat Tuberculosis in Cattle.

The following summary of an address by Mr. Speir before a number of Scottish farmers appeared in the *North British Agriculturist*, and as the address contains a number of important points concerning tuberculosis we have reproduced it here.

"Mr. Speir, as Assistant Royal Commissioner, had distinctly shown that tuberculosis was much more prevalent than was generally supposed, and on that account had taken a strong interest in it ever since. At the outset, Mr. Speir said that in order that his audience might have a clear conception of the various methods of controlling this disease, which he would suggest later on, it would be necessary to explain what the disease was, how it was detrimental to animal and human life, and how it was spread. He then explained that the tubercle bacilli was a low form of vegetable life, that it produced a poison scientifically called a ptomaine, and that it was the poison which was the direct cause of death, not the microbe. He then explained how other microbes manufactured poisons and coloring matter, sometimes harmless, but often deadly to animal life.

"The principal influences concerned in the spread of this disease he put down as inhalation, ingestion, sexual connection and heredity, in the order of their importance. Taking inhalation first, he said that while we had improved the buildings in which we housed our stock, from the point of view of comfort he felt almost certain that the old thatch roof, with dry stone or mud-built walls,

was probably a more healthy building than those of later date. Winter dairying, and the continuous housing of stock during winter, he put down as the most potent cause of the increase of the disease in recent years. He then referred to tuberculin, explained what it was, and how by it affected subjects might be picked out in the earliest stages of the disease, and went on to explain how Prof. Bang had distinctly shown that, by the use of the tuberculin test and isolation of affected stock afterwards, any farmer might in a few years show a clear bill of health at comparatively trifling cost. Our farm steadings, he said, adapted themselves very readily to providing separate houses for the healthy and reacting animals when housed in winter, and in summer the risk of infection was reduced to a minimum, even with animals grazing in the same pasture. The principal sources of infection by ingestion, he said, were from the milk of a cow with a tuberculous udder, from troughs recently used by tuberculous animals, and from the animals licking themselves.

In regard to milk, he referred to Dr. Martin's experiments for the Royal Commission on tuberculosis, and pointed out how deadly milk was from a tuberculous udder, and how it might be so from one teat and not from another.

He quoted Dr. Woodhead's results of the use of tuberculous meat, and showed that carcasses might be used without fear where the disease only existed in an organ or gland, and also explained the reason why the bacilli were not spread throughout the whole carcass. He also explained that, small as microbes were, they were heavier than air, and in the still air of a cowstable, with little or no ventilation, the air of which was loaded with moisture, and with from ten to one hundred times the quantity of carbonic acid in the outside air, the microbes gradually settled down in the lower strata and among the hair of the cows' backs. When licking itself the following day an animal would run a risk of infecting itself by ingestion, more especially if its stomach or bowels were in an inflamed state from any cause whatever.

Infection by sexual connection, he thought, carried far greater risk to the female than to the male, and to the mother than to the offspring. He showed how Cornell, by injection of tuberculous matter into the vagina of rabbits, found tubercular lesions there very shortly afterwards. Neither, however, to this source of infection, nor to heredity, did the lecturer attach anything like the importance that he did to infection from inhalation and ingestion. He here pointed out that Bang, by adopting precautions against infections by in-



halation and ingestion, had bred from animals which were unhealthy, both on the male and the female side, and during the four years that this system had been carried on with over one hundred breeding animals only one calf out of some hundreds has as yet shown any symptoms of the disease, either as calves or since. The lecturer then went minutely into the means which should be adopted to get and keep a herd healthy. The first requisite was to test every animal at least once, if not twice, a year; then keep the reacting animals in a separate building. All the calves from the healthy and unhealthy cows might, if desired, be reared, but they should be fed only on the milk of the healthy part of the herd. These precautions, continuously and rigorously applied, would soon render any herd quite healthy at very little expense, and, coupled with healthy surroundings, the disease might easily be reduced to infinitesimal proportions. In answer to a question, Mr. Speir said tuberculin of itself seemed to have no curative effect, and at present we had no cure for tuberculosis. In reply to another question, he said carcasses sold and bought in good faith as being free from disease should be paid for by the public when destroyed in the public interest. In reply to a further question, he said he was in favor of refusing entry to all dairy products from abroad until the countries sending them satisfied us that their sanitary conditions, cubic space, water supplies, etc., were at least equal to ours, and he thought politicians should insist on such being carried out. The lecturer showed a diagram of the temperatures of cows in his own herd which had been subjected to the test, and pointed out their peculiarities.

### Shorthorn Calves at London Show.

Editor FARMING:

In your February issue appears the following over the signature of Messrs. H. Cargill & Son: "Judging from these and the fact that Mr. Russell was successful in winning all the good prizes at London with calves sired by him (Rantin' Robin), we think we have not made a mistake in acquiring him as a helpmate for Royal Member." The facts are these: Mr. Russell was awarded one first, we were awarded three firsts and one second, at London on calves. We make no comment, but leave your readers to decide to whom were awarded all, or nearly all, the "good

prizes" at London on calves. In justice to ourselves we make this explanation.

Sylvan.

R. & S. NICHOLSON.

### Lice on Cattle.

H.M., Dean's, Ont.: Apart from the kerosene emulsion, which is difficult to apply properly, what other article would you advise as the best to rid cattle of lice?

ANS.—See reply to similar query in the March issue. Some use a decoction of tobacco, but I do not like it for that purpose.

### Exercise for Bull.

Inquirer: (1) Would you advise letting a large bull out in pasture in a small field by himself during the summer or keeping him in the stable, and what should he be fed during the season of service? (2) Please give the scale for judging Hereford and Aberdeen-Angus, and state how they compare with Shorthorns in milking and fattening qualities.

ANS.—(1) No, I would not advise letting him out at pasture all the time for the following reasons: In the first place, if he is to be put to a number of cows, he will need stronger food than mere pasture. In the next place, he will be tormented with flies; and, lastly, if cattle are in sight, he will worry to get to them. I would rather keep him in a loose box—feed him oat chop, and, if worked hard, some pea chop, and cut grass or other green feed for him, turning him out for a couple of hours every day for exercise in a small paddock securely fenced. If he is quiet, and not breachy, you might try my plan of letting him run with the cows all night, taking him in in the morning when the cows come up to be milked, and stabling him during the heat of the day. This plan, of course, necessitates keeping the younger heifers separate from the cows.

(2) There is no scale of points, so far as I know, drawn up for Herefords and Aberdeen-Angus. Herefords are, *par excellence*, a grazing breed, in which characteristic they, perhaps, excel the other two breeds named. Taken as a whole, neither Herefords or Aberdeen-Angus excel as milkers, although occasional good milkers are found among them. In this point they must be classed below Shorthorns as a whole. Crosses of Shorthorns and Herefords, and Shorthorns and Aberdeen-Angus, make prime cattle for feeding purposes.



THE old English sheep dog is not often met with nowadays. The collie is taking his place. In appearance they are square in build, short in the neck and back, and rounder and shorter in the head than the collie. The coat is long and shaggy and inclined to curl, but should be straight. The face is more or less rough, and, in some cases, they are bearded. The color is either black and white, blue and white, gray or grizzled. They are a short-tailed breed, and show wonderful sagacity. They are mostly found in the west of England.

THE class of sheep most favored by the Argentine sheep-breeders up to the present time has been the Lincoln long wool. The demand for such has been so good that they have bought up in England nearly every available shearing and made extensive purchases of two-year old rams as well. The fact that Argentine-bred Lincolns of pure English origin show a softer and more even fleece than their sires may in part be attributed to climatic influence and the depasturing of the sheep entirely on the indigenous grasses, with perhaps a complementary supply of lucern in the winter time. These Argentine-bred sheep cannot compete in size and weight with the English-born Lincoln, and it would seem that the gain in the quality of the wool fibre has been at the cost of the meat-producing capacity of the animal. Romney Marsh, Leicester, Cotswold, and Devon long wool sheep have also been shipped to the Argentine during the past season. There is a good demand for wethers for export to Great Britain, and for well-finished ones weighing 120 to 125 lbs. the price paid is 10s. to 12s. on the ranch. Poorly bred and undersized wethers only bring half as much for local consumption.

### Peas and Oats for Sheep.

Peas and oats make a good summer food for sheep, in the absence of suitable pastures. If eaten down when but a few inches high they will come again. They will furnish a large amount of food in a normal season. And when they are eaten off the second time there will still be opportunity to grow a crop of rape in a moist season. The ground should be in good condi-

tion to throw up a vigorous growth, and the sheep should not be allowed to feed upon the ground when the crop is wet, or they will soil the crop and poach the land. The amounts of seed to use must be determined somewhat by the character of the land, but one and a half bushels of peas and one bushel of oats per acre will make a good showing. When land is thus handled, woe unto the weeds that attempt to grow there. Such a pasture in conjunction with a grass field is excellent for sheep.

### Ontario as a Home for Purebred Sheep.

Ontario has earned an enviable reputation for the variety, the numbers, and the high excellence of the pure breeds of sheep which it has produced. Let us try to maintain that reputation. So long as we do we are sure of a market in the neighboring republic. In many sections thereof succulent food cannot be grown as easily as with us, nor can it be grown in such variety. So long as this fact remains, we shall occupy a vantage ground in growing purebred sheep. Reputation is worth much to the breeders of any line of live stock. Let us try, therefore, to maintain our reputation. We cannot devote too much care to our work. We cannot easily put too much time upon it. Every effort should be made to attain to a higher and more perfect standard of quality. We should not grudge our sheep the needed supplies of liberal feeding. We should not hesitate to cull closely. So long as we can keep our product in the van on this continent, we may expect to find a market for the product that will reward us for our labor.

### Exporting Sheep Dead or Alive.

Some difference of opinion obtains as to the best mode of exporting sheep to Great Britain, now that they must be slaughtered at the port of entry. Some argue that they are not in a condition to kill on landing. Others contend that the restriction will have the effect of stimulating the production of a better product, because of the fact that they must needs be slaughtered on

landing. All things considered, a market without any restrictions should be deemed preferable to one which is restricted, even to the extent only of insisting on the slaughter of animals exported to that country when they reach its shores. But if the effect should be to stimulate the production of a better article, then the evil would not be an unmixed one.

Our American cousins are taking refuge behind the hope that the restriction will result in improving the sheep sent over, so that the better price obtained will more than compensate for the loss that might otherwise accrue. But it must be borne in mind that American sheep stand in need of improvement much more than do Canadian.

But to come back to the first point, viz., are sheep not in a condition to be slaughtered when they reach the port of entry? Why are they then less fit for slaughter than cattle? If they

### Prize Cheviot Ewes.

The three ewes in the accompanying illustration were the winners of the first prize at the last Smithfield show, in the class for fat Cheviot ewes over three years old. They were owned by Mr. J. McDowall, Girdstingwood, Kirkcudbright, Scotland, and were a most deserving trio. The same owner also took the second prize in the same class.

### Sheep as Weed Destroyers.

It is simply marvellous the extent to which weeds will be eaten by sheep at certain seasons of the year. There are few weeds, indeed, that grow which they will not browse off if they have a chance to eat them when they are young and



Three Prize Cheviot Fat Ewes.

are not fit for slaughter, will the experts tell us why? The voyage only lasts about two weeks, including the journey by rail. To be sure, the travelling is unfavorable to flesh-making, but there will not be much loss of flesh in so short a voyage.

The Ontario Agricultural College sent over sheep to England years ago. They were in each instance slaughtered soon after landing. Those who slaughtered them had only words of praise for the condition and quality of the meat, as will be noticed by reference to the reports which speak of these shipments. The question is one of no little importance, for, if we cannot profitably send them over alive, then we are brought, in a sense at least, into competition with the exporters of dead meat from the countries south of the equator.

tender. If sheep are allowed to pasture closely from year to year a field where Canada thistles grow, though they may not destroy the thistles completely, they will certainly do them serious harm. If they have a chance to crop down the leaves of the strong-growing iron weed which infests Ohio valleys, they will, in a few years, run it out of a pasture. If kept in sufficient numbers on the Russian-thistle-smitten plains of Dakota, they will be more than a match for the dreaded Russian thistle. By sowing lands infested with wild mustard for a few years, and pasturing the same with sheep, the mustard plants will soon be greatly reduced in numbers. The sheep will turn those that grow into good mutton. And the process will be much facilitated by sowing two or three crops a year on such lands.

The writer has had occasion to watch sheep feeding on various pastures. These pastures were succulent and choice. They were sown for the purpose, and were much relished by the sheep. Weeds grew among them more or less, and it is a fact that when sheep were turned upon these pastures from spring to midsummer they would first go for the weeds. They would even do so when feeding upon a field of rape, or of peas and oats. But in the latter part of the season they would not so eat the weeds. The latter became woody at an early stage of growth after midsummer; hence the sheep would not eat them until the other food had been gleaned. Sheep are unquestionably the greatest weed destroyers in the world. With such an aid in fighting weeds why should we not have clean farms?

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### A Hint on the Selection of Sheep.

Professor John A. Craig writes as follows in the *Live Stock Report* on a most important subject: Some time ago, in your columns, Mr. Richard Gibson enumerated a number of interesting features connected with the selection of sheep with the object of founding a flock. There was one hint given there which I believe to be worthy of close consideration. He mentioned the fact that, in purchasing ewes to found a flock, the beginner was generally shy in selecting any that were older than yearlings. I, too, had thought somewhat along this line in buying stock, and I had about come to the conclusion which Mr. Gibson has emphasized so decidedly from his experience. When it is possible to buy a two-year-old that has been tried and not found wanting, I am satisfied that it is a mistake for the novice, or even for the experienced breeder, to choose younger animals that have no additional qualifications. It is a great advantage, in the selection of breeding sheep, to be able to see the progeny in visiting a flock or herd with the object in view of purchasing young stock. It has always been my aim to become acquainted, at the start, with the old matrons of the herd or the flock. If you can find out the breeder's preference for the maternal lines, illustrated in his breeding operations, you get to the foundation of his success, and if you can, in addition, see the young stock that sprung from these sources, and they are satisfactory, then you have taken the greatest precautions to secure good animals. I would rather select a ewe two or three years old on account of the lambs she has produced than for any other single feature with which I am acquainted. It is a final test of her value; and

when you have, in addition to a good breeder (that is, one that breeds lambs that are good individuals and true to type), a ewe that has good individual merit, you have then secured the greatest merit that it is possible to obtain. A young ewe that has never raised a lamb will always look well in comparison with an older one, especially one that has done extra well by her lambs, and when you compare them individually it is always to the disparagement of the older sheep. I could go into a flock in September and pick out the best breeding sheep of the flock, and be guided solely by the fact that the thinnest ewes will likely be the best. They are the ones that have given the most milk to their lambs, and have taken the best care of them; consequently, are the poorest at that time. As to the novice who wishes to found a flock, I believe he will not find, in all his future experience, one single factor that will prove to him of more value than this single suggestion which has come from Mr. Gibson. It is a suggestion that a man would not make unless he knew that it was true from experience. It is one that has gradually grown in my mind, but I had not quite come to the point to make it so emphatic as Mr. Gibson has rightly done.

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### Dependence of Sheep on Man.

"The sheep has undergone more modifications at the hands of man than any other animal," writes Dr. Louis Robinson in the *North American Review*. "All the rest of the domestic animals have proved their capacity to reassume the habits of their wild ancestors, but no once-tamed sheep has taken to a life of independence. This is, at first, surprising, because many kinds, such as the Scotch mountain sheep, and those upon the high lands of Chili and Patagonia, manage to live and thrive with very little aid from their masters. Yet it is found that even the hardy Pampas sheep cannot hold its own when that aid is wanting. If man were to become extinct in South America the sheep would not survive him half a dozen years. There are three chief reasons for this, and all of them are of peculiar interest.

"In the first place, the sheep is, as a rule, a timid and defenceless animal, and, at the same time, is neither swift nor cunning. It falls an easy prey to the meanest of the wolf tribe. A single coyote, or a fox terrier dog, could destroy a thousand in a few days. Then it is found that the young lambs and their mothers require special care and nursing. If they do not get it at the critical time, the flockowner will lose them by the hundred. It is a common thing in the South-

downs for the shepherd not to leave his flock day or night during the whole lambing season. Lastly, scarcely any modern sheep shed their wool naturally, in the same way that the horse sheds its thick winter coat."

### Royal Darlington.

The accompanying illustration represents the prize-winning shearing Lincoln ram, Royal Darlington, bred by Mr. H. Dudding, Riby Grove, Great Grimsby, England. This ram was first at the Royal and other shows, and was never beaten, and, after working in the Riby flock for some time, was sold for 150 guineas. Further

time, that all kinds of foot rot are contagious. Such is not the fact, however, and yet it would seem to be true that simple foot rot, which is not usually contagious, may become so under certain conditions when these are aggravated and prolonged. On the other hand, there is a species of foot rot which is more or less contagious at all times and under all conditions. When the trouble spreads quickly through a flock after it has invaded it, the probability is strong that the disease is of the contagious form. Simple foot rot, according to Professor Law, is a simple inflammation of the horn-secreting structures of the hoof and the adjacent skin. The following are among the leading causes of the trouble, as as-



The Lincoln Ram Royal Darlington.  
Bred by Mr. H. Dudding, Riby Grove, Lincoln, England.

particulars of Mr. Dudding's flock will be found in our special stock reviews.

### Foot Rot in Sheep.

Foot rot, though not greatly prevalent in America, gives some trouble, nevertheless. As might be expected, it is more troublesome when sheep are kept in very large flocks than when but few are kept on one farm. This disease is of two kinds. These are sometimes characterized as simple and contagious foot rot respectively. The distinction between them does not appear to have been very clearly drawn; hence the prevalence of the opinion which it would seem prevailed at one

signed by the same author: Wearing of the sole to the quick from long journeys on hard roads; the curling in of overgrown walls on the sole of the foot when on soft, boggy pastures; wounds with sharp bodies like nails; the accumulation and drying of clay or mud between the claws; softening of the horn and sympathetic irritation from standing on hot, reeking manure; and irritation of the skin around the coronets caused by iced water.

Contagious foot rot has been known for a long time on the continent of Europe. It is supposed to have been diffused by the Merinos, although apparently unknown in Spain. The conditions favorable to the production of ordinary foot rot

are also favorable to the spread of contagious foot rot. What the disease is, precisely, does not appear to be well understood, but it is thought that it is generally communicated to healthy flocks by actual contact with the disease germs, although it is also believed that sometimes it originates spontaneously. When sheep are healthy and the horn of the hoof dry and strong, free from cracks and properly lubricated, they have much more power to resist this disease than when the opposite conditions prevail. It may be conveyed through the medium of pastures, corrals, roads, litter and railroad cars. The distinctions between simple and contagious foot rot do not appear to have been very clearly drawn by some, at least, of those who have written upon the subject. Stewart describes simple foot rot as "an inflammation of the internal parts of the foot, the formation of matter, its escape at the hoof, and the separation of the horn or crust from the diseased parts." Inspeaking of contagious foot rot he says, "It consists of an inflammation of the whole hoof, the formation of blisters upon the heels and between the

toes, which break and form discharging surfaces, and in a few days ulcers which suppurate and excrete fetid matter." But this description is rather general than specific.

According to Prof. Williams and Prof. Brown, the contagious foot rot commences at or near the sole and thence diffuses, causing disease of the bones, with sloughing, and degeneration of the horn soon follows, insomuch that it commences to fall away piece-meal. It may be distinguished from foot and mouth disease by its more commonly commencing in one foot and then extending to the others, and by the almost total absence of fever except when the disease has greatly debilitated the animal. Foot and mouth disease usually breaks out in all the feet simultaneously, and it is accompanied by high fever. The period of incubation extends from three to five days.

Spontaneous recovery usually takes place in from four to six weeks. The disease may come again, but a second time its attacks are usually less severe. In some cases death may result from debility leading on to exhaustion.

As this disease is a difficult one to treat, preventive measures are all important. Sheep should be most carefully kept away from pastures on which others have fed that were affected with contagious foot rot, and also from corrals occupied by the same. When they are suspected of exposure to the disease, they should be promptly treated to a foot bath of chloride of lime. When brought from places where the disease is known to have existed, they should certainly be quarantined for a time. The treatment should be both timely and thorough. It should be timely to prevent the further spread of the disease, and it should be thorough to eradicate it in the shortest

time possible. Foot rot, like weeds, never can be so cheaply eradicated as when it is quickly eradicated. Randall's treatment is old, but the newer authorities do not seem to have made any improvements on his methods. The



Three Prize Lincoln Rams.

Bred by Mr. H. Dudding, Riby Grove, Lincoln, England.

directions given by this old veteran of sheep husbandry are in outline as follows: The principal operator seats himself in a chair. Close beside him should be a couple of sharp knives, of which one should be thin and narrow, a whetstone, strong toe-nippers, such medicines as he chooses to employ, and a bucket of water. The assistant catches a diseased sheep, and lays it on its back and buttock, between the legs of the first man, so that the head comes up to about his waist. The assistant presents each diseased foot to the first man, who shortens the toes with the nippers and cleans out any adherent filth that may be between the toes. The assistant helps in cleaning the foot, and both then set to work to pare off such portions of the horn as require to be removed. All loose and under horn must be removed, abscesses and sinuses opened, and all the

diseased part washed with a solution of chloride of lime or of carbolic acid. Extreme cases may require to be poulticed. But it is not easy to give all directions minutely in an article such as this.—Prof. Thos. Shaw, in *Northwestern Farmer*.

### Three Royal Winners.

The three Lincoln rams depicted on the opposite page were bred by Mr. H. Dudding, Great Grimsby, England, and were victorious in the shearing ram class at the Royal Show at Windsor, as well as at other shows, winning all three prizes. They were distinguished for their great size and fine quality of lustre wool. These rams were sold to Mr. W. H. Osmond, Victoria, Australia, for the splendid sum of 450 guineas.

### Sheep Dip.

J. A. C., Hillhurst, Que.: Where can McDougall's Sheep Dip be obtained in Canada?

ANS.—We have been unable to find out if there is any agency for this dip in Canada. If there is, they should let the public know by advertising their wares.

### Ticks.

H. M., Dean's, Ont.: What do you recommend as the best application to kill ticks on sheep?

ANS.—We have found Cooper's dip to be very satisfactory. It is in the form of a powder, may be mixed easily, and it is effective in killing ticks or lice. It is pleasant to handle, and does not burn the arms of the operator. Little's dip is also good.

### Fecundity in Breeding Ewes.

\* Subscriber, Brockville: Will you, Mr. Editor, give your readers some pointers on fecundity? It is important in breeding sheep that we get a large crop of lambs, and we want to know how to get such a crop.

ANS.—Fecundity is a matter of heredity. It is transmitted. Ewes that are producers of twins are likely to produce female progeny that will produce twins also. We should be careful, then, to select our lambs accordingly which are to be kept for breeding ewes. Food, also, influences fecundity. Animals kept in a good condition are more apt to produce abundantly than those not so kept. And succulent foods favor free produc-

tion of progeny. It is also thought that the male exercises some influence. We may look for fewer twins from a male overwrought or lacking in vigor than from one at his best at the time of coupling. Selection will be found to be one of the most potent factors in securing the end sought.

### Sheep Pasturing in Winter.

J. Moncur, Niagara Falls South. Mr. Editor, do you think it wise to allow a breeding flock of sheep to roam over the fields when the ground is bare in winter, or would you advise keeping them yarded?

ANS.—The exercise would do them good, and for that reason they should be given large liberty, if for no other. They will also pick up some grass, which, even though it be in the dead form, will do them some good. There is usually something of firmness in it which lends, in some degree, succulence to the dry diet. The condition of the ground, however, should be considered. If they roam thus on clay soils, when the frost is but a little way from the surface, they will poach the land. In open winters it would be a positive advantage to have the sheep thus glean for themselves. But when the lambing time comes, then such a plan would be full of hazard, as the lambs brought forth in the field would, in many instances, perish.

### Water for Sheep in Winter.

John Rollingstone, Bracebridge: Do sheep want water in winter, or can they get along without it when they get plenty of snow?

ANS.—Sheep will live, and will also measurably thrive, without water when they can have free access to abundance of pure, clean snow. But they will do much better when they are given pure water. They will take enough of snow to keep them alive, but they will not take enough to relieve their thirst as it would be relieved by pure water. The necessity for water increases, first, with the lack of roots as a part of the ration. Second, with the increase in the dryness of the fodder. And, third, with the increase in the amount of grain fed. Sheep that are given a good mess of roots daily, and no grain, will not drink much water. But those which are given no roots or succulent food, and which are, at the same time, fed lots of grain, will consume a great quantity of water, and if it is not given to them they will suffer severely.

# SWINE

If your sows are heavy milkers, be sure to look to their udders a few days before farrowing time. If they are showing signs of caking or becoming hard, a light dose of physic will prove beneficial. Many a good sow has been rendered useless as a breeder through lack of a little attention at this period.

If you have had a supply of roots this past winter for your pigs, you have doubtless found them a grand help in carrying the brood sows through the winter cheaply; but do not overdo it. Remember that too many roots, fed right up to farrowing time, have a tendency to make the litters come weak. Ease up a little on the roots, then, a couple of weeks before farrowing. Oats are cheap this spring, and a few crushed oats will be a useful addition to the sow's rations.

ONE very common source of loss to pig-breeders is through sows lying on their young, more especially if the sow is heavy, or clumsy. The best way of guarding against such accidents is to place a rail around the pen, about eight inches from the floor, and the same distance from the wall. If the sow be then bedded with a small quantity of cut straw, so that she cannot fill up the space behind the rail with her bedding, the little pigs will have a chance of running beneath and behind the rail, and so escaping being crushed against the wall by the sow. When a pig has been laid upon and is not killed outright, the best remedy we know of is hot water, used as follows: Take a pail of water as hot as ever the hand can bear, and immerse the pig in it all but its head, lifting it in and out rapidly, but allowing it to remain in a little longer each time, rubbing well afterwards with a wisp of straw till dry. We have frequently revived pigs that were apparently at their last gasp by this method.

## The Bacon Trade in England.

The *Commercial Record* (London, England), of February 14th, 1896, contains the following report:

"Bacon—In Ireland, 9,000 were killed last week, and on the Continent fully 30,000, which goes far

to prove that Danish farmers have such large stocks of hogs that they cannot and dare not hold back. Indeed, notwithstanding the ruinously low prices of hogs, present bacon quotations must leave shippers heavy losses. Perhaps never in the history of the oldest shipper, seller, or buyer, have such shocking prices been seen, or, in general, such a deplorable state of things. Nobody could have thought it possible that choice quality, and even lean, selected Continental bacon, could be practically unsaleable at 30s. to 32s. Yet this has been the case during the latter part of this disastrous week.

"The imports into the United Kingdom from January 1st until the end of the first week in February were:

	1895.	1896.
Bacon (cwt.).....	326,891	456,304
Beef.....	140,686	246,016
Mutton.....	188,700	285,119

"These figures are taken from the published Government statistics. With regard to the course of the market, it can only be said that things are worse than ever. Prices have fallen daily, and sales become more and more difficult. Stocks are larger, and arrivals have increased; in fact, the whole position at present is utterly hopeless and chaotic. Irish is selling just as badly as Continental, although, of course, buyers bringing 'ordered' selections have to pay many shillings over anything obtainable for 'loose' or market bacon for the luxury of so doing. Although last week, wisely or unwisely, guiding quotations were left unchanged, this week, at any rate, it became compulsory to reduce them, and the following reductions have been made: 3s. on all selections of Limerick; 3s. on 'good' Waterford; 2s. on fat stout, and 1s. on stout Waterford, and 2s. on all sizeables and stout cuts of Continental, leaving Waterford sizeable at 48s.; stout 43s.; stout sizeable, 44s.; fat stout, 41s.; good, 39s. f.o.b.; Limerick sizeable, 43s.; sides, 43s.; stout, 40s.; stout sizeable, 40s., landed; Continental sizeable, No. 1 lean, 41s.; No. 2 ordinary, 39s.; No. 3 medium, 7s.; sides, No. 1 lean, 43s.; No. 2 medium, 42s.; stout, No. 1 lean, 39s.; and No. 2 ordinary, 36s., landed. American bacon—Canadian neglected; 32s. to 33s. for



the leanest, and 28s. to 30s. for fat and heavy. Of American sides at 30s. to 32s., Cumberland cuts at 28s. to 32s., short rib middles at 28s. to 30s; New York shoulders at 26s. to 27s.; and picnics at 29s. to 30s., there are very few selling."

The above taken from an English paper shows that if farmers have not been making much out of their hogs this winter, the packers certainly have not had the thing all their own way.

It is some comfort to notice that even with this deplorable state of things in the English market prices in Toronto and Montreal for hogs, both live and dead, rule from 50 to 75 cents per 100 pounds higher than they did three months ago.

It would be well for all interested to note the great difference in the prices quoted for Irish and Continental, as against Canadian, the Irish bringing from 39s. to 48s., and the Continental from 36s. to 43s., while the Canadian runs from 28s. to 33s., or, in other words, Continental bacon ranks 30 per cent., and Irish 40 per cent. to 50 per cent. higher than Canadian. Surely there must be room for a change here. Canadian cheese is already at the top of the tree, Canadian butter is following it up fast, and we certainly should not allow our Danish competitors to score so far ahead of us in the bacon trade.

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### Care of Brood Sows.

Among what may be termed the rank and file of the farming community, the notion is very prevalent that almost anything is good enough for a pig until it is finally put up to fatten, and then the only thing to do is to stuff it full of grain. Now, as we have often already pointed out, this is a very great mistake. There is no animal that needs more careful attention in the way of feeding than a pig, or that will pay better for any care given to it, and this is more especially true of the brood sow, both before and after farrowing. Very few people stop to consider what a tremendous strain it is on a sow to nourish a litter of pigs, and still fewer ever realize that this strain is going on for a long time previous to the time the pigs are farrowed. Now for a few facts on the subject. Boussingault, the eminent continental authority, weighed a litter of five pigs at birth, and found that they averaged 2.75 lbs. each. On weighing them again thirty-six days afterwards he found that they weighed an average of 17.3 lbs. per head, that is, an increase of 14.55 lbs. each, or a daily average increase of 0.4 lbs. each, all of which was derived from the sow's milk. Again, Dr. Miles, of the Michigan Agricultural College, found that Essex pigs three weeks old consumed  $3\frac{1}{2}$  lbs. of milk the first

week, and nearly seven pounds the second week; a litter, therefore, of ten pigs at this age would drink seven gallons of cow's milk a day. Now, when we consider that four to five gallons a day is very good milking for a cow in her flush, what a tremendous strain it must be on a sow to provide for her numerous family! We also find that it has been proved by analysis that the milk of a sow is rich in casein, or nitrogenous matter. We must, therefore, be careful to see that she has a supply of food containing a sufficient supply of albuminoids, such as oats, peas, middlings, bran, and oil meal, along with skim-milk, which is especially rich in this very constituent. It is not our intention here to enter fully into the treatment of breeding sows; we would simply ask any of our readers who are interested in pigs to ask themselves this question, Have you ever realized that your sow that is raising a litter of ten pigs has to produce a greater quantity of richer milk than your best cow? and have you made it your business to see that she was supplied with the necessary food to produce such a flow of milk? and then anticipating the answer "No" in nine cases out of ten, we would add a word of warning as to not overdoing it in the other extreme. Remember that moderation in all things is advisable, and while, undoubtedly, a sow with ten pigs four or five weeks old will stand a large supply of food, she should be brought up to it gradually, and nothing is more to be guarded against than over-feeding for the first few days after farrowing, or feeding on too rich foods. The sow's diet should be cooling and slightly laxative, and should contain a fair proportion of albuminoids and phosphates. Such foods as we have already mentioned may be given freely after the first week, along with an allowance of green food if possible, such as clover, either green, or cut and steamed, or dampened. For the first week we would advise feeding principally on a slop made of shorts and bran mixed with skim-milk and water, and fed lukewarm, very little food being necessary during the first twenty-four hours, though care should be taken to see that the sow has plenty of fresh water to drink.

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### An English Farmer's Experience.

A writer in one of our English exchanges, after giving as his opinion that pig breeding is one of the best paying and most indispensable branches of dairy farming, states his methods and experience as follows:

"My rule has been to keep a good boar, purchased from a pedigreed herd of the highest standing, and five or six sows of my own breed-

ing. These litters are timed to farrow in February and March, and again in July and August. The spring litters are sold out as stores when they are worth about \$5 each, only from twelve to fifteen of the best being kept back to be fed off for bacon in the early winter. The summer litters are invariably fed off as porkers, some few only being sold as stores.

"Two or three young sows are reared each year, and no sow is kept unless she appears likely to make a good mother, or, having had one litter, appears likely to continue doing so. The advice so often given, "that no sow should be kept after her third or fourth litter," is advice that I could never see my way to follow; for as long as a sow will bring a good, strong, healthy litter of pigs, and rear them well, I have always found it profitable to keep her on, and on the first signs of her failing to do this I have fed her off. The difference in price between a sow that has had only one litter and one that has had six or even eight or more litters rarely exceeds 12 cents per score pounds, which is merely a nominal sum when the extra litters produced are taken into account.

"I allow young pigs to run with their dams for nine or ten weeks, and then wean them, and have both sexes of young pigs operated upon, except, of course, such as are selected to be reared for stock purposes. Before weaning, barley meal of the best quality and skim-milk are put where the young pigs can get at them, to teach them to eat, and their dams are turned from them during the day.

"Sows are fed chiefly on bran, shorts, and wash, with a few mangolds and green fodder in the spring and summer, and are turned out in a grass run, whenever possible, for some time during each day. After harvest all pigs, young and old, are turned out for a few hours daily on the stubbles, and when the stubbles are cleared up they are driven around to the acorns, when there are any. I am quite aware that the latter practice has been much condemned by the "authorities" on pigs, but I have always found it a good practice, and that pigs so treated grow fast and keep very healthy.

"For feeding out the baconers and porkers I have found a mixture of one-third wheat meal and two-thirds barley meal to be an excellent meal for the purpose. I should not, however, use the wheat meal when wheat was selling at much over 72 cents a bushel, and good barley meal obtainable at about \$1.20 per cwt. I also use a small admixture of bean meal, and have found the bacon especially improved in quality thereby; but beans are generally too high-priced

to grind for pig meal. I also use maize meal occasionally; but more often feed the maize whole, as I find it beneficial to the pigs to give them a little whole corn daily, when there are no acorns or waste grain to be fed to them.

"I have always plenty of coal cinders put where all the pigs can get what they want, and it is surprising what a quantity they will consume. For medicines, I use sulphur, linseed oil, and Wilson's Canadian pig powders, as may be required.

"I have the young pigs bedded with good wheatstraw when available, and the older ones with any rough dry litter that is available, and in winter the soiled litter from the horse stables is largely used for this purpose, the results being good for the manure as well as for the pigs.

"I have always kept an accurate debtor and creditor account of the pigs, and from one year's account I extract the following particulars: Five sows farrowed twice each, and reared the following litters—8, 10, 3, 11, 12, 10, 10, 8, 10, and 9, or a total of 91. I keep no account of the number born, but only those living at weaning time. At the commencement of the year there were 5 sows, 28 young pigs, and 1 boar—total 34. At the end of the year there were 36, one young boar having been purchased, and 90 having been sold. The value of the pigs on hand were nearly the same at the end of the year as at the commencement.

"The sales were as follows:

50 baconers and porkers at 10c. per lb.	\$52 50
2 fat sows at 7c. per lb.	43 00
1 boar	12 50
37 stores, average price \$5.35	198 00
Sow services	39 00
	<hr/>
	\$845 00

PURCHASES.

1 stock boar	\$ 15 00
9½ cwt. bran	} 257 00
24 cwt. corn	
157 cwt. barley meal	
10 cwt. bean meal	
Sulphur, oil, powders	10 00
150 bush. home-grown wheat	121 00
	<hr/>
	\$442 00

"To the purchases must be added the value of the skim-milk and "wash" used, also cost of repair, and renewal of troughs, buckets, tubs, etc. I keep no account of the straw and other litter used, or of the few mangels and the green food consumed in the spring and summer, as I consider that the value of the manure amply repays for all this. After I had allowed for all the fore-

going, and also for a proportionate part of the rent and taxes, and interest on capital, I estimated that I had a balance of about \$260 to provide for the necessary labor and profit."

[In the foregoing we have altered the figures from pounds, shillings, and pence to dollars and cents, but have not changed them in any other way. As the prices given both for pork and grain are very much higher than those generally obtainable in this country, we give the following estimate as to how a breeder in this country with the same stock would stand :

SALES.

50 baconers and porkers at 5c.....	\$276	25
2 fat sows at 4c.....	24	50
1 boar.....	12	50
37 stores, average price \$3.50.....	129	50
Sow services.....	39	00
	<u>\$481</u>	<u>75</u>

PURCHASES.

1 stock boar.....	\$ 15	00
1040 lbs. bran at \$12 per ton..	6	25
48 bush. corn at 45c.....	21	60
9 tons barley at \$14.....	126	00
20 tons peas at 52c.....	10	40
Sulphur, oil, etc.....	10	00
150 bush. home-grown wheat at 60c.....	90	00
	<u>\$202</u>	<u>50</u>

[This shows the sum of \$202.50 to pay for the skim-milk, roots, and green food, as well as the labor, and, when we consider that the above is the return from five sows, it certainly makes an excellent showing. The writer's system appears to be a very successful one, and certainly his advice as to keeping on breeding sows as long as they continue to produce and raise good litters is sound. The average of 9.1 pigs to a litter is an exceedingly good one, but it can be reached here as well as across the water by careful selection of sows and proper care of them at farrowing time. —Ed.]

English Breeds.

BERKSHIRES.

Of the various breeds of pigs that have been used in improving the common stock of both Canada and the United States, there is, without a doubt, none that has been used as extensively and as profitably as the Berkshire. As far back as 1823 we find records of Berkshires having been imported into the State of New Jersey by a Mr. John Brentnall, an English settler, and from that date until the present day there have, from time to

time, been large importations, made both to the States and Canada. Among the breeders of the Dominion the names of such men as the Snells, of Edmonton, will be long remembered, as among the foremost champions of the breed, and undoubtedly the present high standard of excellence is very largely due to the time, trouble, and capital expended by these pioneer breeders and importers; while, on the other side of the line, such names as C. N. Bennett, the Hon. A. B. Allen, and F. D. Coburn are closely associated with the best interests of the Berkshire in the United States.

To go back to the early history of the breed, according to the Hon. A. B. Allen, who has probably made a closer investigation into the history of Berkshires than any other writer, there appears to have been a recognized type of Berkshire as far back as 1780, although it is equally certain that that type differed very materially from the type of the present day, the color and markings being very badly defined, red and sandy colored spots not being at all infrequent, and the white markings being very irregular, instead of being exactly defined as they now are; in fact, a most successful breeder of about fifty years ago, a Mr. Sadler, of Cricklade, is said upon one occasion to have exhibited three hundred pigs to an agricultural association, every one of which was marked with a white patch behind the shoulder.

Some idea of the size of the Berkshire of that day may be gained from the fact that the gentleman referred to won first prize at the Baker street show with a fat pig that weighed 856 lbs., the length of her body being six feet four inches and her girth seven feet six inches, while the ordinary weight of a well-bred Berkshire bacon hog, when fit for the butcher, was 400 lbs.

What cross has been used in producing the improved Berkshire from the somewhat rough and coarse-haired pig of the end of the last century is a mooted point, some writers stating that a cross of the Neapolitan was used, while others, among them such well-known authorities as the Hon. A. B. Allen and Prof. Jas. Long, are of opinion that the cross to which the formation of the improved breed is due was with the Siamese, and this appears to be the most generally accepted idea among those who have studied the question, it being pointed out that while the Neapolitan invariably imparted a greater disposition to lay on fat to the breeds with which it was crossed, the strong point about the Berkshire was its large proportion of lean meat, while, in addition to that, the general appearance of the Siamese very much resembled the improved Berkshire, more especially

in the head and ears and the white markings on the feet. However, whatever the cross may have been that was used in the earlier days to impart finer quality and earlier maturing qualities to the original Berkshire, there is no question but that the greatest improvement has been effected by careful selection and breeding on the part of those interested.

About the year 1825 we find the pigs owned by Lord Barrington mentioned as being smaller and finer than those previously known throughout the district, and the well-known writer Sydney states that all the best herds of this day were descended from these pigs. Later on Mr. Sadler, before referred to, is mentioned as a highly successful breeder, while in the last half of the century such men as R. Swanwick, N. Benjafield, Heber Humphrey, A. S. Gibson, Joseph Smith, and many others, have done much to place the Berkshire foremost in the ranks of the improved breeds of swine.

In our next issue we will give the opinions of some of the best known English breeders on the points most to be desired, together with the standard laid down by the American Berkshire Association in 1877, with some criticisms on it as applicable to the present day by a well-known English authority.

(To be Continued.)

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### To the Farmers.

In view of the large number of hogs bred and marketed, dressed, in this province, we wish to draw the attention of the farmers to a few points of issue between marketing their hogs live and dressed. The tendency in the past has been to have the hogs as fat as possible for the winter dressed hog market. This winter farmers held their hogs when they could have sold them live in October and November, and eventually marketed them dressed at the same price they could have sold for alive. By holding them in this manner, the hogs, when marketed, are too fat to command the highest market price. We wish to impress upon all concerned that, to secure the highest market price, they must produce the animal wanted—a long, lean pig, fairly fatted, weighing from 160 to 200 pounds, alive. The interests of the farmer, pork packer, and consumer are identical. The most suitable animal will make the most desirable meat, which will command the highest figure, a fair proportion of which will find its way into the farmer's pocket. Hogs should be fed to sell at six months old, weighing, as stated before, at from 160 to 200 pounds. I has been proved by experiments at the Experimental

Farm at Ottawa that this is the only profitable way of feeding hogs, as it takes less food to make a pound of pork before the animal reaches 200 pounds than after. We know full well that this is not the generally accepted opinion, but facts are stubborn things, and those farmers who have followed up the plan of selling off their hogs when they have attained the weight specified before, and have had others coming along to replace them, have resorted to us their satisfaction with the result. This country is producing more hogs than is required for home consumption; the outlet for the surplus is England. There is no market in the world more exacting in its requirements as to size, leanness, and perfection of cure than the English market, and, to meet this, the packers of this country have to be correspondingly exacting in the size, quality, etc., of the hogs they buy to make into meat suitable for the English market. Consequently, as the offerings of live and dressed hogs this season are too fat, packers, unless they are prepared to lose money faster than they ever made it, are obliged to discriminate most severely against fat hogs, no matter what weight. In fact, at the present time, we are running only one-eighth to one-quarter of our capacity on account of hogs becoming too fat. When farmers realize that selected lean hogs, weight and style as given above, are worth one quarter of a cent to three-quarters of a cent per pound more than fat, heavy hogs, they will readily understand the importance of giving their attention and time to breeding hogs which command the highest market price. Now a word as to the "breed" and feeding of hogs. A long, lean hog is what is wanted. The Berkshire, crossed with either Tamworth or Improved Yorkshire, makes a very suitable hog. Your breeding sows should be long and deep, with a small head, stout legs, and well-developed hams, and should be mated with males of same type. We have had a great deal of trouble in the past with soft hogs from some counties, and would strongly advise extra care in the feeding of your hogs. The main points for winter feeding are warm, dry feeding places and always a run, so that the hogs may have the necessary exercise—which is a very essential point all the year round. The following is an interesting résumé of food producing good bacon: Potatoes (cooked), milk, barley meal, oatmeal, crushed oats, wheat (ground), rye meal, also mangels and turnips. Exclusive wheat feeding has a sure tendency to make soft pork, also a proportionately large feeding of corn and beans. To sum up, we would dwell more particularly upon the point of "fat" hogs. The tendency in all markets is for an increasing demand for "lean" bacon. The

Canadian and European consumer to-day wants his bacon well streaked with lean, and the sooner the Canadian breeder makes quality his goal and ambition, and not weight, the better it will be for the perpetuation of the Canadian packing industry.

INGERSOLL PACKING CO.

### Most Profitable Age to Kill Pigs.

A. M., Clanbrassil: Is it more profitable to kill pigs weighing 125 lbs. or to feed them on till they weigh 200 lbs., live weight in both cases, and prices for pork being the same for both?

ANS.—Prices being the same the smaller weight will be slightly more profitable, but we do not wish to be understood as recommending this as the best weight at which to slaughter, as hogs will rarely fetch as good a price at so light a weight; besides that, other contingencies, such as the supply of feed on hand and the supply of store obtainable for feeding, must be taken into account. As a general thing, 160 to 200 pounds live weight is the best weight to feed to.

### Boiled Food.

Subscriber, Vandeleur: Would you advise feeding boiled roots and grain to pigs, or feeding the roots and grain raw? Would you mix the grain with the roots?

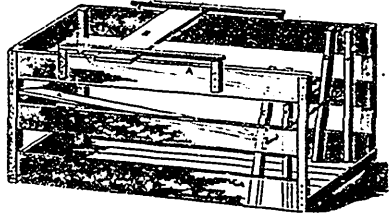
ANS.—You do not say whether you are feeding breeding stock or fattening pigs. In either case we would advise boiling the roots, which is best and most easily done by first passing them through a pulper. If for feeding breeding sows, we have kept these in first-rate order on nothing but steamed roots and a small allowance of peas fed whole and dry on the floor, three times a week. If the floor is swept clean, and the peas scattered among a little clean straw, it will give the sows the needful exercise, and they will clean them up to the last one. For fattening pigs we would mix the ground grain with the boiling roots, and also give two or three feeds a week of dry peas or corn as above. Never feed the roots *hot*. Let them cool down till you can plunge your hand in the mass and hold it there.

### Breeding Crate.

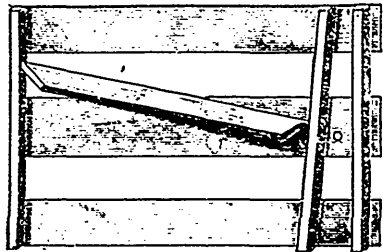
Subscriber, St. Williams: Please give an illustration of a crate for serving hogs.

ANS.—The following description and illustrations of a serviceable breeding crate are taken from "The Hog in America": The box is 5 feet long and 2 feet 7 inches high, outside measurements. It is made of  $\frac{3}{4}$ -inch stuff, of any

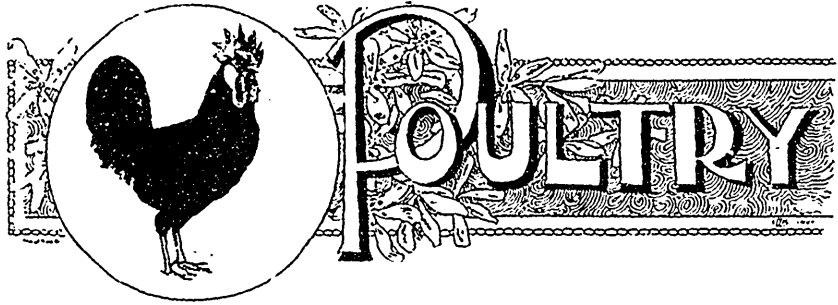
kind of lumber, and is built the same as a shipping box, only it has no top. The uprights are 2 inches square, and there are six of them, three to each side, the end ones being perpendicular, while those marked *C* are on a slant; the space between them at the top is 3 inches, while at the bottom it is  $4\frac{3}{4}$  inches. This is so arranged that the foot-rest can be adjusted to suit the sow



and boar. The foot-rest, marked *A* in the drawing, of which we give a special illustration, is the most important part of the box. In its construction you take a 2 x 2 inch strip, round it to fit the holes in the strip *C*, and make the shank long enough so that you can slip it in towards the back of the box, so as to loosen it in front. The holes in the front slip for the foot-rest should be mortised square, and the ends on the tenons on the bars *A* made square instead of round, to prevent turning. The front should be square and fit in a hole in the front upright, which should be made nine inches from the top of the box. On this two-inch piece you nail a board six inches wide, and round it at both ends, as in the cut. This board is used as a foot-rest, and also to prevent



the sow from moving sideways. Should you have a very small sow, you fit the board as in the cut; if this space is too narrow for another sow, you take the foot-rest out and turn it down, which gives six inches more space. The holes in the upright *C* enable you to adjust the foot-rest according to the height of the sow, and also the size of the boar, placing him in a natural position, regardless of the difference in the size of the sow. The piece *B* is a six-inch board which slides back and forward, and is used as a chin-rest. It is placed one foot from the front of the box, and is  $2\frac{1}{2}$  feet long. This, and the foot-rest, are the two important features of this crate.



[NOTE.—The publishers of FARMING desire it to be an aid to all its readers, and, with that end in view, I cordially invite one and all to make themselves at home in these columns. I shall be happy to answer, to the best of my ability, any and all questions relating to the management, feeding, housing, or diseases of poultry, and invite all who experience any difficulty, or wish information, to write, stating what is desired, and giving all the facts in connection with the enquiry. The name of the writer will be withheld, if desired. Let us not only profit by each other's successes, but also by each other's mistakes.—EDITOR.]

### Poultry Illustrations.

We present to our readers this month an illustration, made by that well-known poultry artist, Franklane L. Sewell, of the prize-winning Brown Leghorn cockerel at the World's Fair. Brutus was bred by Mr. C. E. Howell, Elmira, N.Y., one of America's foremost breeders. The cut is said to be true to life. Certainly it represents a grand specimen of this well-known egg-producing breed.

We also give a half-tone engraving of the second-prize Buff Cochins pullet at the last Ontario show. The photo does not show her color, but the shape is very good, particularly her cushion, a point in which so many Cochins are deficient. While she was being photographed she would persist in "squatting," which detracts somewhat from her stylish appearance. This bird was shown by Mr. George G. McCormick, London, Ont.

We also have two half-tone engravings of Mr. Duff's Black Minorca cockerel, Claude II., winner of first and special at the Ontario show in January last. This is a first-class type of a Minorca. The front view shows breast, station, and head; the side view shows lobes, back, and tail. The carriage, size and shape of the tail has for a long time been the "bone of contention" amongst Minorca breeders. In my opinion, it would be hard to have a better-shaped tail than this. The lobes are perfection. Notwithstanding the fact that this bird is the property of the writer, I am sure our readers will agree that this is a Black Minorca of extraordinary merit.

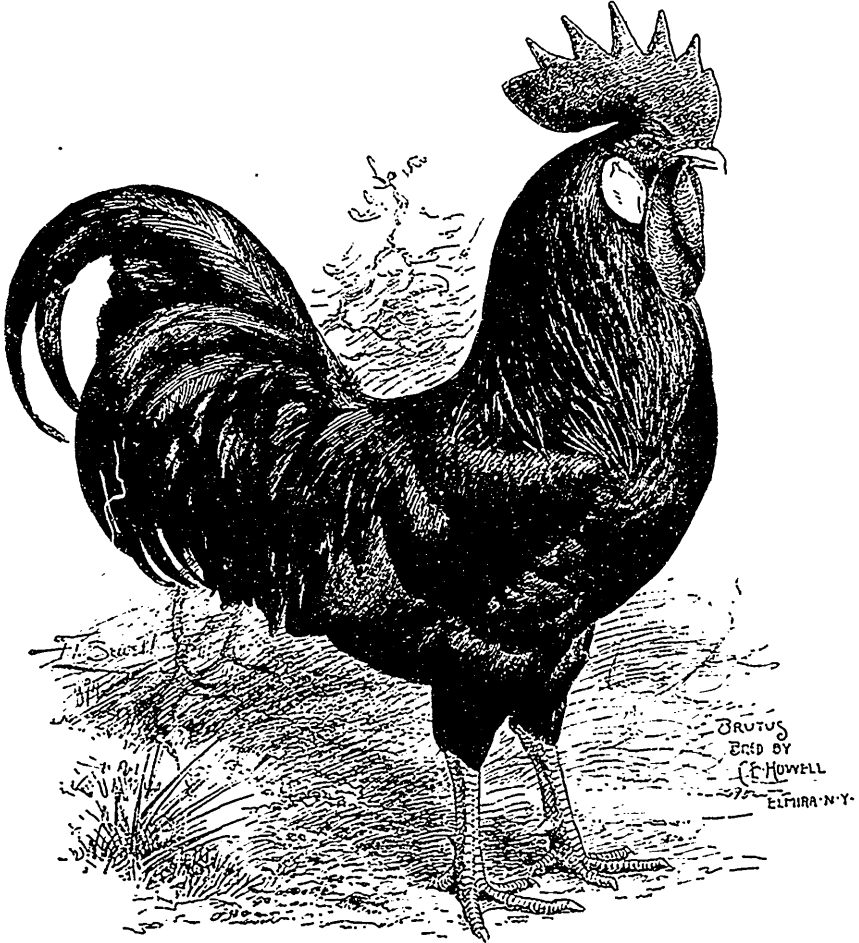
### Poultry Addresses at Farmers' Institute Meetings.

The writer had the privilege of attending twenty-three meetings of Farmers' Institutes the districts of Brockville, South Grenville, Stormont, Cornwall, Glengarry, Dundas, North Grenville, and North Lanark, Ontario, during the last few weeks. Forty-six addresses on poultry were delivered during that trip. The interest shown at every meeting was unprecedented, and the very best of attention was paid and numerous questions asked. Several farmers who have given poultry a trial testified to the profits returned from them. One gentleman in Glengarry asked this question: "We had seven cows. We made butter, used all we wanted for the house, and marketed the balance in Montreal. We had ninety hens, and used all the eggs we wanted in our family, and marketed the balance with our butter. Both cows and hens were given the best of care, and a careful account kept of the receipts and disbursements. From which did we make the most money?" I immediately replied, "From your cows"; but, to my surprise, he answered: "We made four dollars more from our ninety hens than we did from our seven cows."

At another place we met one of the best-known men in the county (an ex-warden). He keeps a herd of dairy cattle and a flock of one hundred and forty-nine Brown Leghorn pullets. I visited his farm, and he kept both cattle and fowl scrupulously clean. He, however, had these one hundred and forty-nine Brown Leghorns in one flock. The house was too small. This he himself knew, and he assured me that he was going to remedy this fault. He gave them, however, the best of care. This gentleman was on the programme to open the discussion on my paper, which he did in an able manner. At the close of his remarks he was asked: "If you had to give up either your dairy herd or your poultry, and depend upon one or the other for a living, which would you part with?" Without the least hesitation, he answered: "I would dispose of my cattle."

Now, readers, does not this speak volumes? To those of you who have not given attention to poultry, I would once more say that there is nothing on your farm that will pay you anything like the profit on the money invested that your fowls will, provided you give them the care and attention which they deserve; and, surely, in these days of low prices for farm products, anything that make a profit should be cultivated to the utmost extent.

The temperature accepted for incubation is 103 degrees. As a rule, when a thermometer is placed under the wings of a setting hen, the bulb of the thermometer touching the skin, and the wings closed on it, the temperature has been found to vary from 100° to 109° Fahrenheit, according to the season and temperature of the day, also the location. I have found that about 104° F. is the usual temperature for a broody hen,



"BRUTUS" THE WINNING BROWN LEGHORN COCKEREL AT THE WORLD'S FAIR BRED BY C. E. HOWELL, ELMIRA, N. Y.

For FARMING.

### A Setting Hen.

As spring is near approaching, and it soon will be the duty of fancier, farmer, and villager interested in the feathered race to prepare for the production of his young stock for 1897, I will set forth my mode of incubation and my methods, which, I believe, are according to nature's plans.

although I have tried a capon, and found one to register 104° on a hot summer day. The egg being on an average two inches thick, and only a small part of it touching the hen, the egg is, consequently, heated by diffusion. The top of the egg is hotter than the lower portion, and the weather, kind of nest, and conditions may make a wide difference between the top of the egg, touching the hen, and the nest, which is con-

stantly cooling the egg at the bottom. This shows that there should be no draughts under the hen. If there are, the eggs will be cooled too rapidly below, and yet must be warmed from above. If the eggs are fertile, after ten days of incubation they will of themselves contain much animal heat, and would soon be overheated if the hen did not leave her nest.

In watching the hen in her incubation, she will often rise and allow a passage of air under her, causing a lowering of the temperature. This nature teaches her, or instinct gives her that knowledge, that constant contact of the body with the egg produces too great a heat for proper incubation. The hen, if left alone in her glory, will



A Prize-Winning Buff Cochin Pullet.  
Owned by Geo. G. McCormack, London, Ont.

keep her eggs at an even temperature of 103° F., without regard to her own temperature. Moisture is avoided by her, as it causes loss of heat through rapid evaporation. When the hen is at liberty and becomes broody, she seeks a place on the ground, because such a place is cool, and not because it is damp, as the majority suppose. During the season of incubation I have a run six feet wide and four feet high in front and three in the rear, and 100 feet long. This is covered with rough lumber and tar paper, making a protection from rain, also from the rays of the sun. This run is built of lath, and divided into pens four feet long. In each pen is a box about two feet by eighteen inches, filled with road dust, sul-

phur, and insect-powder, which is a great destroyer of lice. There is also a drinking fountain and feed pan in each pen. I constantly feed corn to broody hens. I always feed every morning; then, when a hen comes off, food and water are ready for her, and not devoured by marauders. She drinks at will and feeds and returns. In the rear of these pens is a small house 2x4 feet long and two feet high. In this house is a small box without any bottom, resting on the mother earth, and filled to within about four inches of the top with solid earth. On this is placed some fine, smooth straw. I am careful about the condition of the straw, for the hen's bare skin often comes in contact with it.

This comes as near to nature as I can contrive; at the same time your hen is in confinement, will not be bothered by intruders, and will, if left alone, hatch a large percentage of fertile eggs. In building your small house have a small opening in front, with a cloth tacked over it just the size of the hole, and have at your rear end a door, so that when the hen is off you can take and dust the eggs with powder, or wash any broken ones. If readers of FARMING will try this Yankee plan they will find the raising of chickens an easy matter, when they have thirty-five to forty hens sitting, the same as I have, during the setting season.

S. CHAMPION.

Cass City, Mich.

[This was unavoidably crowded out of our March issue. The columns of FARMING are open to all, whether "Yankee" or "Canuck," and I shall be glad to have the experience of anyone. —ED.]

For FARMING.

### A Farmer's Experience.

I read and hear the opinions of many as to which is the best breed of hens to keep; some think one, some another; but most say, keep purebred stock. Six years ago I got three purebred cocks—one Plymouth Rock, one Langshan, and one Partridge Cochin—and some pullets of each breed. They all ran together. Every two years I killed off the old male birds, keeping the largest and best looking from among the young ones, also the best pullets every year, killing off the old ones and retaining sixty hens. Those kept are black and Plymouth Rock in color. The black ones began to lay first. I got twelve eggs between Christmas and the New Year, and five eggs a day until January 14th. Since then they have laid fifty-one dozen up to March 10th.

I feed wheat tailings in the morning, a few pulped turnips every few days, and peas at night.



I keep a dust bath and grit always in the henhouse, and give warm water in very cold weather. I had only a very slight frost once or twice in the henhouse during the winter. I was thinking that if I had taken the pains Mr. Cox did (as described in your last issue), the poultry would have paid me for the extra trouble. My henhouse is under the barn, in size 12 x 26 feet. There is a stone wall on the south and west sides, with a window in each wall. I made a platform four feet high in the centre of the house; upon this platform I put the roost, one foot high; under the platform are the nests, with a board in front eight inches wide for the hens to walk on. The hens come out into a large, well-lighted shed under the barn, with a stone wall around, except where there is an opening of ten feet to let the cattle in to drink, as the water tank is in this shed.

The hens can get exercise without going into the snow. My hens pay us very well, the eggs are of a good size, and we have large chickens for the table. After killing a number last fall and early in the winter, for home use, I shut up seventy roosters to fatten for market. These brought from seventy cents to one dollar per pair. Now, perhaps purebreds would have done better. I would like to hear from someone who has had experience with such. I have mated my hens with purebred Plymouth Rocks this winter.

J. H. JULL.

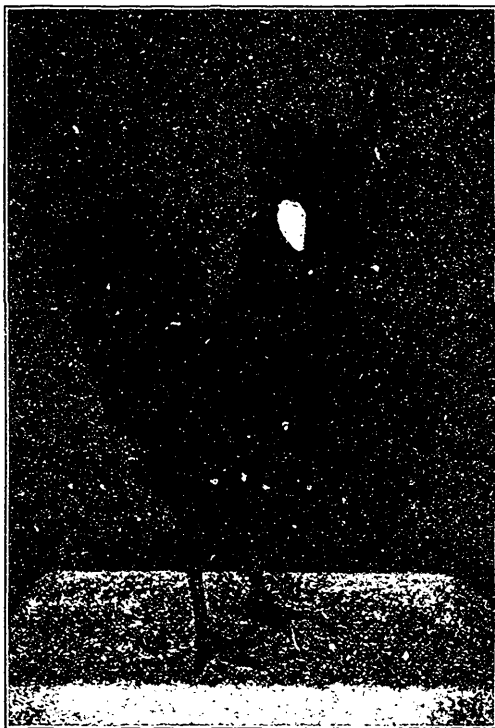
Mt. Vernon, Ont.

[Thanks for your experience. I will try to correct some mistakes you are making. In the first place, you should not run three males of different breeds with your flock. They should all

be of the same variety. Then what do you gain by letting your males run with your hens at a time when you are not wishing to breed? Hens will lay about seventeen per cent. more eggs when males are not running with them; eggs are of a better flavor when there are no males, and they keep better. Now, perhaps you will ask, "How am I to raise chickens?" I will tell you. Be observant; note which of your birds first commence to lay; which lay the largest eggs; which lay latest in the season. Then, when the breeding season arrives, select your best

layers, place them in a separate pen, and mate them with a thoroughbred male bird. If your object is both flesh and eggs, take a bird suitable for this; if for eggs alone, then take a male bird of a well-known egg-producing strain. Now, what is the result? Mating what you know to be your best all-round fowl, picked from your entire flock, to a thoroughbred male of well-known qualities, is bound to increase the value of their offspring. You should have got more eggs from your flock. The average from January 15th to March 10th is about twelve eggs

per day from sixty hens. You should average at least thirty per day. You would do better if you separated your flock, placing thirty in each compartment. I do not think peas a good egg-producing food. Wheat is far better. Turnips make a splendid vegetable food. If you could try keeping all one breed of males, keeping them separate till the breeding season, and then mating them to the pick of your flock, putting your sixty hens into two compartments, with thirty in each, feeding wheat instead of peas, you would certainly have much better results. You should try to feed a



Front View of Black Minorca Cockerel.  
The property of Mr. T. A. Duff, Toronto.

soft feed every day, using a goodly quantity of cut clover hay. See back numbers of FARMING for articles on clover. If there is any further information that I can give you, write again, and I shall be happy to give you my views. Personally, I believe better results would be obtained from keeping purebred fowls.—ED.]

**Best Food For Broody Hens.**

Although we strongly deprecate the system of giving corn to poultry in the ordinary way, on account of its propensity to create internal fat, yet, for exactly this very reason that it does cause internal fat, we advocate its use for the broody hen. Above all things, we must keep up the heat of the body, and the fatter the fowl is the greater amount of heat does she possess. Two thirds maize, with the other one third made up of barley and dari, is as good a food for this purpose as we know of. A plentiful supply of good, sharp flint grit should always be accessible to the birds.—*Feathered World.*

**Cost of Feeding Fowl.**

During my address at Carleton Place, Ont., under the auspices of the North Lanark Farmers' Institute, I stated that a hen could readily be kept upon a farm at a cost of seventy-five cents a year. Someone in the audience questioned this. At the close of my remarks, Mr. Joseph Yuill, Carleton Place, the well-known Ayrshire breeder, addressed the meeting for a few minutes, and assured the audience that there was money in poultry. He gave his method of feeding seventy hens, and the cost of same, which is as follows:

Two and a half pounds cut clover hay, which is steamed before feeding, at \$8 per ton.....	1 c
Three pounds shorts, which is mixed with clover hay, at \$16 per ton.....	2½c
(The above is fed the first thing in the morning.)	
Five pounds roots, fed at ten o'clock.....	1 c
Five pounds ensilage (corn and leaves only), fed at noon.....	2 c
Five pounds oats, fed at night, at 30c per bush, 4c meat scraps ½c.....	4½c
Cost of feeding seventy hens for one day.....	11 c
Cost of feeding seventy hens for 365 days, 11c × 365 = \$40.15.	
Cost of feeding one hen for 365 days, \$40.15 ÷ 70 = 57½c.	

You will thus see that Mr. Yuill feeds his hens, based on winter cost, for 57½c. each per year. He stated that, taking the year round, he did not think the cost would be more than 50c.

Mr. Yuill informed me that his fowl were the poorest housed of anything on his farm, yet during the month of January they sold \$8.35 worth of eggs, in addition to using all they wanted in the house. He stated that it was his intention to build a commodious and suitable poultry house this summer. It is men and women of the stamp of Mr. and Mrs. Yuill who make a success of everything they undertake.

**White Eggs and Brown.**

The report of Mr. Jaffa, agricultural chemist at the State University, shows conclusively that "eggs is eggs," says the *Rural Press*, and that the old proverb-maker was wiser than many of the modern poultry and culinary experts. The most careful chemical examination was gone into, as the report well shows, and the conclusion is that, summing up all the various points of excellence in eggs which can be found in white eggs and in brown eggs, the totals on the two classes are exactly equal. This equality is the more wonderful when one thinks by what searching inquiry it was demonstrated.

But though white and brown eggs are exactly alike in chemical contents and nutritive values, there is a valuable difference in eggs, though it be not in color. This was shown clearly in the *Rural* of December 7th by a Santa Cruz correspondent, under the head "Big Eggs, not White Eggs."

Big eggs will bring the big money if they are graded by themselves and marketed in handsome cleanliness.

It is sometimes claimed that a man sells less weight to the dozen when he produces small eggs, and that is, of course, true, but he gets less money. He probably loses more in price than he saves in weight—if he saves anything, which is extremely doubtful. For it has not been shown that small egg fowls are any more frequent depositors, nor that the small egg is any less in wear and tear on the hen, or on the ranch, or on the feed bin. It is often claimed that eggs should be sold by weight, which might be a good thing, except that it is less convenient, and that perhaps the large egg producer gets now all that he could enjoy by weight selling, and perhaps more. And then weight would not be a full test of the egg. It would require a dynamometer to determine the strength of some of them.

But the lesson of the whole vexed question is plain. It is to grade eggs according to size and according to color, to prevent them from getting in the least stained, and to be absolutely and religiously sure that they are fresh. A poultry ranch which systematically markets such eggs will get fame and coin for it.

### A Poultry House for the Farmer.

R. E. W., Perth, Ont. : In regard to the poultry house, a cut of which appeared in the February number of FARMING, I would like to know if you have a passage running the length of your house. If so, on which side is it, and what is the width?

ANS.—There is no passageway in the house. The compartments are entered by means of a door with spring hinges, which closes after you. The house was built with a view to economy. If you were in a position to have a passageway, it would, of course, be preferable; but this would entail some extra expense. A good thing when there is no passageway is that you are compelled to pass through the pens where the fowl are, and this tames them, which, in my opinion, is important. It is much nicer to see fowl quiet than to have them fly all over when the pen is entered. If you were building a poultry house with a passage in it, I would reverse the view of it; that is, have the lower side (in which the windows should be placed) facing the south, and the passage in the higher or north side. Be sure to make it wide enough, so that you can take a wheelbarrow through it.

[For the information of those who are interested in the building, I might say that I have not

had a comb as much as touched with frost this winter. You will thus see that it is warm. My Minorcas' combs were never even blackened at the tips.—ED.]

### Sundry Queries

Subscriber, Stanton, Ont. : (1) What is good to keep lice out of henhouses in the spring? They come and stay until fall. What is good for killing them, and keeping the henhouse clear of them?

(2) What kind of hens are the hardest and best layers?

(3) What kind of food is best for making geese lay?

(4) What kind of a building should they be kept in while sitting?

(5) Where should geese eggs and duck eggs be kept while both are laying?

ANS.—(1) If your fowl have lice on them, remove all from your building; dust each and every one carefully with Persian Insect Powder, being careful to put a liberal supply under the wings and around the vents. Then take some hot lime, to every gallon of which add three table-spoonfuls of carbolic acid, and whitewash the



Side View of Black Minorca Cockerel.  
The property of Mr. T. A. Duff, Toronto.

house thoroughly. This can be done as well with a large syringe (such as is used for spraying) as with a brush. Run your coal oil can along the roosts. Remove all straw from nests, and burn; pour some coal oil into the boxes, and put in fresh straw. This should kill all vermin. To keep the house-clear of lice, take your sprayer and spray every nook and corner twice a month in summer with carbolic acid and water, using two table-spoonfuls of crude carbolic acid to each gallon of water. Once a month in winter will suffice. Crude carbolic acid is cheaper than the refined

and answers for spraying, but use refined in the whitewash.

(2) For all-round fowl I prefer Plymouth Rocks, Wyandottes, and Javas.

(3) I have never kept geese, but plenty of raw vegetable food, a little grain, and fresh water should suffice. I may have more to say on this later.

(4) Any warm building which is quiet will do.

(5) Keep eggs at about sixty degrees, and turn every day.

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### Fresh Eggs.

A., Muskoka: I wish to gain a little more information on the article, "Fresh-Laid Eggs," published in the January number of FARMING.

(1) The writer states there that he obtained forty and forty-five cents per dozen for fresh laid eggs, I presume during the month of December. How long was he able to obtain such figures? And would it be possible for anyone from this distance (Muskoka) to ship eggs, and get such figures, or anything near them, for guaranteed new-laid eggs? I see the prices quoted at farmers' wagons, as given in the *Mail and Empire*, run from twenty to twenty-five cents per dozen. Am able to get twenty-five cents per dozen in our village from private customers for a few dozen every week, but wished to learn whether it would pay to extend the business and ship to Toronto regularly.

(2) Also would you please give the best diet for ducks, so that eggs may be fertile and hatch out strong ducks? I have not been successful the last two seasons in rearing or hatching ducks; have set the eggs under hens.

(3) Have had some of our hens go lame and lose the use of their legs. Would it be paralysis from overlaying, and could you give a remedy?

(4) Is there any sale in Toronto for rabbits of from three and a half to five pounds weight, dressed, and at what price?

ANS.—(1) The figures of forty and forty-five cents were obtained during December, January, and part of February from dealers for absolutely fresh laid eggs. If you could ship eggs here during these months which would average seven and a half to the pound, not over ten days old, unfertile, of a good flavor, and marketed clean, you could average at least thirty-five cents for them. The eggs which are sold at farmers' wagons as fresh are not fresh, and everyone knows it. At present there is absolutely no confidence in buying eggs. Eggs which are sold as fresh turn out to be of a bad flavor, and have "held" eggs mixed with them. If you could place eggs upon the market which would answer the above requirements, confidence would soon be placed in you, and your goods would be in demand. The prices quoted in the *Mail and Empire* are for "so-called" fresh eggs, but such eggs cannot be relied upon. I would urge upon you the impor-

ance of stamping the date upon the eggs, to which I previously referred in these columns.

(2) Keep them warm and comfortable; give plenty of green feed in as great variety as possible. Morning and evening give as much soft feed as they will eat. Let this feed consist of twenty-five per cent. of cooked vegetables, ten per cent. of its meat scraps, the balance bran and meal in equal parts. The best kind of meal is chopped corn, on account of its containing so much starch; but where it is not to hand, chopped oats, wheat, barley, shorts, etc., will answer. Supply them with crushed oyster shells and gravel. Let the water be fresh and pure. Give plenty of exercise.

(3) Cannot answer without more explicit particulars.

(4) Yes, prices run from twenty-five to thirty-five cents per pair.

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### Origin of Different Breeds.

Sarawak, Cheapside, Ont.: Would it be possible to give a description of some of the different breeds of poultry and their origin, such as Rocks, Wyandottes, and some of the Games? The September number of FARMING contains a description of Minorcas which, I think, would fill the bill.

ANS.—We shall endeavor to meet your wishes. If possible, we will give a description of Barred Plymouth Rocks in the May issue, and endeavor to illustrate the same.

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### Drop Boards.

M. & J., Crosswell, Mich.: How wide and how long is the dropping board over the nests given in the editor's poultry house illustrated in the February number of FARMING, and how many fowls will the roosts accommodate?

ANS.—They can be made of any length. If two roosts are used, as in the sketch in the February issue, the drop board should be five feet wide and twelve feet long. This will comfortably accommodate thirty-five fowl. If you only require one roost, a drop board three feet wide is ample.

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### Barred Plymouth Rocks.

D. C., Nottawa, Ont.: I would like you to describe some of the principal points to be found in Barred Plymouth Rocks. I have bought eggs from different breeders. The cockerel hatched from one setting had large white ear-lobes. I showed him at the principal fairs in the county. The judge disqualified him.

ANS.—If possible, we will give some of the points of the Barred Plymouth Rocks in our May issue, and will endeavor to illustrate the breed.

The American standard of perfection gives permanent white in the ear-lobes as a disqualification. The judge was quite justified in disqualifying your cockerel.



### Cutting Fertility Cheaply.

If fertility has to be got for our farms, let us make it in preference so far as we can. This, in the end, is about the best way in which it can be obtained. How can it be made, asks one? By feeding some kind or kinds of live stock. If a farmer has to buy fertility, there is certainly no other way in which he can get it so cheaply as by making it in the winter season. With the low prices for grain in recent years a farmer can very nearly make the increase in weight pay for the food if he does the work properly, to say nothing of the advance in the selling price over the buying price for every pound of the original weight of the animals. This has been proved again and again. But few farmers are content to feed animals for the manurial profit; yet, if they have to buy the manure in the commercial mart in any form, they are well paid for their work if they get the manure. But good buying and selling, and good feeding, will usually bring more to them than the manurial value, and when it does they are handsomely paid.

### A Small Plot of Alfalfa.

A small plot of alfalfa near the stables is a great source of comfort to the stockman who wants soiling food in the summer season. On some soils it will not grow, but on others it does well. The farmer must determine for himself whether he shall have a plot of it or not. If he tries a small piece, say, one-fourth to half an acre, and finds that it does well with him, it will be easy to arrange to have an abundant supply for soiling uses from year to year.

It has been common to state that sandy soils, and sandy subsoils, were best adapted to alfalfa. But this would seem to be true only in places where the rainfall is very abundant, or where the ground water is not too far distant, as in some of the bottom lands along the rivers of the west. It is at least questionable if moderately open clay subsoils are not better adapted to alfalfa in Ontario than sandy subsoils.

The ground on which alfalfa is sown should be clean. A hoed crop the previous year, well cared for, would be a good preparation for alfalfa. It may be sown by itself at the rate of 15 to 18 pounds of seed per acre, or it may be sown with a nurse crop of thin seeding. There will be no crop the first year, but after that there should be two or three cuttings every season. The strong points about alfalfa are that it lives from year to year, that it furnishes excellent soiling food, and that it is good for the land. Try a little plot for the uses named. As a field crop it will never supplant red clover in Ontario, but it may be found very useful as a soiling crop.

### Varieties of Spring Wheat.

The spring wheat crop in Ontario is not as important as some of the other grain crops grown, but we do well to consider that some parts of the province are well adapted to the growing of spring wheat. And in some of these localities winter wheat will not grow very successfully. Spring wheat is wanted for bread, and it is wanted for the straw which it furnishes for litter. It is also wanted on the principle that a variety of crops is safer than a reliance on one crop, or on a limited number of the same.

In growing spring wheat, the question of variety is important as well as in growing other things. But there is one factor which circumscribes somewhat the choice of varieties in spring wheat which does not apply to the same extent in the choice of other crops. The reference here is to the necessity of having due regard to milling properties as well as to the yields produced.

The Herison bearded, imported into central Ontario in 1889 from France, is a good yielding variety; in fact, one of the best; but it does not seem to stand as high with millers as some of the other sorts; and yet it would seem to possess at least fair milling properties. Pringle's Champion, imported from Germany, is a very good yielding sort, and it is prized for milling uses. Two other varieties, viz., the Bart Trimenia, imported from

Greece, and the Wild Goose, yield well. Both are hardy, and both are vigorous growers. The grain of both, however, should rather be grown as food for stock than for making bread. The Red Fern and Red Fyfe are also old and tried varieties, which seem well adapted to various localities. Hayne's Blue Stem, popular in the west, also promises to do well further east.

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### Varieties of Barley.

Leaves have their time to grow and fall, and likewise some varieties of barley have their time of boom and inflation. So it was with the famous two-rowed Carter's Prize Prolific barley. Where is it now, notwithstanding the booming given to it some years ago? The moral from the story of this barley in Canada would seem to be, Make haste slowly.

For all-round purposes, we have probably got nothing superior to the common six-rowed, which has been grown for many years in the country. It is still the favorite sort with maltsters, because of its color, and for other reasons. The Mand-scheuri barley, however, is a great yielder in all parts of Ontario. It is a vigorous grower. It is strong in the straw, and produces a large amount of the same. It has long heads and plump grains, and seems to have power to withstand well certain adverse conditions of weather, as, for instance, the hot waves which sometimes cause a shrinking of the grain in other varieties when they are maturing. Until some other sort is introduced which proves superior, the farmer who wants large yields of grain for food uses need not look further, if he has secured the genuine Mand-scheuri. The Black Hulless barley is, however, not to be despised.

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### Varieties of Oats.

In this stock-producing country we do well to give every attention to the growing of this much-abused crop. It is much abused for the reason that it is usually sown on land that is not considered in good enough heart to produce a crop of wheat or barley. For this reason we have not yet learned how an oat crop here will compare with a wheat crop under similar conditions. The plowman knows full well the value of plenty of oats for his horses. The dairymaid knows their worth for her cows. The shepherd is well aware of their value for sheep. And the swine-breeder is cognizant of their worth for brood sows. Let us aim, therefore, one and all, to try to raise a big crop of oats for 1896, and, in doing so, let us have a due regard to varieties.

There are many varieties of oats from which to choose. Of these, none perhaps can be more fully relied on throughout Ontario than the Siberian. It is a strong-growing variety, and is well able to stand erect. It is white in color, and the grain is usually plump and well formed. The Po'and White is also a stand-by. It has given an excellent account of itself in nearly all parts of the province. The Bavarian, introduced into Canada from the State of New York, has been popular now for many years in various parts of the province. All these varieties may be pretty certainly relied on in nearly all sections of the province where the soils are average in quality.

The Joannette Black, imported from France in 1889, has made a good record for itself wherever tried on good soil. On poor soil it would not produce enough of straw. It is a variety which stools well, and this fact must be recognized in sowing it. Two-thirds of the seed of the Joannette will make as thick a stand of oats as the full quantity of the seed of the other varieties. The straw of this variety, owing to its fineness, makes good fodder. The Surprise is among the more promising of the new kinds grown. The Negro Wonder, popular in the Western States, also gives a good account of itself here.

Oats are frequently sown by dairymen to furnish food for cows in the form of oat hay. The fine-growing varieties are the best adapted to this use, and those who grow them for that purpose should govern themselves accordingly.

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### Varieties of Peas.

The pea crop is one of great importance. We cannot estimate its significance by the number of bushels grown and the tons of straw that are produced for feed. There is a third quantity to be taken into the account, viz., the nitrogen that is brought to the soil by the peas as they grow. This factor cannot be accurately estimated, but it is now recognized as a greatly important one. It is assigned, and justly so, as one of the reasons why we should give much attention to the growing of peas. But we do well to remember at the same time that there is much difference in the yields obtained from varieties. In 1894, the co-operative tests in Ontario resulted as follows: The three varieties which gave the highest yields were the Prussian Blue, the Canadian Beauty, and the Fall White Marrowfat. The respective average yields obtained from these were 27.9, 27.1, and 26.8 bushels per acre, and the yields of straw were not far different, nor was there much difference in the average time of maturing. The Prussian Blue is one of the most hardy and vigor-

ous of the varieties now grown in this province. The Canadian Beauty is a handsome pea of rather more than medium color, and it is large in size. The Fall White Marrowfat is of large size, and it is a vigorous grower.

The Early Britain, White Wonder, and Mummy are also good, vigorous growers and heavy yielders. The first and second of these varieties were imported by Prof. Shaw to the Experimental Farm, the former from Britain and the latter from New Zealand. The brownish color and the somewhat irregular shape of the latter will be against their sale in the market, but they will not, of course, interfere with the good yielding qualities of this excellent pea. The White Wonder is attractive in appearance. It is a good grower, and also a good yielder. The straw of the Mummy is coarse, and the pods are much prone to cluster about the tops of the vines, but this variety yields well.

The Centennial White, Cleveland's Advance, and the Golden Vine all give a good account of themselves. The two varieties first named are newer introductions, and the last named will be recognized by pea-growers as an old stand-by. The Crown pea is a very good yielder on strong lands, but on soils deficient in fertility it does not produce enough straw.

In view of the importance of the pea crop, it should not be given a secondary place. Your peas may be sown on poorer land than some other crops, and they may be sown later, but they are well worthy of care and attention. Better returns will result from the careful preparation of the land. Put the peas in deeply, but less deeply on stiff clays. Keep them from being injured by excessive moisture, and in an average season they will not disappoint the expectations of the grower.

### Clover Seed Without a Nurse Crop.

In some of the papers of the United States writers high authority are advocating sowing clover without a nurse crop. They base the advice upon the fact that when clover is so grown a "catch" of seed is secured in nearly all instances. So far they are correct. But the important question comes up in the meantime, Can we afford to grow clover on land which gives us no crop for one year? I would not care to farm in that way, more especially in Ontario. It may be that on prairie soils, in a season of good growth, a crop of clover may be cut the same year from seed sown in the spring. But such a result can seldom be looked for in Ontario, with its stiffer and heavier soil.

In our country, so happily favored with moist-

ure, we do not often fail to get a catch of seed any season, providing we use due care in sowing the seed. Winter wheat, winter rye, and barley seem to furnish the more suitable nurse crops for clover. Spring wheat would do as well as barley were it not for the fact that it shades the young plants more, and it is not quite so early. Oats furnish too much shade, and, in a dry season, they take too much moisture out of the soil. Peas also furnish too much shade. On winter rye and winter wheat one of the two modes of sowing the seed should be adopted. If the ground assumes a honeycombed condition in the spring when the frost is going out, the clover can then be sown with the hope that a catch of the seed can almost certainly be depended on. But if the ground does not assume the condition named, and sometimes it does not, it would be better to defer sowing the seed until it can be harrowed.

It sometimes happens that the seed starts well, and then succumbs to the dry weather of mid-summer. Now, if the nurse crop could be removed before it reaches maturity, such a result would probably be prevented. As the crop nears maturity it takes up rapidly the maturity in the soil, and in so doing robs the young clover plants. This, in conjunction with the dense shade, makes these plants tender and weak; hence, when the matured crop is harvested, the hot rays of the sun kill the clover plants in the absence of rain.

Now, this result may be avoided, and in the following manner: Sow the clover with some nurse crop grown for hay. Oats, probably, would answer the purpose best, owing to their suitability for hay. They should be sown thinly. One bushel of seed per acre would suffice. If the weather should become dry, the oats could be cut as soon as the heads appear, and they could be cut some distance from the ground. The clover plants would thus have opportunity to gather vigor before the trying portion of the season had come. In this way a crop would be secured, and also a catch of clover.

Those who sow a light seeding of clover on all their grain crops act wisely. During some seasons they may lose their seed, but in other seasons they are abundantly repaid. In an average of seasons things are so evened that the advantage lies with those who follow the practice. They are thus enabled to keep a field in reserve, if they desire to do so, to meet the emergency brought about by more or less of failure to obtain a stand of clover in very dry years. If the season should prove wet, the reserve field may be devoted to some good use. Beware, then, of the practice of sowing clover alone, that is,

without any nurse crop. It may be a sure way of getting a catch of clover, but it will also prove a sure way of getting a growth of weeds. A nurse crop of hay is worth more than a nurse crop of weeds.

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### Take Care of the Pastures.

An ideal pasture field is not one that simply furnishes grass abundantly and in variety. Its value is greatly enhanced by the presence of an abundance of shade and water. Sometimes we cannot have the shade and water, but we may have them oftentimes when we do not, if we only look ahead. If we have a field in which runs a winter rivulet, but which ordinarily grows dry in summer, it may be that a little labor early each season would so keep back the water that it could be utilized with much advantage in the summer season. Such is the character of the stream shown in the engraving on the next page. Sometimes objections could be found to the adoption of the proposed plan, as when, for instance, the character of the soil was such that the water would produce mire from the tramping of the live stock. And other objections may be raised, but for many kinds of stock there are instances not a few where such a volume of water would be helpful in the summer.

The shade, if absent, can be grown. That, of course, would take time. A clump or grove of trees could be planted in a suitable place and protected. In a very few years there would be shade. Where the requisites of water and shade can be secured in connection with pastures, it is certainly well worth the effort to try to have them.

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### Farming in the Northwestern States.

Some farms are well tilled; but these are the exception. As a rule, the land-holders have far more land than they ought to have to enable them to do good farming. They attempt to go over entirely too much ground; hence, the farms are not well tilled. The average crop returns would be very much increased if the farms were cultivated more generally, as they ought to be. In fact, under a careful system of tillage enormous crops would be raised in favorable years; although there will always be more of variation in the yields of the different seasons than in Ontario, since there is more of variation in the seasons.

Growing wheat has been the chief occupation of the farmers in the past; hence, many of them

know but little about the production of other crops. On many farms the attempt has not yet been made to grow clover. Peas have never been sown, no corn has been planted, and even timothy has not been raised; and, in very many instances, the growing of root crops does not seem to have entered the minds of the people. And when peas have been grown they have more commonly been harvested in the field by turning swine in upon them; hence, there are few farmers, indeed, in all the Northwest who can give an accurate statement as to the yield of an acre of peas.

And yet farming is decidedly progressive. Knowledge is being scattered on every hand. The farmers' institutes are carrying much knowledge to the people, and they are decidedly in a receptive mood to receive such teaching because of the low prices obtained for wheat during the recent past. The agricultural papers are quite abreast of the times. The agricultural schools are among the best, both in equipment and in the character of the work done, and in the attendance of students Minnesota leads in America.

One of the surest evidences of a progressive agriculture is the increase in the price of land. In south eastern Minnesota farms will sell for \$40 and \$50 an acre; in other parts for \$20 to \$25. And in yet other places it can be bought all the way down to \$5 an acre, according to the location. Good land can be obtained in the newer sections for \$5 per acre, and even for a less sum, the fertility of which is far ahead of average land in Ontario. The opportunity, then, for diligent and intelligent men to succeed in farming in this western world is decidedly bright. There are yet many sections where wild land can be got for the cutting, and where thousands of acres of pasture are left unearned every year.

The production of this western land will one day surprise the world. When Minnesota comes to be tilled to the utmost of her capacity she will produce probably ten times as much as at the present time. The reader may look upon the statement just made as extravagant, but it will not appear so if we call to mind that out of the fifty-three millions of acres of land surface in Minnesota, not more than from 7,000,000 to 9,000,000 have ever been under the plough. And of the part that has been ploughed, much of it has been cultivated after the most superficial manner. And in Dakota the fertile soils are like the seas in extent. It is true that in the western Dakotas, owing to dry weather in recent years, some settlers have gone to other parts. But it is also true that one day the very lands which those





An Ideal Posture.

persons leave abandoned will be tilled by settled communities. They will have to be farmed, however, on an entirely different system from that pursued by the people who failed to make a success of agriculture in those regions. Intelligence with the aid of irrigation will raise up prosperous communities in many of those abandoned situations. The idea of irrigation may not be attractive in this age, when much of the land is still unoccupied, but its day is coming all the same. It renders the one who practices it the master of the situation. In a land where the soil is so marvelously responsive as it is on those western plains, where moisture can be applied at will, the earth produces by handfuls. The visitations of insect pests are, on the whole, no greater than in Canada. Grasshoppers, in former years, gave great trouble. But their ravages will be more and more circumscribed with the tilling of the land. Chinch bugs are a far greater enemy to the wheat grower than grasshoppers, but in sections where mixed farming is carried on, chinch bugs do much less harm than in areas devoted to the growth of wheat only.

THOS. SHAW.

University Experimental Station, St. Anthony Park, Minn.

FOR FARMING.

### Clover as a Subsoiler.

As it will soon be time to commence sowing clover, we hope that the farmers who have been converted to the doctrine of clover as an aid to improved agriculture have already shown their faith by their works, and let us hope also that those who were converted long since have grown in grace year by year, and learned some of the many new ideas which thoughtful men are learning each year.

#### STUDY THE CLOVER PLANT.

It will pay any farmer to note more accurately than he has been in the habit of doing the peculiar habits of the clover plant—its long tap root, its ability to stand dry weather when once established, its tendency in loose soils before it is well rooted, the little nodules upon its roots through which it gathers nitrogen from the air, and especially its efficiency as a subsoiler. Every farmer understands that a hard pan under his farm means grief to him and his, either in a dry season or wet. By hard pan we mean any impervious subsoil, whether the result of layers, or what is technically called hard pan, or any heavy clay through which the water percolates but slowly. To have a first-class soil this must be broken up, but how to do it cheaply and effectively has been the trouble.

Subsoil plows have been invented, tried for a few years, and, for the most part, abandoned. Deep plowing has been tried, with the result of a crop failure for one or two years, or until the lower soil had been assimilated by exposure to the rain and frost, or by heavy manuring.

#### THE CHEAPEST SUBSOILER.

The best, and, at the same time, the cheapest subsoiler we know of, is clover roots. The hard pan may be so near the surface that clover will not grow; but in ordinary farming sections, where there is sufficient rainfall to grow clover, there is no subsoiler as cheap and as effective as clover roots.

The clover root bores down by night as well as day. The silent force which honeycombs the earth cannot be measured, but its work is none the less effective. It makes a place for itself in life, and in death it makes a place for air—that most perfect instrument in breaking up the impervious subsoil.

Not only that, but it fertilizes the air space, and thus tempts downward the roots of other plants and grasses. What subsoil plan runs so easily and is so cheap in its construction and efficient in its operations? All it needs is clover seed sown early and covered in time.

#### CLOVER THE BEST SUBSOIL PLOW.

Watch this process going on this summer; examine the clover roots a month old, two months, six months, and eighteen months old. Dig down and see for yourself how deep they go. Find out in what kind of soil they go deepest. Compare the expense of this with that of the subsoil plow and the labor, and remember that the subsoil plow can go at best but a few inches deep, while the clover plant reaches down one, two, and three feet.

G. F. MARSH.

### Sound and Buggy Peas.

G. Gilbert, Dunnville, Ont.: Some seasons the bugs give considerable trouble in growing a crop of peas. Now, can FARMING tell us what effect the work of the bugs will have on the next crop, if what are termed "buggy peas" are sown?

ANS.—The crop will be injured, and largely in proportion to the extent to which the seed has been eaten. Some of the buggy peas will grow, but not all of them, and many of those which do germinate will send up a feeble stalk. Those who sow peas should try to get sound seed. With a good fanning mill many of the buggy peas can be blown out from the seed by using a strong wind when preparing the seed for sowing.

### Sowing Rape Seed Early.

J. Ratcliffe, Oshawa: Will it answer to sow rape seed in the spring as soon as the ground is dry?

ANS.—Certainly; but when sown thus early it should be eaten off two or three times in the season. When pastured, it will grow up again much more quickly and much more vigorously if it is not eaten off too near the ground. One principal reason for preferring to sow rape late rather than early is found in the abundance of grass in the early part of the season.

### Large, Medium, or Small Seed.

J. Jamieson, Harriston, Ont.: Has large seed grain any marked advantage over medium or even small seed, providing the grains are well filled in each instance?

ANS.—Large seed is to be preferred in every instance, on the principle of the survival of the fittest. It may be that large seed would not have much advantage over medium seed, but it would certainly be preferable to small seed. In trials conducted for the purpose, the superiority of large seed over small has been repeatedly demonstrated.

### Winter Oats.

Farmer, Niagara, Ont.: Will winter oats grow in Ontario? They are frequently referred to in certain of the United States papers. Have they ever been tried in this country?

ANS.—Yes. They have been tried again and again within the last twenty years, but, so far as we are aware, without success. Our winters are too severe for them. Usually, the attempts to grow them have ended in complete failure. Before winter oats can be made a success some hardier varieties will have to be introduced than any that have yet been tried.

### Summer Fallow or Clover.

Subscriber, Ancaster: Will summer fallow or a clover crop furnish the better preparation for a crop of wheat?

ANS.—The clover crop will, even though the first cutting of the season should be taken for hay. The bare fallow does not add any fertility to the land. On the other hand, if the season is wet, fertility will be lost by water leaching down through the soil without any crop on it. Nitrates will thus be carried away. Clover will add to the fertility of the land. It will bring plant food from the subsoil, and it will gather it from the air.

It will also give the land more power to hold moisture, and it will impact it less than the bare fallow would.

### Crops for Prairie Land.

W.H.M., Saginaw, Mich.: What is the best grain or vegetable crop to put in newly plowed bayou or prairie land which is usually overflowed annually?

ANS.—Assuming that the land is overflowed with water in the early spring, the crops grown should be adapted to the needs of the market. Such lands are specially adapted to vegetables. They should grow corn nicely, will grow timothy and alsike clover admirably, and will be first-class for rape. They can also be laid down to pastures of longer or shorter duration, as desired. One objection to them, for growing grain, arises from the fact that they are likely to produce straw that is weak, and, if the crop should lodge in consequence, the grain would not become plump, as it would under other conditions.

### Grain Drilled or Broadcasted.

L.B., Strathroy, Ont.: Has drilling grain any advantages over broadcasting? If so, in what respect is it superior?

ANS.—In any season when grain is drilled a less quantity of the seed will suffice. But in moist seasons, apart from the advantage named, there may not be much difference in the yield from sowing by either method. It is not so, however, in dry years. The drilled grain has then a distinct advantage. When the weather is over-dry at the time of sowing the seed, much of what is broadcasted will perish; whereas, if put in with the drill, it may usually be put down to the moisture, and then it will grow. There is also a saving of labor when the seed is drilled in, as compared with broadcasting the same. As we cannot forecast the character of the season, we should give the preference to drill seeding whenever we can.

### Old Meadow.

W.J.S., Turtle Lake: I have an old meadow which is in poor condition, covered with June grass and ox-eye daisies. It was plowed last fall for the first time in ten years. Was thinking of sowing red clover on it next spring, of running the mower over it in June, and plowing under the second crop. Would you advise me to do this? Or is there a better and cheaper way of restoring it to a better condition?

ANS.—No, I would not advise treating the field as proposed. If the field has not been

plowed for ten years, the grass roots and ox-eye daisy roots should put the land in an excellent condition for growing potatoes, corn, or field roots. The decaying vegetable matter will hold moisture and will feed the crops, and the cultivation will put the ox-eye daisies in tribulation. The ground may then be sown with grain the following spring, and the grain seeded with clover. The clover can then be dealt with as may be deemed expedient. If the land wants enriching, the clover may be plowed under; but if not, it can be cut for hay, unless the daisies prove troublesome. Two cultivated crops in succession should make the daisies scarce.

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### Crimson Clover.

H. M., Deans, Ont. : At how late a period can crimson clover be sown to ensure a crop for hay purposes? At what stage should it be cut? How many pounds per acre are sown? Would covering with a roller be sufficient?

ANS.—Crimson clover is usually sown from July 1st and onward, according to the climate of the country in which it is sown. The first crop is obtained the following spring. In Ontario the winters are usually too cold for this plant. Except when there is plenty of snowfall, it will not stand the cold. This does not imply that, in some parts of the province, it will not occasionally survive; but it certainly cannot be depended on to produce a crop. If sown quite early in the spring it will sometimes produce a fair crop, but to do so the season must be favorable. Taking it all in all, it will not compare with common red clover as a crop for Ontario. If sown alone, from nine to twelve pounds of seed will suffice. The last-mentioned is the most suitable quantity. Covering with a roller would be sufficient in moist weather, but, in dry, a light harrow should be used.

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### Mixing Soils.

Subscriber : (1) Would you advise drawing sand on to heavy clay to make it more porous, more easily worked, keep it from baking, and from drying up in the spring?

(2) Is there any loss of nitrogen in mixing wood ashes with farmyard manure?

ANS.—(1) Drawing sand on heavy clay would, of course, make it porous, and more easily worked. It would also have a tendency to keep it from baking; but it would not enable the clay to retain more moisture. The labor, however, of

drawing sand would be so great, that for ordinary farming it is questionable whether it would pay to apply sand in that way. The plan would answer very well for putting a garden in good shape which contained only clay soil. The cheaper way to secure the benefits which are sought by the writer would be to grow green crops, more especially such as can be grown in the form of catch crops, and plow those under. Such a plan would also increase the power of the soil to retain more moisture.

(2) There would be some loss of nitrogen in mixing wood ashes with farmyard manure in the reduced condition, and the more reduced the manure the greater will be the loss. It is not a good way of using wood ashes. It is far better to apply them directly to the land, and at almost any season of the year, for as soon as they come in contact with the land there is practically but little loss of constituents from that time onward. Potash, the most important ingredient in them, is not usually lost after having come in contact with the soil.

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### Failure of Grass Seeds to Catch.

Subscriber : Why is it so much harder to get a catch of clover and timothy seed now than it used to be?

ANS.—The principal reason why it is more difficult to get a "catch" of clover seeds now than formerly arises from a lack of humus in the soil. The longer the land is worked the less is the humus or vegetable matter which it contains, unless it is frequently manured with farmyard manure, with sod turned under, or with a green crop plowed in. And with the decrease of humus there is an increase of impaction in the land, and a decrease of the power of the soil to hold moisture. The roots of the young grass seeds, therefore, have less power to penetrate the soil for food, and they do not get the moisture which they need. Once restore the original humus to the soil, or its equivalent, and we shall get a catch of grass seeds as in the happy days gone by. The aim should be so to manage our farms that a sod or a green crop of some kind should be turned under every few years—every second, third, or fourth year, if possible. Such farming will be good for crop production of any kind. The clearing away of the forests has also had an important influence in lessening the moisture in the soil by allowing the winds to sweep over it and take the moisture out of it.



To make a success of his business, the dairyman must give strict attention to the little details connected with the feeding and caring for his cows, and also with the preservation of the milk for cheese and butter.

MANY dairy farmers aim to have all mature cows produce on an average one pound of fat per day. To do this, a cow whose milk tests about 4 per cent. fat must give 25 pounds of milk per day; a cow producing 3 per cent. milk must give 33 $\frac{1}{3}$  pounds of milk daily, and one producing a 5 per cent. milk must give 20 pounds per day.

A COW is considered at her best when from five to seven years old, and her period of usefulness will be determined by her constitutional strength, by the system of feeding practised, and by the general treatment which she receives. A cow's power to continue the milking qualities can be very largely cultivated.

THE quality of milk produced by individual cows generally remains fairly uniform through the greater portion of the lactation period, and is not permanently influenced in any marked manner by feed or any external conditions. The quality is generally improved during the last couple of months, when the milk yield decreases more rapidly than before.

THE British Dairy Farmers' Association has proposed the following standards for the respective breeds of cows :

Breeds.	Weight of milk in milking period. Pounds.	Pure butter-fat per day. Pounds.
Shorthorn.....	8,500	1.25
Jersey.....	6,000	1.25
Guernsey.....	6,000	1.25
Ayrshire.....	7,500	1.00
Red Polled.....	7,000	1.00
Kerry and Dexter		
Kerry.....	4,500	0.75
Dutch (Holstein).....	8,500	1.00

The standard for crosses of any of the above will be the mean of the standards for the pure

breeds. No animal is admitted in the "Dairy Cattle Register" whose milk contains less than 12 per cent. of solids at any test.

### How to Keep Up the Quality.

In our last issue we endeavored to emphasize the importance of improving and maintaining the quality of our dairy product. To do this, the company or manufacturer who owns the buildings and plant and who manages the concern, the patron or man who supplies the milk, and the maker or man who converts the milk into butter and cheese, must give particular attention to their respective duties, and not neglect any of the little details of their work. It is only by each one connected with the industry giving strict attention to the little things connected with the business that we can hope to improve upon the quality of our dairy products. The general and broad principles of cheese and butter making cannot be very well improved upon. In fact, it is claimed by many authorities that the general methods of making cheese and butter in Canada are about perfect, and it is difficult to see how they can be improved upon. There is, however, room for further improvement in the quality of our goods before we can attain to the highest pinnacle of success, and this improvement in quality can only be brought about by giving strict attention to the little details connected with the methods we have.

### Summer Feed for Dairy Cows.

Many dairymen fail to make a profit out of their cows by neglecting to provide supplementary food to tide them over the dry season. If cows are allowed to shrink in their milk in the middle of the season they can never be got back to their usual flow in the fall, when feed is more plentiful. Therefore, every patron of a cheese factory should have some succulent feed growing for his cows when the pastures get short. The best method to adopt for this purpose is to grow a mixture of peas and oats for feeding during July and August, after which time the corn will be sufficiently ma-

tured. This mixture should be sown in the proportion of 1 bushel of peas to  $1\frac{1}{2}$  bushels of oats to one acre. Sow  $\frac{1}{4}$  of an acre as early as a piece of ground can be got ready in the spring, and about ten days later another  $\frac{1}{4}$  of an acre, and so on for several sowings. This will enable you to have this green food coming in fresh during the season. The area given above will be sufficient for a herd of ten cows. If any of the mixture should get too dry before being used, it will do for winter fodder, at any rate, and will not be lost.

Corn is a splendid feed for this purpose when well matured, but it is very difficult to get it in this condition in time for feeding during the dry season. Too many have depended on it for the early summer feeding, and have not been satisfied with the results, because their cows only got a lot of watery stuff with very little feeding value in it.

Some advanced dairymen are using and recommend the silo as a means of supplying this summer feed. If a small silo could be built for this purpose, it is really the best and cheapest way of tiding the cows over the dry season. But until our dairymen have more generally adopted the silo as a means of conserving cheap food for winter feeding, there is not much chance of their going into the silo business for summer feeding. The silo is, however, everything considered, the cheapest and best means of providing succulent feed for summer or winter.

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### A Word to the Makers.

On the question of quality our words have been directed chiefly to the patrons, not because we consider the duties of the cheese or butter maker less important, but because the larger number of the readers of this magazine are farmers, and, therefore, producers of milk. A cheesemaker's duties are all important, and upon him will depend very largely the success of the co-operative cheese factory. He is the responsible party in the concern, and, therefore, is compelled to give the best attention to his work, and adhere to the very best methods in manufacturing the milk supplied him into cheese.

As we have not space in this issue to give a detailed account of the best methods to adopt in cheesemaking, we shall merely draw attention to a few points for makers to note at the beginning of the season.

(1) Both the making and curing rooms should be thoroughly cleansed before the season begins. It will add to the appearance if the vats, presses, piping, etc., are given a coat of paint, and the walls, if not painted, are whitewashed. The

engine and utensils for making will be the better for a good rubbing and polishing.

(2) See that the floor of the making-room is solid throughout, and that all the drains are in good working order. Allow no places where filth will accumulate around the factory.

(3) The shelving in the curing-room should be cleaned and all the old grease taken off, and the shelves made fit for holding the new goods. It is a good plan in the spring to fumigate the curing-room, and, in fact, the whole factory, by burning sulphur. This will greatly purify the air, but it should be done long enough before making begins to allow the buildings to be thoroughly aired and the odor of sulphur taken away.

(4) Make arrangements to get the very best supplies for making. It never pays to get inferior furnishings for cheesemaking.

(5) Then get a supply of aprons and suitable clothing for working with the milk, and prepare not only to keep yourself clean and neat during the season, but the factory as well. If the maker does not observe cleanliness regarding himself and his work, he will not be able to give advice to his patrons in regard to the care of milk.

(6) Prepare yourself for making the cheese in the very best way by becoming conversant with the latest and best methods in modern cheesemaking.

(7) Equipped thus, and with an average quality of milk, the maker is not likely to go astray, and the percentage of inferior goods from his factory will not be very large.

(8) Always remember that cheesemaking cannot be carried on successfully in a slipshod fashion, but only by the most careful attention to every detail connected with the process, from the taking in of the milk to the curing of the finished product on the shelves in the curing-room.

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### Cheese Factory Buildings.

The building should be in a good state of repair before the season's work begins, and should be built in a manner suitable for the work to be carried on. Many of the cheese factories now in use were built years ago, and are not at all suited for making cheese according to the latest modern methods. Some have too much ventilation, and others have not enough. Even if a cheese is well made, it cannot be cured to advantage in many of the factory curing-rooms. A curing-room should be built so that the temperature can be kept under control at all seasons of the year. It should be arranged so that a proper ventilation can be had during the summer. If the windows

are fixed so that they can be opened in the evening and closed in the morning, the cool night air can be allowed in during the hot season. Shutters should be provided for every curing-room, and should be closed during the day. There should be proper ventilation through the roof. This can be had by inserting a wooden box about one foot square in the ceiling of the curing-room, and running it above the roof. A good plan is to have a wooden box about the same size connected with the floor of the curing-room, about the centre, and passing underground a few rods before being brought to the surface. This will cause a current of air to pass into the curing-room which will be partially cooled by passing so far underground. Then, again, every curing



**Mr. Henry Wade, Toronto.**

President, Eastern Ontario Dairymen's Association.

room should be made so that it can be readily kept at an even temperature when the weather is cold. The curing-room should be kept perfectly clean when the cheese are on the shelves. It should be scrubbed out regularly during the season, or at least after every shipment is made, in order that the air within may be sweet and pure. Even after a cheese is made and placed in the curing-room it is still susceptible to foul odors, and will take on the taint peculiar to the atmosphere around it while undergoing the curing process. A pure atmosphere will tend to promote the growth of the germ life necessary to the proper curing of cheese.

It hardly seems necessary to impress upon factorymen the importance of having properly

arranged and properly equipped making-rooms. The larger number of the making-rooms are about as unfit for the purpose for which they are intended as many of the curing-rooms are. It is as important that the temperature should be controlled in the making-room as in the curing-room. Many of our factories are totally unfit for making fine cheese in during the early spring or late fall, from the fact that it is practically impossible to keep them at a proper temperature for making fine cheese. Our November and October cheeses are usually considered to be inferior to the September makes. This inferiority is largely due to the fact that many of the making-rooms are unfit for making them properly, and the curing-rooms for curing them after they are made. The milk during these months is rich in quality, and, if no turnips, nor anything that will give a foreign flavor to it, is fed to the cows, it should, if handled under proper conditions, be as capable of producing as good a quality of cheese as the milk produced in September.

The making-room floor should be perfect, and the drainage so arranged that all the wastings will be carried away from the factory, and not allowed to drip through the floor and soak into the soil beneath. Before beginning in the spring the floors should be repaired, and made so that no stench pools will gather under the buildings. All making-rooms should be built without any chinks or openings in the walls other than windows and doors, and so that, with an ordinary stove, they can be sufficiently heated during cold weather, and made so that cheese can be made in the very best way at all seasons of the year. In many of our factories the maker should not be held responsible for the quality of the cheese made, as the buildings and the surroundings are such as would prevent the making of really fine cheese. What we have said in reference to cheese factories will apply to creameries also. In fact, dairymen should be even more particular about buildings for buttermaking.

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### Eastern Ontario Dairymen's Association.

The rapid strides made in the dairy industry and the high reputation of the cheese of the eastern section of Ontario have been due to the efforts put forth by the Eastern Dairymen's Association. The information imparted at its annual conventions, where the best-informed men upon dairy subjects of both Canada and the United States are employed to give the public the benefit of their researches, together with the system of instruction and inspection carried out

under the supervision of this association, has been the means of placing the dairy industry of Eastern Ontario upon a secure basis, and of making the quality of the cheese second to none.

The first Dairymen's Association for Ontario was established in the year 1867, and incorporated in the year 1873; and in the year 1874 received its first grant from the Provincial Government. In the year 1877 the work of the association had so increased, and the growth of the industry in the east had been so marvellous, that leading dairymen thought it advisable to divide the province and have two associations, the Eastern taking charge of the work from Toronto east.



Mr. J. R. Dargavel.  
Director, Eastern Ontario Dairymen's Association.

The Ontario Government, recognizing the importance of the work to be done, made grants to the Eastern Association, which, in time, were increased, and of which the directors have made such use that great good has resulted therefrom.

During the year just closed the association employed five competent instructors and inspectors, allotting territory to be covered by each, and the work performed by them was of such a character as to meet with the approval of all who had their services.

Mr. Henry Wade, Toronto, the President of the Eastern Dairymen's Association for 1896, although he has not been a manufacturer of cheese

for a great many years, is a pioneer in the cheese factory business, having personally learnt how to make cheese on the factory system in 1865 in the neighborhood of Utica, New York. After returning home, having purchased at Utica a complete outfit for a small factory, he started on the homestead between Port Hope and Coburg a small factory a year or so after the first one was started near Ingersoll. For fully ten years this small factory was continued, adding much to the fertility of the farm. As many as sixty cows were milked on his farm for that length of time; and, in addition, all the milk that could be got in the neighborhood was purchased by Mr. Wade. He was a great believer in feeding corn to the cows during the summer months, and used to grow it extensively long before the age of silos. Mr. Wade also took a great interest in the West Riding of the County of Northumberland Agricultural Society, having been on the board of directors for seventeen years, as well as filling the position of president. In 1882 he was appointed secretary of the Council of Agriculture from amongst ten applicants, and the same year was elected one of the directors of the Eastern Dairymen's Association; and now, after fourteen years' service on that board, has been elected president. He now claims to be the oldest director on the board; no one but the treasurer, Mr. Daly, having been on it when he was first elected. He has always, until now, declined serving in any higher capacity than as a director; but has always assisted to the utmost of his ability in the appointing of cheese instructors to visit the factories during the summer and teach the cheesemakers, better methods of manufacturing; and believes that this teaching has been the cause of the wonderful success of the dairy industry of late years.

Mr. J. R. Dargavel, Elgin, a director of the Eastern Ontario Dairymen's Association, was born in the county of Leeds, of Scotch parentage, in 1846. In 1868 he commenced business in the village of Elgin, where he has built up a mercantile trade second to none in the district. He is the owner of two farms, postmaster of the village, and has filled the office of township clerk for nearly twenty-five years, and enjoys the respect and confidence of the whole community.

Mr. Dargavel for years has taken a deep interest in farming, particularly in the dairy branch of it, and is a strong advocate of a more advanced and intelligent system of feeding, care, and breeding of stock, and of winter dairying. He has an interest in two cheese factories, and in the Elgin Model Creamery. It was he who, with Mr. R. G. Murphy, built and equipped the first winter



creamery in Ontario that started without Government aid. He was elected a director of the Eastern Dairymen's Association at the annual meeting in 1895, and re-elected in 1896.

Mr. R. G. Murphy, secretary of the Eastern Dairymen's Association, first saw the light of day in Athens, Ont., on November 22nd, 1842. He received his education at the Farmersville (now Athens) High School, at the time one of the leading seats of learning in Eastern Ontario. When about eighteen years of age, Mr. Murphy entered the teaching profession, and followed it very successfully for several years in Elgin, Forfar, Seeley's Bay, Portland, and Delta. Shortly after his marriage, in 1869, he gave up teaching, and



Mr. R. G. Murphy.

Secretary, Eastern Ontario Dairymen's Association

turned his attention to agricultural pursuits on the farm adjoining Elgin, where he has remained ever since. He has a fine farm of 175 acres, equipped with good buildings and machinery of all kinds, and ranks among the foremost of the farmers in his district. He takes a great interest in dairy matters, owning a half interest in both the Elgin Model Cheese Factory and the Elgin Model Creamery, the latter being the largest winter creamery in Canada.

Mr. Murphy was appointed president of the Brockville Dairymen's Board of Trade in the year 1890, and has continuously occupied the position of salesman upon that board since its organiza-

tion. He is a justice of the peace and notary public, was appointed secretary of the Eastern Ontario Dairymen's Association at the annual meeting held at Gananoque in January, 1895, and has proved himself worthy of the confidence reposed in him by the board of directors.

### Cheese and Butter Makers' Convention.

A most successful gathering of cheese and butter makers was held at the Dairy School, Guelph, on March 6th. It was the first purely makers' meeting ever held in the province, and, from the interest taken in the proceedings throughout, it is not likely to be the last. The addresses were practical, and the discussions upon them to the point. Mr. A. F. MacLaren, president of the Western Dairymen's Association, presided at the afternoon session, and Mr. D. Derbyshire, president of Ontario Creameries' Association, at the evening session. Among those who addressed the convention were President Mills, T. B. Millar, J. W. Steinhoff, T. C. Rogers, Mark Sprague, Prof. Harrison, A. T. Bell, Geo. H. Barr, J. B. Muir, Prof. Dean, Prof. Shuttleworth, and R. Robertson.

We have not space in this issue to give due attention to all the papers read, for they were all equally valuable, but quote from a couple bearing on practical cheese and butter making. In a paper on "Handling Overripe Milk," T. B. Millar said:

"When the milk arrives at the factory, and you find that it is going to work quickly, do not stir the milk after it is in the vat, or apply any steam until sufficient milk is on the stand to fill the vat; then heat quickly. If colored cheese is desired, add the coloring as soon as you have the weight of the milk in the vat, and be sure that it is thoroughly mixed before the rennet is added. Set the milk at a lower temperature than usual, or at 82° or 84°, as the acid develops more slowly at a lower temperature, and the curd will form faster. Make a rennet test as soon as the desired temperature has been reached, and if it shows that the milk is going to work very fast use more rennet, say, half an ounce extra per 1,000 pounds of milk. Commence cutting the curd early; cut finer than usual in order that the curd may be cooked before the development of too much acid takes place. Cook quickly and draw off part of the whey as soon as possible, keeping the curd well stirred, so as to obtain a uniform cooking.

"When possible dip the curd with less acid, and stir well in the sink before allowing to mat.

As soon as the curd is matted sufficiently for handling, cut in narrow strips and turn frequently, never allowing the whey to gather in pools on the curd. A curd sink is preferable, especially for a curd of this kind, as it allows the whey to escape more readily.

"Mill or grind early or when the curd will show from three-quarters to one inch of acid by the hot-iron test, and endeavor to have the curd in a flaky condition at this stage. Stir the curd well immediately after milling, and every few minutes afterwards, until ready for salt. Air and mature well, and do not salt the curd too soon. This is a mistake, for if the curd has been milled at the proper time there is no danger of its getting too much acid in the sink. He concluded by saying that by following this method he had obtained from overripe milk very good results."



Mr. D. Derbyshire.  
President, Ontario Creameries' Association.

T. C. Rogers, in a paper on "Preparation of Cream for Churning," gave the following valuable hints:

"One writer had said that the whole secret of successful butter making lies in an understanding of cream ripening. The preparation of cream for the churn begins at the time the skimming is done, and continues until the cream is ready for churning. Certain temperatures are employed to give the butter a firm texture and body, and assist the development of lactic acid in the cream, and the lower the temperature of the cream can be ripened at, so as to develop sufficient lactic acid, the better the texture of the butter will be. Ample provision for the rapid cooling of the cream immediately after separation is most im-

portant to success, and the creamery associations could not do better than supply the manufacturers of creamery supplies with the latest and best information necessary for the construction of coolers that will cool the cream at 60 degrees as it flows from the separators to the vat, this being the most satisfactory temperature in winter; a lower temperature in summer is more suitable. At these two temperatures enough starter should be used to develop sufficient lactic acid in the cream to cause it to turn thick about six or eight hours before the time for churning. The quantity of starter to use will vary according to the ripeness of the milk, and is from two to ten pounds of starter in 100 pounds of cream, or to 1,000 pounds of milk separated. When the cream is to be held for two days before churning it should be cooled to 52 degrees in winter and 50 degrees in summer, and about half the usual amount of starter used. The cream should be stirred frequently during the first six hours after separation to improve the flavor and secure a more uniform ripening. To complete the preparation of the cream for the churn, it should be cooled to churning temperature at least one hour before churning to harden the fat globules. This rule applies to creameries as well as to the private dairy."

Upon an address on "Handling Tainted Milk," by J. W. Steinhoff, the discussion turned largely upon the turnip flavor in milk. Everyone strongly condemned the practice of feeding turnips or the tops to milch cows either for butter or cheese making.

Mark Sprague, in his address on "Separators and Separating Milk," among other things, said: "In districts where the roads are good separators are a necessity, and in order to have a separator perfectly run it should be set level. In the preparation of the milk for separation, he said that milk when warm and fresh would separate better than at any other time, but when it is taken to factories this state cannot be found. Frozen milk should be heated slower and to a higher temperature than milk that had not been frozen."

Delegates to the convention were privileged to see the various departments of the Dairy School in active operation, which added no little interest to the meeting.

### Ontario Creameries' Association.

The first dairy association formed in Ontario was the Ontario Dairymen's Association, which was started in 1867, and which, some ten years later, was divided into two branches for the two divisions of the province—the eastern and western. These associations did excellent work,

especially in the line of cheese improvement; but some of the members who were more interested in the creamery line felt that, in order to encourage the butter industry, it was necessary to start an association especially in the interests of creameries. Accordingly, at a meeting in Guelph, in 1886, such an association was formed and a provisional board of directors appointed, and a grant of \$500 was voted by the Legislature to aid the new association.

From this inception the association has progressed to the important position which it occupies to-day. Under the care of the instructor, Mr. Mark Sprague, creameries are turning out a better product, and the quality all round is



Mr. Mark Sprague.

Secretary, Ontario Creameries' Association.

greatly improved. During the last season the butter trade has more than doubled its dimensions, as has also the home consumption, and our creamery butter is beginning to receive special attention in the markets of Great Britain.

In addition to other ways of stimulating the production of fine butter, the association gives grants of money for prizes for butter at the leading Canadian shows.

The president of the association, who was re-elected at the last annual meeting at Cornwall, is Mr. D. Derbyshire, Brockville, who for six years was president of the Eastern Ontario Dairymen's Association. Mr. Derbyshire is one of the

best known and foremost dairymen in the country, and, previous to the starting of the Creameries' Association, identified himself very largely with the putting of the cheese trade on a first-class basis. He is now devoting himself to doing the same with the fancy butter export trade, and sees no reason why Canadian butter should not bring into Canada as much money as its cheese now does. In another column we give an illustration of Mr. "Dan" Derbyshire, as he is popularly called.

The other two representatives of the Creameries' Association, of whom we give illustrations in this issue, are Mr. Mark Sprague, Ameliasburg, secretary and lecturer, and Mr. R. J. Graham, Belleville, treasurer. The former has, besides his work as secretary, done excellent work as instructor, travelling from place to place, pointing out where improvements could be made, so as to produce a better and more uniform make of butter. Mr. Graham has been identified with the association from its start, and is an enthusiastic advocate of better methods of butter making.

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### Cotton-Seed Meal.

Editor FARMING:

In my question to FARMING in last issue, a misconception seemed to be taken. I certainly did not mean "butter or cheese." I meant butter in winter and cheese in summer, or butter in connection with cheesemaking and manufacture, whichever pays best. The question I wished you to settle was, Who is in the right—the man who opposes us in establishing a creamery, or are we in the right? We are in a good dairy locality.

(1) Please give me an idea of the value of cotton-seed meal to be fed to milking cattle, and how much should be fed to a cow, mixed with a ration of bran and oats, equal parts by bulk, an ordinary panful fed twice a day.

(2) Also, what should be its value per 100 lbs., compared with other feed?

SUBSCRIBER.

Wallbridge.

We gave a pretty full answer to the first part of the above in our February issue.

(1) The proportion of cotton-seed meal to use with equal quantities of oats and bran will depend upon the quality of the bulky feed used. To get a balanced ration with these foods, the following would be about right: 15 lbs. timothy hay, 30 lbs. of mangels, 5 lbs. of bran, 3 lbs. of oats, and about 2 lbs. of cotton-seed meal. When equal quantities of bran and oats are fed, 5 lbs.

bran, 5 lbs. oats, and about 1 lb. of cotton-seed meal, with the above bulky feed, would give good results. The ration used at the Agricultural College, Guelph, for full milch cows, and which costs 16 cents per day, is: 40 lbs. ensilage,  $\frac{1}{2}$  bushel mangels, and 9 lbs. of meal, made up of bran, 3 lbs.; peas, 2 lbs.; oats, 2 lbs.; and oil cake, 2 lbs.

(2) The price of cotton-seed meal varies from \$20 to \$30 per ton. Bran will run about \$15 per ton. The prices of all foods depend largely upon the locality.

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### Milking With Wet Hands.

Editor FARMING:

I saw in the January number of FARMING an article treating on "Wet Milking," taken from the



Mr. R. J. Graham,  
Treasurer, Ontario Creameries' Association.

*American Dairymen.* Now, I believe the man who wrote that knows very little about milking. He says, "No milker that we ever met could give a satisfactory reason for adopting the habit." Now, I will give you a reason, and it is this: I can milk cleaner by wet milking than by dry. I wet the teats before starting to milk; then there is no occasion for keeping the pail right under the teats; so that if there were any drippings it would not go into the

pail, whereas in dry milking there are always scales falling, and if the wind is blowing you cannot prevent them from falling into the pail. Now, I would ask you where is the difference between wetting the scales and letting them fall in the pail, or letting them fall in the pail and get wet there? And it is not necessary to place your fingers in the pail to wet the teats.

He also says that wet milking injures the teats. I have always found it a benefit. Of course a person should not leave the teats to dry in cold weather. In the summer time I have often seen the cow's teats sore from chaps or from flies, and I have found it a great benefit to wet the teats.

He says wet milking makes the cows kick. I have always found it just the reverse. Take it in the winter time, when the cow's udder becomes hairy. If you are dry milking you cannot help pulling the hairs, thus causing the cow to kick. Now, let us look to nature, and see if the writer of that article is not trying to change the ways of nature by advocating dry milking. Just turn a calf to a cow and see if it will dry milk. But there is no use of a dairymen or a professor starting out to lecture without saying something!

I believe, however, it is not wet or dry milking that causes dirty milk; it is dirty habits. Let a person have clean habits and he will milk clean either way, and a person with dirty habits will just do the reverse. I have milked since I was large enough to do so, and have found that I could milk faster and cleaner by wet milking. Some persons milk altogether by stripping with their fingers and thumbs; now, it is almost impossible to strip by dry milking.

AN OLD SUBSCRIBER.

Dunnville, Ont.

We willingly give space to the above letter from "An Old Subscriber," as we desire that these columns should be open for discussing or criticizing anything published in them. There are always two sides to every question, and it cannot be well understood unless both are given. However, notwithstanding "Subscriber's" objections to dry milking and his arguments in favor of wet milking, we are inclined, from our own practical experience, to favor the former one as being more conducive to cleanliness. It devolved upon us in our growing days to have to milk cows, and we never learned to milk with wet hands. From what we saw of wet milking we were not favorably impressed with it, though we would not, perhaps, take as strong ground for our faith as the writer we quoted in our January issue.



## Spraying.

The question of spraying will now rise into great importance in the mind of every fruit-grower. Towards the end of this month the first application of a fungicide should be made. The object of spraying is to destroy fungi, or insects, that prey upon the foliage or fruit. On the apple the scab fungus and the codlin-worm, the rot of plums, peaches, and cherries, the shot-hole fungus of the leaves of plum and cherry trees, must be combated. Grapes, raspberries, and gooseberries should also be treated for the various fungous diseases which attack them.

Spraying should be done thoroughly and carefully. Every part should be reached by a fine spray; no part should be drenched by a poisonous shower. A convenient outfit, a proper nozzle for the liquid, are indispensable.

The best fungicide is the Bordeaux mixture; the best insecticide is Paris green. The manner of preparing the former is as follows: Take six pounds of copper sulphate; dissolve it in an earthen or wooden vessel containing, at least, four gallons of water. This will be found a somewhat tedious process; but by keeping the chemical in a coarse woolen bag and having a sufficient supply of water, the difficulty is reduced to a minimum. The other element of the mixture is lime. Slake four pounds of it in an equal amount of water. Then mix the copper solution and the lime together, and add enough lime to make forty gallons. The mixture is then ready for use.

A Paris green mixture for applying to trees is made by stirring one pound of the poison into two hundred and fifty gallons of water. Paris green may be applied along with the Bordeaux mixture in this same proportion. If it is to be applied alone it may injure the foliage, and, to prevent this, a pound of quicklime should be dissolved in the barrel.

The failure of the apple crop in recent years has been ascribed largely to the scab fungus. It blights the leaf, disfigures the fruit, and impairs the strength of the tree. Experiments from all parts of the United States and Canada show con-

clusively that spraying is an effective remedy against this disease. It is not possible, however, to lay down rules for general guidance in spraying. The stage of growth, the weather, the kind of fruit, afford more or less variable elements. Spraying should be more frequent in wet weather than in dry, because the rain partly washes off the mixture, and because, also, the fungus develops more rapidly in damp weather.

A first application of a fungicide to the apple is recommended before the leaves are open, while the buds are swelling. There is no need of lime then in the solution, for there is no foliage to hurt. The quantity required is small, and the work is quickly done. One pound of copper sulphate to fifteen gallons of water is the proper proportion. For peaches twenty-four gallons, at least, of water should be used.

The second application to the apple tree should be made just before the blossoms open. This should be the Bordeaux mixture. If danger is apprehended from the bud moth, the Paris green solution should be given when the leaf buds open.

The third application consists of the combined Bordeaux mixture and the Paris green solution, and should be made when the blossoms have fallen. Let no poison be applied in any form to a tree while it is in bloom. It is wholly unnecessary, and is, moreover, destructive to the bees, the fruit-grower's best friends.

Ten days later, a fourth application, similar to the third, should be made, and, at intervals of two weeks after, two more sprayings of the Bordeaux mixture may be required; but, unless needed, they had better not be given.

It is well to have an excess of lime, for the Bordeaux mixture is apt to damage the foliage of some varieties.

Most gratifying results are reported from every quarter with regard to spraying. Sprayed trees often yielded fruit when others were barren. In one case reported, the conditions in other respects being as nearly as possible the same, a sprayed tree gave \$3 worth of fruit more than an unsprayed one alongside. The apples from sprayed trees are larger, more numerous, more sound, and keep longer than those from unsprayed trees.

## The Violet.

"I would give you some violets, but they withered all. . ."  
—*Shakespeare.*

Associated with our anticipations of spring comes, perhaps, more than any other flower, the violet. It is one of the evanescent flowers of spring. It soon disappears, and the plant is scarcely distinguishable from the grass among which it has wandered from its original bed; but while it lasts it is exceedingly pretty. All that the violet requires is a cool, damp, and shady spot. It comes up very early, and blooms profusely, needing no special care in cultivation.



Violets.

No variety is sweeter than the little, old-fashioned, simple English violet. The double varieties are also very beautiful; they are larger and more showy, but they require more care, and are of even shorter bloom than the single varieties. The Victoria violet is of a deep purple color, with red spots on some of its petals. The Marie Louise is bright blue, with a white centre, and the Swanley White is, as the name suggests, a white variety, and of great beauty.

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## Pansies.

"And there is pansies, that's for thoughts."  
—*Shakespeare.*

Few flowers are cultivated more extensively than pansies. They are general favorites for several good reasons. Their great beauty is the first and principal one. Their colors interblend and shade so beautifully from such vivid extremes; and their texture is so soft and velvety. Then, again, they bloom profusely, and their season extends from early in spring until late in autumn.

Pansies planted in August will bloom the following year. But the seeds had better be planted in a box during the winter, or even as late as March. The box should be about four inches

deep, filled with good garden soil. The seeds should be planted in rows an inch apart, with half-inch intervals in the row. They must not be planted deep; a mere sprinkling of soil over them is sufficient. They require, however, free moistening; and, lest they should be displaced by the water, it is best to cover the earth in which the seeds lie imbedded with a sheet of coarse paper, through which, until the shoots appear, the water can gradually soak. As soon as the little plants have become well started, they should be removed to their permanent places in the bed prepared for them. If allowed to remain long in the box, they will not prove vigorous and thrifty. As soon as the frost is out of the ground, the pansies may be transplanted. They require a rich soil, well pulverized. Though they thrive best with all the light they can get, yet they should be protected from the noonday sun. If they are on the north or east side of the house, they maintain their bloom much longer than they otherwise would. In a more exposed situation, their period of bloom would probably end by the middle of July. Dishwater is an excellent fertilizer for a pansy bed. Pansies should be plucked as soon as they reach their highest bloom. If they are once allowed to go to seed, no more flowers, or, at most, only occasional, undersized ones, may be expected.



Pansies.

Pansies are quite hardy, and stand the winter well. In severely cold weather, however, if they have no covering of snow, some artificial protection is necessary.

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## Fruit Buds of 1896.

If you wish to know whether a bud has passed through the winter successfully, cut through it with your knife and examine its heart. If the bud is fresh and green throughout, it is sound; but if the centre is black, the frost has proved too severe for it. This winter has been characterized by unusual severity, and we may expect that considerable damage has been done to the

## HORTICULTURE.

more tender varieties of fruit. People will learn with general regret that the peach buds have not stood the winter well. It is not so much a severe frost that damages them as a sudden change from mild to very cold weather; and several such phenomena have occurred this winter. There will, no doubt, be favored places on the lake shore and along the river, but it may be confidently said, even now, that the peach crop of the Niagara district for 1896 will be a very light one.

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### An Experiment with Mildew and a Caution as to Spraying.

The representative of FARMING, travelling in Elma township, sends the following: "Mrs. Charles Prost, of the 16th concession, who is well known for her lovely garden of flowers and small fruits, gave me an item which may be of value to some of your readers. Some years ago she obtained from a neighbor a number of bushes of a fine large English gooseberry that had always promised a good crop, but the mildew had spoiled the fruit year after year. Mrs. Prost experimented with them by covering the ground underneath the bushes with small limestones; and to prove the experiment she left one bush free. The result was that she had a crop of nice clean berries, but the berries on the bush that had not been treated were, as usual, spoiled with mildew. Since then for several seasons she has had fine crops of large clean berries, free from mildew."

"Mr. Wm. Clarke, of the 8th concession, has always had good crops of currants and gooseberries, and his bushes are never damaged by worms. He sprays with a weak solution of Paris green. The point he wishes to make is that the proper time to spray is just as the leaves are opening out, and once again about a week or ten days after. If we wait till the worms appear, they can hardly be killed, and they generally have the bush stripped before they are noticed."

[English gooseberries are particularly subject to mildew, and everyone would be glad of a simple remedy such as Mrs. Prost found effective. I must confess, however, that I find it difficult to understand how the presence of the limestones should prevent the appearance of mildew. Before we can establish a case of cause and effect, we must be sure that we have taken note of all the phenomena. Prior to the use of the Bordeaux mixtures, the remedy found most effective as against mildew and rot was sulphur, and sulphur had to be applied directly to the plants. The Bordeaux mixture contains lime, but this element is intended to counteract the caustic properties of the bluestone from affecting the foliage, and is

not known to have any special fungicide properties itself.

[Mr. Clarke is quite correct in his method of using Paris green to prevent the ravages of worms on currant and gooseberry bushes. Hellebore is considered better and handier to use in the case of this pest. I have never found it to fail whenever sprinkled over a colony of worms. One must be very watchful, however, for these worms spread with amazing rapidity.—ED.]

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FOR FARMING.

### A Plea for a Closer Study of Insect Life.

By M. BURRILL, St. Catharines.

[Continued].

Last month a few reasons were urged why the farmer generally should make a systematic study of their chief insect foes, and an indication or two given as to the number of these and the extent of their ravages. It is unnecessary to say that the man who has even partially acquainted himself with the peculiar habits and structural differences of his enemies is better equipped for the fight than he who has never given the subject any consideration. But, as we all must bear arms in this war, it is proposed here to point out a few ways in which the farmer can help himself. In the first place, he can secure the powerful services of two untiring allies. We allude to birds and the beneficial insects. In the second place, he can adopt positive methods which we will consider further on.

With respect to birds, it is hardly beside the mark to say that the English sparrow, that ubiquitous scoundrel, is our only adversary. Almost without exception birds are more or less insectivorous, and generally to an extent unsuspected by the agriculturist. The sparrow itself is, occasionally, an insect eater, but not to any great degree, and the chief count against him is that he drives away our native birds, like the blue-bird, oriole, and so on, which are very insectivorous. The crow is the recipient of a good deal of profane abuse—more especially in the corn-planting season—but he consumes large numbers of wire-worms and the white grubs (larvæ of the May beetle). The United States Government instituted an exhaustive enquiry into the habits of the bird, and after much research, and the examination of the crops of a thousand crows, our genial black friend was pronounced, on the whole, beneficial to man. The robin, too, is roundly denounced sometimes; but, although he is a fruit eater, and goes at it with an unblushing audacity worthy of a better cause, he is a grub eater all the time, and a great devourer of

cut-worms. Hawks and owls also consume a considerable number of insects, and their ceaseless pursuit of mice more than counterbalances the evil of their occasional visit to the chicken run. The second class of allies in the war against insects consists of the various insects beneficial to the farmer, and these may be roughly divided into predaceous and parasitic forms. We should in every possible way encourage and protect these friends, and it is highly important that we should endeavor to discriminate between friend and foe. It is too frequently the practice of the farmer to kill ruthlessly every "bug" he comes across, and too often he murders a humble instrument of good.

The predaceous insects are those which seize and devour their prey, such as hornets, wasps, ladybirds, and other beetles. A notable instance is the Fiery Ground beetle, which confines himself almost exclusively to a diet of cut-worms. The parasitic insects include an immense number of species, such as the ichneumon flies, etc. Many of these flies pierce the skin of their victim (usually the larva of some beetle or butterfly), and lay, some species one or two, some over one hundred, eggs therein. In due course the eggs hatch into small maggots or grubs, which live on the fatty portions of their host's body, and eventually destroy him.

(To be continued.)

FOR FARMING.

### Tomatoes for Home Use.

By JAMES SHEPPARD, Queenston.

The tomato is naturally a plant that requires a warm temperature to mature its crop, and, to succeed with it, we must help it artificially as far as possible.

The first principle of successful tomato-growing is good plants. About two or three dozen is all that is required for family use, and more satisfaction can be got out of two dozen good plants that will ripen a crop than out of two hundred that will grow a lot of fruit only to be frozen on the vines.

About the first of March sow the seed in a box, and keep near a sunny window, where the temperature does not get too cool at night.

When the plants are about an inch high, pick out until they are about an inch apart, and set down to the second leaf. Keep them growing slowly until about the fifteenth of April, then move them out into a cold frame five or six

inches apart, giving them all the air possible, and as much water as is necessary. When all danger of frost is over, the plants ought to be eight or twelve inches high, and stocky.

Soak the ground well, and move the plants with as much earth as possible. If the plants are very long lay them down flat, like a tree blown out by the root, and cover up to within five or six inches of the top.

Plant on a different piece of ground every year. Do not manure too heavily, but use ashes to each plant, or a handful of some good fertilizer, well mixed with the soil.

After a sufficient amount of fruit has set, a judicious trimming will hasten ripening, and, to a certain extent, prevent rot.

For the first early crop, Atlantic Prize, and for the main crop Livingstone Favorite or Royal Red will be found to give good satisfaction.

### Currant Culture.

Inquirer: What is the best method of cultivation for currant bushes?

ANS.—First, procure the bushes from a nurseryman; or, as the process is simple and easy, raise them yourself. Get slips or cuttings of about a foot in length, and plant them in the autumn or early spring, wherever convenient, in the open garden. They will take root very readily. In the fall have that part of the garden which you intend to devote permanently to the currants carefully dug up, drained, and fertilized. Next spring transplant the currant bushes there, at intervals of four or five feet. Keep the bushes always in the form of trees, a single stem rising from the ground. This is important, because any suckers coming from below the surface will surely bring forth inferior fruit, and you will have great difficulty in preventing grass and weeds from growing up about the base of the plant. The method of cultivation must be the same for both black and red varieties. Once the bushes begin to bear fruit, all the care necessary is to keep the ground free from weeds, cultivated and manured, to thin out every winter the superfluous wood, and, if you want larger fruit, to pinch off, about the middle of June, the ends of the more vigorous shoots. Early in June, also, be watchful that worms do not attack the leaves of the red currant. The black currant has ample protection against insect enemies in its powerful odor. Wherever worms appear, a sprinkling of hellebore will quickly destroy them.





E. B. THOMAS, in the *American Bee Journal*, recommends for painting anything exposed to the weather a prime coat of raw linseed oil, not paint. He claims that with such a first coat the work will be much more lasting. It is perhaps not necessary to add that the lead used should be absolutely pure. If it is impure, on exposure to the atmosphere it will soon come off in scales and dust.

THE Australian Government has decided to introduce a Foul Brood bill into Parliament during the present session. Beekeepers in California are also moving in this direction. In England the same question is under discussion. Canadians may feel proud that in this matter the Ontario Legislature has set an example. May other portions of the Dominion follow the good example set!

SOME of our beekeepers are putting sections on in the fall of the year, having the foundation drawn out by the bees and the comb completed. They then extract the honey and melt the comb down to make a cell with a wall, say, a quarter of an inch deep, and use it for comb honey next season. The advantages must be great indeed to repay so much labor. Will anyone ever be smart enough to invent a machine which will make comb foundation with a side wall a quarter of an inch deep, yet so delicately made that it will leave no hard fishbone in the comb? It seems impossible that such a machine can ever be made.

CAREFUL tests conducted by R. F. Holtermann in his work in the Experimental Apiary under the Ontario Government go to show that if a certain amount of syrup be given to the bees through the best feeders there is a high percentage of waste and loss. It was also found that the waste with weak colonies was greater than with strong. From the experiments one would be justified in coming to the conclusion that it will not pay to extract honey from the combs and feed back syrup for winter stores. It would also pay better, if winter stores were short, to feed extra

combs to strong colonies than to give them to the weak ones. A full report of the work can be found in the Ontario Agricultural College Report for 1895.

THE *Australian Bee Bulletin* is carrying on an interesting discussion as to the best methods of shipping queens by post from America to Australia. Several queens have been sent with success. As far as can be judged at present, the voyage generally takes thirty-five days. A worker bee will only live forty-five days during the summer, and, although active, she has her own freedom, and is under natural conditions. The points which have to be considered are: The construction of the cage, the making of the food, and the age and the number of the accompanying bees. It has been suggested that instead of candy only some comb be put in the cage. This would enable the bees to dispose of any excess of moisture which the candy might take up from the atmosphere. It is altogether likely that a dozen bees would go through much better than thirty, the number spoken of. If a practical success of such experiments can be made, it will do much to assist beekeepers in the introduction of new blood and new races of bees.

A GREAT change has been made in the manufacture of comb foundation. Until last fall the best way of making comb foundation was to dip wet boards into a tank of melted wax, and in that way secure sheets of wax from eighteen to thirty-two inches long. These sheets were one by one run through a machine, which gave it the impression of comb, or rather the base of the comb. During the past year Mr. E. B. Weed perfected at the establishment of the Canadian firm of Gould, Shapley & Muir Company an entirely new process and machine for making comb foundation. In the operation nature is followed as closely as possible; the wax is cooled slowly and worked during the process of cooling. A continuous sheet is made, miles in length if desired, and the sheet is much more even; the gradual cooling process makes the foundation much tougher. It has already been tried in

Florida, and found to effect a saving of one-fifth over that of the old make. The United States royalties will bring in, for 1896, at least \$1,000. German, English, and Australian dealers and beekeepers are also adopting the new foundation.

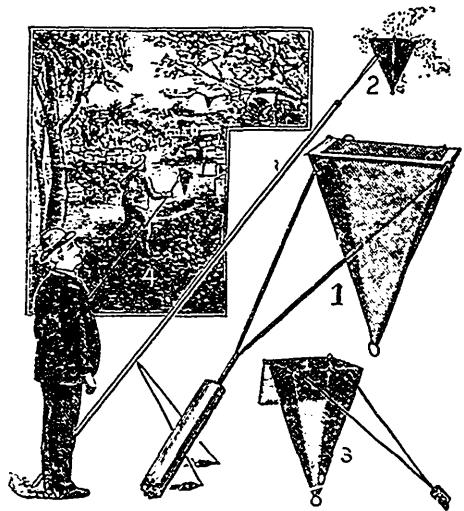
### Absconding and Other Swarms.

In the last number of *FARMING* a few words were written upon the subject of absconding swarms. In this number I propose to say a few words about swarms which cannot be considered normal. First, there are those who swarm out in the spring of the year. I will confess here that I never had a colony swarm out in the spring of the year and desert the hive, but the experience of many is that this may occur when bees which have wintered in the cellar have their first fly. From what I can glean, colonies are likely to do this which have not wintered well, or perhaps have lost their queen. During the confusion of the first cleansing flights the bees are likely to desert their hive in a body, and generally attempt to enter another hive. It has been my practice for years to set out of the cellar only a portion of the apiary at a time; say, out of one hundred colonies, ten or so on the very first favorable day, even in March, and from that time out increasing the number of colonies put out at each time until the bees are all upon their summer stands. In that way there is likely to be far less confusion than when all the bees are put out at one time, and bees from the weaker colonies are not nearly as likely to attach themselves to those flying strongly. This they are more or less likely to do when there is much confusion in the apiary during the first flying. Again, at any time during the spring, summer, or autumn, bees are likely to desert their hive when starving. When there is no honey in the combs and there is no source from which the bees can gather nectar, they are likely to desert the hive.

Then we find swarms which have been hived in a proper way deserting their hive. This is sometimes owing to the fact that the queen is not with the bees. An experienced beekeeper can tell very soon after the bees are hived if the queen is not with the swarm. The bees appear to be restless, and run back and forth at the entrance as if looking for something, and so they are—they are in search of the queen. I have detected the absence of the queen in the hive in this way late in the evening. Such a condition should be remedied by promptly finding the queen, giving another, or

putting combs of brood in all stages into the queenless colony. A swarm may leave a hive and abscond if the condition of the hive is not pleasing to them; there may be offensive odors in the hive through dead brood in the combs, or the combs may be mouldy and old. Such combs should never be given to a swarm. The hive may have stood and be standing where the sun beats upon it, and, this being a condition not favorable to good beekeeping and their natural instincts, the bees desert. In the accompanying engraving we find an excellent arrangement for taking swarms from trees and other places not convenient. It is the Manum Swarming Device.

Fig. 4 shows the man with the device and the swarm in the tree above. Fig. 2 the device, after the limb has been shaken and the bees are collect-



The Manum Swarming Device.

ing in the appliance. It also shows how the device can be supported without the aid of the apiarist. Figs. 1 and 3 give an enlarged view of the same. The bag is made of wire cloth, to prevent the bees from smothering; it has also a cover which can close the bag and confine the bees if they have to be carried long distances.

If a Manum Swarming Device is not at hand, a large light basket attached to a pole may be used. Such an arrangement, however, is not quite as convenient, and the bees, if so inclined, cannot well be prevented from flying from the basket. If, however, the queen gets into the basket, the bees will soon enter the basket, when the swarm can be shaken in front of the empty hive.

# RECENT INVESTIGATIONS

## Sachaline.

Sachaline has been very extensively "boomed" as a forage plant, but from nearly every experiment station which has tried it come unfavorable reports. Prof. C. E. Bessey, among the rest, reports adversely upon the introduction of this plant. His report is based upon two years' observation of its growth. Its foliage is said to be unfit for forage, and no animal has shown a disposition to eat it.

## Effect of Farmyard Manure.

Experiments at Rothamstead, England, upon the continuous growing of barley upon the same soil, show that the residual effect of farmyard manure was conspicuous twenty-three years after the last application. Thus the plots once manured produced in 1892, 1893, and 1894, respectively, 16 $\frac{3}{4}$ , 12, and 13 $\frac{3}{4}$  bushels per acre more than the continuously unfertilized plots yielded in these same years.

## Effect of Lime.

At the Maryland Experiment Station, on land to which was applied twenty bushels per acre of stone lime just before planting corn, the yield of corn was increased 34.7 per cent., as compared with no lime; without further applications of lime the following crop of wheat was increased 37 per cent., and the hay crop following the wheat 91.3 per cent., or 1,271 lbs. per acre.

The main value of lime consists in liberating plant food from insoluble compounds in the soil, and improving the texture of clay, making it more porous and friable. Hence lime would be of little or no value on really poor soils.

## Planting at Different Depths.

At the Michigan Experiment Station seeds of wheat, oats, flax, corn, barley, clover, peas, and buckwheat were planted in boxes containing sand, loam, and clay soils, the depth of planting ranging from half an inch to twelve inches. The highest percentage of germination for wheat, flax, corn, and clover was at a depth of 1 inch; for oats, 2 inches; for barley,  $\frac{1}{2}$  inch (closely followed by 1 and 2 inches); for peas, 4 inches; and for buckwheat, 2 inches. Clover entirely

failed when the depth was greater than two inches. Some plants of oats, corn, and peas appeared above ground when the depth of planting was 8 inches or more.

## Field Experiments With Corn.

J. G. Lee, Louisiana Experiment Station, reports tests of fertilizers. With every form of nitrogen used the yield of corn was largely increased. The most effective form of nitrogen was nitrate of soda, followed, in the order named, by dried blood, compost, cotton-seed meal, stable manure, fishscrap, and green cotton seed. With the use of phosphoric acid there was an increased yield, the most effective form being dissolved boneblack. Potash did not increase the yield, and the author recommends the use of fifty pounds of nitrogen and thirty-six pounds of phosphoric acid, with not more than thirteen pounds of potash.

## Potato Scab and its Prevention.

J. C. Arthur, Indiana Experiment Station, reports very favorable results from the use of corrosive sublimate as a remedy for potato scab. The experiments cover three years, and the treatment consisted in immersing the tubers for different lengths of time, varying from half an hour to fifteen hours, in a solution of corrosive sublimate of a strength of 1 part to 1,000.

The average of the three seasons' work shows that 82 per cent. of the crop from treated seed was without scab, against 56 per cent. from untreated.

It was found that in all trials made the number of tubers per hill was less in the treated than in the untreated portion, but the weight of merchantable tubers showed a decided increase in two years out of the three.

The corrosive sublimate proved somewhat injurious to potatoes that had sprouted before treatment, though the injury was not serious when the immersion was of short duration.

Though cut tubers may be treated without serious injury, it is deemed preferable to treat before cutting.

The strength of solution recommended is 1 part corrosive sublimate to 1,000 parts water, or 2 ounces of corrosive sublimate to 1 $\frac{1}{2}$  gallons of water. The length of time of immersion varies with the

amount of scab present, but it is found that from one to one and a half hours is the most satisfactory length of time in ordinary practice. If the tubers are somewhat wilted and sprouted, half an hour will be found satisfactory. The cost of material will not exceed 50 cents per acre, and the extra labor and trouble are not considered serious obstacles.

Bordeaux mixture and potassium sulphide were tested at the station, but with little success.

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### Crimson Clover.

A. A. Crozier, Michigan Experiment Station, publishes reports of more than forty correspondents in seventeen counties in the State. The greater number of these reports were unfavorable, and are summed up as follows:

\* Many of the sowings of crimson clover appeared to pass the winter successfully, only to be killed by the freezing and thawing of early spring. On sandy soil and rolling land the clover did the best, except where the soil was too dry, or where the snow blew it off. There was, in some instances, a failure to get a good stand, owing to dry weather, and in many cases the growth, when winter set in, was less than desirable. Judging mainly from the experience of the past season, it seems probable that over most of the lower peninsula of Michigan crimson clover will not prove to be a satisfactory crop, though for certain localities, particularly along the western part of the State, it seems worthy of a further trial. Under ordinary circumstances a smaller growth is to be expected here than in warmer climates.

Since the climate of Michigan is similar to that of Ontario, it would be well for Ontario farmers to "go slow" on crimson clover.

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### Growth of Leguminous Crops for Many Years in Succession on the Same Soil.

Nowhere in the world have more extended and systematic experiments in the growth of crops been conducted than at Rothamstead, England. For more than half a century this work has been carried on, and, therefore, the results are especially valuable. The following notes on leguminous crops are interesting and instructive:

Beans and clover on a given area stored up much larger amounts of nitrogen than did wheat, barley, or roots. Thus, in 1873, the nitrogen in a crop of barley was only 37.3 lbs. per acre, while in an adjacent crop of clover it amounted to 151.3

lbs. In 1874, barley was sown on both plots; when it followed barley the nitrogen stored up in the crop of 1874 was 39.1 lbs.; but on the plot where clover in the preceding year had removed so much nitrogen, the barley crop of 1874 contained 69.4 lbs. of nitrogen, indicating the high manurial value of clover stubble. After both clover and barley were harvested in 1873 it was found that the upper nine inches of soil were richer in nitrogen on the clover plot than on the plot that had grown barley.

Red clover was sown on the same land fifteen times in twenty-nine years, but in only seven was any clover obtained.

In marked contrast with the failure to grow frequent crops of red clover on ordinary arable soil was the success in getting excellent crops of clover hay for forty years in succession on rich garden soil without any nitrogenous fertilizers. The garden surface soil contained four or five times as much nitrogen as the field soil.

The amount of nitrogen stored up per acre per annum in clover hay averaged during forty years 159 lbs., but in the second year the nitrogen was estimated at 435 lbs. per acre. "There would seem, then, to be clearly indicated a soil source of failure on the arable land, and a soil source of success on the garden soil." (In other words, a soil must be naturally very rich in nitrogen in order to support the long continued growth of clover).

Soil samples taken a few years after this test on garden soil was begun, and, again, twenty-one years later, showed that, as a result of twenty-one years of clover culture without fertilization, the surface nine inches of soil had lost, on an average, 130 lbs. of nitrogen per acre per annum.

With this decline in the nitrogen content of the surface soil there was a very marked reduction in the clover-growing capacity of the soil. While fresh seed was sown only five times during the first twenty years, it was fully or partially sown twenty-one times during the last twenty years. During the period that the soil lost annually 130 lbs. of nitrogen per acre, the crop removed annually more than 160 lbs. of nitrogen per acre.

After growing clover for three years on a somewhat exhausted soil, it was found that the surface soil had become determinably richer in nitrogen.

Of fourteen different leguminosæ tested, only white clover, vetch, Bokhara clover, and alfalfa gave satisfaction when grown continuously on the same land.

Analyses of the soil of the plots showed that, when cropped with vetch, white clover, Bokhara clover, and alfalfa the surface soil gained in nitrogen.—*E. S. R., Vol. 7, No. 5.*



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## The Thoroughbred and Hunter Show.

(By Our Own Correspondent.)

The above show, held by the Hunters' Improve-  
ment Society, in connection with which are awarded  
the Queen's premiums, was held at the Royal Agri-  
cultural Hall, Islington, London, Eng., on March  
10th, 11th, and 12th, 1896.

Taking the Thoroughbred stallions that competed  
for the Queen's premiums, we find that there were  
entered no less than 110 for twenty-nine premiums of  
£150 each. Thus it will be seen that there was a  
very good competition for these valuable prizes,  
which are given upon condition that a certain num-  
ber of mares are served at reduced fees, and that the  
particular horses duly travel a certain district, as  
drawn up by the Royal Commission who have con-  
trol and management of this affair.

One notable horse we missed, that is, old Blue  
Grass, who has been in evidence at all previous  
shows, and only once, in 1890, failed to be a pre-  
mium horse. Moss Hawk has an even better  
record, for he has won a premium every year since  
1886. He is a grand horse, by Blair Athol, out of  
Vergin Mein Nitch, by the Flying Dutchman, a  
lineage worthy of such a grand old horse.

Most of the classes were well filled, and a large  
percentage successfully passed the veterinary exami-  
nation. A better lot of sires suitable for getting  
hunters has possibly never before been selected since  
the establishment of these classes. Now as to the  
Hunters' Society's own particular classes; we may  
very shortly sum these up in but a very few words,  
as being an exhibition well worthy of the trouble and  
time spent in devising and arranging the same, and  
as a standing monument of the vast good that has  
been accomplished by those sires which have been  
winners of the Queen's premiums in years gone by,  
for quite a number of entries were by those stallions  
who had been Queen's premium winners.

There were classes provided for yearling hunter  
colts, two-year-old colts and three-year-old colts, and  
corresponding classes for fillies, in all of which there  
was good competition; also for four and five-year-old  
mares and geldings, in two divisions, according to  
height, amongst those entered being many animals  
of great merit.

**Thornton's Shorthorn Circular.**—This cir-  
cular for the last quarter of 1895 is to hand. We  
note the continued shipment of Shorthorn cattle in  
large numbers to South America.

## Special Stock Reviews.

### The Riby-Grove Lincolns.

Among our advertisers none, perhaps, has a better known name than Mr. Henry Dudding, of Riby Grove, Great Grimsby, Lincoln, England, owner of the world-renowned Riby-Grove flock of Lincoln sheep.

The Riby-Grove flock has been, it is needless to say, duly recorded in the Lincoln studbook since that society was started, for Mr. Dudding, the owner, is a man who believes in progression, and not standing still. He succeeded his father in the ownership thirty-five years ago, the flock having been in existence previous to this date for a period of ninety-four years; thus we have a flock whose history can be traced back for 140 to 150 years. One need not expatiate upon the past sires used in his flock, nor need we go into details of ancient history, for it is, so far as sheep are concerned, with the present we have to chiefly deal; but we cannot pass over altogether without mentioning the grand victory achieved at the great show of the R.S.A.E. at Windsor in 1889, when Mr. Dudding's flock brought home the leading honors. Last year at five shows Mr. Dudding won twelve firsts, eight seconds, one fourth, and nine R. N.'s; in 1894 at five shows one champion, eight firsts, five seconds, two thirds, one fourth, and nine R. N.'s were won. The flock is now as good as ever it was; perhaps never was in so fine a condition. The type, character, and hardiness are as good as ever. The fleece, that important item, is of the finest quality, length, and texture. The flock ewes now number 1,250, and a truly grand lot they are—every ewe being most carefully selected before being allowed to have a chance to become the mother of a Riby-Grove hero, for many are produced here.

The demand for these sheep has been tremendous, and sales made by Mr. H. Dudding have been at very high prices. The three shearlings at Windsor in 1889 were sold for as follows: Two for £350, one for £100. The sales at Lincoln ram sales have been most successful since 1892. The record has been as follows: In 1892 twenty-two averaged £38 3s. 7d.; in 1893 twenty averaged £37 6s. 6d.; in 1894 twenty averaged £28 9s. 1d.; in 1895 seventeen averaged £40 15s. 3d.; but these are but a few of the sales carried out, for many sheep have been sold for from 50 to 100 guineas—many after having been used for the season at home—for Mr. Dudding always keeps his best for his own use, and then if a buyer wants them they can be had at a price. The flock is always on view, and nothing gives the owner greater pleasure than to have the privilege of showing a brother sheepman round.

In the sheep department will be found some illustrations of Mr. Dudding's sheep.

## Jottings.

**Holstein-Friesian Register.**—The official Holstein-Friesian Register, the paper of Holstein cattle breeders, published by Frederick L. Houghton, secretary of the Holstein-Friesian Association of America, Brattleboro, Vt., appeared in a new and greatly improved form both in contents and appearance, as a thirty-two page monthly magazine, March 1st.

**Southdown Sheep-Breeders' Association.**—The membership of the English Southdown Sheep-Breeders' Association has largely increased during the past year, while the demand for export certificates has exceeded that of any previous year. A gratifying feature with reference to the foreign trade is the insistence of foreign buyers that only registered sheep be sent to them.

**Australian Gossip and Story.**—One of the best-known contributors to the *Sydney Stock and Station Journal*, New South Wales, is the "Globe Trotter," whose short, pointed contributions are always worth reading. These have now been reprinted and published in book form, under the title of "Australian Gossip and Story," a copy of which we have just received.

**Pearce's Seeds.**—Every reader of FARMING is interested in buying seeds of some description. We have no hesitation in referring all such to the well-known and reliable firm of John S. Pearce & Co., London, Ont. We have looked over their catalogue, and find that it is most complete, containing all the well-tried varieties of vegetable, garden, field, and flower seeds, as well as the latest and most promising novelties. Send for a copy of their catalogue.

**Swine-Breeders' Record.**—We have received a copy of Vol. 5 of the Dominion Swine-Breeders' Record, which contains the pedigrees of 1,150 Berkshires, 859 Yorks: res, 96 Chester Whites, 92 Poland-Chinas, 333 Tamworths, and 81 Duroc-Jerseys. Owing to the fire in the office a year ago, in which all the manuscript was burned, a total of 1,216 certificates are still missing, the pedigrees for which would otherwise have appeared in this volume.

**The Ideal Spray Pump.**—The following, taken from the March number of the *Canadian Horticulturist*, in reply to a subscriber's question as to the worth of the pump, bears ample testimony to the worth of the ideal spray pump manufactured by the Goold, Shaply & Muir Company: "Our foreman, Mr. P. Blanchard, who used this pump last season almost constantly for some weeks, says that he is much pleased with it; indeed, that it gave excellent satisfaction, especially with the McGowan nozzle."

**An International Champion Sow.**—The Berkshire sow, Elphicks Matchless, bred by Mr. E.

Buss, Horsmonden, Kent, England, and sold by him to Messrs. Metcalf Bros., East Elma, N. Y., has had a remarkable show career. Exhibited in England by Mr. Buss, she won three first and two champion prizes. Since coming into the possession of her present owners she has won sixteen first and champion prizes at the Buffalo, Ohio, Wisconsin State, and New York city shows. This is an excellent showing.

**Illinois Oats.**—In this issue Mr. J. A. Simmers, Toronto, advertises what is described as the agricultural wonder of the age. This is the Illinois oats, which were brought to public notice by Mr. Buckbee, of Illinois, and are the result of careful selection and of hybridization. Mr. Simmers assures us that during the past season these oats yielded over 100 bushels to the acre on ordinary ground. The grain, though not, perhaps, as fine-looking as other oats, is large and heavy, while the straw is very heavy, long, and very fine, standing up against heavy storms.

**Correction.**—By an oversight on the part of our advertising department, an electrotyped advertisement was inserted in FARMING, last issue, to the effect that the paper for this magazine was supplied by The E. B. Eddy Co., of Hull, Que. We desire to state that this was an error, in no way intended either by the advertisers or by ourselves. The paper for every issue of FARMING, and also for THE LIVE STOCK JOURNAL, which preceded it, has been supplied by the well-known firm of Buntin, Reid & Co., of Toronto, since August, 1889, at which date the magazine was first published in Toronto. The paper supplied is generally admitted to be superior to that used in publications of this class, and has always given both us and our patrons the utmost satisfaction.

THE BRYANT PRESS,  
J. E. Bryant, Manager.

**Spraying Apparatus.**—The Spramotor Co., London, Ont., have issued a more than ordinarily excellent catalogue for this season. In addition to the advertising of their goods, they give most complete information as to diseases affecting fruit trees and the remedies necessary for their destruction. The spramotor advertised by them is a most efficient spraying apparatus, being very handy, durable, and easily worked. Two new features are the bamboo extension rod and the interchangeable brass "Y" connection. By means of the latter two nozzles can be placed on the end of the hose, which enables one man to do the work of two. There are other important features which we have not space to mention here, but we advise all to write to the company for a copy of their catalogue, and thus make themselves acquainted with all the details.

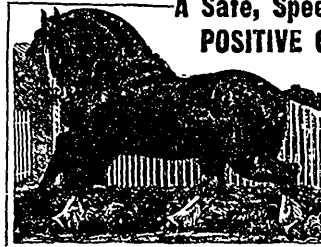
**The Government Pioneer Farm.**—A pamphlet dealing with the Pioneer Farm and the Wabigoon country has just been issued by the Ontario Department of Agriculture. It will be remembered

Horse Owners Should Try

**COMBAULT'S  
Caustic  
Balsam**

The GREAT FRENCH VETERINARY REMEDY

A Safe, Speedy and  
POSITIVE CURE.



Prepared exclusively by J. E. Combault ex-Veterinary Surgeon to the French Government Stud.

**SUPERSEDES ALL CAUTERY OR FIRING**

Impossible to produce any scar or blemish. The Safest and Best BLISTER ever used. Takes the place of all treatments for mild or severe action. Removes all Bunches or Blemishes from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, Etc., it is invaluable.

**WE GUARANTEE** that one tablespoonful of **CAUSTIC BALSAM** will produce more actual results than a whole bottle of any liniment or spavin cure mixture ever made.

Every bottle of **Caustic Balsam** 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, testimonials, etc. Address  
**THE LAWRENCE-WILLIAMS CO. TORONTO, ONT.**

613

PUREST AND BEST

**Windsor**

Cheese and Butter

**Salt**



Has, during the season of 1895, given the best satisfaction on account of Purity, evenness of crystal, and splendid working qualities.

It is now used in all the largest cheese factories and creameries in Canada.

**WINDSOR SALT WORKS.**

WINDSOR, ONT.

428



**IRON FENCING  
COMMUNION RAILING**  
and all kinds of  
**IRON AND WIRE WORK**  
TORONTO FENCE AND  
ORNAMENTAL WORKS,  
TORONTO, CAN.

437

# Choice Seed Oats

**Golden Prolific** A new, yellow, early oat. Plump grain with thin hull. Straw stiff and of good length. The Jos. Harris Co., Moreton Farm, N.Y., say: "Since we introduced the Improved American Oats six years ago, we have failed to find anything to equal them until we tried the Golden Prolific last year, which yielded 114 bushels in this county."  
Price, \$1 per bushel; ten bushel lots, 80c. per bushel.

**Improved American** Large white plump grain, with an abundance of straw.  
Price, 75c. per bushel;  
10 bushel lots, 60c. per bushel.

**White Maine** A large white branching oat, thin hull, and heavy grain.  
Price, 75 cents per bushel;  
10 bushel lots, 60 cents per bus.

**Lincoln** A good white early oat, not so rank a grower as others.  
Price, 75c. per bushel; 10 bushel lots, 60c.

**JOHN MILLER,  
MARKHAM, ONTARIO.**

Also a few fine young bulls and heifers still on hand for sale.

that this farm was established by the Minister of Agriculture, Hon. John Dryden, about a year ago, for the purpose of testing the agricultural capabilities of a section of country on the line of the C.P.R., not very far east of Rat Portage. In spite of the fact that the country gave every indication of being well suited to agriculture, that it was on the direct line of travel and within easy reach of markets, it had hitherto remained unsettled and unproductive. We understand that, so far, the experiment has been quite successful. The crop last year, although sown on the first plowing, was very satisfactory. During the coming season there will be forty or fifty acres under cultivation, and special attention will be given to dairying, as the country is thought to be particularly well suited to this branch of agriculture, combined with stockraising. Among the numerous attractive features of the country, it may be mentioned that the land, which is rolling in character, is entirely free from stone, and is very easily cleared, underbrushing, for the most part, being all that is necessary. We would recommend farmers of Ontario who are on the lookout for cheap land to investigate the Wabigoon country and other unsettled portions of the province before turning their attention elsewhere. The pamphlet may be obtained by addressing a card to the Minister of Agriculture, Toronto.

## Stock Notes.

### Horses.

MR. JOHN HOWIE, Wroxeter, Ont., has purchased from Mr. John Baird the Clydesdale stallion, King Orry (9558). This horse was bred by Wm. Kerr, Palmallet, Whithorn, Wigtonshire, and was sired by the celebrated Flashwood (3604), out of a mare by Garnet Cross (1662). King Orry is described as a useful animal, and likely to do some good in Canada.

MESSRS. I. DEVITT & SONS, Freeman, Ont., write: We have sold our farm at Floradale and purchased the E. C. Kerns' farm, situated a quarter of a mile north of Burlington station. Being fully convinced that the draught-horse trade has reached the bottom and is beginning to improve, we are going to give more attention to horse-breeding than in the

**EGGS** for hatching, from  
*Single Comb B. Leghorns*  
*and Silver Duckwing Game Bantams.*

See my ad. on page xi. of this journal.

J. A. Stewart, Menie, Ont.

## 400 ACRES. 400 ACRES. FRUIT AND ORNAMENTAL TREES

### 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 scrups 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.

E. D. SMITH, Prop. - - WINONA, ONT.



Do You Keep A DOG?  
Send for  
Pamphlet (gratis)  
on  
Diseases etc.  
to **SPRATTS PATENT (AM.) LTD.**  
241 E. 56 St., N.Y.

### WHOLESALE AGENTS:

Caverhill, Hughes & Co., Montreal; J. A. Simmers, 147 King Street East, Toronto; The Eby, Blair Co., Ltd., Toronto; A. M. Smith & Co., London; M. F. Leggar, Halifax, N.S.; H. N. Bate & Sons, Ottawa, Ont.; Whitehead & Turner, Quebec; W. H. Gilloard & Co., Hamilton, Ont.

## ULRICH'S ILLINOIS MAMMOTH SOUTHERN

### SWEET WHITE DENT ENSILAGE CORN...

Is what you want for ensilage purposes. It stands more dry weather, and will produce more ensilage on poor or good soil than any we know of. Ask your seed dealer there for it and use no other. It is endorsed by some of the best seedsmen throughout Canada. Don't let them press you into using any other, but insist on having your seed dealer show you our book of testimonials and invoice dated this season. It will pay you. Also ask for our **YELLOW DENT**, which is very choice. Our sales this year have been very heavy. Invoice must be signed

**E. R. ULRICH & SON, Springfield, Illinois**





MANUFACTURERS OF

# Patent Spraying Apparatus.

AND ALL-BRASS SAND PUMPING CYLINDERS

## AWARDS IN 1896.

- |   |  |
|---|--|
| Diplomā at Industrial Exhibition, Toronto | Diploma at East Lambton Fair, Watford        |
| Medal at Western Fair, London             | Diploma at Malahide Fair, Aylmer             |
| Diploma at Great Southwestern Fair, Essex | Diploma at Great Northwestern Fair, Goderich |
| Diploma at Howard Fair, Ridgetown         | Diploma at Huron County Fair, Seaforth       |
| Diploma at Norfolk Fair, Simcoe           | Diploma at Huron Centre Fair, Blyth          |

THIS is a model outfit for apple spraying, and will be found to meet all the requirements where only one line of hose is needed. With the addition of the Y connection and two nozzles, we provide an effective means by which one man can do the work of two under old conditions. This is a strictly high-class outfit, and will repay the cost of the entire outfit in one season by saving of labor.

DEPARTMENT OF AGRICULTURE  
Toronto, Feb. 18th, 1896.

W. H. HEARD, ESQ.,  
Spramotor Co., London, Ont.

Dear Sir,—I am in receipt of the catalogue you sent me. I have looked through it casually and should like to congratulate you on its completeness. You appear to have given thorough information both as to your spraying outfit and also in reference to diseases affecting fruit trees and their remedies.

I am sure your catalogue will be highly valued and much sought for.

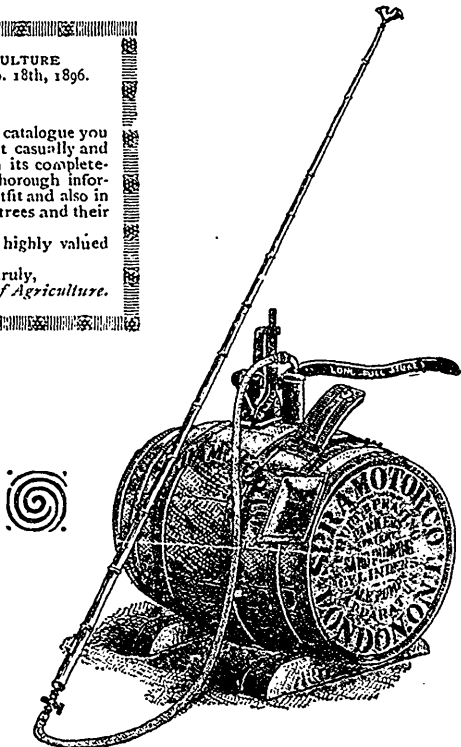
Yours very truly,  
JOHN DRYDEN, *Minister of Agriculture.*

ONTARIO AGRICULTURAL COLLEGE  
AND EXPERIMENTAL FARM,  
Guelph, Ont., March 8th, 1896.

Spramotor Co., London.

Dear Sirs,—Thanks for your interesting and instructive catalogue received a few days ago. It is full of very valuable information to all interested in a warfare against insects and fungous pests.

Yours respectfully,  
J. HAYES PANTON.



Patented in Canada and U.S., Sept. 21, 1893; July 17, 1894; and Dec. 3, 1895.

Agents Wanted. Send a three-cent stamp for treatise on Spraying.

**Stock Notes—Continued.**

past. One stud now numbers sixteen head, including colts and fillies. Douglas Macpherson still heads the stud, and is looking better than ever, and his stock are doing well. Another young horse is Grandeur 2nd, a big, strong colt, with plenty of quality and good action, and a credit to his sire, Messrs. Sorby's Grandeur. Our brood mares are mostly in foal to Douglas Macpherson, and the yearling fillies and last year's colts are doing well. With the improved railway facilities in our new home, we hope to do a better trade than ever. We have lately bought a few Holstein cows, and hope, in the near future, to have a good herd of dairy cattle. We have at present a fine bull calf.



HON. M. H. COCHRANE, Hillhurst, Quebec, writes: We intend showing the four young Hackney stallions, advertised in your last issue, at the Toronto spring show, and will probably enter one or two of them for the auction sale; also some young mares, full registered, and half-bred fillies and geldings, most of which will be entered in the harness and saddle classes, together with the imported prize-winning mares Vina, by Wildfire, and Miss Dales, by Pioneer, both of which have proved to be grand brood mares, but were not bred last season so as to be put in shape for show and sale. This offering will afford an excellent opportunity to any one desiring to begin breeding the ever-popular Hackney. In view of the rising market, it must be borne in mind that choice mares are quite as necessary as high-class stallions for the production of the kind that are in demand. Shropshire lambs are coming strong and vigorous, with a large proportion of doubles; so far all by the imported ram, Parkers 454, third-prize shearing at Toronto last year, bought of Mr. Miller. Dorset lambs grow by leaps and bounds; a ewe lamb under four months weighs 91 lbs., and others close up.



**Cattle.**

MR. C. J. WRIGHT, Dixville, Que., writes: About a month ago I bought a couple of Jersey cows from Mr. C. C. Hanson, Jersey Island Stock Farm. The five-year-old cow has dropped a very fine heifer calf. I am expecting good results from my investment. My Leicesters are doing well. They will commence lambing about April 1st. My Berkshires and poultry were never in better condition, having stood the winter very well in their comfortable houses.



MR. JAMES DOUGLAS, Caledonia, Ont., writes: Our herd of Shorthorns have wintered very well, considering the scarcity of hay and straw, as we have not used any straw for bedding this winter, yet they are in good healthy, thriving condition. We still

have eight good young bulls for sale that we are offering at rock bottom prices. Our best young bull, a dark roan, is just past sixteen months old; if he were in show condition, he would be a hard one to beat. Anyone wanting a good bull would do well to come and see Baron Evenlode = 16705 =. As we are overstocked, we are offering females at very low prices to make room for others. All kinds of fodder are very scarce here; it is almost impossible to get any at any price.

MR. ARTHUR JOHNSTON, Greenwood, Ont., writes: Feed is growing very short, and cattle in general are very lean, with the unpleasant prospect of a late spring. Sales of young bulls have been rather slower than they were last year, though enquiries are quite as numerous as they have ever been. We have still eleven magnificent young Shorthorn bulls for sale, all fit for immediate service, and more than that number of younger ones. They are now

# Corn

is a vigorous feeder and responds well to liberal fertilization. On corn lands the yield increases and the soil improves if properly treated with fertilizers containing not under **7% actual**

# Potash.

A trial of this plan costs but little and is sure to lead to profitable culture

Our pamphlets are not issuing circulars booming special fertilizers, but are practical works, containing latest researches on the subject of fertilization, and are really helpful to farmers. They are sent free for the asking.

GERMAN KALI WORKS,  
93 Nassau St., New York.

THERE IS . . . .

## Money in Poultry Raising

If you get good stock to begin with, and give the work the attention it requires. We can supply you with eggs from the very finest strains of the following breeds:

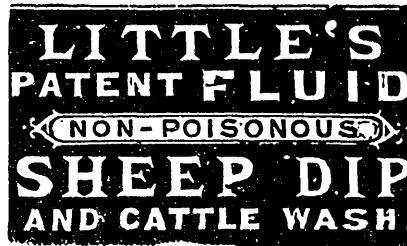
Partridge Cochins, Light Brahmans, Barred P. Rocks, Golden Laced, Silver Laced, and White Wyandottes, Silver Gray Dorkings, Brown and White Leghorns, Cornish Indian Game, Black Red and Brown Red Pit Games. Eggs mixed of any breed if desired. \$1.50 per 13. Bronze Turkeys, Toulouse Geese, Pekin Ducks; eggs \$1.50 per 11. We guarantee safe shipment and good hatches.

**GEORGE BENNETT & PARDO,**  
CHARING CROSS, ONT.

in the primest form, and a wonderfully smooth, even lot—big, sappy, and short-legged. "Indian Brave," the Toronto prize yearling of last September, now just past two years old, is the handsomest young bull we have ever owned. He is big, sprightly, and full of well-packed, even flesh. He is as good-tempered as he is lively and active. The two white ones are simply grand ones, and fit to head the best herds in America, both in quality and in breeding. One is Duchess of Gloster, as pure a Cruickshank as lives; and the other is of Booth breeding, with two prime imported Cruickshank crosses on top.

MR. T. D. MCCALLUM, manager, Isaleigh Grange Stock Farm, sends in the following: Although there has been a depression for the past year in all lines of business, we have no reason to complain, as we have made numerous sales to all parts of the Dominion and the United States. We are getting many enquiries at present for Guernseys and Ayrshires, and are still in a position to supply a few young heifers and bulls of the above breeds of the very choicest quality. Our cows are milking better this winter than ever before, and the young stock are in fine growing condition. Our flock of Shropshires went into their winter quarters in grand condition, which was due to our twenty-five-acre field of rape. I shipped a ram lamb to Mr. W. Frazer, of Atlantic, Iowa, in October last, that was dropped in April, and weighed 160 lbs. Mr. Frazer only wishes he had more like him. We hope to be able to supply all our customers the coming season with young pigs, as we have a large stock of fine breeding sows, bred to imported prize-winning boars, which should give good results.

TO STOCKMEN AND BREEDERS



For the destruction of Ticks, Lice, Mange, and all Insects upon Sheep, Horses, Cattle, Pigs, Dogs, etc.  
 Superior to Carbolic Acid for Ulcers, Wounds, Sores, etc.  
 Removes Scurf, Roughness and Irritation of the Skin, making the coat soft, glossy, and healthy.  
 The following letters from the Hon. John Dryden, Minister of Agriculture, and other prominent stockmen, should be read and carefully noted by all persons interested in Live Stock:

"MAPLE SHADE" HERDS AND FLOCKS.

BROOKLIN, ONT., Sept. 14th, 1890.  
 DEAR SIR,—I cannot afford to be without your "Little Sheep Dip and Cattle Wash." It is not merely useful for Sheep, but it is invaluable as a wash for Cattle, etc. It has proved the surest destroyer of lice, with which so many of our stables are infested, I have ever tried; it is also an effectual remedy for foul in the feet of Cattle. I can heartily recommend it to all farmers and breeders.

JOHN DRYDEN.

17 Gold, Silver, and other Prize Medals have been awarded to "Little's Patent Fluid Dip" in all parts of the world. Sold in Large Tins at \$1.00. Special terms to Breeders, Ranchmen, and others, requiring large quantities. Ask your nearest druggist to obtain it for you; or write for it, with pamphlets, etc., to

ROBERT WIGHTMAN, Druggist, Owen Sound.

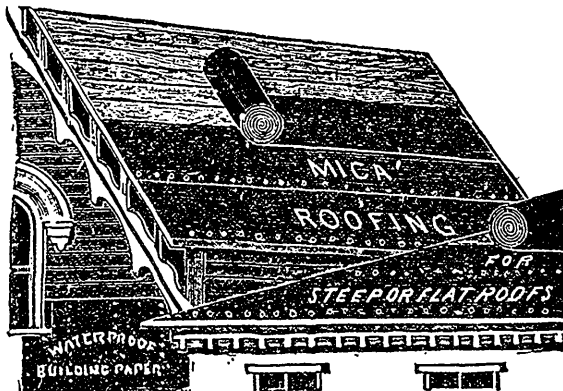
700

Sole Agent for the Dominion.

MICA ROOFING

USE  
**Mica Roofing**

On all your buildings.  
 It is cheaper than shingles.  
 Waterproof and Fireproof.



USE  
**Mica Paint**

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

RAPIDLY TAKING THE PLACE OF SHINGLES.

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

HAMILTON MICA ROOFING COMPANY,  
 Office—101 Rebecca Street, HAMILTON, ONT.

# The People's Company

Stands direct between producer and consumer. We want you to send us all the choice Butter, fresh Eggs, Poultry, Wool, Hides, etc., that you have to dispose of, and in return we will send you the highest market price in either cash or goods, as you may direct.

We are now offering a beautiful Sugar, direct from Demarara, at \$3.90 per 100 lbs.; Redpath's granulated \$5 per 100 lbs.; 5 lbs. of 25c. blend Tea for \$1.

Now is the time to prepare for spraying your fruit trees. Copper Sulphate, the best, 8c. lb. Pure Paris Green 15c. lb.

Hand-made double and stitched single harness \$14.

American Patron Sewing Machine \$16.

Grand Rapids Carpet Sweeper \$2.25.

Clothes Wringers \$2.25.

3-spring Sweat Pads 25c. each.

For Groceries, Boots and Shoes, Oils, Patent Medicines, Dry Goods, etc., send for our catalogue.

**THE PEOPLE'S WHOLESALE SUPPLY CO.,**  
35 Colborne Street, TORONTO.

R. Y. MANNING,  
Manager.

746

Stock Notes.—Continued.

Sheep.

MR. E. ELLIS, Summersbury, Shelford, Guildford, England, one of our advertisers, has had a most successful lambing season up to March 1st. Out of 283 ewes that lambed, there were 119 pairs of twins and 164 singles.

MR. W. W. CHAPMAN, Fitzalan House, Arundel street, Strand, London, Eng., exporter of live stock, informs us that he has had over sixty enquiries for sheep for export to various countries. Among the enquiries are some for Shropshires, Southdowns, and Romney-Marsh sheep.

MR. H. B. JEFFS, Bondhead, Ont., writes: Feed has been very scarce; but, nevertheless, stock are wintering well. I have some very nice things to dispose of at low figures, so as to make room for what are to follow. Southdown lambs are just commencing to come, and in good numbers, including several triplets. I have one litter of Berkshires already. I have made the following sales of Shorthorns lately: one two-year-old bull, two bull calves, and one two-year-old heifer, to Mr. T. Meredith, Yorkton, N.W.T.; one two-year-old bull to Mr. John M. Stinson, Mansfield.

The New "Illinois" Oats

marvellously productive (100 bushels per acre), well worth trying. Price, 25 cents per lb.; 5 lbs. for \$1, postpaid. Price per peck, 60 cts.; per bushel, \$2; 2 bushels, \$3.50, including a bag; 5 bushels, \$7.00, bags free.

White Maine Oats

The best variety in existence for horse feeding. Thin hull, good straw, and a good yielder. Price, 15 cts. per lb., 4 lbs. for 50 cts., by mail postpaid; per bushel, 75 cts.; per 5 bushels at 60 cents per bushel.

Siberian Oats

A good yielder and reliable, at 50 cents per bushel.

ORDERS BY MAIL PROMPTLY FILLED.

## Simmers' Select Seed Oats

White Cap Yellow Dent Corn

For fodder and ensilage, the best corn of all. Price, per bushel, \$1.20; in 2 bushel lots, \$1.15 per bushel; in 10 bushel lots, \$1.10 per bushel.

American Banner Oats

40 cents per bushel.

White Challenge Oats

55 cents per bushel.

Peerless White Oats

60 cents per bushel.

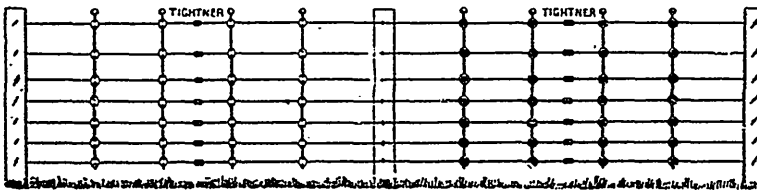
Black Tartarian Oats

Grown from imported seed. Prices and samples on application.

Send your orders at once, and get our Catalogue of Seeds, which gives full description of Oats etc., mentioned in this advertisement. Clover and Timothy Seed at Lowest Market Prices.

Write us

**J. A. SIMMERS, Seed Merchant and Importer Toronto, Ont.**



No better wire fence built than the Casey Diamond Grip, Pat. Just the thing for farmers—neat, strong, and durable. Will last a lifetime, barring accidents. Uses only straight wires, with so little depression as not to cause the galvanize to crack or peel. If a dealer wants something better to handle than he has had let



him try it. We also supply the Double Lock Wire Fence, which is claimed by some to be second to none, the lateral wire of which, as well as the upright stay, being crimped at joints. Our agents build either on premises. Agents wanted everywhere in Canada, to whom sole territory will be allotted. County and township rights for sale. Our Gas Pipe. Frame Gate takes the lead. No better or cheaper place in the city to get plain or fancy turning done. Call on, or address,

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## Swine.

Mr. J. C. NICHOL, Hubrey, Ont., writes: My Tamworths are wintering splendidly. I never had pigs do so well before. The yearling boar, which I offer in this issue, is a grand pig, and his stock are coming strong and healthy, showing him to be a first-class stock-getter. I am having good luck with the young pigs this spring; they are coming even and strong. I am anticipating a brisk spring trade in pigs.

Mr. J. C. SNELL, Snelgrove, Ont., writes: The demand for Berkshires was better the last two months, and we have made a number of sales. Our orders have come from Manitoba, Quebec, and Eastern Ontario principally, and a few from the southern and eastern States. Fall pigs have wintered unusually well, and early spring litters have come strong, and are going on well. The demand for Jerseys has been good all winter, and our sales have been very satisfactory—much more so than we anticipated in view of the scarcity of feed. We look for a very active demand when grass comes.

## SECOND ANNUAL

# CANADIAN HORSE SHOW

Under the joint auspices of  
The Canadian Horse Breeders' Association  
and  
The Country and Hunt Club of Toronto  
To be held in the

## NEW ARMORY, TORONTO

On Wednesday, Thursday, Friday, and Saturday  
APRIL 15th, 16th, 17th, and 18th, 1896.

The Canadian Horse Breeders' Association will control the breeding classes, and the Country and Hunt Club will have charge of the harness, saddle, hunting, and jumping classes. Entries close on Saturday, April 4th, 1896, in time for catalogue, and should be addressed to HENRY WADE, Parliament Buildings, Toronto.

Horses will be stabled in Toronto at exhibitor's expense.

Joint Secretaries: HENRY WADE, Parliament Buildings,  
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TORONTO, ONT.  
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Lay aside your prejudices, and do that which experiment and experience has determined to be the best.

You can restore the fertility and productiveness of your soil easier, cheaper, quicker, and more lastingly by a liberal use of our high-grade bone fertilizers than by any other known means.

#### Sixty per cent. more clean and smooth potatoes.

"Used your Potato Manure on potatoes at the rate of 500 pounds per acre, which were planted on ground that had been sown to oats without manure the year previous, getting at least sixty per cent. more potatoes than where none was used.

"Also used it alongside of stable manure, using about thirty dollars' worth per acre, and about ten dollars' worth of Freeman's Potato Manure per acre, the yield being about the same, but there was a wide difference in quality. Where Potato Manure was used the potatoes were clean and smooth; where stable manure was used they were very scabby.

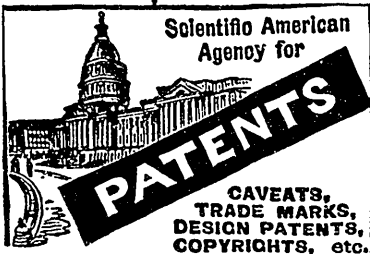
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Agents wanted where not represented.

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APRIL 15TH, 1896,

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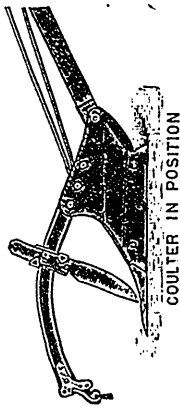
At our farm, one mile from Meadowvale station, on C.P.R. Our entire herd of Shorthorns, consisting of about forty head comprising such well-known Scotch families as Nonpareils, Minas, Cecilians, Jilts, Clarets, and Bessies, topped out with the best imported Cruicksbank and Campbell bulls. Among the lot are some of the best show animals offered at public sale for a number of years, as well as cows that have proved themselves heavy milkers. The heifers are a choice lot, sired by such imported bulls as British Statesman, Tofthills, and Village Boy 6th. In all, ten bulls will be offered, among which is imported British Statesman, which is a first-class show bull in any country, and is bred from one of the best milking strains in Scotland.

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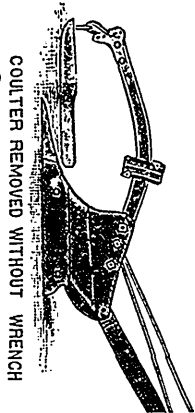


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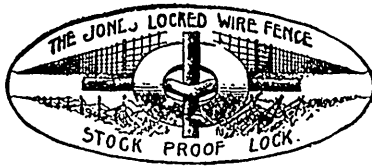
Owing to most of my farm having been sold. This is positively **Not a Culling Out**, but purchasers given their own choice at the **Lowest Prices I ever offered**. For many years I have taken everywhere **1st Herd Prize**, and some of these splendid animals, with their descendants, are for sale. There is seldom such an opportunity to get together a superb dairy herd that will also sweep the show rings.

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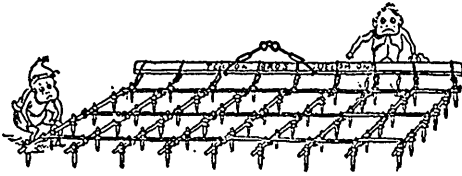
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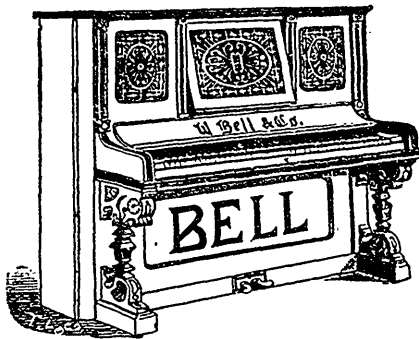
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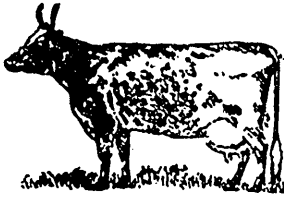
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