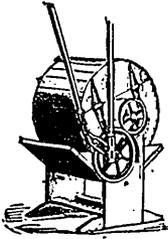




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GLASGOW, as a centre for the disposal of American and Canadian horses, has proved by far the best market in Britain during the past season, and it is likely to continue so, as from its central position it commands buyers from all parts of Scotland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

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

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Don't wait until the trees are in blossom, but order now one of our

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IN HAYING TOOLS, OUR

HAYMAKER CARRIER AND PATENTED STEEL TRACK

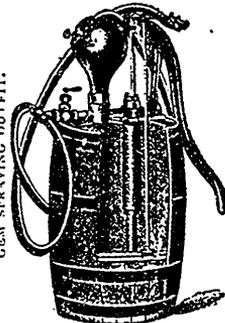
are unexcelled. It won't pay you to harvest without them.

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DO 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

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BOYS FOR FARM HELP

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

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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.

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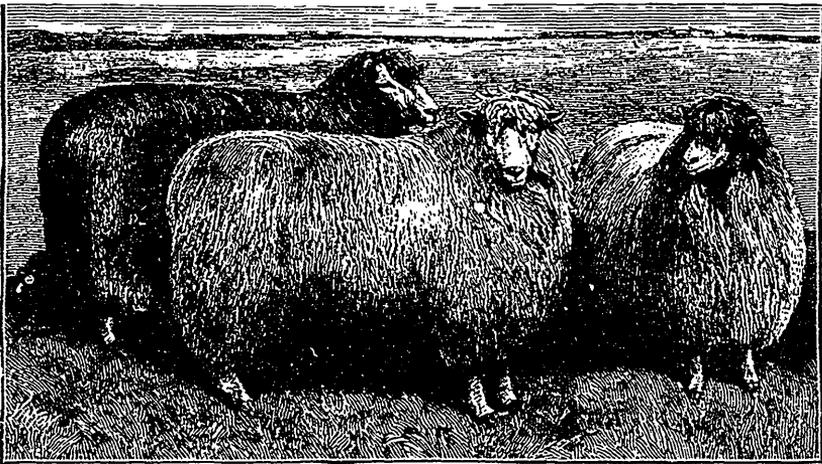
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Group of LINCOLN LONGWOOL SHE HOG<sup>s</sup>, eleven months old, sired by Lincoln 200 Guineas 1,099—bred by Messrs. S. E. DEAN & SONS, Dowsby Hall, Folkingham, which when one year and eight months old won First and Champion Prize for Breeding Sheep at Oakham Show, 1895.

**S. E. DEAN & SONS,** DOWSBY HALL,  
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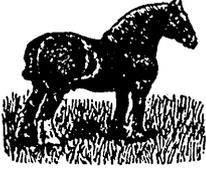
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Dowsby Hall is one mile from Rippingale Station on the Great Northern Railway, Bourne and Sleaford Branch. **TELEGRAMS:—DEAN, RIPPINGALE.**

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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, Carruchan Stamp, Knight Errant, and other celebrities.



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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.

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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.



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From the best studs in Scotland. English and French Carriage Horses, Shetland Ponies, and Ayrshire Cattle.

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DIRECTLY IMPORTED FROM BEST SCOTCH STUDS

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Guaranteed Sound Reasonable Prices  
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Oldest Stud of Hackneys in America.

**FOR SALE** \* Highly-bred Young Hackney Stallions.

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.**

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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, \$100 each. Also several heifers.

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**SHORTHORNS** of both sexes for sale. Four young Bulls and a number of fine young Cows and Heifers. Prices to suit the times. Address

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631

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**SUTTON WEST, ONT.**

100 Head of Registered Shorthorns Including bulls of various ages.

Chance for breeders to buy colts to finish. Inspection invited.

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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 Bows and Sows fit to breed. Write for prices, or, better, come and see.

532

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

**H. I. ELLIOTT**

Breeder of Scotch Shorthorns and Southdown Sheep

Imported King James at the head of herd.

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**Riverview Farm, Danville, Que.**

**RIVER BOW STOCK FARM**

For sale eight choice Shorthorn bulls fit for service. Sired by Chief Captain, one of the best stock bulls living. 75 head of Poland-China and Duroc-Jersey Pigs now ready to ship from choicest prize-winning strains. Also eggs in season from Silver Gray Dorkings, R. Plymouth Rocks, Black Langshans, Brown Leghorns, \$1.00 per 12. Mam-



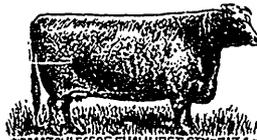
moth Bronze Turkey eggs, 40 cents each. Satisfaction guaranteed. Write



**B. SNARY & SONS,**

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**FOR SALE CHEAP**



We have yet on hand two very fine bull calves over two months old. One from imp. Cruickshank cow, the other a Matchless, both sired by General Booth.

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**Elmhurst Farm - CLINTON, ONTARIO**

**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.

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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=9100=. Terms and prices to suit the times.

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742

SHORTHORNS.

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

**PINE GROVE STOCK FARM,  
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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.

793 **JOS. W. BARNETT, Manager.**



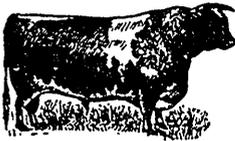
**LAURENTIAN STOCK and  
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Ayrshires, imported and homebred; herd headed by Imported Tam Glen 2nd, No. 1310 D. A. H. B. Jerseys all of the celebrated St. Lambert family; herd headed by Lisgar Pogle of St. Anne's 25704 A. J. C. C. Berkshire Pigs. Young 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.

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**- CARGILL HERD of SHORTHORNS. -**

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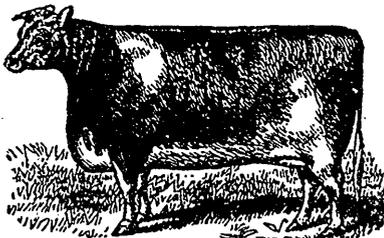


We have but one bull calf left (the best of the lot). Got by Albert Victor (Imp.), out of Lovely Lena, a daughter of Lovely 19th (Imp.). This is a calf fit to head a herd anywhere, and we will sell him right. He is thin in flesh, as we were not troubled with any extra feed this winter.

We have also some grand show heifers and some Canadian-bred cows for sale, and must sell, as our herd is outgrowing their quarters. Come and see them, prices are right. 444

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

**ARTHUR JOHNSTON  
GREENWOOD, ONT.**

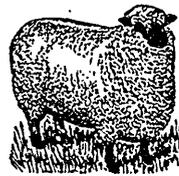


**SHORTHORN CATTLE AND BERKSHIRE PIGS**

FOR SALE—A grand lot of choice-bred young Shorthorn bulls fit for service, and in perfect condition.

Young Cows and Heifers equally fine and Registered Berkshire Pigs of the best English strains. Send for catalogue. "No business, No harm," is our motto.

Claremont Station, C.P.R. Pickering Station, G.T.R.  
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"MINNIE MILES," twice winner over all breeds.

The oldest established flock of Oxford-Down Sheep in Canada. Won many honors at World's Fair. Animals of all ages and sexes for sale reasonably at all times.

**HENRY ARKELL,**

**ARKELL, ONT.**

403

**SIMMONS & QUIRIE**

**Shorthorns and Berkshires.**

The herd is headed by the Matchless bull, Royal Saxon =10537=, by Excelsior (imp.) =2693=(51232), 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.

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

**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,**  
Birohton, Quebec.

Farm one-half mile from station, C.P.R.



633

## SHORTHORNS.

## 4 Grand Young Shorthorn Bulls 4

Twenty heifers of finest quality and best Scotch breeding. Sired by the greatest living Cruickshank bull, Sittytton Stamp (66368). Also a few high-class Welsh ponies. Prices low. Write us. 497

JOHN MILLER & SONS, Brougham, Ont.

## 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.  
544

## JERSEY COWS AND HEIFERS.

The highest testing strains.  
Rich breeding and good colors.

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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 &amp; Laidlaw

LONDON, ONT.

THE MANOR FIELD FARM  
OF JERSEYS

Combines blue blood with vigorous constitutions, and undeniable dairy qualities. The St. Lambert bull, Kaiser Fritz 21773, bred by D. S. Dodge, Connecticut, U.S., heads the herd. Write for prices on young stock.

548

WILLIAM BACON,

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## HEREFORDS.

Ingleside  
Herefords..

THE BEST ALWAYS CHEAPEST

CHOICE BULL CALVES  
FOR SALE

YORKSHIRE AND TAMWORTH  
SWINE

All Ages and the Right Sort.

Satisfaction  
Guaranteed..

H. D. SMITH, Ingleside Farm,

536

Compton, Que.

## 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 quality into consideration.

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

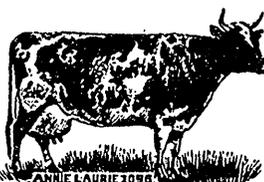
Write for particulars and prices.

JOHN H. DOUGLAS,

WARKWORTH, - - ONTARIO.

598

## 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.  
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Hoard's Station,  
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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,  
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ST. ANNE DE BELLEVUE, QUE.  
710

## AYRSHIRES FOR SALE

Six young bulls, fit for service; 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,

76



Wellman's Corners, Ont.  
Hoard's Station, G.T.R.

## AYRSHIRES

—OF THE—

RICHEST MILKING STRAINS

—AND THE—

CHOICEST BREEDING

ARE KEPT AT THE GLEN FARM.

YOUNG BULLS AND HEIFERS FOR SALE.

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Correspondence solicited.

WHITESIDE BROS.,

INNERKIP, ONT.

## MAPLE CLIFF STOCK AND DAIRY FARM

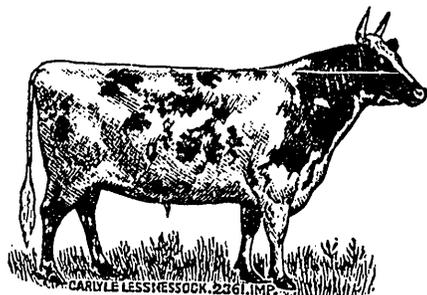
AYRSHIRE CATTLE, BERKSHIRE AND TAMWORTH SWINE. Our herd is headed by the grandly bred Gold Ring 1387, from Nellie Osborne (imp.) 2018. We have still three young Bulls for sale, and young Pigs of both breeds.

R. REID & CO.,

729 (One mile from Ottawa.)

Hintsburg, Ont.

AYRSHIRES.

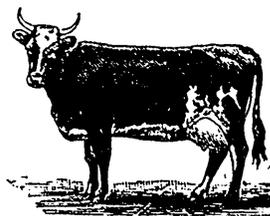


MAPLE GROVE AYRSHIRE STOCK FARM  
R. G. STEACY - Importer and Breeder - LYN, ONT.

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

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.

590

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.

AYRSHIRES

A few choice calves of both sexes for sale, from deep milking dams, and sired by Grand Duke; bred by Mr. James McCormack & Son, Rockton. Also a few cows. Write for prices and particulars.

549

R. E. WHITE, Perth, 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. McLAHLAN,  
Petite Cote, Que.

535

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.

AYRSHIRE CATTLE.

Now is the time to secure your stock bulls before the best are picked, and we have a few left. 2 two-year-old, 3 yearlings, and a fine lot of calves, also females of all ages. Shropshire sheep, and a fine lot of young Berkshire pairs not akin. Prices to suit the times. Give us a call before buying.

J. YUILL & SONS,

Carleton Place, Ont.

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,  
Ormstown, 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.

John Sandilands, Williamstown, Ont. 479

FOR SALE

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

DANIEL DRUMMOND  
Petite Cote, Que.

538

## AYRSHIRES.



# 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, - - QUEBEC.**

**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

**HOLSTEINS.**

**PUREBRED HOLSTEINS  
AND  
TAMWORTHS**

Carmen Sylvia, the sweepstakes cow over all breeds in milk tests at Toronto and Gananogue, 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.

**FOR PRICES ON**

## HOLSTEINS

**WRITE TO**

**F. A. FOLGER,**

**RIDEAU STOCK FARM**

393

**BOX 577 KINGSTON, ONT.**

**HOLSTEIN-FRIESIANS**

Purebred stock of all ages, male and female, of Netherland, Johanna, Moore, and Peel strains, for sale at lowest prices.  
LONDON JOHN MCGREGOR, Constance P. O.  
Londesboro Stn.

**GEM HOLSTEIN HERD.**

**SNAP, \$40 CASH** for Bull Calf dropped March 4th. Dam, Clarabell Sjut, No 18813, H. F. H. B. She has averaged five gallons of 3.2% milk every day during six months, and over 1,500 gallons, and a calf, per year. Prize-winner at World's Fair, Chicago, and at Toronto Industrial Exhibition.

690

Shipping Stn., Toronto.

**ELLIS BROS.,**

Bedford Park P. O., 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 IN  
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

DeKOLS MECHTHILDES TIRANIAS  
ABBEKERKS PIETERTJES MERCEDES  
INKAS AAGGIES NETHERLANDS  
ARTIS AKKRUMS TENSSENS BARRINGTONS  
EMPRESS JOSEPHINES

Young stock of both sexes for sale.

550

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

## SPRING BROOK STOCK FARM

**Holstein-Friesian Cattle and Tamworth Swine.**

Four excellent young bulls, ready for service. Breeding unsurpassed. Come or write at once for bargains. Also a fine lot of Tamworths on hand of all ages.

**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.

**HEL BON 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.**

GUERNSEYS.

**GUERNSEYS**

THE GRANDEST OF ALL DAIRY BREEDS.

**2 BULLS FIT FOR SERVICE 2**

Prize-winners at the leading shows last fall. Also calves of both sexes.

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

Elm Grove Farm, 511 - **LYN, ONT.**

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.

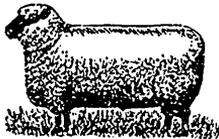
**J. F. GIBSON,** Denfield, Ont.  
**W. WALKER,** Ilderton, Ont.

520

**OXFORD DOWNS**

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

**SMITH EVANS,**  
491 **GOURCOK, ONT**  
BREEDER and IMPORTER



**Oxfords** - - -

Fine rams, shearing and 2 shears and ram lambs. Yorkshire 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.**



**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.**



**SHROPSHIRE**

Our flock, one of the oldest established Shropshire flocks in Canada, was founded in 1881. Importation arrive from time to time, selected in person from best English flocks. Imported stock of both sexes for sale. Homebred January and February lambs by the typical Mountford Exile, and English-bred ewes are also offered.

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

SHEEP.

**McDOUGALL'S SHEEP DIP . .**

And Cattle Wash. Non-poisonous, and reliable. Mail orders promptly supplied. Imported and for sale by

**S. E. STONE,**  
**GUELPH, ONT.**

**FAIRVIEW SHROPSHIRE.**

As my yearling rams and ewes have wintered remarkably well, I am now ready to book orders, guaranteeing to fill them from the best all-round lot ever offered by me.

My rams are specially good, and with the excellent breeding of their sires and dams, will not fail to prove valuable heading flocks. Inspection and correspondence invited.

**JOHN CAMPBELL,**

606

Fairview Farm. **WOODVILLE, Ont.**

**OXFORD DOWNS.**

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

**TURNER & JULL,**  
**BURFORD.**

**E. TURNER,**  
Burford, Ont.

**J. H. JULL,**  
Mt. Vernon, Ont.

418



SWINE.

**Berkshires AND Yorkshires**

Over 50 young pigs of both the above breeds now on hand for sale at moderate prices.

**AYRSHIRE BULLS** fit for service and bull calves.

Also **LIGHT BRAHMS,** **S. L. WYANDOTTES,** and **B. P. ROCK FOWLS EGGS** for hatching, \$1 per setting. 669

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

**Sweepstake Herd of Improved Chester White and Tamworth Swine.** Our herd having

won the grand sweepstakes at Toronto Exhibition of 1895 for the best boar and two sows of any age, we offer for sale spring pigs in pairs not akin from imported stock. Pigs for exhibition purposes a speciality. Pedigrees furnished. Reduced rates by express. Drop a card for prices before buying.

393

**H. GEORGE & SONS**  
Middlesex County. **CRAMPTON, ONT.**

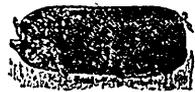


**Large English Berkshires**

Choice stock, both sexes, all ages. Ten boars fit for service, and sows in farrow. Prices moderate. Write for particulars. 698 Mention FARMING.

**C. R. Decker,** Chesterfield, Ont.

Bright Stn., 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.

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

Importer and Breeder of Large English Berkshires.

I am prepared to book and ship orders for March, April, and May Pigs. Pairs and trios furnished not akin. Sires and dams weighing 300 to 800 lbs. Prices right. Poultry, B. P. Rocks, Brown Leghorns, S. G. Dorkings, and Black Javas. Eggs, 13 for \$1, 30 for \$2. Pekin Duck Eggs, 9 for \$1. Bronze Turkey Eggs, 15c. each. 553

## ELMDALE HERD OF TAMWORTHS



One yearling boar, a prize-winner at the Western Fair, 1895. 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

MOUNT PLEASANT STOCK FARM  
Large English Berkshires

Herd took 21 firsts, 10 seconds, and 4 third prizes in 1895. I have a number of pigs farrowed this spring, good length, and large bone, and fine quality. Registered pedigree. Satisfaction guaranteed. Write for prices.

602 Box 102. W. H. SPENCER, Morpeth, Ont.

## ENGLISH BERKSHIRES.

The home of the famous imported sires, Bacon Lee 4th, and Star One. Young litters arriving every month out of matured sows. Highest quality. Best breeding. Now is the time to order spring pigs. Write for prices, or come and see us.

J. G. SNELL, Snellgrove P.O.

Brampton Stn., Ont. 455

## Yorkshires • Berkshires

Primelot 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

If you wish REALLY CHOICE STOCK

Come and see us or write. We have on hand some grand young pigs that cannot be beaten for exhibition purposes. We guarantee that quality and prices will suit you.

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

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,

650 Wm. McALLISTER,

VARNA, 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 looking 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.

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. 559

WALTER. T. ELLIOTT, Hamilton, Ont.

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. Prices right. Mention FARMING.

493

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

## CHARING CROSS HERD.

Choice lot of Chester White swine from 2 to 6 months old. Also Eggs from fine poultry. Partridge Cochins, Light Brahmas, 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 Game. Eggs mixed of any breed if desired, \$1.50 per 13. Bronze Turkeys, Toulouse Geese, and Pekin Duck Eggs, \$1.50 per 11. We guarantee safe shipment and good hatches

GEORGE BENNETT &amp; PARDO,

CHARING CROSS, ONT.

409

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. 657

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. BRETHOUR,  
Burford, Ontario.

668



**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.

**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.**

**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 **GIDEON SNYDER, Jarvis, Ont.**

**Pine Grove Herd** Duroc-Jersey SWINE

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



754

**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

**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).



710

**OLIVER DRURY,**  
Fargo, Ont.

**Chester Whites**

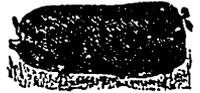
Sows in farrow, and Mammoth Bronze Turkeys. AT ROCK-BOTTOM PRICES.

375

**JOS. CAIRNS, Camlachie, Ont.**

**LARGE ENGLISH BERKSHIRES**

I have a large number of pigs of good length and fine quality, bred from the best imported families. Two fine litters of Spring '06. All first-class. Send order for a pair not akin, or a single pig of this most profitable breeding sort.



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

603

**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.

**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 a lot of good stallions wherever they can. Every mare in the county 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.

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

382

FOR SALE.

## Auction Sale of Jerseys

On Thursday, the 28th of May, at one o'clock p.m.,  
I will offer for sale at public auction  
TWENTY HEAD OF REGISTERED (A.J.C.C.)

AND  
FIFTEEN HEAD OF UNREGISTERED  
JERSEY CATTLE

Very superior stock. TERMS: Six months' credit  
on approved joint notes.  
Catalogues ready by May 15th.

**HENRY YUNG, Prop.**

One mile east of Tavistock. TAVISTOCK, ONT.

## 2 Holstein-Friesian Bull Calves

for sale, at low prices. Apply to

632 WM. SUHRING, - Sebringville, Ont.

## ≡A.J.C.C. JERSEY BULL FOR SALE≡

Handsome dark fawn, dropped July 26th, 1895; in choice  
condition, at prices to suit dull times. Also bull calf, nine  
months old. For further particulars, apply to

786 WILLIAM CLARK, Meyersburg, Ont.

## MAPLE LODGE STOCK FARM.

We have for sale now one very handsome young Shorthorn  
bull, and a few choice heifers, all of the best breeding.

**JAMES S. SMITH,**

785 MAPLE LODGE P.O. Ont.

**11,000 lbs.** of milk in less than 12 months.  
FOR SALE—12 or 15 SHORTHORN  
dairy cows and heifers of the above breeding. Also half-a-  
dozen Shorthorn Bulls, from 12 to 18 months old. Some  
of them bred from the 11,000 lbs. cows, and others from

*Purebred Scotch Shorthorns*, good ones.

Prices and terms to suit the times.

LOT 28, 4TH LINE, BLENHEIM,

JAS. McARTHUR, - GOBLES, ONT.

## Shorthorn

## Bull....

One Year Old.

Fit For Service.

Was awarded first prize as a calf at Markham Fall  
Fair, 1895, beating the third-prize calf at Toronto.

## Several Young Heifers

FOR SALE CHEAP

**JOHN MILLER,**

MARKHAM, ONT.

## MEN AND WOMEN

Teught to make Crayon Portraits in spare hours at  
their homes by a new copyrighted method. Those learn-  
ing my method will be furnished work by me, by which  
they can **EARN \$8 TO \$16 A WEEK.** Send for  
H. A. GEISE, German Artist, Tyrone, Pa.

POULTRY.



## Lenton's Fowls

Are noted winners. To my already fine yards, I have  
recently added the entire flock of Golden Wyandottes  
of C. W. Johnson, Crawford, N.J., which include: Jersey  
King, winner of three firsts at New York, and never beaten  
wherever shown, hen third at New York, and dozens of other  
famous winners at Philadelphia, Hackensack, Newburg, etc.  
Remember I also bought from M. D. Hinds his 1st hen and  
3rd cock at New York, 1895. In Silver Wyandottes I have  
just received a fine pen from E. L. Everett, Spokane, Wash-  
ington, thus making my pens of this variety equal to any.  
White P. Rocks (Rice's stock) and Black Hamburgs  
(McNeil's stock) equal to my Golden Wyandottes. Eggs, \$2.00  
per 13. Bronze Turkeys of immense size and rich color.  
Eggs, \$3.00 per 13. Four full particulars send for catalogue.  
I am agent for Webster & Hannum Bone Cutters.  
Catalogue free.

{ SHARP BUTTERFIELD, JAMES LENTON,  
Windsor, Ont. Park Farm,  
JOHN J. LENTON, Oshawa, Ont.  
Biltmore, N.C.

## BRONZE TURKEY EGGS FOR SALE TOULOUSE GEÈSE

Also eggs of Dark Brahmas, White and Barred Ply-  
mouth Rocks, Red Caps, and Cayuga Ducks.

672 Send stamp for reply.

WM. HODGSON, - Brooklin, Ont.

## Pickle Your Eggs

when they are  
7c. to 10c. per  
doz., for your  
own use, or  
sell them when  
they are 20c. to 25c., and double your money. I have a recipe  
to make Pickle that will keep eggs two years if necessary,  
which I have used for fifteen years. Will send it to anyone  
sending me \$1.00 (registered letter).

**W. N. BUSH, Walkerton, Ont.**

## FARMERS

BREED ROSE-COMBED WHITE LEGHORNS

Best layers; dress well, and combs never freeze. Also eggs  
from Golden and Silver Wyandottes, Single-Combed Brown  
and White Leghorns. All selected, prize-winning stock.  
High scorers. Eggs, \$1.50 per setting.

755 H. W. LAIRD, Cobourg, Ont.

## Thoroughbred Black-breasted Red Game

Stock for sale. Eggs, \$5 per thirteen.

## Thoroughbred S. C. B. Leghorns Black Javas Silver Wyandottes

Stock for sale. Write for prices. Eggs, \$2 per thirteen.  
Satisfaction Guaranteed. 596

J. L. MARGACH, - Port Hope, Ont.

## EGGS FOR HATCHING

From three pens of B. Plymouth  
Rocks selected from 200 birds, at  
\$1 per setting; three settings, \$2.50.  
Reduced prices on large quantities.  
Also Indian Game Eggs at \$1,  
and Pekin Ducks at \$1 per 11.  
The 100 pullets are gone, and gave universal satisfaction.

**W. R. GRAHAM,**  
BAYSIDE, 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 Garden*, 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



791

**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.*

**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 \$4 for thirteen. Stock for sale.

546

**W. T. GIBBARD, Napauoe, Ont.**

Get the Best

**EGGS \$1 per 13.** From high-class purebred Barred Plymouth Rocks, Red Caps, Silver Laced Wyandottes, and Silver Gray Dorkings.

Can ship either by Canadian or Dominion Express Cos. 718 **W. H. KIRBY, OSHAWA, ONT.**

**EGGS FOR HATCHING**

From **SILVER WYANDOTTES**, winners of Silver Medal at Toronto last fall, at \$1.25 per 13. And **PEKIN DUCKS**, headed by the second-prize drake at Toronto, at \$1 per 11. Send for my Incubator Circular.

**J. E. MEYER,**

Box M., Kossuth, Ont.

763

**MAMMOTH BRONZE TURKEY EGGS**

**FOR SALE**—Choice stock. Tom weighs over 30 lbs. Hens from 15 to 20 lbs.. 25 cents each; 5, \$1; 11, \$2. Also **JERSEY and DURHAM BULL CALVES.**

752

**CHAS. MACREY, Box 86, Thornbury, Ont.**

**FOR SALE.** Silver and White Wyandottes. Barred and White P. Rocks. Cornish Indian Games and Mammoth Bronze Turkeys. Specimens for exhibition and breeding purposes. Send for my 12-page catalogue. Address **ALBERT F. FIRESTONE,** 674 L. Box 79. Logansville, Ohio.

**WHITE WYANDOTTES . .**

The very best general purpose fowl. Excellent for the table, and grand good layers of rich flavored eggs. Eggs from pen headed by my winning 10 lb. cock, and prize hens and pullets at \$3.00 per 13, \$5.00 per 26.

Box 202.

**CHARLES MASSIE,** Port Hope, Ont.

**SILVER GRAY DORKING**  
**BLACK MINORCA**

**EGGS** for hatching  
**PLYMOUTH ROCK**  
**BROWN LEGHORN**

759

**\$1 per 13**

**T. & H. SHORE, White Oak, Ontario.**

**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**

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**Champion's Guide**

To success on Poultry Culture contains 36 pages. Richly illustrated. Valuable information on poultry-raising. Priced in colors. I have won over 200 prizes on my 12 varieties of fowls in two years, also diplomas and specials. Male birds scoring from 92 to 94 head. My breeding pens, I have the finest fowls in the thumb of Michigan. Guide sent for 5 cents in Canadian stamps. Duty on eggs only 5 cents per dozen.

**S. CHAMPION, Cass City, Mich.**

**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 exhibitor. For prices of eggs, and further particulars, address **C. J. WRIGHT, Box 114, Dixville, Vt. 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

**BRONZE TURKEYS.**  
FOR SALE

An extra fine lot of Bronze Turkeys from prize-winning stock at Toronto and other shows, at prices to suit the times. If desired can furnish pairs or trios not akin.

JAS. TOLTON,  
Walkerton, Ont.

462

**RIVER VIEW POULTRY YARDS.**  
GEORGE & SPETTIGUE, LONDON, ONT.

793 (52 Clarence Street.)  
All kinds of Brahmas and Cochins, also Golden Wyandottes, Barred and White Plymouth Rocks, R. C. and S. C. Brown and R. C. White Leghorns, Black Spanish, Buff, Pekin, and Black African Bantams. Stock for Sale after Sept. 15.

**LUCKNOW POULTRY YARDS**

Eggs for Hatching, \$1.50 per setting, from Light Brahmas, Black Minorcas, White Leghorns, B. P. Rocks, S. L. Wyandottes, Redcaps, also Pye Games and Pekin Ducks. Games, \$1.00 per setting; ducks, \$1.00. These birds have won 124 prizes at the leading shows the past season. Write for further particulars. 750

J. C. LYONS, - - - LUCKNOW, ONT.

**BARRED PLYMOUTH ROCK EGGS**  
FOR HATCHING

FROM MY BEST PEN. \$1.50 per 13; \$2.75 per 26; \$3.75 per 39. 755  
- R. F. HOLTERMANN, Brantford, Ont.

**GREEN VALLEY FARM**

Eggs from Prize Birds for Hatching

Silver and Golden Wyandottes, Partridge Cochins, White and Brown Leghorns, S. S. Hamburgs, Golden Polands, Light Brahmas, and Red Caps.

Only \$1.50 for Thirteen.

F. J. MACKLIN, Fenella, Ont. 761  
Telephone, "Fenella."

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**Toronto** CUTS FOR ALL ILLUSTRATIVE PURPOSES.

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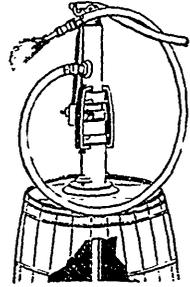
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# FARMING

Vol. XIII.

MAY, 1890.

No. 9.

## The Old Live Stock Freight Rates Restored.

In our last issue we referred to the injurious effect that the new classification by the railway companies of live stock shipped singly or in small lots had on the breeding interests of the country. The article was hardly in print before we learnt that, owing to the persistent efforts of the committee representing the Dominion Cattle Breeders' Association, the railroads had agreed to restore rates to the original basis. This is eminently satisfactory, and the committee who had the matter in hand are entitled to the thanks of every breeder in the country. They were: Hon. Thomas Ballantyne, chairman; Mr. J. I. Hobson, secretary; and Messrs. A. Johnston, R. Miller, J. C. Snell, and D. G. Hanmer.

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## The Horse Show.

The importance of the horse industry to this country has caused us to give as extended a report of the Canadian Horse Show as possible in this issue. There are some wise men who think that they can foresee the extinction of the horse in the near future, owing to the bicycle and electric cars destroying its usefulness, but we are not of that opinion ourselves. The love of good horses is too firmly implanted in the human breast, and it only needs an exhibition like the Horse Show lately held at Toronto to show the interest taken by all classes of people in the equine race. Such shows are of untold good in increasing the popularity of the horse. Long may they flourish!

---

## Canadian Horses are Sound.

The unwarrantable statements made in Great Britain, that horses imported from Canada were suffering from glanders, called forth the following resolutions, which were passed at a meeting of the Canadian Horse Breeders' Association, held in the Armouries, Toronto, on Saturday, April 18th, Mr. R. Davies, president, in the chair. It was moved by Mr. H. Cargill, M.P., seconded by Mr. William Hendrie, jr.:

"That this association of horse-breeders for the Dominion desire to place on record the fact that glanders is not prevalent in Canada. They are satisfied from their own knowledge, also from the assurance of Dr. Andrew Smith, V.S., principal of the Ontario Veterinary College, that no Canadian horses have been exported suffering from this disease."

It was moved by Mr. Robert Ness, of Howick, Que., seconded by Mr. H. N. Crossley, Toronto: "That the Hon. Dr. Montague, Minister of Agriculture, be requested to take such steps as may best protect our export trade in horses."

At a meeting of the Executive Committee of the Clydesdale Association, which was held on April 16th, at the Albion Hotel, a deputation was appointed to go to Ottawa and ask the government to prohibit the shipping of American horses for Europe from Canadian ports, on the ground that Canadian horses are free from disease, and that the horses found to be suffering from glanders were American stock shipped to the old country from Canadian ports.

---

## Notes from Great Britain.

(By Our Own Correspondent.)

A cause of considerable trouble, and one that often results in heavy losses, and with which all breeders of horses are more or less troubled, is "navel-ill." It has been noticed that this disease is oftentimes very largely prevalent in large studs, and particularly is this the case where one or more boxes are made into what is termed foaling boxes. This is an arrangement that should never be made, for each and every mare should either foal in her own box, or, if she has not one, then in a temporary enclosure—anywhere, in fact, rather than in a box that has previously been used for this purpose during the same season. The reason why this should be done is that the disease is generally supposed to arise from infection, and hence, as prevention is always better than cure, it behooves all breeders to bear this matter in mind. One very strong reason for this plan is that it is a well-known fact that rarely, if ever, does the disease attack a colt

whose birthplace has been out in the open field. Let a mare be in, as near as possible, a perfect state of nature, and the odds are a thousand to one that no evil will result.

Like every place where birth takes place, the foaling box or enclosure should be thoroughly and frequently disinfected. Many old hands may smile at this, and say that they never used to do so, and were always safe. This may be true, but science has conclusively proved that by these simple and inexpensive means security may be made doubly secure, and surely, in these times, when every cent is of importance, it behooves one not to take an additional risk.

The demand for really first-class horses of all kinds has been very good. Many brood mares and stallions have been sold at very high figures. Hackneys, Shires, and Clydesdales all have sold well, and particularly is this the case where the animal is of number one quality. There are always on hand buyers for these.

---

### The Hackney Horse Show, London, England.

(By Qur Special Correspondent.)

The tenth annual show of the above society was held March 3rd to 6th, 1896, and a most successful one it was in every way, the total entries being 442, as compared with 431 in 1895.

The stallion classes were of very great merit, and the competition was very keen. Sir Walter Gilbey stood out a most conspicuous winner, for not only did his entries in the two-year-old, three-year-old class, over 15 hands, and the class for over four years between 15 and 15.2 hands, go to the top of their respective classes, but these same three stallions won in the champion contest the cup for the best young stallion and reserved number for the same, and the cup for the best old stallion, and also the challenge cup for the best stallion in the yard, and reserved number for the same, a feat never before accomplished. Class 1 for yearling colts had 32 entries, and a very level class it was, headed by a very nice colt of great promise, Mr. T. Mitchell's Edemynag, sired by Ganymede. Next in order of merit came Mr. Ripley's Gantry, by the same well-known sire. Two-year-old colts were a class of exceptional merit, which was headed by that grand colt, Royal Danegelt, bred and owned by Sir. W. Gilbey, a truly grand son of old Danegelt, and who later won the proud position of cup winner for young stallions, and reserved number for championship of the yard. Mr. W. H. Oates' level colt, Lord Ryburn, was second.

Three-year-old stallions under 15 hands were led by Mr. Sidney Brunton's Manfred, last year's first-prize two-year-old. This colt has gone on growing, and he is a splendid, level goer, with great action. Next in order of merit came Mr. H. Moore's Clarionet, a colt with excellent character and action, but not of the substance of the premier winner.

Three-year-old stallions over 15 hands numbered 33. Sir Walter Gilbey's May Royal, a son of Danegelt, was almost without hesitation selected for premier winner by the judges, whose choice was thoroughly supported by the attendant public. This is an excellent colt, and although beaten in the cup competition by his half-brother, Royal Danegelt, has great substance, quality, and hock action. Next came Mr. T. Mitchell's Grand Master II., a colt with good underline, but lacking somewhat in substance.

Stallions four years and over, 15 and under 15.2 hands, although fewer in number than last year, were a class of great merit. Here, again, the judges at once practically selected Sir Walter Gilbey's Hedon Squire for premier honors, to which, later on, he added those of being winner of the cup for the best old stallion, as well as winner of the challenge cup for the best stallion in the show. He has great action and a beautiful symmetrical body, with grand shoulders, and is full of quality and character. Next in order of merit came H. Wittick's Gentleman John.

Stallions over four years old, and over 15.2 hands, were perhaps one of the best classes in the hall. They were headed by that grand and typical old horse and champion in 1891, R. Tennant's Connaught, now twelve years old, but going like a three-year-old, with splendid action both in front and behind, and having that substance with quality and splendid conformation that one always looks for in a stallion. Next in order of merit came Rosador, last year's junior cup winner.

The filly and mare classes were not quite as well filled as last year, but they were of great merit, particularly in the yearling class of fillies, which numbered 33. Here Mr. F. Pemberton's Lady Valentine by Grand Fashion II. came to the front, followed by J. Conchar's Fiona, a very nice, level, and promising filly.

Three-year-old fillies were headed by C. E. Galbraith's Lady Helmsley, a splendid filly of great quality and action, moving both shoulders and hocks rightly. Further honors were in store for her, for she was an easy cup winner in the junior section for mares. Mr. Mitchell's Sabina, first last year in her class, made an excellent second, and to her also went the reserved number for the junior mare cup.

In the class for mares having produced a foal in 1895, or being in foal, between 14 and 15 hands, Mr. C. E. Galbraith was an easy first with Danish Lady, a grand mare, with splendid action and quality. Next in order of merit came the same owner's Lady Ulrica.

Mares having had a foal in 1895, or being in foal, between 15 and 15.2 hands, were a very strong class of merit. Here an easy winner was found in Stella, Mr. Waterhouse's last years winner, a grand mare of exceptional merit, with excellent conformation and action. To her went the premier honors here, as well as the cup for the best mare in classes 13, 14, 15, and ultimately she won for her owner for the second year in succession the challenge cup as best mare in the show. Next in order of merit came another of Mr. Waterhouse's mares, Radiance.

Class 15 was a similar class to the above, but for mares over 15.2 hands Ada Rufus, last year's third-prize mare, went easily to the top. J. W. Temple's Lady Dereham came next.

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### The Canadian Horse Show.

The great success that attended the efforts of the management of the Canadian Horse Show in its initial efforts last year has again been repeated. In spite of the fact that the prize list was very largely increased, and the expenses of running a four days' in place of a three days' show were also greater, the balance in hand is fully as large as it was last year. It is true that the attendance, during the mornings and afternoons especially, was not as large as might have been expected, but in the evenings it was good, although the building was never inconveniently crowded at any time. It would be worth while for the management to consider whether a lower rate of admission next year would not prove more beneficial to the gate receipts than the present price charged, which bears somewhat heavily on families whose members are numerous.

Everything ran smoothly during the exhibition, and the joint secretaries, Messrs. Henry Wade and Stewart Houston, must be congratulated on the admirable manner in which everything was arranged. The presence of the Governor-General and Lady Aberdeen, who took great interest in the horses, proved a good drawing card, and the Lieut.-Governor and Mrs. Kirkpatrick were frequently present. Sergeant-Major Dingley, of the Royal Canadian Dragoons, proved an excellent master of ceremonies in the ring.

The breeding classes, on the whole, were fairly well filled, and many of the animals were of very great merit. Some of these classes, however, were

lamentably weak, notably the Shire, Standard-bred, and Coach classes, especially the latter. It is to be hoped that another year will see a great improvement in this portion of the show.

The harness classes were well filled, and many of the classes were worthy of the highest commendation, as showing what we can produce if we only bend our efforts in the right direction.

#### THOROUGHBREDS.

In the class for Thoroughbred stallions foaled previous to 1893 five horses faced the judges. Among them was the unbeaten Mikado, the lord of the harem at Thornccliffe, who added another to his list of victories by winning first in this class, and also the Prince of Wales prize for the best Thoroughbred stallion on the ground, second place going to Mr. S. B. Fuller's well-known horse, Wyndham, and third to Tyrone, a brown horse, now owned in Millbrook, a good pattern, if hardly as big as his competitors. Pillarist, owned by Alex. Holmes, Beachville, a big strong fellow that many of the spectators would have liked to have seen a bit higher up, was fourth.

In class two for stallions three years old and under, there were but two entries, Cinders, a bay colt by Cheviot, taking first over the imported chestnut colt, Disturbance III., a decision that certainly puzzled a good many fanciers outside the ring. The chestnut struck us as being a capital sort all over, and he certainly ought to prove a success in the stud if blood tells, as a glance at his pedigree shows him to be by Morion, he by Barcaldine, out of a mare by Blair Athol, second dam the dam of Hermit. We venture to prophesy that if he is done right by another year or two will show that his owner, Mr. John Dymont, showed his usual good judgment in this purchase.

Class three, for Thoroughbred stallions calculated to produce hunters and saddle horses, brought out ten entries, and here Wiley Buckles, exhibited by Quinn Bros., Brampton, scored first. This horse has been so often described that it is unnecessary to say any more than that it was a popular decision. Second place was awarded to Godard, by King Ban, who was brought out by his new owners, Graham Bros., Claremont, in the pink of condition. He is a big, strong horse, of excellent quality, and shows extraordinary action for a Thoroughbred. Semper Rex, a chestnut from the stud of Mr. Wm. Hendrie, came in third. This is a well-furnished horse, of a somewhat lighter stamp than the first and second prize horses, but we fancy that if he has any kind of a chance he should leave some half-breds that will be worth buying.

With two exceptions the three-year-old half-breds were a very indifferent lot, so much so that

that the judges withheld the third prize. First went to Donovan, a big, breedy-looking bay gelding by the imported horse, The Chicken, and second to W. O. Law's bay colt got by Dennison, hardly big enough, but a colt of nice quality. Four four-year-old half-breeds made a decidedly better showing, a chestnut gelding, owned by Dr. A. Smith, taking first, with R. O. McCulloch's Monte, a bay colt by Dandie Dinmont second, and a brown filly, whose breeding was not given, third.

#### CARRIAGE OR COACH.

Stallions were not out in force, and, while the prizes were not large for this class, only \$25 was claimed out of \$165 offered, and this was in the younger class, in which there was but one entry. The judge, R. P. Sterrick, of Springfield, Illinois, had an easy but rather disappointing time in looking over the entries for one of his favorite breeds. Mr. W. C. Brown, of Meadowvale, took a first for Prince George, foaled in 1893, sire, Prince Victor. Those sent into the ring in the older class were not awarded any prizes, as the judge did not consider them good enough to merit that honor.

#### STANDARD-BRED ROADSTERS.

These were also a very light class. There must be plenty of these yet in the country, but most of them may not be in any show condition. Those out were in good form and well shown. Six aged stallions faced the judges. Amongst these were two distinct types. One rangy looking, one might almost say lanky, with drooping quarters and low set tail; the other more compact, more blood like, with square quarters, and tail well set up, showing altogether a more pleasing picture to the eye accustomed to the well-made saddler or racer. The first was the type of many of the fast ones of the past decade. The latter that of the more handsome stayers of the modern track, having speed as well as some beauty of form and gait. It was a noticeable thing that the three bays in this class captured the first three prizes, and the browns, blacks, and chestnut had to take a lower place. First went to Altoneer 17493, exhibited by Edmund Taylor, Toronto. He is a very nice bay, with a skin like shot silk, and he went through the paces in good style. Second prize was taken by R. Robson, Brantford, for Wiry Jim 15617, a horse that showed well as a walker, which is a very desirable quality, and one all too rare amongst the Standard-breds. Harold Hamilton, another bay, and only a four-year-old, came third. He is owned by T. Boyes, Churchill. Fourth went to Hugh Scott, Caledonia, for the brown horse Bryson. In the younger classes there were but two animals

out. In the regular class for three-year-olds Uncle Bob 23785, a brown black, or a black brown, got first, and Charity Bell 28397 got second, while the latter had it all his own way in the two-year-old class. In the class for fillies the two-year-old, Pindus, got first. She was shown by Thos. Hodgson, V.S., Toronto. Harry Webb was second with Alecia Bell, a nice chestnut. In the class for mares any age, but age considered, the mare the judges fancied was thrown out over some informality in her pedigree, and the Kentucky-bred Almeria, foaled in 1893, got the red ticket, her stable companion, Wiltonwood, getting second. They are a pair of bays, owned by Harry Webb.

#### HACKNEYS.

In these classes Mr. R. P. Sterrick, who officiated as judge last spring, again tied the ribbons. The first class for stallions four years old and over, and over 15½ hands, brought out five competitors, first place going to Royal Standard, imported last fall by Graham Bros., and now shown for the first time in Canada, a capital good stamp of horse, having size and substance, with plenty of quality, and true Hackney action all round. Fireworks, by Wildfire, from Mr. Crossley's Rosseau stud, came in a good second, while Courier, owned by A. G. Ramsay, Hamilton, was third, and Lord Rosebery II., bred and exhibited by R. Beith & Co., fourth. This last horse, although still a little high off the ground, has improved both in appearance and way of going since last year, while Courier, who showed wonderful action last year, struck us as not showing as well as in the past. In the next class for stallions under 15½ hands, last year's champion, Banquo, had to lower his colors to a newcomer, Moorland, a bay horse exhibited by Thomas Irving, Winchester, a good old-fashioned pattern and a grand goer. "Tom" Irving generally manages to be somewhere in it, and certainly no one grudged him his success this time. Banquo, who was, as we have said, placed second, seemed to miss his old trainer, John Wylie, and, while going very well in front, hardly managed his hocks as well as we would have liked. Third and fourth went, respectively, to The Shah, a black horse owned by A. G. Bowker, Woodstock, and Royal Dane, from the Hillhurst stud.

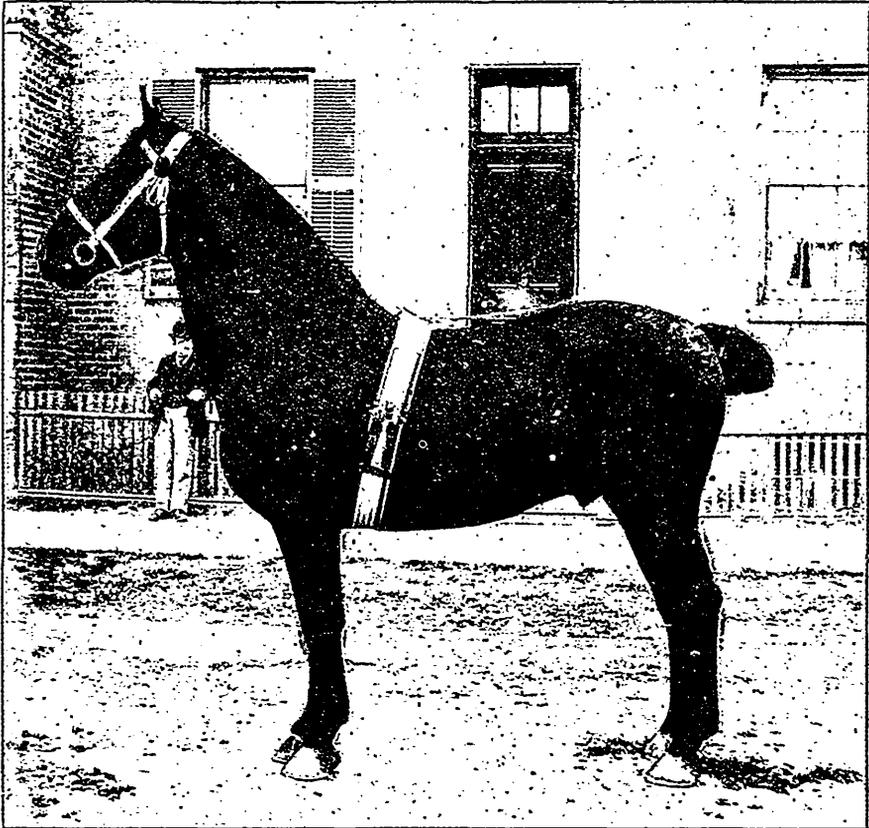
Three-year-old stallions were represented by two entries from the Hillhurst farm and one from the Rosseau stud. This latter, a red roan, by the well-known English sire, Enthorpe Performer, showed wonderful action, drawing round after round of applause from the spectators. Still, the judge seemed to prefer the Hillhurst colt, Barthorpe Performer, a dark chestnut, by-

a son of the famous Connaught, which he placed first, the other entry from Hillhurst, a chestnut by Fordham, out of their famous mare, Princess Dagmar, getting third.

Two-year-olds were also three in number, and here Hillhurst scored first with Danish Duke, also by Fordham, out of Princess Dagmar, a bay colt showing decidedly the best Hackney type of the two, although not handling himself as well as he might; his stable companion, Gentility, out of the well-known show mare, Miss Baker,

Victoria and Birdie, third and fourth, respectively, both nice fillies, and giving every promise for the future, but hardly forward enough, at present, for the show ring. Fannie Bardolph, a filly by the well-known Lord Bardolph, shown by G. H. Hastings, came in fifth.

Class 16, for Hackney stallion and three of his get, brought out three entries, and here Jubilee Chief, whose get were represented by Banquo, Rosebery II., and Jessica, had no trouble in taking first; but we were a little surprised at



The First Prize Hackney Stallion, Moorland (4420).  
Imported and owned by Mr. Thomas Irving, Winchester, Ont.

coming in second, with Rosseau Fireball, a colt of a rather different pattern, smaller, but showing plenty of quality, and a fairly good mover, shown by H. A. Crossley, third.

In the class for Hackney mares, three years old and under, there were five entries, and last year's winner, Messrs. Beith's Jessica, a full sister to Banquo, again walked away with the red ribbon, second going to a chestnut yearling by Ottawa, bred and exhibited by the same firm, with Mr. Crossley's two yearlings by Fireworks,

seeing Courier placed second over Fireworks, and we fancy that, had the latter's two yearling fillies been in a little better trim, the verdict might have been reversed.

In the sweepstakes class there was no exhibit from the class for horses under 15.2 hands, as, through a misunderstanding, Mr. Irving had not entered his horse, Moorland, and Messrs. Graham's Royal Standard was an outstanding winner.

The class for high-steppers sired by a registered

Hackney stallion brought out a good exhibit, first going to Mr. Crossley's imported mare, Althorpe Duchess, a capital actor, and a winner in many previous contests; second to Perfect, shown by L. Meredith, London, a chestnut gelding that went away in grand style, handling his hocks in true Hackney fashion; with a very pretty brown, owned by T. S. Weld, London, third; and Cherry Ripe, by Seagull, shown by John Holderness, fourth.

## SHIRES.

Shire stallions were a very small class, there being but three entries, all in the aged class. First in his class and sweepstakes went to Pride of Hatfield, exhibited by Messrs. Morris, Stone & Wellington, Welland, Ont.; second to Bravo II., from Mr. Crossley's stud; and third to Darnley, exhibited by George Garbutt, Thistle town, Ont. These three horses have all been shown at previous shows, and the competition between the first two has always been of the keenest description. Both excel in different points, and both had their fanciers among the audience. The judges gave them a careful inspection, and, after due deliberation, gave the awards as stated. In the class for mares, Lizzie, imported and exhibited by Morris, Stone & Wellington, a thick, low-set mare, took first, with a three-year-old from the same stud third, second going to a bay four-year-old of Mr. Crossley's. Altogether, the exhibit of Shires was by no means what it should be, and we would urge the necessity of more attention being paid to this breed in these days of demand for bigger and heavier geldings.

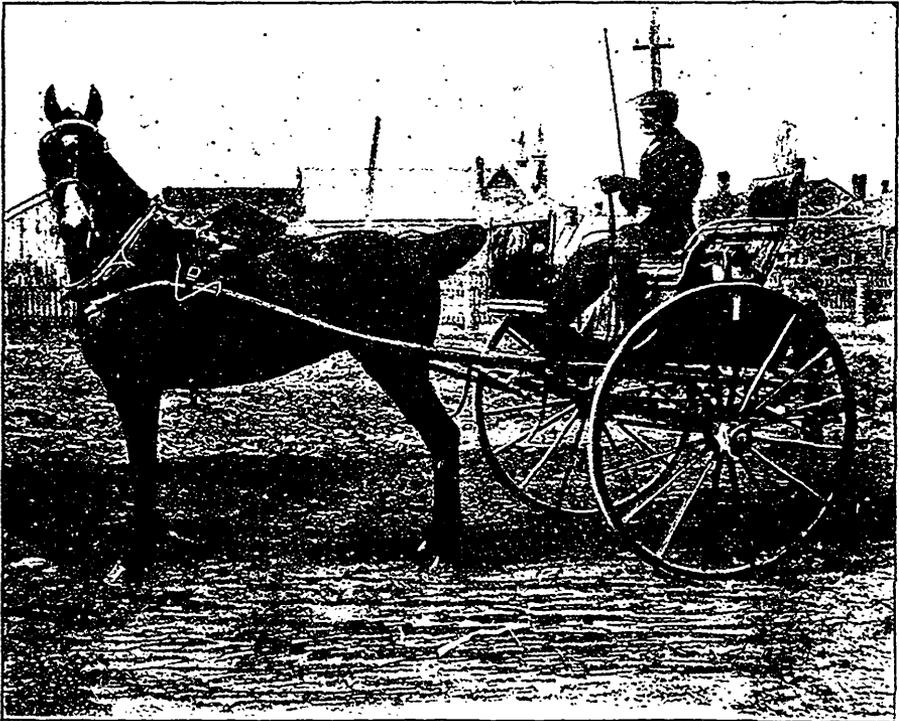
## CLYDES.

The show of Clydes was one of the best features of the exhibition. This was to be expected, as this breed has always taken the lead among the heavy horses of Canada. Of late years they have shared the prevailing depression in all branches of the horse trade, but they were the first to show signs of returning prosperity, and to-day the prospects for good, heavy Clydes are anything but dull. Only recently a first-class team of heavy, well-bred Clydes were sold by their exporter in Liverpool for \$1,000. Clyde breeders see the promise of paying prices for anything good and heavy they have to sell. With this in view, the trade in Clydes has already revived, and the horses brought out were good ones, and were shown in excellent form. There were twenty-five stallions forward in the different classes, and, while they were not all equally good, the representatives, as a whole, were very creditable specimens of the breed. There was just an even dozen entered in the aged stallion class, and of these nine faced the judge, Robert Ness, of Howick, Quebec. Mr. A.

Galbraith, of Janesville, Wis., was to have been associated with him, but the latter had gone to England, and a cablegram from that land advised the directors that he would not be able to get back in time to take his duties at this show. The work was well done by Mr. Ness, who was very painstaking, and handled the animals carefully before allotting the ribbons. Before the public judging took place in the ring, there were gathered in the waiting shed at the east end of the Armories about as critical a lot of the Clyde breeders of Canada as one ever sees together. Here the knowing ones had their private view, and had a chance to handle legs and pasterns, and lift and examine the feet. Here not a few of the breeders were able at once to pick out the first three, and place them in the order in which they finally stood in the prize list. Graham Bros., of Claremont, had the winner in The Royal Standard [2221], sire Royalist (6242). He was bred by Mr. Robertson, Linkwood, Scotland, foaled May, 1892, and was sold to Mr. Leonard Pilkington, Cavens, Dumfries, who won with him at the Royal as a yearling, and again as a two-year-old. He was purchased from Mr. Pilkington by Graham Bros., and brought to Canada last fall, but was just too late for the fall shows. He is a nice bay, with a little white on his face, and a pair of white hind socks. He has splendid feet, and very well-set pasterns, nice bone and good quality of hair. His joints are clean. His forearm at first sight looks light, but when examined is found firm and muscular. Looked at from the front, the first thought is that he is a trifle narrow, but his chest is deep, and on careful examination is found to be good and roomy, much better than some of his rivals. His make-up is smooth and level; his gait good, and his action true and regular. Robert Davies, of Toronto, was awarded the blue ribbon and second prize for Prince of Quality [2173]. He came second at the World's Fair to the sweepstakes horse there, and was second last year to Esquire of Park [2178]. He is a beautiful black, with white face and white on hind legs; not very large, but of excellent quality. He was one of the best movers on the ground, and for good hock action not many of the Hackneys could beat him. He was foaled in 1889, and bred by that veteran breeder, Col. Robert Halloway, of Alexis, Ill., United States. His sire, Cedric (1087), by Prince of Wales (673), is one of the best sires that ever crossed the Atlantic. Of quite another sort was the third-prize horse, Erskine Macgregor 7543, bred by John Gilmour, Fife, Scotland, exhibited by C. E. Clark, St. Cloud, Minn., United States, and sired by Lord Erskine 1744,

the very celebrated son of old Boydston Boy (111), so well known to many Canadian horsemen. Erskine Macgregor is a massive horse, with size, weight, and substance to commend him, and he looks as if he lived on the fat of the land. He stands very wide in front, with a broad chest, neither outstanding nor deep, a massive barrel, with a good top. He had many admirers, and some of the Shire men thought that he should be the winner in this class. Fourth prize went to John Davidson, Ashburn, for Lewie [2177], bred in Canada by the owner and exhibitor. Lewie is by Lewie Gordon [1602], a well-known winner at

seventh place the commended horse, Ingram's Heir 6950. This horse was bred in the United States by N. P. Clark, of St. Cloud, Minn. He is by Sinclair (4714), out of Sonsie, imported by D. & O. Sorby, Guelph. This is a good, thick horse, just the kind to breed to. The younger classes were not filled, but those shown were equal to the best of late years. In the two-year-old class, foaled in 1893, R. Beith & Co., Bowmanville, were the winners with Locksley [2192], a nice bay, with white markings, a good, big, strong colt of great promise. He is by Sir Walter [1131], out of Messrs. Beith's prize mare, Maria



The First Prize Hackney Mare, Althorpe Duchess—21—.  
The property of Mr. H. N. Crossley, Rosseau, Ont.

former shows. He is a big, thick-jointed horse of good substance, and a credit to the skill of his breeder. He was placed second in the three-year-old class last year. Fifth prize fell to F. W. Evans, Yelverton, Ont., for Craichmore Darnley [2127], a big, good-looking son of Darnley (222). The highly-commended ticket was taken by Erskine Style [2121], bred and exhibited by John Vipond, Brooklin, O.N., sire, Erskine [1652], by Lord Erskine (1744). It is refreshing to see such good ones as Erskine Style and Lewie brought out by our Canadian breeders. Next stood in

[979]. Second prize went to Stanley 9677, shown by C. E. Clark, of St. Cloud, Minnesota, and third to John Vipond, Brooklin, for Whitby Champion [2175], by New Day [1912], out of Heather Bloom [2003]. For the yearling class foaled in 1894 four good ones came out. The first easily went to King's Own [2172], bred by Robert Davies, Toronto, out of Candor [1656], and sired by Queen's Own [1708], Graham Bros.' well-known horse. This colt was foaled May, 1894, and now weighs 1,760 lbs., which does not say much for the croaking that has been heard

about the Clydes being now bred all to quality without size. King's Own is a massive colt, and has quality as well. He was brought out in great condition, and is one of the best colts, Canadian bred, that has ever been seen at the spring stallion shows. Graham Bros. had Sensation, bred by William Parlan, Kirkcudbright, Scotland, also a big thick colt weighing 1,620 lbs., but this son of Macgregor (1487) had to be content with second place when he came against the big Canadian. King's Own is a nice dappled brown, with big joints, strong knees, and with good bone and feather. C. E. Clark got third place with Glen Alpine 8061, a dark bay, by Esquire of Park [2178], the champion horse at the show of last year. The fourth horse, bred and exhibited by Alex. Doherty, Ellesmere, Ont., is also a Queen's Own colt, but he lacks the size of his big half-brother.

#### CANADIAN-BRED CLYDES.

There was nothing as good in the class for Canadian-bred Clydes. This class has to be confined to animals tracing on the dam's side to grade animals bred up from the ordinary stock of the country, but with not less than five crosses of Clyde blood, which may either be imported Clydes or registered graded-up animals. Ashburn Hero [2093], bred and shown by Job White, Ashburn, Ont., was easily first. He is a big thick horse of fair type, sired by Tannahill [1205], who has had a big record for breeding good ones. He is now five years old, and was winner of third place in this class last year. Second prize was awarded to Joseph Alsop, Glasgow, Ont., for a horse by Lord Lieutenant [975], imported by Arthur Johnston, Greenwood. This is a three-year-old, called Captain Willie [2170]. Third place went to Strathmore [628], a horse nine years old, and not as heavy in type as some, though showing good, useful points. In the younger class, foaled in 1893, there was but one entry, City Boy [2174], sire the Granite City [5397]. This horse was bred and shown by W. J. Howard, Dollar, and is a nice bay with white markings, and considerable Clyde character. The two classes as a whole did not compare favorably with what is sometimes seen in the Canadian classes at the Toronto Industrial and other leading shows, and did much to bear out the contention made by some breeders that it is not fair to ask that these animals be shown against Canadian-bred stock from purebred imported mares.

For the sweepstakes—a gold medal—for the best Clydesdale stallion of any age, there were several entries, but only two came forward. Mr. Robert Davies had King's Own [2172], the grand colt out of Candour [1656], the best and biggest

specimen of a Canadian-bred colt we have seen for many a day. With him competed Graham Bros.' The Royal Standard (10014), the winner in the aged class. The latter showed well, and was better schooled in his paces, and brought out in good form. After a close tussle, the latter got the award.

#### CLYDE MARES.

The mares were all grouped together, imported and Canadian-bred, and a grand lot they were. We have heard a good deal lately about the farmers and breeders parting with the best of their mares, but, if these were a specimen of those left, we shall do very well yet. Of those parading before the judge nearly one-half were Canadian-bred, and, of these, two got into the first four in the prize list. The winning mare was Nelly [1323], by Lord Lynedoch (4530), owned by Robert Davies, Toronto. A notable feature in this mare's pedigree is the fact that she has for her dam Maggie of Hyndford (1), bred by John Anderson, Croy, Stirlingshire, entered as No. 1 in the Clydesdale Studbook of Great Britain. Nelly, in herself a number one mare, is a nice bay with one white foot and a stripe on her face. She is a grand type of a Clyde matron, but so is also the second mare, her stable companion, Pride of Thorncliffe [1937], a big, roomy mare, just the type to breed good ones. She was bred by Major L. D. Gordon Duff, Keith, Scotland, and has been a winner of prizes in many a show ring before. Third place went to a young bay mare, The Queen [2263], of quite a different type, owned by Graham Bros., and bred by William Carter, Pickering, Ont., a big thick, blocky mare with dark points and lots of bone. Fourth place went to James I. Davidson & Son, Balsam, for Boydston Lass II. [2007], by Prince Imperial [74], a light-barrelled mare, with good feet and legs. She was followed by the brown mare, Candour [1656], the dam of King's Own, a good type, and a grand breeder. She is sired by Macgregor (1487), and has already done well for her owner, Robert Davies. Those in the class failing to get a prize were extra good animals. William Hendrie, Toronto, had a grand pair of good thick mares, but not brought out in the sleek style of their rivals, and their feet showed signs of hard winter's work.

#### HEAVY DRAFT TEAMS.

Half a dozen very fine teams paraded for inspection. George Moore, of Waterloo, took first with a splendid span of geldings, each of them weighing a ton. They were 16.3 hand and well matched, being five and six years old and trotted around more like ponies than their mountains of muscle would lead one to expect.

Another look showed how beautifully they were mated. Dark legs in front and off white stockings behind, with just the least bit of white on the nigh hind feet. The off was rather the better of the two, and with just a little bigger blaze on his face. They were hitched to a heavy C.P.R. dray, and trotted around the ring beautifully, going together like clockwork. They easily took the fancy of the crowd, and were loudly cheered on getting the red ribbon. The second prize went to Wm. Hendrie, of Toronto, for a thick, blocky, useful team. They looked as if they had already done good work at the traces, and were ready for much more. They were not as heavy as the first-prize team, but looked to be in good hard flesh. Third went to Robert Davies for his well - matched pair of brown mares, Young Lily and Candour. They have both taken honors in their class at former shows both as fillies and as mares, and both showed up well at the World's Fair, Chicago. They make a beautiful team, heavy and good, and the best of it is they are breeding good ones to follow in days and in shows to come. Fourth prize went to James I.

Davidson & Son for Boydston Lass II. and Queen, both with good Clydesdale character.

(For continuation see back pages.)

### Clydesdale Association of Canada.

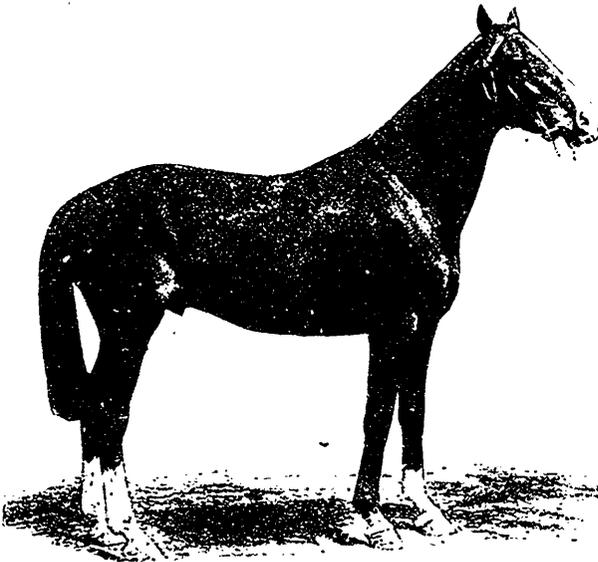
At the general meeting of this association held during the Horse Show in Toronto, to consider the amalgamation of the Canadian and American associations, a letter was read from Mr. Robert Miller, vice-president of the American Clydesdale Association, stating the terms on which that association was willing to amalgamate. After a good deal of discussion, it was decided to thank the committee for the work already done, and to

ask them to devise a more popular system of membership than that proposed, and, if that could be arranged, the feeling of the meeting was favorable to a union on a satisfactory basis. It is proposed to keep up the Canadian association, but to join the American organization in issuing pedigrees and publishing future volumes of the studbook.

### Dominion Cattle Breeders' Association.

The fifth annual meeting of this association was held in Toronto on Friday, April 17th, Mr. John I. Hobson, Mosboro, in the chair. The subjects under discussion were "Transportation Charges on Live Stock," and the "Abolition of the Quarantine between Great Britain and Canada, and between Canada and the U.S."

With regard to the former question the railway companies had already met the views of the association by restoring the freight rates on small shipments of cattle to the old basis, with which the breeders were satisfied, except that it was thought that the schedule



The Second Prize three-year-old Thoroughbred Stallion, Disturbance 3rd (Imp.).

The property of Mr. John Dymont, Orkney, Ont.

on yearling bulls was excessive. The following motion was passed :

"That while this association desires to express its appreciation of the courtesy shown by the authorities of the two great railway companies in acceding to the request of the breeders and others to return to the old estimated weights for animals shipped over their roads, it is of the opinion that an estimated weight of 3,000 pounds for a bull between one and two years is excessive."

The quarantine regulations were discussed by Hon. John Dryden, President Mills, Messrs. Hobson, Snell, A. Johnston, Hanmer, and others, and it was evident that all were a unit in favor of the abolition of the quarantine, every speaker emphasizing the fact that the abolition would largely benefit Canadian breeders.



MR. W. B. ANDERSON of Willink, Buffalo, N.Y., owns and works a span of mares aged 34 and 36 years. They were both bred by their present owner, who has always taken good care of them, and who thinks they are good for several years yet.

It is alleged by some of the horsemen in New York that a number of horses have died during the past year by eating golden rod. One writer says: "I am fully convinced that this disease is due either to some poisonous principle in the plant, or to some parasitic fungus upon the surface of the same."

It is a common saying, says a writer in the *London Live Stock Journal*, that a good horse is never of a bad color. Whether this be true or not, it is certain that the biggest and heaviest dray horses in London streets are mostly all grays or chestnuts. Yet neither of these colors is, in a stud sense, fashionable.

PROFESSOR WALLACE, of Edinburgh University, says: "A horse doing very hard work and receiving a full daily allowance of oats is much better for about two ounces of linseed oil added to his food. This makes just about a wineglass full. The animals get extremely fond of it, relish their food, and thrive in consequence."

HORSESHOEING competitions are valuable and very interesting, and would make an attractive feature of our leading shows. There is a very elaborate arrangement being made for an exhibit at the Highland Society's Show next summer at Perth, Scotland. \$150 are to be given as prizes.

MR. MORTIMER LEVERING, of Lafayette, Indiana, secretary of the American Shetland Club, says: "The Shetland is the only breed considered safe and fit to trust in the hands of little children. They never bite, kick, or run away, and are never tired out, or sick from careless feeding or watering; they stay hitched or unhitched wherever you put them. They are the longest lived of the equine family. Some are known to have lived sixty to eighty years."

THE records of the British Thoroughbred horse are the oldest in the world, dating from 1791. All existing Thoroughbreds branch off from three sires—Eclipse, Matchem, and Herod. They are all inbred to Whalebone, Blacklock, Orville, and St. Peter. "A good animal is a good animal, however it may be bred, but it is to pedigree that we must look for the perpetuation of merit." Of modern sires the foremost are Galopin and his son, St. Simon, the latter being by far the more popular."

RACING men in the United States are advocating the shortening of the trotting races. The present rule of the best three in five heats is very hard on the faster horses. It has been suggested that it would be a good change to have races decided in four or five heats, and divide the money at the end of these heats according to the position of the horses in the summary. Others are in favor of making the best two in three the order for the future. The change, if made, will largely stop the laying up of heats and some other abuses that are creeping into modern racing.

LIVE-STOCK raising is more important in Belgium than in any other country in Europe. The Belgians raise more heavy draught horses than are produced in the whole of France. The varieties of these horses are very remarkable—the Flemish horse and the big Hetsbaye horse. Then comes the Condroz horse and the Ardennaise horse. The report of the United States Department of Agriculture states that there are 47 head of large-sized farm animals (horses and cattle) to every 247 acres of surface, and 100 head to every 247 acres of arable land, or one head to two and a half acres, which is considered the maximum of agricultural production.

THE Allan Line carried across the Atlantic in 1895 the large number of 6,773 horses. Of these, 4,382 went to Glasgow, 1,800 to London, and 591 to Liverpool. The loss in transit amounted to 122 head. 4,712 went from Montreal, and of these there were lost only 39. This route is much safer than that from either Boston or New York. From Boston the loss was nearly 30 per cent., while from Montreal the loss was only about eight-tenths of one per cent. The same firm carried

52,745 cattle and 79,943 sheep during the season of 1895.

It has been said that a good horse is never a bad color, but certainly a bad color detracts from the value of a horse. The darker colors have the preference at present, especially for horses used for pleasure in the cities. White markings are rather fashionable for high-steppers, and black points are preferred for heavier carriage types. The lighter colors, grays and whites, are not desirable, as, while shedding the coat, the light hairs show very much on ordinary garments. Horses of these colors are also more trouble to groom and keep clean. The colors stand in popularity about as follows: Brown, bay, black, chestnut, roan, gray, white.

MESSRS. DALGETY BROS., of Dundee and Canada, have just shipped a very fashionably-bred Clydesdale stallion from Glasgow to Boston. The horse in question, Royal Prince (9053), was bred by Mr. John Hardie, Mull Farm, Kirkmaiden, and is one of the justly-celebrated Prince of Wales and Darnley crosses, a cross which has been productive of so many good horses, such as Prince of Albion, Prince Alexander, Orlando, Prince of Kyle, Prince of Garthland, and others equally well known in the Clydesdale world. Royal Prince has already a highly distinguished showyard career. Two of his progeny stood first and second in the three-year-old stallion class at the great spring show of Clydesdales in Aberdeen lately, and there is not the slightest doubt that this grand horse will be highly popular in Canada, where, it is understood, the Messrs. Dalgety intend to station him during the forthcoming season. The figure at which he was purchased has not yet transpired, but it may be remembered that he was sold as a yearling at the Highland and Agricultural Society's Show, in 1890, at the handsome price of £850.

THE *Horse World*, of Buffalo, says: "The action of the Board of Review in directing all tracks belonging to the National Association to accept no more entries from the New Brunswick horseman, George Carville, is not to be commended. Carville entered a horse in a race at the St. Stephen's track, but decided to draw him the night before the race, and telegraphed the association to that effect before seven o'clock in the evening, according to the rule. The telegram did not reach the track until the next morning, and the judges took the horse out of the stable, selected a driver to pilot him, and started him in the race in spite of the owner's orders. The horse came out of the race lame, and his

owner brought suit against the association and recovered damages. The track officials admit that their action in starting the horse was unlawful, and simply because the owner went to the courts to secure reparation the Board of Review entered the decree, which is practically expulsion. The injustice of such action is manifest, and, until the board administers turf law in a different spirit than this, it will never secure the respect and commendation of the general public."

THE *American Sportsman* has lately published a table showing the winnings of the get of prominent trotting sires during the years 1892, '93, '94, and '95. The first four sires are all developed sons of George Wilkes. Of the nineteen sires in the table twelve have records of 2.30 or better, and twelve are descendants of George Wilkes. The best ten are:

|                    |       |           |
|--------------------|-------|-----------|
| Guy Wilkes, 2.15¼  | ..... | \$114,593 |
| Baron Wilkes, 2.18 | ..... | 108,005   |
| Onward, 2.25¼      | ..... | 107,780   |
| Alcantara, 2.23    | ..... | 89,035    |
| Director, 2.17     | ..... | 85,834    |
| Pilot Medium       | ..... | 84,180    |
| Happy Medium       | ..... | 79,569    |
| Wilton, 2.19¼      | ..... | 72,584    |
| Simmons, 2.28      | ..... | 68,583    |
| Alcyone, 2.27      | ..... | 66,576    |

Then follow Electioneer, Wilkes Boy, Mambrino King, Red Wilkes, Sable Wilkes, Robert McGregor, Young Jim, Nutwood, and Bourbon Wilkes. All these have sums over \$50,000 placed to the credit of their get in the past four years.

### Clydesdale Breeding.

When the Clydesdale Association was organized in 1886, one of the objects was the keeping of a reliable record for Canadian Clydes and the publication of a studbook, which has now reached its eighth volume. Another object was the establishment of a stallion show along the lines so successfully carried out in Glasgow, Scotland. This has been well managed, and the horse show just held was the tenth annual one held in Toronto. From small beginnings this show has widened and extended till now it is one of the most attractive exhibitions of the kind on this continent.

In one point, however, it has been a failure. It was intended by the original promoters that it should become a great buying and hiring fair, where purchasers could come from the United States and Canada and find the best of our horses, and where Canadians would come and

hire the horse of their choice for their particular district. The former of these ideas has been realized to some extent, but the latter has not come up to the expectations of its promoters. There is yet, in Canada, no systematic hiring of stallions, no cohesion amongst the breeders in a section, such as we find in Scotland, and no working together to improve the breed in any particular locality.

Co-operation is needed, and to begin a work of this kind a few active, energetic breeders should get together and start the movement. These should discuss and decide upon the best route for their district, and then proceed to get the farmers interested who have suitable mares convenient to the route. The fee being fixed, and the agreement duly signed by the farmers willing to join the society, the next step is to appoint a committee to select the stallion. This committee should be good judges, and they should get the best horse they can for the fees they have to offer.

Some such plan as this is needed to get the best results from our horse breeding. It would greatly help not only the farmers, but the stallion owners, and, in time, give Canadian-bred Clydes a much advanced position in our country.

The following is the list of awards made since the spring show was begun, in 1887 :

| CLYDESDALE STALLIONS, FOUR YEARS AND OVER. |          | NAME.                  | SIRE.                    | OWNER.          |
|--------------------------------------------|----------|------------------------|--------------------------|-----------------|
| 1887-15                                    | entries. | Gilman (572)           | The Druid (1120)         | Robert Beith.   |
| 1888-11                                    | "        | Abbot of Kerwick (575) | Belled Knight (1305)     | R. Beith & Co.  |
| 1889-15                                    | "        | St. Gatten (821)       | Old Times (579)          | R. Beith & Co.  |
| 1890-14                                    | "        | Macneillage (1117)     | Macgregor (1487)         | Graham Bros.    |
| 1891-20                                    | "        | Macneillage (1117)     | Macgregor (1487)         | Graham Bros.    |
| 1892-21                                    | "        | Queen's Own (1708)     | Prince of Wales (673)    | Graham Bros.    |
| 1893-14                                    | "        | Grandeur (1724)        | Darnley (222)            | D. & O. Sorby.  |
| 1894-16                                    | "        | Grandeur (1724)        | Darnley (222)            | D. & O. Sorby.  |
| 1895-16                                    | "        | Esquire of Park (2178) | aird Darnley (3748)      | Graham Bros.    |
| 1896-12                                    | "        | Royal Standard (2221)  | Royalist (6242)          | Graham Bros.    |
| CLYDESDALE STALLIONS, THREE YEARS OLD.     |          | NAME.                  | SIRE.                    | OWNER.          |
| 1887-14                                    | entries. | Norseman (413)         | Duchal (2727)            | Robert Beith    |
| 1888-14                                    | "        | The Granite City (799) | Lord Eskine (1744)       | R. Beith & Co.  |
| 1889-13                                    | "        | MacBean (827)          | Macgregor (1487)         | Graham Bros.    |
| 1890-18                                    | "        | MacClaskie (810)       | Macgregor (1487)         | Graham Bros.    |
| 1891-16                                    | "        | Lewie Gordon (166)     | MacCannon (13818)        | John Davidson.  |
| 1892-12                                    | "        | Linkwood Lad (1818)    | Cairnbrogie Stamp (4774) | John Davidson.  |
| 1893-9                                     | "        | Symmetry (1715)        | Ensign (5749)            | W. Innes.       |
| 1894-1                                     | "        | Millring Stamp (2222)  | MacNeil (4566)           | P. & A. Holmes. |
| 1895-3                                     | "        | Grand National (1957)  | Tannahill (4745)         | S. McArthur.    |
| 1896-3                                     | "        | Locksley (1923)        | Sir Walter (8272)        | R. Beith & Co.  |

The opening year, 1887, was memorable for the first appearance of the now famous Mac-

Queen [462], who won as a yearling. The gold medal winners were :

- 1888—The Granite City.
- 1889—MacBean.
- 1890—MacClaskie.
- 1891—Macneillage.
- 1892—Queen's Own.
- 1894—Grandeur.
- 1895—Esquire of Park.
- 1896—The Royal Standard.

In 1893 the Prince of Wales' prize (\$50) was won by Grandeur.

### The Thoroughbred.

The modern English horse, known as "Thoroughbred," is the best type of a racing horse in the world. These horses have been brought to this perfection by long years of careful breeding to develop the greatest speed upon the race track. In the earlier times they were bred from Eastern blood—more or less—crossed on native British racing mares. Just how these latter were bred is not known. We have no record of the horse in Britain till the time of the Roman invasion under Julius Cæsar. Horses were then plentiful, and were used in cavalry service and for horsing the numerous war chariots in the native army. They were good enough to attract the notice of the Romans, who, as masters of the world, must have been familiar with the best races of horses of that period. Probably there was little change in the breed of horses in Britain till the time of the Romans, who were ardently devoted to the horse, and brought over many from the continent, chiefly from France and Flanders. The knights of those days fought in armor that needed weight-carrying horses, and heavy horses were bred for that purpose. The style had changed before the days of the good Queen Bess, and horses were used in those days as pack-animals to distribute the goods and other freight of the kingdom.

Horse-racing, as a national sport, was not much encouraged until the times of James I. and Charles I. A Mr. Place, who was stud-groom to Oliver Cromwell, imported an Eastern horse, known as Place's White Turk. This horse appears in the studbook. Cromwell took great care of his own horses, had an excellent stud, and frequently drove four-in-hand. Charles II. made an importation of four Barb mares from Tangiers. These are known as the "Royal mares." Three mares captured at the siege of Vienna were brought to England in 1684. The racehorses of English breeding in these days were fast enough to beat the best of these imported animals, but

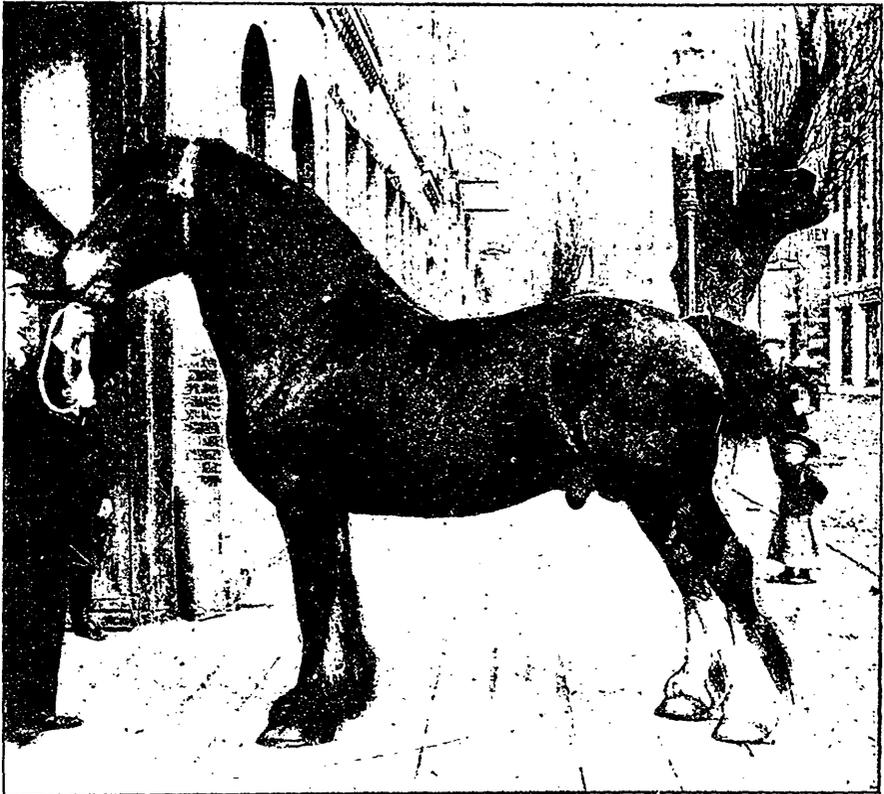


The Champion Thoroughbred Stallion, Mikado.  
The property of Mr. Robert Davies, Toronto.

the crossing of Eastern blood brought out several noted winners. Of these Flying Childers, Matchem, Herod, and Eclipse deserve special mention, and one or more of these appear in most modern pedigrees. Just how much credit is due to Eastern blood, and how much to the old breed in the modern racehorse, is a difficult question to answer. Care in breeding has done much for the modern Thoroughbred. No horses in the world are his equal in speed. While a century or two ago the first cross from an Arab sire

the last century. This can be judged by comparison of the portraits painted of the old winners. In point of height there can be no question. Out of over 100 winners in the middle of last century only eighteen were 15 hands and upwards. Now, a winner in any great race under 15 hands is a great rarity,

The average height of the modern Thoroughbred may be taken as 15 hands 3 inches. Stallions often are 16 hands or over, but extra size has not been found to add to their chance of win-



The Sweepstakes Clydesdale Stallion, The Royal Standard [2221] (imp.).  
The property of Messrs. Graham Bros., Claremont, Ont.

could be counted as a probable winner, no Arab now would be expected to beat a good English racehorse, and a very ordinary second-class animal would be expected to beat easily any Arabian half-breed, so much has the modern racehorse been improved by judicious selection. "The Studbook" is the standard for the Thoroughbred. No animal is entitled to the name unless his pedigree appears in the record, or he is bred from sire or dam so recorded. In size and appearance the racehorses of to-day are superior to those of

ning in hard-fought races. Few very tall racers have made good performances on the turf, while many rather under 16 hands have made great records. The improvement of late years has been chiefly in the length and slope of the shoulders, the length of the arms and thighs, and the shape and size of the head. The modern racehorse is often a very beautiful animal. It has been claimed that for their beauty of form and development of high speed for a short race other valuable qualities have been sacrificed, but this

has been denied by others, and many claim that for pluck and bottom our modern horses are equal to any. We shall not attempt to decide this much-discussed question. The racing of two-year-olds has had much to do with bringing on early maturity, incompatible with very lasting qualities of any kind. Formerly horses were not raced till five years old, when they had attained a fair measure of growth without forcing of any

light necks, deep chests, oblique shoulders, long racing hindquarters, strong hocks, fine bones, clean sinews, long, sloping pasterns, and good feet. Some good ones have been plain and even coarse-looking, but in spite of their plainness their points have been good and useful, and some extra development in one part has thrown the whole out of an elegant form. Most turfmen believe that high breeding is of more real value than



First Prize Clydesdale Team at the Canadian Horse Show.

Owned by Mr. George Moore, Waterloo, Ont.

kind. The average modern racehorse is of such forced growth that he is unable to bear the wear and tear of training as he used to do, and a large number of unsound animals are to be met with. There is every reason to believe, however, that any distance may now be run in as short a time as ever was done during or before the last century. The Thoroughbreds have usually neat heads,

beauty of external form. If two horses be taken, one of an almost perfect racing shape, but of an inferior strain of blood, the other of a rather poor shape, but rich in winning blood, the latter will be most likely to win on the racecourse. "An ounce of blood is worth a pound of bone" is the racing proverb to illustrate the point.



## Ranches in Argentina.

The estancias or ranches in the Argentine Republic are of two kinds, outside and inside. The inside are fenced, and contain from about 3,300 to 80,000 acres. The outside ones are farther back in the country, where land is cheap, and are seldom fenced in. Some of these are owned by big British companies, and are very extensive. One in the Rio Negro district covers a thousand square miles.

The best ranches are in the province of Buenos Ayres, and their stock-carrying capacity is good. The Entre Rios ranches will carry about 4,500 sheep and 1,500 cattle to every 6,600 acres. In the provinces of Buenos Ayres, Santa Fé, and Cordova alfalfa or lucerne plantations are becoming general, thus not only increasing the stock-bearing capabilities of the land, but enabling the owners to fatten their animals very cheaply.

The live stock are at present rather rough, but the more advanced stockowners are rapidly changing all this by importing high-priced stock from Great Britain, so that we can look for much keener competition in the near future in the British markets from South American cattle than is the case at present.

## Intelligence in Cattle.

Youatt, in his work on cattle, mentions the following well-authenticated story of a bull which showed almost human sagacity: "A gentleman in Scotland, near Laggan, had a bull which grazed with the cows in the open meadows. As fences were scarcely known in those parts, a boy was kept to watch, lest the cattle should trespass on the neighboring fields and destroy the grain. The boy was fat and drowsy, and was often found asleep; he was, of course, chastised whenever the cattle trespassed. Warned by this, he kept a long switch, and with it revenged himself upon the cattle with an unsparing hand if they exceeded their boundary. The bull seemed to have observed with concern this consequence of their transgression, and, as he had no horns, he used to strike the cows with his large forehead, and thus punish

them severely if any of them crossed the bound ary. In the meantime he set them a good example himself, never once straying beyond the forbidden bounds, and placing himself before the cows in a threatening attitude if they approached them. At length his honesty and vigilance became so obvious that the boy was employed in weeding and other business, without fear of the cows transgressing in his absence."

## Cowbane.

Cowbane is the name of a poisonous plant that grows freely in low, swampy places in various parts of this continent. It is known by the name of water hemlock, spotted cowbane, musquash, and root or beaver plant, and is a perennia growing with hollow stems, large compound leaves, and white flowers. It is a member of the carrot family, and, like another member of the family, poison hemlock, is deadly poisonous to man and cattle, and occasionally to horses.

The roots of the cowbane are of a fleshy nature, and there have been numerous cases where portions of them have been eaten by persons under the idea that they were roots of wild parsnip, in most instances with deadly results. In Iowa there are records of a number of persons, and also of cattle, having died after eating portions of the roots of cowbane. On examination, the stomachs of the cattle after death were found to be all blackened over, showing the poisonous nature of the plants. It is also said that cows which fed on hay containing the stalks and leaves of cowbane lost their calves. The poisonous effects show in a very short time after the animal partakes of the roots or leaves.

It is asserted by some authorities that horses, sheep, and goats can eat it with impunity, although, in the cases of horses, there is considerable evidence to the contrary. Several experiments carried on with horses and cats seemed to show that it was not fatal to horses, although it affected them for a time, while cats suffered no inconvenience therefrom.

As the writer has frequently seen cowbane growing on farms in Ontario, it would be well for

farmers who can recognize the weed to destroy it wherever found, or to refrain from turning their cattle into places where it grows.

In this connection it may be mentioned that the much denounced wild parsnip which is generally supposed to be poisonous has not been found to be so, and it is probable that, where cases of persons having been poisoned from this plant have been reported, it is cowbane, and not wild parsnip, that was partaken of. In fact, in several cases this has proved to be so.

### Blind Stagers.

This is not a common disease among cattle, but I once had a cow that was troubled with it. She was a good milker and was bought by me on that account, and, as a rule, was as quiet and orderly a cow as any of the rest, but, once in a while, she would be attacked with the disease, on which occasions she would foam at the mouth, bellow, stagger and fall. In a few minutes she would, apparently, be all right again. As I was moving to a new farm some time after the last attack she had, I sold her with a number of others, and so know no more about her, but I always thought that it must have been some brain trouble that brought on the attacks. Personally, I know of no other cases, and shall be glad to hear from anyone who knows of a similar one.

In looking over the report of the United States Bureau of Animal Industry on diseases of cattle, I find the disease referred to pretty fully. It is known by various names, such as staggers, stomach staggers, mad staggers, sleepy staggers, frenzy, and coma. It may be caused by blows on the head, by tumors in the brain, or by food containing ergot or other fungi which contain narcotics. This latter is said to be the most frequent cause. The symptoms vary much. The first signs may be those of frenzy, but generally at the start the animal is dull and sleepy, with little inclination to move about; the head may be pressed against the wall or fence and the legs kept moving, as if the animal were endeavoring to walk through the obstruction; the body, especially the hind part, may be leaned again the side of the stall, as if for support. The bowels are constipated; the urine is small in quantity, and darker in color than usual. There may be trembling and spasms of muscles in different parts. In the dull stage the animal may breathe less frequently than natural, and each breath may be accompanied with a snoring sound. The pulse may be large, and less frequent than normal. If suddenly aroused from this dull state, the beast

appears startled and stares wildly. When moving it staggers, and the hindquarters sway from side to side.

When the delirium ensues, the animal seems mad, bellows, stamps, runs about, grates the teeth, and froths at the mouth. If confined to the stable she rears and plunges, rendering it dangerous for anyone to go near her. The body is covered with perspiration. She may fall. The head is often raised and dashed against the ground till blood issues from the nose and mouth; the eyes are bloodshot and sightless; the limbs stiff; and the urine squirted out in spurts. After the convulsions cease a quiet period ensues, and in a short time the animal may rise and feed as usual, though this is not always the case. In bad cases death results before long.

The treatment of this disease is not satisfactory. Recoveries are rare, even under the most favorable circumstances. To be of service, the treatment must be prompt at the outset of the disease. Bleeding is called for, and eight or nine quarts of blood should be taken from the jugular vein. This should be followed by a purgative, the following being for a cow of average size: Epsom salts, 24 ounces; pulverized gamboge,  $\frac{1}{2}$  ounce; croton oil, 20 drops; warm water, 3 quarts. Mix all together and give at one dose.

About two quarts of warm soapsuds should be injected with a syringe or tube into the rectum every three or four hours. It is best to keep the animal in a quiet, sheltered place, where it will be free from noise and other cause of excitement. All the cold water the animal will drink should be given it, but no food except bran slops or grass should be allowed. During the convulsions the animal's head should be held down to prevent it injuring itself, and cold water or bags of ice should be applied to the head. A blistering compound of mustard, 1 ounce; pulverized cantharides,  $\frac{1}{2}$  ounce; hot water, 4 ounces, well mixed together, may be rubbed in over the loins, along the spine and back of the head on each side of the neck. This is occasionally beneficial.

If the purgative acts, and the animal improves 2 drams of iodide of potassium may be given, night and morning, dissolved in half a bucketful of drinking water, or given as a drench, if the animal will not take it naturally. After some progress is made toward recovery,  $\frac{1}{2}$  dram of pulverized nux vomica, in addition to the iodide of potassium, should be given twice a day till the staggering gait ceases.

Post-mortem examinations reveal congestion of the brain, and, in cases showing much paralysis, of the membrane of the lumbar region (loins) as well. In all animals that die of this affection the

lungs are also very much congested, but this is only a natural consequence of the brain disease.

Such is a summary of the description given in the report mentioned above. It must be evident, however, that the symptoms given there are for severe cases, and, judging from the single personal experience I have had, there must be many slight attacks of the disease which do not result fatally. I may state that the animal which I am referring to was in my possession for several months after the last attack that I noticed, and, except during the short time when they came on, was otherwise as well as usual.

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### A Fine Ayrshire Heifer.

The illustration on the opposite page is from a photograph, taken from life, of the fine Ayrshire heifer, Alice of Haun, bred by Mr. W. S. Park, Bishopston, Scotland, and imported by Mr. John H. Douglas, Warkworth, Ont. The photograph was taken when she was two years old, before her udder started to develop, and so does not give one any idea of the fine udder that she now carries since calving.

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### The Long-Horned Breed of Cattle.

The long-horned breed of cattle, now practically extinct in Great Britain, although at one time they occupied an important place in British agriculture, originated in the district of Craven, a corner of the West Riding of Yorkshire, whence they were sometimes called Craven cattle. They seem to have been a valuable breed, and the milking qualities of the cows were by no means poor. They were distinguished by an exceeding length of horn, which in the improved cattle projected horizontally on either side; but as the breed improved the horns took other directions, sometimes hanging down so that the animals could scarcely graze, or nearly meeting under the muzzle, or threatening to perforate the nose or face. It seems that, as the breed improved, the horns also lengthened. There were, apparently, two distinct varieties of the breed, the smaller Cravens, which lived in the mountain districts, and which were excellent milkers, and the larger, which thrived on the richer pastures of the dales, and were more inclined to beef, although the cows were fair milkers.

It was about the year 1720 that the first attempt seems to have been made to improve the Craven cattle. A blacksmith and farrier named Welby, who lived at Linton, in Derbyshire, and who worked a little farm, had the honor of being the

first one to try it in a systematic way. Unfortunately, a disease broke out among his herd, which carried off most of them, and so impoverished him that he was unable to continue his efforts in the line of improvement.

Soon after this, a Mr. Webster, of Canley, near Coventry, commenced improving his herd of long-horns. His original stock were the same as those of Mr. Welby's, having been obtained from Sir Thomas Gresley, who lived near Burton-on-Trent. Mr. Webster took great trouble in procuring the best bulls he could get from Lancashire and Westmoreland, and soon had worked into a herd of excellent quality. Youatt says that little more is known of Mr. Webster than that he established the Canley breed, some portion of whose blood flowed in every improved long-horned beast.

The bull Bloxedge, which was to the long horns what Hubback was to the Shorthorns, and whose value, like Hubback's, was only accidentally discovered, was out of a three-year-old heifer of Mr. Webster's by a bull from Lancashire. When a yearling he was so little thought of that he was sold to a farmer named Bloxedge (whence his name), but, as he turned out a particularly good stock-getter, he was repurchased by Mr. Webster and used for several seasons.

It is, however, when we come to the celebrated Robert Bakewell, of Dishley, Leicestershire, who was born about 1725, that we find the most systematic plan of improving the long-horns being carried out. Unfortunately, we have no account left of the precise principles which guided him in his work, but he seems to have aimed principally at beauty of form, utility of form, improvement in quality of the flesh, and earlier maturity. In order to carry this out he commenced inbreeding, and soon had a herd whose fame spread far and wide. They were noted for their roundness of form, smallness of bone, and aptitude to lay on external fat. At the same time, however, their milking qualities were considerably lessened. Some idea of their ability to take on fat may be obtained when we mention that the fat on the sirloin of old Comely, the mother of the herd, was four inches thick on the outside when she was killed.

Although the good work carried on by Bakewell was continued by other breeders, still the breed did not spread as we might have expected. This was due to the advent on the scene of the more popular Shorthorns, which seemed to suit the breeders' wants in a more satisfactory manner. Judging by our own requirements, the length of horns alone in the long-horns would have been a considerable inconvenience, and the loss of milk-



The Imported Ayrshire Heifer, Alice of Hatton,  
The property of Mr. J. H. Douglas, Warkworth, Ont.

ing qualities would also be an objection, because the early Shorthorns were good milkers, and, consequently, would be chosen in preference. Be the causes what they may, the breed has now almost entirely disappeared, and, except for the stimulus given to cattle improvement by Bakewell, his work as regards the long-horns seems to have been labor lost.

### Abortion in Cattle.

Some time ago we mentioned in our columns that carbolic acid, administered internally, had been used successfully by the manager of an English herd of cattle for the prevention and cure of abortion, the said manager being generally credited with being the discoverer of the benefits of carbolic acid thus used.

In an article on this subject, however, in *The Breeders' Gazette*, Mr. William Watson, Keillor Park, Winchester, Ill., claims the honor of being the first one to treat abortion and "leucorrhœa," or "whites," in this manner. He got the idea from a Denver physician, who had used it successfully in the human subject. He first experimented with it in 1879, in the herd of Mr. T. L. Miller, Beecher, Ill., a well-known Hereford breeder, a number of whose cows were affected with "whites," the result of abortion, while two were suffering from retention of the afterbirth. We give Mr. Watson's description of treatment in his own words:

"The cows were tied up till thoroughly cured. We regulated the strength of the drench to the best of our ability, being guided very much by our own palates. The strength arrived at was fifteen drops of diluted crystallized carbolic to one gill of water; this proportion was found most effectual in every case.

"We treated every cow according to her condition. Those slightly affected were drenched once a day; those in a medium state, twice; and those suffering most, three times a day. At first all were drenched from a common quart bottle, to make certain of every one receiving her due proportion; later, some received their ration of carbolic acid in slop, but many would not taste the slop when they discovered the acid in it; consequently, they had to be drenched, which is really a better way, as every animal secures her proportion to a "drop." At the end of every week we ceased drenching for a couple of days or so, to study the effect of the medicine. The mildest cases were generally completely dried up by the end of two weeks, and the cows returned to the pasture.

"In all cases there was a marked change for the better; yet drenching or slopping was renewed, and continued till discharges ceased. By the end of another week others were cured and transferred to the pasture, and so on till, within four weeks, every cow was released from quarantining. Some of these cows were in as bad a condition as could be imagined, but before the month had expired all had returned to their normal state. Several of the cows came quickly in heat, but were allowed to pass the first time unserved, and, if there was the least doubt as to the discharges being healthy during the second period of heat, they were allowed to pass over another twenty-one days. It was only in rare cases that this further delay was found necessary. Every cow proved to be in calf the first service, and, I understand, carried her calf safely through the nine months.

"Considering the condition many of the cows were in when we began treatment, they made a marvellously quick recovery. The two cows that had retained the placenta got rid of it after a few doses of carbolic acid, and were soon restored to perfect health. Many prominent breeders in the neighborhood were anxiously watching our work. Some of Chicago's most eminent "vets." were ridiculing us, and felt certain the treatment would prove a failure. Their strong argument was that the carbolic acid would ruin the mucous membrane of the throats and stomachs; but, as neither Mr. Miller nor I could consent to failure, we persevered at our work, and perfect success was our reward.

"For those who insist that abortion is contagious, it may be well to mention that every morning and evening eight dairy cows were brought into the barn to be milked; they were tied up close to the sick cows, leaving a space of about fourteen feet between them. The dairy cows' noses were towards the aborting cow's hind part. The milch cows were fall in different stages of pregnancy, yet not one of these eight cows aborted, or showed signs of doing so. On entering the barn one could at once perceive the abominable stench attending the affected cows; anyone would have pronounced it a hotbed for contagion, yet nothing of the sort took place. What have the advocates of contagion to say in this case? No antiseptic means were taken to prevent these eight cows from aborting, such as drenching or using medicine in feed.

"The cows that were suffering from whites I had cleaned about their tails and hind parts three times a day, as the cleaner they were kept the more distinctly could we discern the leucorrhœal discharge, and the more accurately could we

judge of their condition. There was a sloping open wooden gutter behind the cows for draining the urine. This was swilled out with water behind the sick cows three times a day, and, after being thoroughly cleansed, a liberal sprinkling of crude carbolic acid was applied. The passages in front of the cows were also sprinkled with the solution by the use of a gardener's watering-pan or sprinkler. The tail, vulva, and hind parts in general were sponged three times a day with the same antiseptic. The eight dairy cows referred to received, in a modified form, through inhaling, the benefit of the carbolic administered to the aborting cows, which may, to a certain extent, account for none of the cows being affected.

"As these cows were not under my charge when abortion appeared in so violent a form, I could not be positive about the cause, but attributed it to the water. The water in the field in which those cows were kept ran very slow, some parts of it being stagnant, and covered with a green scum. The well or pump at the buildings stood by the side of an open court full of manure, making it impossible for the well water to be free from contamination from the sipe of the manure. On reflection, I have not a doubt that the above cases of abortion were the result of contaminated water. In ordinary circumstances nothing is done to purify the sources of supply from which the water used by stock is obtained, and the only wonder is that the supplies taken from contaminated rivers, creeks, and wells do not breed a perpetual pestilence. Contaminated water is one of the two great causes of abortion among cows. After I left Beecher the buildings were destroyed by fire, the byres were rebuilt on adjacent grounds with fresh water supply, and abortion has never again appeared in the herd, although almost fifteen years have elapsed.

"I had been reading in one of the numbers of the *North British Agriculturist* in 1880 an article in which was given an account of the inquiries of the British Dairy Farmers' Association concerning the cause of abortion. Amongst the many causes, wet and woodland pastures was given as one of the great sources of its prevalence. In the *Prairie Farmer* of about the same date there was a very instructive article on abortion, where it mentioned various instances having occurred of whole herds of cows having aborted in consequence of great thunderstorms. Mr. Miller had a pasture five miles from Beecher, known as the 'Woods,' similar to the one described in the *North British Agriculturist*. In this pasture were thirty in-calf cows and heifers. In the

second week of August, 1880, there was a terrific thunderstorm, which lasted two days and nights. During the first night's storm I thought of what I had read. Alarmed for the consequences of the storm, I arose at three in the morning and rode to the 'Woods' to ascertain the effect the thunder had on the cows. I found them all massed at the gate and apparently much alarmed, many of them bellowing and looking toward their home. At mirk, as daylight began to dawn, I examined the cows closely, and found that the pelvic ligaments of twelve of them were very much relaxed, and showing other unmistakable signs of abortion. I at once separated these from the others, took them home, tied them up in the barn, and administered with all speed three ounces of laudanum to each animal.

"The following morning I again brought home six cows showing the same symptoms, and treated them in the same manner. I repeated the laudanum as it seemed necessary, and kept them perfectly quiet and undisturbed, as cows are generally very excitable when in that condition. Some of the cows made speedy recovery; others were slow. A few that were the nearest calving were kept tied up till they did calve, and a careful watch kept over them, and laudanum in small quantities administered when thought necessary. All brought their calves to fruition but two. Two calves died within twenty-four hours after birth, which I attributed to an overdose of laudanum given their dams. So satisfied am I of the benefit of laudanum in the first stage of abortion that I have never since then lost time in administering a strong dose of it—three ounces—accompanied by undisturbed rest. Do this when you observe the first symptoms of miscarriage, and you will invariably succeed in prevention."

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### A Galloway Cross.

W.M., Rosseau: (1) Would it be advisable to use a Galloway bull on a herd of grade Shorthorn cows with a view of increasing the hardiness of the offspring? (2) Would the cross reduce the size? (3) What can I buy a young Galloway bull for?

ANS.—(1) The use of a Galloway bull would certainly tend to render the calves more hardy. (2) In all probability there would be some loss of size, though not very much. (3) Write to some of those advertising Galloways in our columns. See Breeders' Directory.



THE crop of lambs in Great Britain this year is fully up to the average.

SHROPSHIRE ewes are in great demand at Buenos Ayres, in the Argentine Republic, at present. One local dealer has been getting \$100 a head for all he could supply, and could not keep up with the demand.

It has been suggested that a profitable business might be done by persons taking up some of the abandoned New England farms, and starting sheep-breeding on them. These farms can be bought very cheaply, and on many of them there are good houses and outbuildings. The experiment is worth trying.

THE lamb crop in Australia has been very short owing to the great drought. One station reports that from 50,000 ewes only 10 per cent. of lambs have been reared, and they are poor ones. On the same station the output of wool is 800 bales less than it was the previous year.

WHAT is known in Great Britain as pure lustre wool is the growth of Lincolnshire, Nottinghamshire, and the East Riding of Yorkshire, and there is no wool precisely like it anywhere else in the world. It moves in price with alpaca and mohair. It can be mixed with or used in place of the latter, or it can be made into beautiful, bright goods without any admixture. The Demi-Lustre, a straight, silky-haired wool, not so bright as Lincoln, but a little finer, and which is known as Leicester, is grown in the midland and in some of the western counties.

THE only native sheep of America are the Rocky Mountain sheep, which inhabit the highest mountain chains of the western part of America from Alaska to Mexico. In the extreme north they are not so numerous, and have been found at much lower altitudes. They were found in large numbers at the time the Spanish first explored the western part of America. They were then of large size, and their flesh was said to be very delicious. Their breeding beds have often been found at an elevation of 12,000 to 13,000 feet above the level of the sea. Domesticated sheep were first introduced into America in 1493.

## Summer Food for Sheep.

Don't forget to provide some. It will pay well to do it if the pastures are not ample. The food should be sown. It will be a great help to the sheep. And when of the right sort it will furnish them with a nice bite during much of the summer. Various kinds of food may be sown, but there is probably no single plant that will furnish more summer food than rape. Rape may be sown early. If eaten down, it will come up again, more especially if not eaten too closely. If it is harrowed after the first, and even after the second, time of pasturing, so much the better. The harrowing will be good for the rape. It will help to retain the moisture. It will break the crust formed by the treading of the sheep, and it will start weeds which the sheep will mow down subsequently when they are eating off the rape. Two pastures will, of course, be much better than one, so that the sheep may be made to alternate on them.

## The Sheep Industry in America.

The sheep industry in the United States, at the present time, is not in a flourishing condition. Since the Democratic party came into power the number of sheep in the country has been reduced by nearly 9,000,000 head. This is owing, probably, to the change in the tariffs, and to the effects of the contemplated change before it came. The flocks have been reduced by about one-fifth. This is a serious reduction, and one that cannot be made up even in several years. The influence which this large reduction should have upon the sheep industry in this country should be favorable, for it should lessen the competition in the export trade from this country to England. The trade between Canada and England in sheep has been much on the increase of late, and, if it should still further increase, so much the better for our flockmasters. It is not improbable that the protective tariffs in the United States will be made higher, and the people may again give more attention to the sheep industry; but, even so, as already stated, some time must elapse before the shepherds can restore the numbers even that they have lost.

### Castration.

The castration of the lambs should not be neglected if they are to be kept for winter feeding. They should certainly be castrate. It is not a mere fancy of the dealer which gives the preference to castrated lambs at the finishing season. They are really larger and better. They are larger because they grow more quickly in the absence of development of the generative system. They grow better meat because there is less development of bone, head, neck, and other rough parts. They are fatter, since they feed more quietly, and are much more contented. The difference is quite material, and it should be recognized. The grower should aim to fit his lambs for best filling the demands of the market, and this he cannot do without castrating them at the proper time. The proper time is when they are young. The tails should also be cut for reasons that will be manifest to all. Of course, lambs that are to be sold to the local dealer early in the season need not be thus treated; but in every instance in which they are to be carried over to the autumn or winter following, it is important that they should be both castrated and docked.

### Are More Importations Needed ?

The question is often raised, Are more importations of purebred sheep wanted in this country? I am of the opinion that they are. So long as Britain can raise sheep that may be brought over here to win prizes from us, just so long will it be to our advantage to use more or less of such blood in renovating our flocks. If the day shall come, in the future, when we can hold our own in the show rings with Great Britain, in the sheep which enter the ring, then we may be able to give up importing without harm to ourselves. Great Britain has rendered a wonderful service to mankind in the improved breeds of sheep which she has originated, and she is still instrumental in furnishing to the western world materials for further improvement. So long, therefore, as we can benefit our flocks by importing, occasionally, purebred males, let us not heed those who would have us believe that we can do well enough without any more blue blood from beyond the Atlantic.

### Ailments of Sheep.

When sheep sicken they usually die. The proportion of the instances in which they recover is small in proportion to the whole number of

instances of the ailing ones. Two reasons may be assigned for this. First, the sheep is what may be termed of a sensitive constitution. It is easily injured, and, owing to the sensitiveness of its organization, it has less power than some other animals to bear up under the attacks of disease. In the second place, nearly all the diseases which attack it are parasitic in character, and, because of this, it is exceedingly difficult to deal with them. The parasites work into places whence they cannot be easily dislodged, as, for instance, the brain and the remote nasal passages. In view of these facts, the duty of flockmasters is clear. Preventive measures should be used as far as possible. The sheep should be kept away from low, wet places early in the season which are apt to be infested with parasites. And every care should be given to maintain regularity in digestion, so that the sensitive mechanism of the sheep may not be put to the test by disarrangement in the digestion. This may be done by giving due care to the providing of foods.

### Grub in the Head in Sheep.

This is one of the most serious ailments of sheep, and it is one of the most fruitful causes of loss among flockmasters. It is not so frequent, however, in Canada generally as in the Central and Western States. In the latter it frequently makes severe inroads in a flock in the winter season.

It is caused by a species of the gadfly, which, at a certain season of the year, lays an egg in the nostril of the sheep. The season will, of course, vary with the different kind of sheep; but it usually comes about harvest time. When the flies infest the sheep, they may be seen moving quickly with the head down toward the ground, as though trying to keep the same so near the earth that the fly cannot disturb them. Because of this propensity some flockmasters have actually plowed two or three furrows in the pastures to enable the sheep to rub their noses against the ground, and they claim that the results have justified the means used.

The egg soon hatches into a minute worm or grub, which crawls up into the nasal passages, and from these into the divisions of the same, contiguous to the brain. Sometimes it remains in the larger passages, and it is only in these instances that it can be reached. When any substance is injected into the nostril that causes violent sneezing, it is possible that the grub may be dislodged. But these instances are exceptional. Generally speaking, it works its way up into the more complex part of the air passages in

close proximity to the brain. It cannot do any harm there directly to the brain, but it does so indirectly. There is a wall of bone between the air passages and the brain. By inducing a diseased condition of the parts adjacent to this separating part, the brain is also affected; hence the peculiar symptoms of the disease. The sheep will sometimes hold its head upward or stretched out. It becomes very dull, or stupid, and is much inclined to mope around. It refuses to eat as time goes on; and finally dies after having hungered for several days.

It is evident, therefore, that in dealing with this trouble the remedies to be used must be chiefly preventive in character if they are to be efficacious. They must be applied to prevent the fly which lays the egg which produces the grub from doing the work. Several remedies have been recommended and practised with more or less success. But it is evident that before any of them can be effective we must be able to determine with no little precision the season of the year when the fly does its work in our locality.

American shepherds have frequently adopted the following remedy: They make a trough, V-shaped, with a board resting on one edge on the bottom of the trough, and dividing it longitudinally into two divisions. This board, which stands upright on its edge, is smeared occasionally with tar. Salt is then put into the trough, and when the sheep come to lick the salt the nose gets smeared, more or less, with the tar. The smearing has a tendency to keep away the fly. This remedy has done some good, but it is not considered sufficiently effective.

Where the flock is not too large the following plan will work well, but it means a great deal of labor: Smear the nostrils once a week with some offensive substance applied with a brush. The smearing need only be done at that season when the fly is troublesome, and it need not be done more frequently than the times stated, if carefully done. It must be some substance which will be distasteful to the fly. A mixture of equal parts of tar and grease will answer. But a mixture of equal parts of tar and fish oil, or whale oil, will probably be more effective, as the smell of the latter tends to keep away the fly. Whale oil alone is sometimes used.

The following mixture has also been recommended: Take one pound of beeswax, one pint of linseed oil, and two ounces of resin, and melt the beeswax and resin in the oil. While yet hot add four ounces of carbolic acid. At the present stage in our experience it would not be possible to determine which of the above remedies will prove the most effective. But for simplicity and

effectiveness, when considered together, nothing will probably excel the tar and fish oil, and, it may be added, that this remedy is very cheap, so much so that it is within the reach of all.

It may not be practicable to deal with very large flocks of sheep, as with those, for instance, kept on the ranges. The labor would not probably be compensated by the increased returns. But even on the ranges the method of smearing a board placed in a salt trough, as described above, is eminently practicable, and it is, at least, measurably effective. But with purebreds it would certainly pay well to give attention to the smearing of the animals, as indicated, during the period of danger.

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### The New Sheep Barn at the Minnesota University Experiment Farm.

The building of which the accompanying sketches give a very correct idea was erected in the summer of 1895. It is 120 feet long, 36 feet wide, and 14 feet high at the posts. As shown in Fig. 2, a passage 5 feet wide runs from end to end, but it will be observed that this passage is not in the centre, for the reason that the pens or divisions on the south side are intended for breeding flocks of the different breeds, and those on the north side are intended for feeding flocks. One hundred sheep or lambs can be fed in the pens on the north side at one time, and small flocks of nine different breeds can be kept simultaneously on the south side.

As will be noticed, the building is plentifully supplied with windows. A door also opens into each division from without, and it is cut in twain, and a yard is attached to each pen. The divisions between the pens are movable; hence they can be taken out at will, and large doors are so arranged that a wagon can be run through the various divisions when the manure is being removed. The racks extend along the sides of the passage, so that all the food given may be easily put into them from the passage into each pen. The lambing pens are shown in the sketch, as also the silo, the cellar, the wool room, and the feed room. The silo is 24 feet high and is made of 2½-inch matched staves. It rests upon a floor of bricks laid in cement, a double tier of bricks being laid under the part on which the staves rest.

The plan of the loft is shown in Fig. 4. It is amply capacious to hold food supplies for a whole winter, and also bedding, even where experimental feeding is carried on. The water is brought in

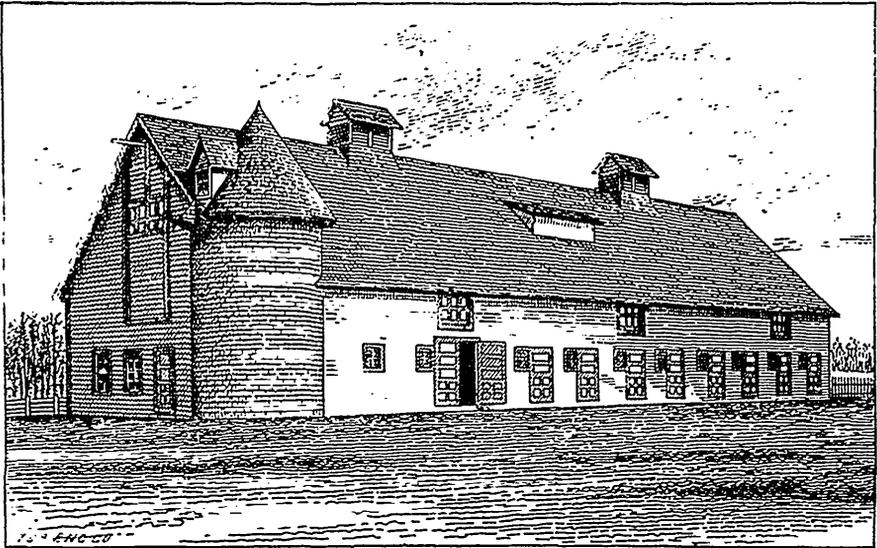
pipes, and is drawn from hydrants in the passage. From these it will be conveyed by means of hose into small tubs in the various divisions.

This barn, which some good authorities have pronounced the best sheep barn in all the west, is located in a field which contains between ten and eleven acres, and it is the intention to keep all the sheep on the farm, about one hundred head, in this field through the summer season on the food which it produces. Some of the crop grown will be devoted to soiling uses, but the larger portion thereof will be pastured.

One hundred lambs were fed in the barn the past winter. They made from eleven to twelve pounds of gain each month on dry food. The bright sunshine of the winter season in the Northwest is eminently favorable to the fattening of

sharp bills till they reach the kidneys. They are thus described by a writer in the *English Illustrated Magazine* :

"The Kea, or New Zealand parrot, is in color a dull olive, which brightens on the upper parts, especially in the tail feathers, where it shines with much lustre. It is extremely amusing to watch the bird when feeding on the ground. After selecting a favorite spot it sets about unearthing the larvæ, on which it sometime feeds, with a thoroughness and evident earnestness of purpose that is refreshing to see. Rapidly and with astonishing force stroke follows stroke of its pickaxe-like beak, the loosened soil flying about in all directions. The natural food of the kea consists of larvæ and insects, and berries and roots of various Alpine shrubs and plants.



New Sheep Barn, Minnesota University Experiment Farm.

sheep. The dryness of the air and the steady character of the weather enables them to follow their natural inclination to spend most of their time out of doors.

THOMAS SHAW.

Minnesota University Experiment Farm.

### The Sheep-killing Parrot.

One of the worst enemies of sheep in New Zealand is the Kea, or New Zealand parrot. These parrots at one time did not attack sheep, but it is supposed that in a time of dearth they got a taste of mutton and ever since have made sheep their prey. Their method of attack is to light on the sheep's back, and peck with their

"This was the habits of the kea before men put temptation in his way in the form of fat sheep. Once he would nearly starve in the winter time, but now he can get a fat living all the year round."

The writer goes on to say :

"So rapacious has it become that it has been known to attack a sheep when directly under the charge of the shepherd and in broad daylight ; indeed, there are not wanting cases where it has been known to attack foals, and one instance is reported of a horse becoming its victim.

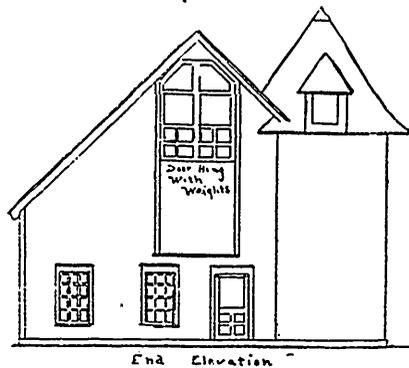
"Although the government has offered so much a beak for every head brought in, the keas continue to increase and multiply, and help to render sheep farming unprofitable. In New Zealand, in a single twelve months, in a corner



were allowed liberty of access to shelter at will. Next to these came the lambs in lot 5, which were under cover; and the least profit was derived from lot 4, those fed on wheat and oil cake.

The average daily gain made by each lamb in the experiment was nearly  $\frac{3}{8}$  lb., and the average monthly increase by each lamb as follows: Lot 1, 8.41 lbs.; lot 2, 10.67 lbs.; lot 3, 9.61 lbs.; lot 4, 8.91 lbs.; lot 5, 8.51 lbs.

The average cost of making each pound of increase in live weight in the respective lots was as follows: Lot 1, 5.36 cents; lot 2, 5.25 cents; lot 3, 4.71 cents; lot 4, 6.48 cents; lot 5, 5.41 cents. The lambs were sold in Chicago for 6 cents a pound live weight; and every pound of increase made during the experiment was worth



End Elevation of Sheep Barn, Minnesota University Experiment Farm.

more than its cost to make it, except in the case of the lambs in lot 4, an unusual feature during the finishing period, as the profit generally arises from the advance in price on each pound of live weight possessed by the animal at the commencement of the finishing process. There was an average net cash profit on each lamb of 62 cents.

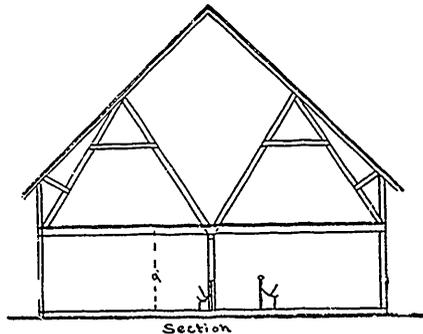
Some of the conclusions to be derived from the experiment are: (1) That with the rations used lambs that are being fattened in winter consume about 3 lbs. of food per day for every 100 lbs. of live weight. (2) The lambs do not gain as rapidly in cold weather as when the temperature is moderate, notwithstanding the greater consumption of food. (3) That since the cost of 1 lb. of increase in live weight with the lambs which

were fed wheat and oil cake was but 4.17 cents during the first period of feeding, as against 23.17 cents during the last period, prompt marketing as soon as good gains cease to be made is greatly important. (4) That a grain portion of wheat and oil cake is better adapted for short periods of feeding than for long, and that wheat screenings and oil cake are more suitable for lengthened periods of feeding.

### In-and-in Breeding.

William Whitcombe, Woodstock: Should in-and-in breeding be practised to any extent?

ANS.—In-and-in breeding, where the animals are not paired well, will always work harm, for it will intensify faults. But where the animals are well chosen as to form and other qualities, there should be no hesitancy about mating those



Sectional View of Sheep Barn, Minnesota University Experiment Farm.

closely related for one or two generations. But, when long continued, in-and-in breeding is certain to work harm. It will injure the size of the animals, and it will weaken their constitution to the extent, in some instances, of ruining the same. It will induce impotency with the male, and barrenness with the female, and will predispose its victims to diseases of a scrofulous character. Animals long inbred are more subject to tuberculosis than those not so bred. A small flock of sheep, long inbred, lose size and vigor in a remarkable degree.

# SWINE

[A KENTUCKY breeder recommends the use of a decoction of white oak bark for scours in young pigs, the bark to be boiled, and a teaspoonful of the tea given at a dose.

Do not forget that the first one hundred pounds of pork is the cheapest. See that the litters are kept moving. There is no cheaper way of feeding a young pig than through its dam.

JOHN A. JAMIESON, in the *National Stockman and Farmer*, recommends feeding oats and corn in the proportion of one part oats to two parts corn by weight, and declares that a little over four pounds of this mixture will make a pound of pork. At the present prices for these grains (April) pork can be fed at a profit, even at the present low figures, if this will work out.

DURING extended experiments in pig feeding, conducted at the Danish State Agricultural Experiment Station, practically no difference was found between the value of barrows and sows for feeding purposes. We fancy, however, that the sows used in these trials must have been spayed, as we know from experience that an unsplayed sow can never be fed as profitably as a barrow.

MR. H. D. NICHOL, Nashville, Tenn., superintendent of the Swine Department of the Tennessee Centennial Exposition, writes us that the time for holding the Centennial has been postponed on account of this being the Presidential year, and, as it follows so closely after the Atlanta, Ga., Exposition, the commissioners decided to start the Centennial in May, 1897, and continue it for six months.

OVER and under feeding are the two rocks on which so many pig breeders and feeders are wrecked. High feeding can only be pushed to a certain point profitably, and when we go beyond that point the balance quickly slips to the wrong side of the ledger. Underfeeding is never anything but a source of loss. Do not forget that pigs are like human beings, as regards their appetites, in many cases. What is enough for one is too much for another, and too little for a third.

OUR esteemed contemporary, the *Swine Breeders' Journal*, makes the very sensible remark that the profit in pigs is in the number raised, not in the number farrowed. We would amend this slightly by saying the number and quality of those raised. Ten good, strong pigs are far better than fifteen weakly ones, and in the same way six well-bred pigs, with their easy-feeding and early-maturing properties, are worth far more than ten of the old long-legged, ill-shapen type.

It is a good plan always to break off, with a small pair of nippers, the four temporary teeth with which little pigs are supplied when born. Very often a good deal of trouble is caused by the little pigs biting the sow's udder, and so causing her so much pain that she will not attempt to suckle them, but will lie flat on her belly, and so keep them from pulling at her. This is more especially the case with young sows with their first litters.

A CORRESPONDENT of the *National Stockman and Farmer* gives the following method of ringing hogs, which he states can be very easily carried out: Take a stick of wood about four feet long, the size of a lath for shingles, bore a hole in one end, slip a strong quarter-inch rope two feet in length through this and tie the ends securely, and you are ready for operation. Pen the hogs if wild, slip the noose over the hog's nose, and quickly twist it tight. The hog will stand like a statue, hardly able to squeal, let alone bite. Hold him with one hand while you insert as many rings as you desire with the other.

A CORRESPONDENT in one of our exchanges writes as follows: "We breed very largely from old sows and young boars. When we find a sow that is a uniform breeder, as to the number and size of the pigs, a good mother, and a good milker, we keep her till she begins to lose these valuable qualities." This is sound doctrine; too many good sows are recklessly killed off every year because the owner has a young one just coming on. One tried sow is worth several that are untried.

EX-GOVERNOR FURNAS, of Nebraska, is credited with a curious experiment in swine-breeding. In the belief that the diseases to which the hog was subject were largely due to injudicious breeding and bad management, he procured a pair of purebred "razor-backs" from the Everglades of Florida. He first crossed the male on two Duroc-Jersey sows. On the females of the cross he used a male Poland-China, and on the sows of this cross a large male Yorkshire. The result was "an ideal hog for family meat," very healthy, good rustlers, and with strong bone. After the first cross they fattened readily and cheaply. They make good feeders, are prolific, and the sows are good nurses. Gov. Furnas professes to be quite gratified with the result from a practical standpoint, and he thinks he has obtained a healthy strain of hogs, which make healthy human food, the quality of the meat being especially good, tickling the appetite of the most fastidious pork-eating epicure, being characterized by a rich, nutty flavor, and well streaked with lean and fat.

### Pigs Losing Their Tails.

Nothing is more annoying to a breeder of pedigreed pigs than to have an extra promising young pig lose its tail, as such animals are looked upon as of very little use in a show ring.

Very often several pigs in a litter will lose their tails, the cause of this loss being difficult to discover.

The first symptom of any trouble is a reddish appearance of the tail. Later on one or two red spots will appear and form a scab, after which the portion of the tail from the scab to the end sloughs off. The commonest cause of this trouble, we think, is cold and damp, exposure to which checks the circulation in the extremities of young animals, those that have delicate skins and very little hair usually being the first to suffer.

We have tried several remedies, unsuccessfully, for this trouble, but we recently came across a remedy known as "Boroglyceride," which is strongly recommended by that well-known authority, Mr. Sanders Spencer. Boroglyceride is prepared by heating together forty-six parts of glycerine and thirty-two of boracic acid, till the mixture ceases to lose weight. It may be obtained through any druggist, and is used either simply melted, or mixed with an equal weight of glycerine. Mr. Spencer describes his method of using it as follows: As soon as a little pig's tail shows signs of becoming unduly red, a little boroglyceride is taken between the first finger and

thumb, and the tail of the pig drawn between the thumb and finger until it becomes quite moist with the mixture. If this be done carefully night and morning for a couple of days, a cure will be the result.

### Breed Competitions.

There is a growing disbelief in the value of breed competitions at live stock shows, which finds the reason for its existence in the unsatisfactory character of the results. One breed will win this year, and the lovers of that breed will, for the time, think that breed contests are a pretty good thing. But next year another breed will carry off the prizes, and then there is dissatisfaction with this kind of competition where there was satisfaction before, while the feelings of the winners are tempered and modified by the fact that they were the losers the previous year. The same feeling with respect to breed competitions prevails in Great Britain. An English paper, in an article upon the subject, says:

"Breed competitions must go. That is one of the reforms that the newly organized exhibitors' association must take up at the earliest possible moment. They are a fraud; they prove little or nothing, can rarely be satisfactorily judged, and the money spent upon them, if distributed throughout the various regular classes, would bring out larger shows all around. At most of the leading exhibitions of breeding stock we have already settled this question, and the inter-breed contest is a thing of the past."

### The Hog for the British Market.

In our April number, we gave an extract from an English paper, showing the ruinously low prices at which both home and foreign bacon has been selling in the English markets, and at the same time we drew attention to the fact that both Continental and Irish bacon ranked from 30 per cent. to 50 per cent. higher than the Canadian article.

Since then we have had an opportunity of looking over the sales account of one of our large packing establishments that caters largely to the English trade, and when we saw the balance that stood on the wrong side of the ledger we were not surprised at being told that the company had decided to close down to a great extent until things began to brighten up a little.

One fact, however, we noticed particularly, and that was that in several cases the returns from the consignees in England were accompanied by the injunction to ship nothing but light weights of

the best quality, containing plenty of lean meat, fat heavy weights being practically unsaleable. We drew the manager's attention to the difference in price between Canadian and Irish curings, and asked him to tell us frankly whether the fault lay with the quality of hogs supplied by the farmers, or whether the curing had something to do with it.

His reply was that undoubtedly the fact that Canadian bacon-curers were obliged to salt rather more than the Irish and Danish curers do for their best qualities, owing to the necessity for keeping the meat longer before it is consumed, prevented their realizing the highest prices for fancy, mild-cured goods; still the main trouble with Canadian bacon was the fact that packers experienced the greatest difficulty in getting a steady supply of suitable hogs for producing the quality of bacon most in demand, and until packers could depend on getting such hogs in sufficient quantities to supply a steady demand for the finished products Canadian bacon would never reach the standing it might in the English markets. This gentleman is an excellent authority on all matters relating to the bacon trade, and we cannot urge our readers too strongly to lay his words to heart; it has been proved over and over again by actual tests that every pound over the first two hundred pounds live weight costs the feeder far more than the preceding one, and when the market calls for a light hog, and when it has been proved that a light hog costs less per pound to feed than a heavy one, why will so many of our farmers persist in feeding their pigs up to weights that are practically unsaleable, except for mess pork, and for supplying local shantymen?

England is the market of the world, and the men who have captured the English markets for their products are the men who are making the most money. We have every facility in Canada for raising the quality of hog our trade calls for, and it is our own fault if we do not do so.

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### Breeding Sows.

That well-known American authority, John A. Jamieson, in reply to a correspondent who enquires as to the advisability of weaning a sow three days after farrowing, writes as follows: "While our experience is limited, so far as it went it was a failure. I have an acquaintance that once owned a fine Berkshire sow that was suckling an excellent litter of pigs, which he was anxious to have do their best. At six weeks old they were attacked with the scours. For a time he could assign no reason, but in hunting for the

cause he remembered that the sow had been served at three days after farrowing. To save the pigs they had to be weaned at six weeks old, which was against their making as fine animals as they would had they been allowed to suckle two to four weeks longer.

"This plan of breeding has, in the main, been advised by men growing roasting pigs, in which case the practice may be a success for a time. But in general farm practice it can but prove a failure in a short time. About the third litter under this plan will be a failure. The overcrowded machine is bound to go to pieces. It is the same with the brood sow; if crowded beyond her limit, nature will call a halt, and give the farmer possibly one or two pigs where he expected a large litter. It is simply beyond the powers of endurance of a sow to suckle a large litter and feed another in embryo at the same time."

This corresponds exactly with our own experience. We have frequently heard the question discussed as to whether it was possible to breed a sow successfully while suckling her pigs, and we have had no hesitation in answering in the affirmative, as we have done so ourselves on more than one occasion; but, like Mr. Jamieson, we highly disapprove of the practice.

Two litters a year is all any sow should be called on to farrow, and very often one will pay as well as two.

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### Packing House Fertilizers.

We were surprised to learn recently from the manager of one of the largest pork-packing establishments in Ontario that they were utterly unable to dispose of the fertilizer manufactured from their waste products in Canada, although they had offered it as low as \$20 per ton in retail quantities, and that consequently they were shipping it all to the States.

On looking over the Government analysis which they had just received we were struck with the large quantity of nitrogen it contained, and taking a copy of this analysis we sent it to the chemist at the Dominion Experimental Farm, Prof. Shutt, and asked him to give us as nearly as possible the values of the different ingredients. The following is a copy of the analysis (Government):

|                        |       |
|------------------------|-------|
| Soluble phos. acid.... | 0.64  |
| Reverted " ".....      | 5.44  |
| Insoluble " ".....     | 2.11  |
| Ammonia.....           | 10.39 |
| Potash.....            |       |
| Moisture.....          | 10.84 |

and the substance of Mr. Shutt's reply to our questions is as follows:

The values assigned by the Chief Analyst of the Inland Revenue Department to the various fertilizing constituents are as follows:

|                         |                |
|-------------------------|----------------|
| Soluble phos. acid..... | 7 cts. per lb. |
| Reverted " " .....      | 6½ " "         |
| Insoluble " " from bone | 6 " "          |
| Nitrogen.....           | 14 " "         |

Using these figures, the value of this by-product is calculated to be \$34.43 per ton.

Nitrogen (of which this fertilizer contains a large amount) is essentially the fertilizer for cereals of all kinds and grasses, especially when associated with phosphoric acid. Soluble forms of nitrogen are required by all plants, and consequently nitrogen finds a place in the formula of all commercial fertilizers.

"We should not expect this fertilizer to act as quickly as one containing superphosphate and nitrate of soda. In soils, however, neither too dry nor too wet, the decomposition would be more or less rapid, and we should expect the results to be visible for some years.

"The lack of potash, which is of special benefit as a fertilizer to corn, potatoes, peas, clover, and leafy plants in general, might be overcome by the use of wood ashes, which, when of good average quality, contain about 5.5 per cent. of potash, or, if ashes were not obtainable, kainit, or muriate of potash, might be used."

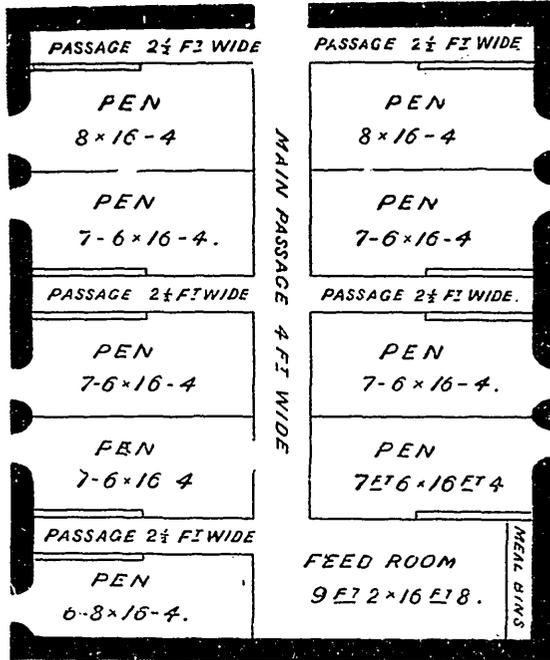
But some of our readers may ask, What has this got to do with the swine department of FARMING? Simply this, that we want to draw attention to the fact that a very important by-product of the hog industry is being allowed to leave the country at far less than its value, and

thus our farmers are not only neglecting to make use of a large quantity of exceedingly valuable fertilizing material that is within their reach, but by compelling the packers to dispose of it at a price that is very much below its value they are increasing the cost of production of the finished article of which it is a by-product, and so striking a blow at their own interests.

We have no hesitation in saying that the time is fast coming when commercial fertilizers will be used far more extensively than they are now, and we believe our farmers are making just as big a mistake in the case of the by-products of our pork factories as they are in the case of our ashes,

in allowing them to be shipped across the line to enrich the lands and increase the crops of our wide-awake Yankee cousins.

As this is not intended as a free advertisement for anybody, we do not give the name of the packing house where the fertilizer referred to is manufactured; but we believe a similar article can be obtained from any large establishment of the kind.



Plan of Hogpen.

Plan of Hogpen.

In compliance with a request from one of our subscribers for a plan of a hogpen suitable for an ordinary farmer, and to hold (twenty-five or thirty pigs, we give the accompanying illustration of a pen lately built by Mr. W. W. Ballantyne, of Stratford, together with Mr. Ballantyne's letter describing it:

"The building, 40x48 ft., is one that was moved from another farm, and forms an addition to our cattle barn, the upper part being used as a straw house and the lower as a hogpen. The height from floor of hogpen to floor of straw

house is eleven feet, four feet being stone wall, twenty inches thick, and the remainder single boards battened outside with tar paper, and tongued and grooved lumber inside. The height of the stone wall permits of a door three and a half feet clear in height under the sill, enabling a person, without any trouble, to go in and out when cleaning out the pens. The doors are two feet four inches wide.

"The main passage running lengthwise is four feet wide, those running between the pens to the troughs at the back of the pens being two and a half feet wide. The troughs are eight feet four inches long at the end of the pen next the wall, leaving a space of eight feet next the passageway for the pigs' bed. A ventilator, three and a half feet square, runs to the roof, having doors every few feet for putting in straw, which falls below into the main passage, being in a convenient place to just throw over into the sleeping places in the pens, thus avoiding throwing it into the troughs, as in the old style. The floors and troughs are made of Queenston cement concrete. The concrete is also run up about six inches high and four inches wide under the partitions, which prevents the wooden part above getting wet, and, of course, prevents rotting.

"The sleeping-places and stands at the troughs slope to a gutter, three feet by eight feet four inches, opposite the doors, which is three inches lower than those parts. The partitions at the troughs swing back over them when the feeding is done, thereby keeping the pigs out of the troughs till the feed is in. The back of it is also partitioned off to keep hogs from getting into the troughs lengthwise, and to keep each in its place. The pen doors are double, one swinging out and the other sliding up and down inside. The latter can be raised and kept at any height to let in air in summer, directly on to the hogs. Eight large windows give an abundance of light. Water is conveyed by pipes from the tanks that supply the cattle barn."

[We understand that the cement troughs have not proved very satisfactory, and that it is intended to replace them with movable iron ones. We are ourselves decidedly in favor of movable troughs that can be taken outside and thoroughly cleansed. We would suggest also, as improvements to this pen, that there should be a door into each pen from the passageways, which might be placed between the feeding-trough and the sleeping-place, and also a door from the outside into the feed-room. With these additions to the plan we think that our subscribers will find this an exceedingly useful model pigpen. Should any further information be required we will gladly furnish it.—ED.]

## English Breeds.

### BERKSHIRES.

[CONCLUDED.]

One of the most famous prize-winning herds in England is that owned by Mr. N. Benjafield, Motcombe, Shaftesbury, who writes as follows on the points of the breed: "The Berkshire should be long and deep in the body, and provided with long thick hair of fine quality; the head should be well set on the body, and furnished with good-sized ears, which should be well fringed at the edges and hang nicely forward, but not droop (as is sometimes seen in Berkshires of otherwise good type), and the snout should be slightly dished."

As regards color and markings, Mr. Benjafield states that while the skin should be of a good dark color, excepting only the blaze on the face, a white tip of the tail and the four white feet, he would never object to a really good animal if he had a little too much, or too little, white on his feet, or a little white hair on his ear, although he would much prefer that the ears be free from any white.

Another well-known breeder, Mr. Joseph Smith, in defining the form of a typical Berkshire, applies what he calls the four L's, viz., Long, Low, Lusty, and Level, adding that the hair should be soft, and not coarse or hard, with a nicely dished face, wide nose, and short head.

Mr. A. S. Gibson, a well-known authority on Berkshires (a brother of Mr. R. Gibson, Delaware, Ont.), declares that a true bred Berkshire must have abundance of fine hair all over him, and a snout neither too short nor too much turned up, with ears medium in size, well carried and wide between; adding that lack of hair and extreme shortness of nose indicate alien blood, probably Black Suffolk.

The American Berkshire breeders in convention in 1875 adopted a scale of points and a standard of excellence as follows:

*Color*.—Black, with white on face, feet, and tip of tail, and an occasional white splash on arm. Any other white marks to be discouraged.

*Face*.—Short, fine, and well dished, broad between the eyes.

*Ears*.—Small, thin, soft, and showing veins, and generally carried almost erect.

*Snout*.—Full.

*Neck*.—Short and thick.

*Shoulders*.—Short across and deep down.

*Back*.—Broad and straight, or very slightly arched.

*Ribs*.—Long, well sprung; short ribs of good length, giving broad, level loin.

*Hips*.—Of good length from point to rump.

*Hams*.—Round and deep, and carrying thickness well down to hocks.

*Tail*.—Fine and small, set on high up.

*Legs*.—Short and fine, but straight and very strong, and set wide apart.

*Bone*.—Fine and compact.

*Skin*.—Pliable.

*Hair*.—Fine and close.

*Size and length*.—Medium; extremes either way to be avoided.

Commenting on this standard as applied to the requirements of ten years later, that well-known breeder, Mr. Heber Humfrey, urges that more stress be laid on the necessity for providing the long deep sides, so much in demand in the markets of the present day, adding, at the same time, a word of warning against producing an undesirable flatness in an attempt to increase the length of the side. He also calls attention to the fact that, while the word full may be properly used to describe the jowl, heavy jowls are most undesirable, as they almost invariably indicate a corresponding lightness in the flank. Mr. Humfrey advises medium length in the male, and a much greater length in the female, provided it is coupled with a well-sprung rib and a good loin.

### Milking Qualities of Brood Sows.

The value of a brood sow depends to as great an extent, or even greater, than any other one thing upon her milking qualities. The sow that is a poor suckler is never profitable as a breeding sow. She has unusually small litters, and these fail to thrive, for the simple reason that they are not fed. On the other hand, a sow that is a good milker—or, as we say, a good suckler—has usually large litters, takes care of them so well that they make rapid advancement, and soon outstrip the rest of the herd. They grow from start to finish, and prices must be low and feed high if they do not pay a profit. A brood sow that is a good suckler is worth two that are poor, and even more. Whether the pig department of the farm in any year gives a profit or a loss depends largely upon the milking qualities of the brood sows, says a writer in the *Farmer and Stockbreeder*.

Singular as it may seem, this point has been largely overlooked by farmers, and even by breeders of improved pigs. The present ideals of beauty in any kind of live stock are against the development of milking qualities, and the effects are seen not merely in pigs, but in cattle and sheep as well. In fact, on many breeders' farms the working herd of any kind of stock is of different type from the show herd. The one is

selected with an idea of beauty of form and color, something to catch the eye of the granger; the other with the idea of utility and money-making. The farmer who buys brood sows at a show is not very likely to secure good milkers. Where fat covers a multitude of sins, as it always does, one of the most prominent of these sins, as well as one of the most frequent, will be barrenness, or at least shy breeding and poor milking.

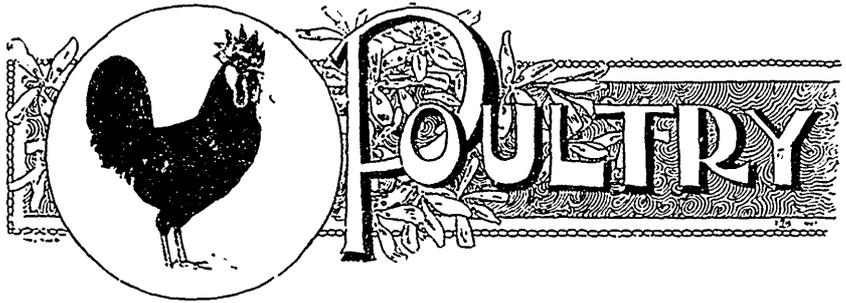
The best way to secure a milking herd of brood sows is to select pigs of sows that are good milkers. Select, at least, from the best milkers in the herd, and condemn the rest, no matter how handsome they may be, or how nearly they come up to the fashionable ideal, to the feed lot to be fitted for the shambles. By continuing this process from year to year, a very fair herd of sows will be secured.

It is not enough, however, to select well. Feeding is as important as selection. No matter how good the stock may be, if the young things are fed all the corn they want to eat from birth until farrowing time, they will be poor milkers. It is impossible to develop a roomy sow with milking capacity without feeding largely on albuminous foods. The proper frame, bone, and form can be developed on clover pasture, on foods in which oats, bran, and shorts are predominant, with plenty of exercise for muscular development, and they can be obtained in their highest form in no other way. The short, compact brood sow, pretty as a picture, is not the one to yield a profit in the breeding herd. Plenty of corn will develop her beauty, because it will develop fat; but fat and a high degree of fruitfulness or fecundity are incompatible.

Nature is wise enough not to spend time in developing milking capacity beyond the wants of the litter. It will thus be seen that the sow that is a good milker must be built up from the foundation. Select, first, an inheritance in that direction, with vigorous and abounding health, and then feed along the line of nature as indicated.

Many dairy cows of strong milking inheritance, and that have been properly fed up to the milking period, are spoiled by bungling milkers. There is no danger of spoiling a brood sow. The pig, before he is an hour old, has mastered the science of milking, and has acquired greater proficiency than the most skillful dairyman in the country. That organized appetite which we call the young pig is thorough master of all the instructions ever given on the subject of milking. He milks quickly, thoroughly, and gently, except when his rights are disputed.

By thus selecting with an eye to inheritance of milking qualities, by feeding from birth, or rather from conception, with the object of securing vigorous and abounding health, and along the lines nature has indicated, the herdsman will be working with nature to victory, instead of against her to inevitable defeat.



[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.]

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### Poultry Illustrations.

As promised in the April number, we give this month an article on "Barred Plymouth Rocks," and illustrate the same by using three cuts of birds, Madison Square and Music, being the property of that well-known breeder, Mr. E. B. Thompson, Armenia, N.Y., and Madam, the property of another well-known breeder, Mr. W. Ellery, Bright, Waltham, Mass.

These three cuts are as good as any the writer has ever seen, and should show breeders of this grand variety of fowl what to strive for.

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### Express Rates.

There seems to be some misunderstanding in regard to express rates on poultry, and, in order that everything may be clear, I quote from the instructions given to express agents. The rule is as follows:

"On poultry, live, other than for market, if shipped in coops made of wood, whether covered with cloth or not, and so constructed that coops may be piled one on another, or on which light parcels can be piled, charge merchandise rates.

"On such coops as cloth is used for the purpose of making the coop, enclosing and confining fowls, and which would not be safe and satisfactory shipping coops without the cloth, double merchandise rates must be charged."

You will thus see that there is no reason why cloth should not be used to protect fowl from draughts. Make the bottom of the coop solid, use inch square posts, and make the top solid.

Put cloth on the sides and then slats two inches apart all around. This makes a light coop, and one which conforms to express regulations.

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### Barred Plymouth Rocks.

There is, probably, no variety of fowl for which there is greater demand than Barred Plymouth Rocks, and deservedly so, because they are one of the very best all-round fowl that we have—excellent for market, and very good winter layers.

Mr. I. K. Felch says: "The Plymouth Rock is the result of cross-breeding of acknowledged 'full blood' breeds, namely, the imported Black Javas of 1851, the White Birminghams, and the American Dominiques; and this American product was the top-cross that stamped the Rocks for color and gave to the breed an independent character. It was that which eradicated the Asiatic sluggishness, while not materially decreasing the size and hardiness. Its appreciation is best told in the fact that there are now a greater number of Plymouth Rocks bred than of any other breed."

Two systems of mating are adopted by farmers. One is called the "extreme" or "double mating" system, and the other the "standard" or "single mating" system.

By the former system, to produce show females, use a male bird bred from females that were passed as standard color, and sired by a male whose barring showed a light slate or grayish color, the space between the dark bars being wide, and the barring running well down into the underfluff of the feathers. The females bred from such a mating will, in a large per cent., be reproductions, and be of good color throughout. The males will be too light for exhibition purposes, but the best of them could again be used as breeders in female matings.

To produce cockerels, take a good standard-colored male and mate him to females which match him in breast color, with the bar extending down to the skin in all sections, and which females have been bred from a cockerel mating.

From such a pen you would get good exhibition males, but the females would be several shades too dark for good exhibition birds, but could be used as breeders in matings of this kind.

Mr. J. L. Todd, Atlantic, Iowa, has this to say (in a circular entitled "Mating Barred Plymouth Rocks") in regard to the "standard," or "single mating":

"We have always been an advocate of the single mating system, and our experience has fully demonstrated that this is correct. Like will produce like, provided the blood is there to produce it; but chance specimens from extreme matings will not do so. We can produce fine specimens by extreme matings; but I claim that such birds are not reliable breeders, and will throw more or less culls.

"It takes time and patience to get the blood so strongly bred into a specimen that it will produce its equal in a majority of its get; but once you get a preponderance of good blood running in the veins of these exhibition specimens, then you can breed them together and the finest results will be obtained. Would you not rather buy a choice specimen, even at a fancy price, that had the blood and record of a long line of prize-winners back of him for a number of years, than to take a bird from an extreme mating that looked equally as good?

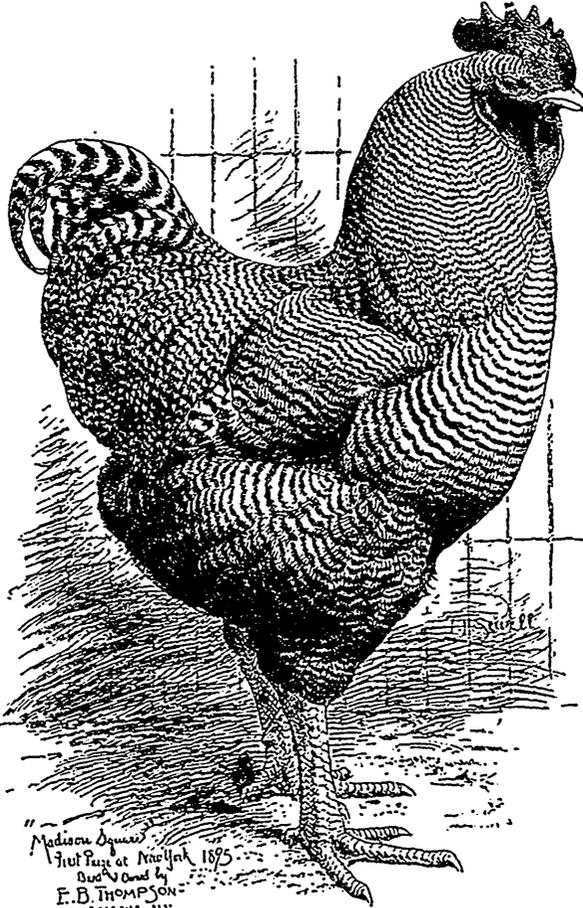
"When once you get the blood lines established strong enough, then you can breed exhibi-

tion specimens together, and a majority of their get will be fit for the exhibition room, and the man that gets a breeder out of such a flock, even though he may not be the finest specimen the breeder has, yet has blood in him that will make a marked improvement in his flock another year; and if he has any choice specimens to mate with him, the finest results will be obtained. In order to get their blood established the breeder must

line breed. This can be done very easily where a man has a number of pens, and, by using males from one pen and females from another, he can soon establish a strain, and, by always selecting the best specimens, can soon get where he can mate exhibition specimens together, and they will produce exhibition birds.

"There is another point I wish to make. Breeders are aware that on some birds the bars are closer together than on others. He should note this when he is mating up his pens, and not mate a male that is barred close to females with wide bars. I believe

that here is a very important point. You see, nature, in trying to conform with the natural law, gets confused and don't really know what to do. The blood of one says: 'I want a wide bar'; the other wants a narrow bar. Here you see the work of nature. She tries to make a compromise between the two, and the consequence is a zigzag bar across the feather. Breeders, did you ever consider this? Now, if



Barred Plymouth Rock: Cockerel.

you will mate narrow-banded males, use females with narrow bars; if you want the medium, use a medium in both sexes. If the females have wide bars, use a male with wide bars. The idea is, as I understand the standard, that the bars should be even and nearly straight across—not zigzag, as you will find on ninety-five per cent. of Banded Plymouth Rocks. This is a point that should be looked after, and I can see no reason why we can't, in a few years, produce birds with stripes around like a zebra."

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### Industrial Exhibition.

The Poultry Committee of the Industrial Exhibition met the last week in March. Present: Joseph Dilworth in the chair, Thomas A. Duff, William Barber, William Fox, and Mr. Collins, Toronto; Allan Bogue and William McNeil, London; Messrs. Hobbs and Moorecraft, Bowmanville; R. H. Hodgson, Brampton; and T. D. Murphy, Hamilton. Mr. H. B. Donovan and the superintendent, Mr. C. J. Daniels, were also in attendance. Several changes were made in the prize list. The most important matter dealt with was the time when the poultry exhibit should be in position, and after considerable discussion it was decided that for this year the poultry must be in place by noon on Thursday of the first week. Judging will commence on Friday morning, and be completed, if possible, by Saturday night. This will give the Exhibition Association a chance to arrange excursions during the first week, as all departments will be open on Thursday. Furthermore, it will give both visitors and exhibitors a better chance—the former to inspect the stock, and the latter to make sales.

A sub-committee was appointed to deal with the matter of poultry appliances, and to formulate a list and rules to govern flying contests for homers. This committee met on April 7th. Four classes were made for incubators and brooders, a class for bone-cutters, and also a class for the best coop for shipping fancy fowl, such coop to conform to the new express tariff, which tariff is given elsewhere. Twelve classes were added for homing pigeons, and a set of rules governing the flying contests agreed upon.

It is to be hoped that the board of directors will adopt the committee's report, as there is no branch of the live-stock department which gives the association such a large return for the amount of prize money offered. Unquestionably, the display of poultry at the Toronto Industrial Exhibition is the peer of that of any other fall exhibition on this continent.

Intending exhibitors and visitors will please bear in mind that for this year, at any rate, the poultry must be in place by noon on Thursday of the first week, instead of on Monday of the second week as formerly.

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### Poultry on the Farm.

From a paper read at a Farmers' Institute meeting at Pinckneyville, Ill., by S. L. Johnson.

I would ask you to consider the amount of revenue derived in the United States from small fruits and the amount derived from poultry. Poultry even competes with wheat and corn, and millions of dollars worth of poultry and eggs are imported every year, and yet we see but one little topic on this programme, and that is placed the last thing at night, and it is quite likely that Mr. White, who lives ten miles away, will go out home on the evening train and not be here. We do not want to be understood as wishing to take anything from the importance of horticulture in making this comparison, as in this part of the States it is one of the most profitable branches of farming, and our farmers will soon lift the mortgages if they will pay more attention to raising fruit, and raising it intelligently. Our neighbors in adjoining counties make it pay, and why should we not be reaping the benefits to be derived from this very important branch of the work? My object in making this comparison is to show you just where the poultry industry stands in this community. You will readily see that it cuts but a very small figure in the ordinary farmer's life.

We called our worthy president's attention a few days since to the way he was treating us "poultry cranks," and he was free to admit that he had overlooked it, and also admitted that Mrs. Milligan made a larger percent. of profit from the amount of money she had invested in poultry than he did in his business, and yet he spends thousands of dollars each year. Give your wives someone to put in the house to take care of your children; make the beds and wash the dishes; get the dinner, patch your old clothes and darn your old socks, and give them time to devote to their poultry, with a proper place in which to house them, and an acre of ground, and you may take the whole farm and at the end of the year she will have placed more to her credit than the head of the firm. For just a moment I would like to ask you a few questions: How many of you spend any money for sugar and coffee? I am talking to the farmers now. How many of you spend any money for your wives' dresses, and even the shoes for the children, and, if you do anything of this sort, why is it that you growl about it? Where

does your money go that you make off your wheat crop? Do you not spend most of it for machinery, while the rest of it is devoted to paying interest? Where, then, does your living come from? Is it not the good wife who saves enough from the eggs, etc., to run the house, and goes round with you when you will let her, while you point with pride at "the magnificent place I have"?

I will venture the assertion that if any farmer here who has fifty hens on his farm will keep an accurate account of the amount spent and the amount received from them in one year, giving them ordinary care, and not neglecting them, he will give more of his time and attention to them afterwards. A

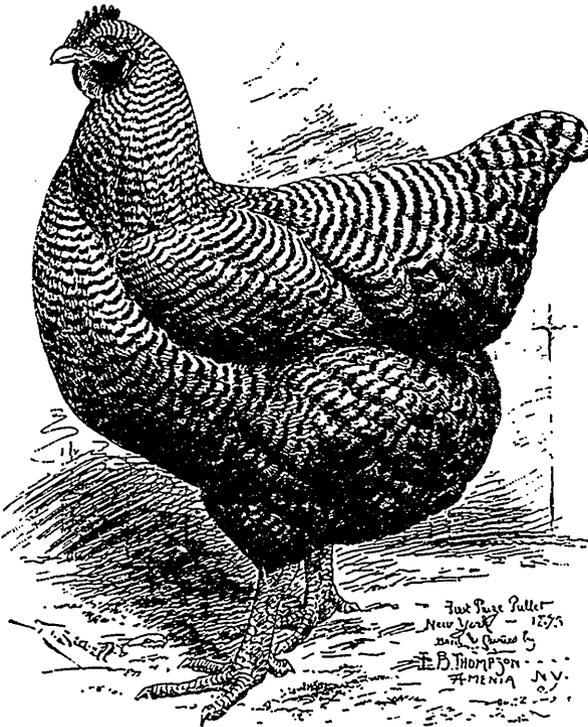
hen, with ordinary care, will lay 150 eggs in one year, and at our home market you will get on an average about 18 cents per dozen, which would give you \$2.25 per year on one hen; and how much do you think you are out for feed? In town, where we keep them up all the year round, we count on paying \$1 a year for feed, which would leave you a profit of \$1.25 per hen; and how much money have you invested in the hen? Probably 50 cts. What other part

of the farm will yield you 250 per cent. profit? This is no fancy figure, but one from actual experience, which has been demonstrated many times, and with proper attention they may be made to lay many more eggs than this. But you will please bear in mind that if you let your hens roost in the trees and have their combs and feet frozen, as we so often see, and they are allowed to gather up just whatever they can find to eat or do without, you need not expect any eggs when they are worth the most money and in the greatest demand. How much milk would your cows give if forced to lie out in the snow and eat just what they could get

under the leaves and from the twigs of trees? A farmer who would permit his cattle to be treated in this manner would be considered blind to his own interests, and yet he does the same thing with his chickens. He makes just the same mistake that many of you did years ago when you kept the scrub calf to breed from rather than pay a few extra dollars. You saw the error of your ways at that time; why is it that you are so slow now?

Besides the general neglect of poultry, another reason it is not made to pay better is on account of the kind of stock you raise. Many farmers say to-day that "the common dung-hill will beat

them all"; when the fact of the business is that you don't know what you are talking about. There is not one farmer in one hundred who has given purebred poultry a thorough test and has given them up for the scrubs; and unless you have tried both kinds you are not a competent judge. These same persons used to say that it did not pay to breed good cattle or horses, that the old seedlings were the best fruits grown, that the woods were full of "razor-back and hazel-split-



Barred Plymouth Rock Pullet.

ter" hogs, just as your barnyards are now full of dung-hill chickens. Why was the change made in breeding horses, cattle, and hogs? Because it was found to be more profitable, and we see now a thoroughbred horse or hog of some one of the various breeds or a first-class male of the Durham, Jersey, or some other breed of cattle at the head of almost every herd. Fancy prices are paid for these males, for it is well understood that on them depends to a great extent the kind of stock you will have in future; but how few of you are willing to pay from \$2 to \$5 for a rooster? You laugh at the idea, and yet he is one-half of your

flock, and the kind of young chicks you will raise depends upon the kind of a male bird used. If you cannot do any better, get a good male bird and put at the head of your flock of scrubs, and see what you have the year following. Or, if you prefer, spend \$2 a sitting for a few sittings of eggs from some good breed, and raise enough to get a good start. For early market poultry you should have some breed that matures rapidly, and that you will not have to feed all summer to make them weigh a pound or two.

I tell you there is money in poultry. There is money in poultry here in town. It will pay you to raise poultry for eggs alone, if for nothing else, in order that you may have them fresh when wanted. I saw a man last spring who, or a little 50 by 130 foot lot, raised and sold \$1,000 worth of eggs and chickens in one year. We had with us, on Friday, Mrs. Judy, of Decatur, who made more than this off twenty-five hens in one year. We may not all be able to do this, but if we can make \$1 profit on each hen we are doing well, and I am only ashamed of our people in this country that they pay so little attention to this branch of farming, when there is so much in it, and when they have so many advantages. The climate is well adapted to it, and you are close to the market, and could get good prices for your eggs and chickens if you took the proper interest. One thing, however, I wish to call your attention to, and that is the kind of eggs that are often brought to market. Have you ever watched the eggs that come into any of our stores during any one day? If you will do so, you will not be surprised that during the summer they are so cheap. It is nothing unusual to find three-fourths of them rotten, so that the people who purchase them are really paying a large price for the number of good fresh ones they receive. They would be only too glad to pay a much better price for eggs that are really fresh, and, if you had enough of them to send to market a full fresh case regularly, you could easily receive from five to ten cents above market price all the year around.

### Scoring Birds at Shows.

Editor FARMING:

Would you permit one who has lately embarked in the poultry business, but who is well satisfied with it so far as he has got, to venture a few remarks on poultry shows as seen through impartial spectacles?

It seems to me that the scoring of birds is rather an uncertain quantity, especially when a judge is expected to run over 600 or 700 birds in a couple of days. From what I have heard, the

same judge cannot be depended on to score the same bird the same number of points at different shows a week apart, and from what I have seen he will not do it in some cases twice alike the same day—he may give a bird ninety-three points in the morning, and disqualify it in the afternoon, or *vice versa*. The question is, Would he do any better by comparison?

In favor of the scoring it might be said that it gives the man who doesn't get a prize a chance to sell his birds well on the score card, whereas if he doesn't get up as high as third by comparison he has nothing to show for his entry money.

I would like to see a system adopted by judges that would give more prominence to the valuable points from a commercial standpoint, and less to the fancy points, if such a thing could be managed. I would not have them allow black feathers to pass in white fowls, for instance, otherwise all the breeds would soon get mixed; but I would study up what points could be depended on to indicate good laying or meat qualities, and cut severely where they were absent, cutting lightly, on the other hand, for defects in plumage, white faces, etc. Breeds for business are what we want.

One more. It ought to be possible to get at the prize jayhawkers who gather up all the birds in their locality, and, adding the letters "& Co." to their name, show them over the country as from their own yards, when they may never have been within miles of each other till they were cooped up and sent off on their travels. This borrowing and lending of birds is not honest, and ought to be shut down on. I can hardly see how it pays.

AMATEUR.

### Red Caps.

J. J. I., Romney, Ont.: I would like to know about the laying qualities of Red Caps as compared with other non-sitting breeds. Are they a good table fowl?

Ans.—Red Caps are considered first-class layers, but I do not think that they will lay as many eggs as Leghorns or Minorcas. The egg is about the same size as that laid by a Leghorn. I believe they are very prolific. Breeders claim that their flesh is sweet and tender. The standard weight for a cock is  $7\frac{1}{2}$  lbs.; for hen,  $6\frac{1}{2}$  lbs.; for cockerel, 6 lbs.; and for a pullet, 5 lbs.

### Canaries.

N. C. R., Haydon, Ont.: My canary birds scratch and pick themselves and the feathers fall out; otherwise they are in good health, but they have stopped singing. I can find no insects, and

have used insect powder. What do you think is wrong with them, and how can I cure them?

ANS.—I fancy the birds are being kept in too warm a place. It would be preferable to keep them in a place where water would freeze rather than in a place where it is too hot. You would find your birds healthier. Put a rusty nail into the drinking water.

purpose fowl. White Rocks, Wyandottes, and Javas are also good. Their drawback is an inclination to become broody. Minorcas will lay a very much larger number of eggs than any of the above-named varieties, and are non-setters. They are not to be despised as a table fowl, but, of course, do not compare with the other breeds named, where the object is meat.



Barred Plymouth Rock Hen.

### General Purpose Fowl.

H. T. T., Mount Pleasant, Ont.: Which is the best all-round general purpose fowl to keep? My own fancy inclines me to think Barred Plymouth Rocks; yet I notice the Minorcas have been coming to the front lately. My object is to get poultry stock for the table and eggs.

ANS.—The Barred Plymouth Rock is, without doubt, one of the very best all-round general

### Number of Eggs.

Subscriber, Toronto: (1) How many eggs per hen can be had from a choice lot of well-bred pullets per annum, under favorable conditions? (2) What is the estimated cost per dozen for producing eggs?

ANS.—(1) A pullet of a laying strain, properly fed and cared for, should produce, at least, one hundred and fifty eggs per year. Some produce more than this. (2) The cost of producing a dozen of eggs is about six cents.



### Preparing for Planting.

The season of planting corn is now near, and an important work this is. It will be well, indeed, if proper preparation has been made for it. It should be carefully noted that weed destruction can oftentimes be more successfully carried out before the planting season than after it is over. That stirring of the ground before the time for planting is so potent in destroying weeds. Why is it not more frequently done? For the reason, probably, that farmers are so busy with other things. Yet a great effort should be made to stir the surface one, two, or more times before planting the crop. Such a process is so helpful in sprouting weeds. There is then lots of moisture in the soil, and the weeds germinate readily. Ground thus prepared is half cultivated, in a sense, before it is planted; that is to say, the weeds that would have to be destroyed by the cultivator are far more rapidly destroyed by the aid of the harrow before the seed is planted.

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### Catch Crops.

It is to be hoped that there will be no crop failures the present season, but there will probably be some notwithstanding. Where it is certain that the spring-sown crop will fail, then it becomes the grower to look about for a substitute. If ground is left idle a harvest of weeds is produced, and a harvest of weeds ripening without molestation means a harvest of sorrow and trouble for some one in the future. Various crops can be sown late where failure, or even partial failure, in the preceding crop has taken place. These are such as millet, buckwheat, and rape. They may be put in, of course, by simply cultivating the land previous to sowing them. Such catch crops may succeed as well as if they had been sown on land especially prepared for them. The only extra outlay in obtaining them will be the labor of cultivating the land and the cost of the seed. In no instances, therefore, should the land be allowed to lie idle where it is possible to avoid the same.

### Don't Neglect the Corn Crop.

Last year hay was a very short crop in many sections of the province. In the autumn it was very dear. Many farmers would gladly have fallen back on a corn crop to help them out, but they had no corn. Why did they have no corn. Corn grew very well last year, but it only grew when it was planted, and those who did not plant any, of course, had no crop. This bit of experience should be remembered. Another dry season should never be allowed to catch any farmer napping thus, for corn will grow at least fairly well in all the settled parts of the province.

Corn can be very successfully grown as a grain-producing crop in certain areas of the province, and where it can be thus grown it ought to be. No crop will produce more food, no crop will prove a better preparation for laying down lands to grass, and no crop can be more relied on in an adverse season.

In other sections corn cannot be relied on to produce an abundant crop of matured grain. But it will at the same time produce a very large amount of good fodder with considerable grain. The corn can be put into the silo, or it can be cured in the shock, as may be convenient; and, of course, in either case it may be fed without husking it. The man who has a good large crop of corn fodder is able to carry over his stock, even though other conditions should not be favorable, including a shortage of hay and fodder generally, such as is usually obtained from grain crops. Those who have never fed corn can scarcely credit the amount of food that it will produce per acre. To increase the corn area, then, is to increase the stock-sustaining power of the country.

Of course, a regard should be had to the varieties of corn that ought to be grown. In what may be termed the corn belt of Ontario, more particularly the Lake Erie counties of the same, much larger and later-maturing varieties can be grown than in the districts to the northward. In the latter, where some varieties of corn do not always ripen, the Early White Flint and Compton's Early may be relied on. In the more suitable

corn sections the Mammoth Cuban, Cloud's Early Yellow, and Salzer's North Dakota have been found to yield well, but it is not easy to get seed of these, as they have not been grown for many years in the country.

And let it be observed here that when the small and early-maturing varieties are planted for fodder, they may be planted more closely than would be found profitable with the late-maturing sorts, even in sections where the latter will ripen. Compton's Early may be made to yield a good crop of fodder and small ears, if the rows are as close as thirty or thirty-six inches, and if the plants are but four or five inches apart in the rows.

### Varieties of Turnips.

The turnip crop of Ontario is a source of much profit to its farmers. Turnips and excellent live stock are inseparably associated. Where you find the first, you find the second. Where you find the first in abundance, you find the second superlatively good. The introduction of turnips into Britain was contemporaneous with the beginning of the era of progress in stock-keeping, and the general growth of this crop by the farmers of any country is always associated with the general keeping of live stock. In Ontario the great turnip-growing counties are the great stock-keeping counties; hence the man who teaches our people that they should not grow turnips without regarding them what they can grow better is to be regarded as the enemy of his country.

With a crop, therefore, so important as turnips, it is not only important that they should be grown in the best possible manner, but it is also important that those varieties shall be grown which yield the most food value in quantity and quality of product. Close attention should be given to quantity as well as quality, for quantity alone does not tell the tale of the feeding value of a food.

Among the Swedish varieties, the Carter's Prize Elephant is a favorite. It seems to do well in all parts of the province. Hartley's Bronze Top has also given a good account of itself. Laing's Improved and East Lothian also do well so far as yield is concerned, but in some localities their keeping qualities would not seem to be of the best. The extension of the turnip crop has not reached its limits. In many sections turnips can be successfully grown where they are not much grown now. And on some farms there are fields of suitable texture for the growth of these crops where they have never been grown, because the effort has never been made to grow them. Of course, in some sections they cannot be grown

with profit, and in such localities the attempt to grow them should not be made.

Turnips require a loamy soil, and, if there is some sand in it, so much the better. They will grow well in a sandy soil, providing it is made sufficiently rich. But they will not do well in a black loam soil with a superabundance of vegetable matter in it, nor can they be made to flourish in a hard clay soil without overmuch labor.

### Mixed Grains for Forage and Soiling.

Various mixtures of grain may be sowed to provide forage. But there usually exists a greater necessity for them for soiling uses in our country, where we are more blessed with more moisture than some other countries. Various mixtures have been tried of the small grains for soiling uses, but it is doubtful if anything has been found superior to a mixture of peas and oats sown together. These two plants seem to agree well when thus sown. They also make an excellent food. When put in on good land they will produce ten tons of green fodder per acre, rich, palatable, and health-giving. It is very questionable if we can find any soiling food better adapted for dairy cows at the season of the year when such foods are wanted.

But it should be remembered that no cast-iron rules should be laid down to determine the quantities of seed that should be sown per acre. That should be decided very largely by the soil. Sometimes it may be wise to have the oats in excess; oftener it will be wise to have the peas in excess. And sometimes it may be the proper thing to have equal quantities of the seed of each sown. The richer the land the larger relatively should be the quantity of peas, and the poorer the land the larger relatively should be the quantity of oats. This is owing to the fact that oats, because of their soiling power, are very apt to overshadow the peas on rich land, whereas this power diminishes with the diminishing poverty of the land. Sometimes it may be wise to put in the peas and oats in the proportion of two of oats to one of peas, but oftener it will be found advantageous to sow in the proportions of two of peas to one of oats. And for many soils it will be well to sow them in equal parts, and at the rate of two bushels of seed per acre.

The food makes a good sheep pasture. The sheep may be turned on when the peas and oats are six inches high. If eaten down quickly, these plants will grow up again. After they are eaten down the second time, a crop of rape may be sown on the same soil. But, to get all this, the first crop would have to be sown quite early. And

care should be taken to remove the sheep in time of wet, for then they would spoil the crop and poach the land, and they would also break the rape down much more easily.

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### Kaffir Corn.

Much is being said in favor of Kaffir corn, more especially by those papers, published in the Western States. It is sometimes said that it will grow well where corn will grow, but that is not exactly true. It wants more of summer heat than corn; hence our farmers who are likely to be carried away by the praises of Kaffir corn should go slow in the question of planting any considerable quantity of it. It is all well enough to try a little of it, but it should not be planted in a large way until we are quite sure that it will be at least as good as the crop which it would for the time being supplant. Kaffir corn should do best, therefore, in the milder portions of Ontario, as, for instance, along Lake Erie, and in the Niagara and Lake Ontario districts.

The experiments that have been tried in growing Kaffir corn in Ontario have not as yet made a favorable showing. The growth has been slow, feeble, and, on the whole, discouraging. The plant is feeble at first in any case, and grows but slowly for a time; but in countries adapted to its growth it pushes up rapidly after it gets a few inches high, and produces a large amount of fodder, and also of leaves. One peculiarity of the fodder is that it does not grow as high as corn, a second is that it produces more of leaf growth, and a third is that the leaves keep green for some time after the seed ripens.

When fodder corn is planted something will depend upon the object sought. In fact, much will depend upon this. If the object is to grow fodder only, the Kaffir corn should be planted with the grain, letting every spout run, or, perhaps, every other spout. If planted in rows at greater distances, the Kaffir corn should be cultivated. When the rows are close it produces some seed, though not great quantities of the same, and yet but a limited quantity of the seed enhances the value of the fodder.

When planted for the seed, it is usually put in rows about three feet apart. The plants in the line of the row may stand from four to six inches apart. The most careful cultivation should be given. A few quarts of seed will plant an acre when the rows are three feet apart; but when sowed with a press drill, such as used in the west, allowing all the spouts to run, some three pecks of seed are used. The plant is at its best in such

states as Kansas and Missouri, which makes it pretty certain that it is not likely to be grown at its best in Canada.

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### Potatoes: Deep or Shallow Planting.

This question is not easily determined, as various conditions will, unquestionably, affect it very much. There can be no doubt that, where soil moisture is abundant, shallow planting will be safer than where there is a scarcity of the same. It will also be found that where moisture is either abundant or over-abundant at the time of planting, the results from shallow planting will be more favorable than when the opposite conditions prevail. On the other hand, deep planting except in times of excessive rainfall, will undoubtedly be safer in the average season, as where potatoes are put well down they are, to some extent, fortified against a dry season.

Shallow planting is also less favorable to harrowing soon after the potatoes are planted. This is very important, as then it is that weeds can be most effectively killed. If the potatoes are near the surface, there is much danger that the harrow teeth, if at all long, will drag out the tubers. On the other hand, if they are well down the harrowing may be done—at least, as much as is necessary—without any hindrance from the sour named.

Another evil resulting from shallow planting that the tubers come up too near the surface of the soil; hence a considerable proportion of them become affected with sun scald. The proportion thus affected will be very much greater in the case of the potatoes of shallow planting than in those planted more deeply. In fact, it is liable to be so great as to materially affect the value of the crop.

Experiments conducted to test this question have resulted variously. In some instances the deep-planted tubers have given the best results; that is to say, those planted as deep as six or seven inches. In other instances those of intermediate depths have done the best—that is to say, those planted from three to five inches; but in no instances, so far as known to the writer, have the best results been obtained from those planted nearer the surface than three inches. As potatoes planted quite near the surface have a tendency to form tubers further from the surface, and as the potatoes planted seven inches have a tendency to grow tubers a little nearer the surface, the lower intermediate depth would seem to be about the best depth at which to plant them.

### Seed Corn from Different Parts of the Ear.

Some farmers contend that better corn will be grown from seed taken from the portion of the ear which remains after the tips and butts are broken off. But the contention has not, as yet, been backed up by a sufficiency of proof to render it incontrovertible. Some experiments have been conducted with that end in view, but these are such as related to small plots only. Some advantage has been claimed from planting the corn grown on the central portions of the ear—that is to say, the grains of corn which are large and good; but in those instances the rows were in small plots and near together. The rows could then benefit by a superior fertilization, if such were produced by the grains at the tip ends, as has sometimes been claimed. To demonstrate this matter clearly would call for a sufficient space between the different plots of corn to prevent the possibility of fertilizing influences being carried from one plot to the other. An experiment conducted by Professor Sturtevant, some time ago, tended to show that fertilization was not so complete if only those grains were planted which grew on the body of the corn, and some private experiments tend to show the same result.

In the small experiments conducted which have shown a slight advantage in favor of the corn grown from seed taken from the body of the ear, the difference may have arisen from the stimulus given to the plants by the large seeds at the first. It is one thing to get large plants and another thing to get good bearing plants. Those, therefore, who are growing corn should be chary about breaking off the tip and butt end of the cob and rejecting these for seed until they are quite sure that good will result from such a practice.

There can be no dispute, however, about the wisdom of growing large and well-matured ears for seed. Selection, in this respect, may be at once careful and severe. The choice of large ears is based upon that principle which pervades the kingdom of nature, and which recognizes the survival of the fittest. Where the farmer grows his own seed, such selection is easily possible.

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### Potatoes for 1896.

The crop of potatoes in 1895 was simply enormous. The like of it in point of yield was seldom known previously, and it may not be known for a long time again. The earth last year literally brought forth by handfuls, so far as the potato crop was concerned. It may, therefore, with

becoming fitness, be called the potato year. In all parts of the continent potatoes were cheap last autumn, and in many places of the far west they were not dug at all.

Because of these things the acreage of potatoes will very likely be diminished this year. Very many who went wild on the potato question last year will not plan: any the present year, except for home use. Because of this the crop is certain to aggregate a less number of bushels this year than last. And it should also be borne in mind that it very seldom happens that we have two abundant crops following one another. Those who have suitable land, therefore, should not hesitate to plant potatoes. The seed is cheap. The price is almost certain to rise, and therefore the aim should be to take advantage of the opportunity that is thus likely to come to those whose faith is unshaken in the potato crop.

The mystery of the marked absence of bugs also may not be repeated for some time again. In 1895 many fields in Manitoba, for instance, and in other potato-growing countries to the west, were untouched by the beetles. It is simply remarkable how few of those beetles showed up last year, and how little damage was done by them. We can scarcely hope for such exemption from the pests during the present year.

We should have a careful regard to varieties, for varieties in potatoes are as important as varieties in other things. Some of what may be termed the new varieties have been found to give a good account of themselves in all parts of Ontario. These include the Empire State, Pearl of Savoy, and Burpee's Extra Early. One good advantage of the latter is the short time that it takes to mature, that is to say, in the vicinity of one hundred days. The Empire State takes nearly a month longer to get to its growth. Vick's American Wonder is one of the most promising of the new varieties. It grows very large potatoes and very few small ones. But amid the innumerable number of potatoes that are ever being brought to the front, it is almost bewildering to make a choice. However, the varieties that have been recommended are such as have been tried and not found wanting.

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### The Milkmaid and Her Friends.

Modern thought and modern practice would relegate the milkmaid to the realms of a receding past. Pernicious thought, and mischievous practice! If the boy should not be denied the pleasures of the companionship of his dog, why should the milkmaid be denied the pleasures of the com-

panionship of her pets, as shown in the accompanying engraving? There can be no mistaking the nature of the relations between the girl and the cow in the picture, and it is a picture taken from real life. It would not be easy to estimate the pleasure which the maiden finds in the companionship of such pets.

A man who milks cows might well learn a lesson from that picture, for such are not always the relations between men and cows. A terrified cow and an uplifted milk-stool would bring out the picture of some men milkers, but never would it truly represent a milkmaid. Cows have no love for such male milkers; why should they? And, if maidens love them, they are less wise than the cows. Down, then, with the crusade that would give the milkmaid no place on the modern farm!

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### Pure Water on the Farm.

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From an address by PROF. F. T. SHUTT before the Ontario Creameries' Association.

It is no less necessary and essential to have pure water than it is to have good, wholesome, nutritious food for our cattle. That is a statement which will be endorsed by all who have given this subject any study.

The functions of water in nature are many. Its universal presence alone might assure us of that. If we examine an animal or a plant chemically, we find the greater part of it is made up of water. Take, for instance, a stalk of corn. We find that when almost ripe it contains between 70 and 75 pounds of water in every 100 pounds. Again, all animals, ourselves included, are largely composed of water. The same is true of animal products. Milk, for instance, contains more than 85 per cent. of water.

We may, therefore, rightly assume that of all the functions that water performs in nature, we have here one of primary and of paramount importance. Water is necessary to the maintenance of life and the development of plants and animals. We may consider water as the chief agent in the constitution of animals and plants for conveying nourishment to the parts where it is needed. The first service water does for plants is to render soluble the plant food in the soil. The plant food, to be available, must be in the form of a liquid or a gas, and the constituents in the soil necessary for the maintenance of plant life must first be dissolved. They can then digest and assimilate this food into their tissues. With animals we have a very similar case. The blood is largely made up of water, and contains digested and in liquid form the food we give them. By the action of water and certain

secretions the food may be digested and assimilated; and, further, by the circulation of the blood it is carried to the different parts of the body where it may be needed. So you see that this function of water as regards animals is a most important and vital one. There must be a sufficiency of water in the first place, or one cannot maintain vegetable or animal life.

I do not purpose to go into any detailed account to-day of how it is that water acts in this way—how it is absolutely essential for the process of assimilation whether in the animal or vegetable kingdom. I wish, however, to-day to bear with some emphasis upon the fact that this water must be free from pollution if we wish health and vigor in our animals and their products to be wholesome.

During the past eight years that the experimental farm system has been in vogue, we have, at Ottawa, made many analyses of waters from farmers' wells, and I regret not to be able to speak with any degree of satisfaction as to the quality of the samples examined. In the report of this year will be found the analyses of nearly one hundred samples sent in by farmers and dairymen throughout Canada, and you will be surprised to notice that only a very small percentage of these have been passed as pure and wholesome supplies. This is a state of affairs that should not be, and I will go further and say need not be, because the natural water supplies of our country are of the very best quality. They will compare most favorably with the waters of any country of the world. You will see, therefore, that it is only unnecessary that this water should be protected from the infiltration of polluting matter; in other words, that we should maintain it in its purity.

This is a matter which we, as dairymen, now woefully, and I may say sinfully, neglect. We have regarded anything, I presume, of the character of water as good enough to drink or to use in the dairy. Of course, we have not, as individuals, the means at home of obtaining a knowledge of the presence of impurities, and so it is, I suppose, that we have gone on, in many instances, giving to our cattle and using for ourselves, year after year, water containing liquid manure, fluid excreta which has found its way into the wells. In nine cases out of ten it is impossible to say by mere casual examination of a water whether it is pure or impure. There are waters sent to me, however, which need no chemical examination. Anyone endowed with the senses of smell and taste ought to be able to at once diagnose such cases; but such are exceptional. There are, on the other hand, many waters sent to us which,



The Milkmaid and Her Friends.

FOR ENGRAVING CO.

though bright and brilliant in appearance, are really reeking with organic filth.

Now, what is the character of this pollution that we want to guard against, and why is it injurious? The contamination is frequently the drainage from the stables or the manure heap—practically the fluid excreta of animals. We must prevent the infiltration of such into our wells. It is most dangerous. It often leads directly to diseases and ill-health in the farmer's family, and, at any rate, to a lowering of the vitality and vigor in our constitutions and that of our animals. It will lead to tainted milk and unwholesome products. Again, this pollution is directly favorable to the growth of those germs which cause disease. Concerning these disease germs I may have something more to say shortly.

You will all bear me out in saying that in many instances the well is situated in the barnyard or in the stable itself. Where it is in such a position pollution must sooner or later find its way into the water. That is not where it should be. The material that thus gets into the well contains plant food. It is a fertilizer. Do not give that water to your cattle, nor use it yourselves, but put it on your hotbeds. The well is often robbing the fields of their fertilizer, and so you lose by this vicious custom in two ways. Everything has its right place, and we ought to realize that, both from a hygienic as well as an economical standpoint, the manure should be in the fields and not in the wells. Let me, then, at the risk of repetition, say that the wells should not be so situated as to be subject to the infiltration of this liquid manure, where they cannot fail to act as cess-pools. We have plenty of data to prove that not only illness, but death, in many farmers' houses in this country, can be traced to impure well water. Hygienists are at one the world over upon the pernicious, injurious effects upon the system of water contaminated in this way. Indeed, it stands to reason and common sense that that which has passed through the body should not be used again directly.

This pollution, then, is of the nature of decomposing animal matter. Such contains as an essential element nitrogen, and, therefore, is particularly susceptible to change. Compounds are formed that undoubtedly are poisonous to the system, thereby rendering the water dangerous to health. But apart from this, we know that this decomposing nitrogenous matter is particularly favorable for the development of bacteria or germs. Now, all germs are not injurious to health—many of them are beneficial to mankind, and especially to agriculturists. There are, however, those which develop within the system

typhoid, diphtheria, scarlet fever, and other dire diseases. These microscopic plants feed on excrementitious matter, and too often find a home in the farmer's well. How they get there, in many cases, it is not easy to trace. We have a power of resistance against these deadly foes, but we can overtax our immunity. For many years we may be able, by a robust constitution, to withstand their attacks, but when the system becomes "run down" we fall victims to their fell inroads. It is not wise, therefore, to run the risk. Again, we may be using polluted water for washing milk cans and in the various dairy operations, and thus be disseminating disease. Surely we must guard against such a possible evil.

We must recollect, then, that past immunity does not necessarily imply a pure water supply, and, further, that the action of polluted water is often most insidious in its action. There can be little doubt but that many cases of diarrhoea and indigestion are attributable to its effect, and these may be but the forerunners of something even worse. I would ask you, therefore, to throw off your apathy in this matter, and find out whether your supply is uncontaminated, for neither yourselves nor your animals can for long withstand the baneful effects.

Now, if I have said enough to convince you of the danger that may lurk in the well, allow me to point out how we may prevent it. First of all, we must not, for the sake of convenience, locate our wells in the stable or barnyard. When so situated, they must eventually become catch-pits for liquid manures. Even the densest of clay soils after a period become pervious to such drainage, and in light, sandy, or gravelly soils the contamination of the well water comes about in a comparatively very short time.

In conclusion, I would say that the Dominion Government are anxious to help you towards obtaining pure water supplies upon your farms by the examination of such samples as may be collected and shipped according to instructions issued by us. If, therefore, you will write to me, a copy of these directions will be sent you, and, if faithfully followed, a report will be sent stating the quality of the water.

Mr. J. G. Sneltinger: How long a distance will liquid manure filter through the ground?

Mr. Shutt: The character of the soil must determine very largely the distance at which a well may be safe from pollution. In a light, sandy soil, it is extraordinary how far this will run. In a heavy soil, of course, it will not travel so quickly. Then, too, it will depend on the amount of liquid manure that is allowed to get

waste. Any soil will become gradually saturated, and if the well is situated in the barnyard the pollution will eventually find its way into it, no matter whether the soil is open or close. The question of keeping the barnyard clean will also affect the purity of water supplies.

There is one question I did not, perhaps, sufficiently emphasize, and that is the absolute need of having pure water in our creameries and cheese factories, and for washing out our utensils. If we use water for washing the utensils which is impure, we are running the risk of introducing into the milk disease germs. Consider their size. They are so extremely small that it requires the highest powers of the modern microscope to see them. There may be hundreds of thousands in a square inch of water. Where the cans are cleansed with impure water, they become a favorable medium for the dissemination of these germs. The water, therefore, on all farms supplying milk to towns and cities should be subjected to a rigorous examination, and the same examinations should be made of wells on farms sending milk to the creamery or the cheese factory.

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### Crimson Clover.

J. F., Lavender, Ont. : Please inform me how to proceed with regard to crimson clover. Can I sow it with other grain and cut it the following year? How is it to be handled for seed?

Crimson clover cannot usually be sown with other grain in Canada with any sure prospect of success, because it is an annual. If sown with spring grain, therefore, it would not make much growth the same season, and would almost certainly die during the following winter. Where crimson clover is grown successfully, it is sown in the late summer or early autumn, and is then cut the following spring or plowed under, as desired; but our winters are too cold for it when the ground is not well covered with snow. The only chance with us to get a crop is to sow the clover seed by itself and cut it the same season. Whether it would pay us to do that has not been fully determined.

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### Lime on Roots.

J. W. H., Welland : When is the best time to apply lime on clay loam for mangels, carrots, turnips, and corn? My root land was fall-plowed, and is already manured, but will require to be

plowed again this spring in order to get a good seed bed. I thought that after it was ready for planting, except the last barrowing, would be a good time to apply the lime, but would like to be certain about it.

ANS.—The writer is correct in his idea of applying the lime after, rather than before, plowing the land when preparing it for field roots. If the lime were applied before the said plowing, it would be buried so deeply that its favorable action would affect the subsoil rather than the surface soil. When applied near the surface, the chemical and mechanical influences resulting are chiefly in that portion of the soil in which the plants grow, and the food in the lime is also more easily accessible to the rootlets. But why should the ground be plowed again for mangels and carrots? These should be sown early in the season, and if they could be grown on fall-plowed land that has been disked or cultivated, quick germination and rapid early growth would be secured more certainly than on the cold, upturned spring-plowed land. If the lime can be applied some time before planting the seed, the benefits will be relatively greater, because the action of the lime on the soil will be greater than if just newly applied.

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### Sowing Rape with Grain.

A. F., Chatham : Would it be advisable to sow rape with oats and wheat this spring for pasture in the fall? If so, when should I sow it? Would it do to sow it with the drill with the grain, and should it be sown before or behind the hoes? How much seed should be sown to the acre? Will rape taint the milk of cows pasturing on it?

ANS.—It should answer well to sow rape seed with the grain; sow not more than two pounds to the acre. Less will do. In a dry season the rape feed may not amount to much; but some seasons it will make a nice lot of pasture. If the roller is used, the rape seed may fall behind the drill tubes, as then the roller will cover the rape seed. If sown with grain on very rich land and the season is very moist, then rape may give some trouble in curing the grain, but this will seldom happen. If rape is fed to cows before they are milked, it will probably taint the milk; but if it is fed after they are milked, it is claimed by some persons who have fed it thus that it will not affect the milk, otherwise than by producing a fine flow of the same.

# THE DAIRY



NEVER give a cow cold water so long as there is danger from milk fever.

AN ointment for caked udders may be prepared as follows: Take a cup of vaseline and thoroughly stir in equal parts of spirits of turpentine and spirits of camphor, or saturated camphor, as called by some; heat it up thoroughly, and rub upon the udder or apply to any wound.

THE average cow in New Zealand and Tasmania, and on the best farms in Australia, is expected to produce 200 lbs. of butter annually and about 500 lbs. of cheese. On many farms the yield is much higher than this. The average annual yield of milk is from 500 to 700 gallons.

DAILY analyses of milk at the Vermont Experiment Station for a whole year have demonstrated that milk gets richer as the weather grows colder, and poorer as the weather grows warmer. Of course, such a condition can only prevail with well-kept cows. Again, cows on early pasture made more milk, and better milk, than during confinement in barns.

A SIMPLE remedy for milk fever is to pare, slice, and boil until soft, about one dozen good-sized onions in a pot of water with a handful of salt. Take about one quart of wheat flour, mix with cold water to a thin batter, stir gradually into the boiling onions, broth and all; add water enough to make a thin drink, and give it to the cow at the temperature of blood heat.

THE value of the escutcheon in indicating the milking qualities of a cow is not universally accepted by dairy authorities. There are, however, a number of reliable experts on this subject who believe that it is an important factor in indicating a good milker. The flandrine escutcheon is the best class. It indicates the large milkers. The butter quality is got by selection. A good escutcheon should measure about 18 inches wide across the thighs; 8 inches above the udder; 4 to 6 inches higher up, and not less than 4 inches wide at the top.

THE United States appears to afford a splendid field for the manufacture of fancy brands of cheese. There is imported yearly into that country cheese to the value of about \$1,500,000, and much of this is French, Swiss, and English. A few American factories have secured such a reputation for fancy cheese that they get from 3 to 10 cents per pound above the market price for standard quality cheese.

AT the Minnesota Station some experiments recently carried on show that some cows produce butter-fat at much less cost than others, and this depends on shape more than breed and size. Plump cows produced butter-fat at 17½ cents per lb.; cows less plump at 15 cents; spare and angular cows, lacking depth of body, at 14½ cents, and the same with deep bodies at 12 cents. All received the same quantity and quality of food per 1,000 lbs. of weight.

ABOUT ten or twelve years is long enough to keep a good cow unless she has shown remarkable individual value as a milk and butter producer, and an ability to perpetuate these qualities in her progeny. A good many cows condemn themselves long before that time. There is but little profit, with a few exceptions, in milking cows for a longer period; for the old cow gradually lessens her yield. The only profitable object in keeping such a cow is to produce calves.

AS a means of detecting margarine, it has been suggested that all makers of this spurious article should be compelled to put phenol-phthalein in it. Phenol-phthalein is perfectly harmless and does not show color when in an acid solution, but when an alkali is added it becomes pink in color. A very small portion of this substance put in all the margarine made would admit of its being detected very easily by any buyer by mixing a little alkali, such as soda, with a sample of the margarine purchased. Phenol-phthalein is a neutral body without taste or smell, incapable of imparting to margarine properties which it does not possess, and, besides, is cheap enough for all purposes.

## The Buying and Selling of Cheese.

There are about one dozen cheese markets in Ontario where factory representatives and buyers meet for the sale of cheese. The method of selling at nearly all of these has been the "call system." Where this plan is followed and the rules governing it strictly adhered to, it has given good satisfaction. During the past season, however, at most of the markets in Western Ontario, at least, both buyers and sellers have not kept to the rules very faithfully, and the consequence is that no one has been satisfied with the manner in which they were conducted last year. It is sincerely to be hoped, however, that if the "call system" is done away with that as good, if not a better one, will be substituted in its place, but it is hard to see how the present system can be improved upon, provided that each member of the market does his duty.

One of the difficulties connected with the markets last year was that both buyers and sellers would negotiate for the sale of cheese as soon as the "call" was over, thus breaking one of the important regulations and rendering the market itself a kind of "farce." At many of the places the market was only used as a kind of "feeler" to find out how things were going. A great many salesmen made it a practice to sell off the board nearly altogether, which made it unsatisfactory for those who attended to do business. If salesmen would make up their minds to sell regularly by public competition on the "call" system at the highest price when the cheese were ready to go, the difficulties connected with operating the markets and disposing of the product would be largely overcome. The buyers, when they fully realized that the factorymen had come to there to sell, would make their very best bids in order, if possible, to get the cheese. At the opening markets this season this question should be thoroughly discussed, and the difficulties connected with operating our cheese markets overcome.

### Fodder Cheese.

As the beginning of the new cheese season approaches, it becomes more evident that the stocks of old cheese on hand are not as large as they were last year at this time. This should have a good effect upon the market, as it will leave it free for the new stuff. At the beginning of April there was considerable effort shown on the part of dealers and leading dairymen to prevent the factorymen from making any fodder cheese, and from opening their factories till well

on in May. This agitation has had the effect of causing many of the large factories which formerly began operations early in April to refrain from doing so till several weeks later. This movement has no doubt resulted in much good to the trade, and will have some effect in strengthening the market for later-made goods. The quantity of April or fodder cheese made is small as compared with the total output—about 7,000 or 8,000 boxes in all, and, in reality, should not have much effect upon a market to which a few thousand boxes is neither here nor there. There is, however, more in the name than in anything else, and the fact that comparatively few new cheese are being made and sent forward will deny buyers a chance to "bear" the market.

It would be a wise move any year to make as little as possible fodder cheese. Even if prices are higher than they have been during the past year, we question the advisability of making any large amount of early cheese. The quality is never good, and the cheese made before cows have access to the pastures have not the keeping qualities of the later-made goods, and, consequently, have to be sold immediately and consumed quickly. Besides, going at the beginning of the season, they are apt to unfavorably prejudice the consumer before the better quality of goods appear.

It would be better for the farmers to keep their milk at home during April, at least, and make butter and raise their calves, and perhaps better if the factories would put in buttermaking apparatus, as many of them have done this spring, and have the butter made upon the creamery plan, when the skim-milk could be returned for feeding swine and raising calves.

## The Turnip Flavor in Cheese and Butter.

In many of the older dairy sections in the fall of the year, cheese and butter makers have to contend with the turnip flavor in milk. It is a flavor very hard to get rid of in milk, and very often injures the sale of cheese and butter very materially. There were a few cheese factories in some of the older dairy districts last year that held their fall cheese till April, because they could not get the highest market price for them, and the reason they did not get the highest market price was because the cheese had a pronounced turnip flavor. It would have been better if the farmers who supplied milk to those factories had not grown any turnips last year, as their cows would not have eaten any, and their cheese would have gone off in good time.

A speaker at a dairy meeting held recently, on being asked if turnips could be fed to cows without tainting the milk, said, "Yes, if fed to steers and heifers not giving milk." This is about correct. Turnips cannot very well be fed to cows without tainting the milk, and where the milk is affected by them it is not fit for making either fine cheese or butter. There should be a regulation in every cheese or butter factory prohibiting the feeding of turnips to cows whose milk is being supplied to the factory. We know of one winter creamery where, if a patron is known to grow turnips, his milk is not taken. This may perhaps be a little too stringent, but cheese and butter makers cannot be too particular about the flavor of the milk, if they wish to get the highest price for their products.

If turnips are grown they should not be fed to cows giving milk, and the feeding of the tops is more injurious than of the turnip itself. If it is necessary to have roots for the cows in the fall and winter, mangels should be grown for that purpose. They can be grown

just as easily as turnips, and, bulk for bulk, will produce as much milk, and also will not give any bad taint to the milk. We would, therefore, recommend and urge upon all patrons of cheese and butter factories to grow mangels for fall or winter feeding for cows giving milk, and, if turnips are grown, to feed them to the other stock. Rape fed in large quantities to which cows will also injure the milk. Where a dairyman has a silo, he will not need to depend upon the root crop for succulent feed for his cows.

## Growing Corn for the Silo.

In many sections there has been a great scarcity of rough feed for cattle during the past winter. Many dairymen have had to buy hay and straw to help them come through. There is one class of dairymen, however, who have not felt this scarcity of feed, and they are the men who have silos and had them well filled last fall. Not only have they not had to purchase feed for their cows, but, on the other hand, they have had hay and straw to sell to their neighbors.

The silo plays an important part in the economical feeding of dairy cows, and we would, in this age of cheap dairy products, recommend to every dairyman this cheap and practical method of conserving food for winter feeding. Corn is the best plant that can be grown for silo purposes. There are other plants that make good ensilage, but they cannot be produced as cheaply as corn, which is the main silage crop of this country.

There are a great many varieties of corn,

and some of them are better than others for silo purposes. The ideal ensilage corn should have a tall, slender, short-jointed stalk, well eared, and bearing an abundance of foliage. A large percentage of the total weight should be made up of leaves and ears, and the yield per acre should be heavy. It is desirable that the plant stool well, and throw out tall grain-bearing suckers. A variety of corn that matures late, the later the better, so long as it matures in time for the silo, will produce the most feed, as varieties that mature very early will not give as much feed per



Hon. Thos. Greenway,  
Premier of Manitoba.

acre as the late-maturing ones. When silos first came into use an effort was made to get the largest variety that would give a large bulk of feed per acre. The Mammoth Southern varieties were got for this purpose, but have not proved as satisfactory as some of the smaller varieties, because in this northern climate they rarely mature in time for silo purposes. When the season is long, and the plant has a chance to develop and mature, these large Southern varieties may be grown to advantage for the silo. Some of the varieties that have been tried and recommended as good ensilage corn are the Mammoth Cuban, Improved Leaning, Compton's Early, Thoroughbred White Flint, and Early White Dent.

Land intended for corn should be in good condition, and as rich as possible. Fall plowing is recommended by many successful corn-growers. Corn coming after clover will give the best results. The ground should be well prepared and well pulverized for corn. Other things being equal, the earlier the planting the better. For ensilage purposes the corn should be planted in such a way as to allow the plant to mature and develop. This can be best brought about by planting in hills, or drills, the old broadcast method not being considered practicable. Whether to plant in hills or drills will depend largely upon the condition of the ground. If the land is clean and free from weeds, and will not need much cultivation, it would be better to plant the corn in drills, about three and a half or four feet apart, with one plant about every nine or ten inches. Where the land is dirty, and will need considerable cultivation to keep the weeds down, better results will be obtained by planting in hills, about three and a half feet apart, with about four grains to a hill. This method will allow of the field being cultivated both ways, and give a better chance to get rid of the weeds. Besides, as many plants will be grown on the same area as where it is planted in drills.

The depth at which corn should be planted will depend largely upon the season. If the summer turns out to be very dry, the plant will do the better if it is covered pretty deep; while, on the other hand, if a very wet season prevails, shallow planting will give the best results. Each one will have to be guided largely by his own experience. After planting, the soil should be kept pulverized, and thoroughly cultivated. Shallow cultivation will give better results than deep cultivation, as the former suffices for destroying the weeds, and, at the same time, preserves the soil moisture, which are the essential points in cultivating corn. Corn should be cultivated as often, but no oftener, than is necessary to kill the

weeds. In the large number of cases one cultivation a week, until the corn shades the ground, will be found sufficient.

### Manitoba Government Dairy School.

The growth of dairying interests in the Province of Manitoba in the past two years has been almost phenomenal. Though hastened in some measure by the partial failure of the wheat crop three years ago, it is really due to the healthy reaction from the speculative farming common in newly-opened territories, and proves that farmers have abandoned the idea of colossal fortunes to be made



Mr. C. C. Macdonald,  
Provincial Dairy Commissioner, Manitoba.

from wheat growing, and are settling down to the more safe and profitable business of mixed farming.

Farming being the chief industry of Manitoba it seems most appropriate that the first minister should be a farmer. The Hon. Thomas Greenway had made a practical success of agriculture before he took in hand the arduous duties of chief of the Provincial Cabinet, and during the years in which he has held the reins of government he has left no stone unturned to further the interests of the farming community; and to no branch has he given more thought and care than to the development of dairying. The Provincial

Dairy Association have felt—in carrying any new request before his government—sure of a patient, courteous hearing, and a prompt and practical response whenever possible.

At the annual meeting of the dairy association, held in February, 1895, a resolution was passed asking the Provincial Government to appoint an expert butter and cheese maker to travel through the province, give instruction, inspect factories and creameries, and generally to supervise the dairy industry in all its branches, with a view of improving the quality of the product. The government acceded to this request, and after consultation with the Dominion Dairy Commissioner, Prof. Jas. Robertson, appointed Mr. C. C. Macdonald, of the *Dominion dairy staff*, to the position.

Mr. Macdonald, although still a young man, brought to the work a wide experience in similar fields. Born near Cobourg, in the county of Northumberland, Ontario, in September, 1863, he received his early education at the public school, and while attending school he also commenced the study of dairying as a profession. At nineteen, Mr. Macdonald was in the actual work, having charge of a cheese factory in the county of Glengarry. After seven or eight years spent in this way he was appointed by the Government of Quebec as provincial dairy instructor for that province. At the expiration of a year Mr. Macdonald received an appointment on the Dominion dairy staff, and in that capacity spent three years in travelling about the Dominion, giving instruction and gaining a vast fund of information on all subjects pertaining to the making, packing, and exportation of both butter and cheese. He entered upon his duties in Manitoba about the middle of May last, and, with the exception of a month in British Columbia, spent the entire season in visiting cheese factories and creameries, inspecting their equipment, testing milk, and giving practical instruction in the manufacture of butter and cheese, and as to the best forms in which to place these articles upon the market.

The object of the trip to British Columbia was to enquire into the extent and requirements of the dairy markets. The result of Mr. Macdonald's enquiries and observations was issued by the Department of Agriculture in the form of a report to the minister, and is a very valuable handbook for all who are looking to the province by the western sea as a market for dairy produce.

As a result of Mr. Macdonald's labors and observations during the season, the government decided upon opening a school for instruction in butter and cheese making and milk testing. A building 50 x 30 was secured in a central portion of the city, and fitted up as a school.

The front portion of the first floor is devoted to the office, cloak, and cheese rooms of the school. The cheese room has two vats, each of 1,000 lbs. capacity, a gang cheese press, and, along the wall, the curd knives, curd mill, and strainers.

The rear portion of this floor is the creamery room. In this are two milk vats, three separators—Sharples' Little Giant and Mikado, and a Baby de Laval—churns, both steam and hand power, a revolving butter table, milk-testing table, and all the cans, pans, pails, strainers, prints, etc., that pertain to the latest improved methods of buttermaking. The second floor contains a lecture room and a cheese-curing room.

About 8,000 lbs. of milk have been received daily and manufactured into butter and cheese, the rule being to make butter on Mondays, Wednesdays, and Fridays, and cheese on Tuesdays, Thursdays, and Saturdays. Each morning, as the milk was received, it was sampled for testing.

Two students took charge of the different departments each day, while the remainder of the school watched operations, lectures being delivered by Mr. Macdonald on the work actually in progress. Three afternoons each week lectures were delivered in the lecture room on "Cheese-making," "Buttermaking," "Milk-Testing," "Management of Dairy Machinery," "Division of Proceeds to Farmers, as Determined by the Babcock Test."

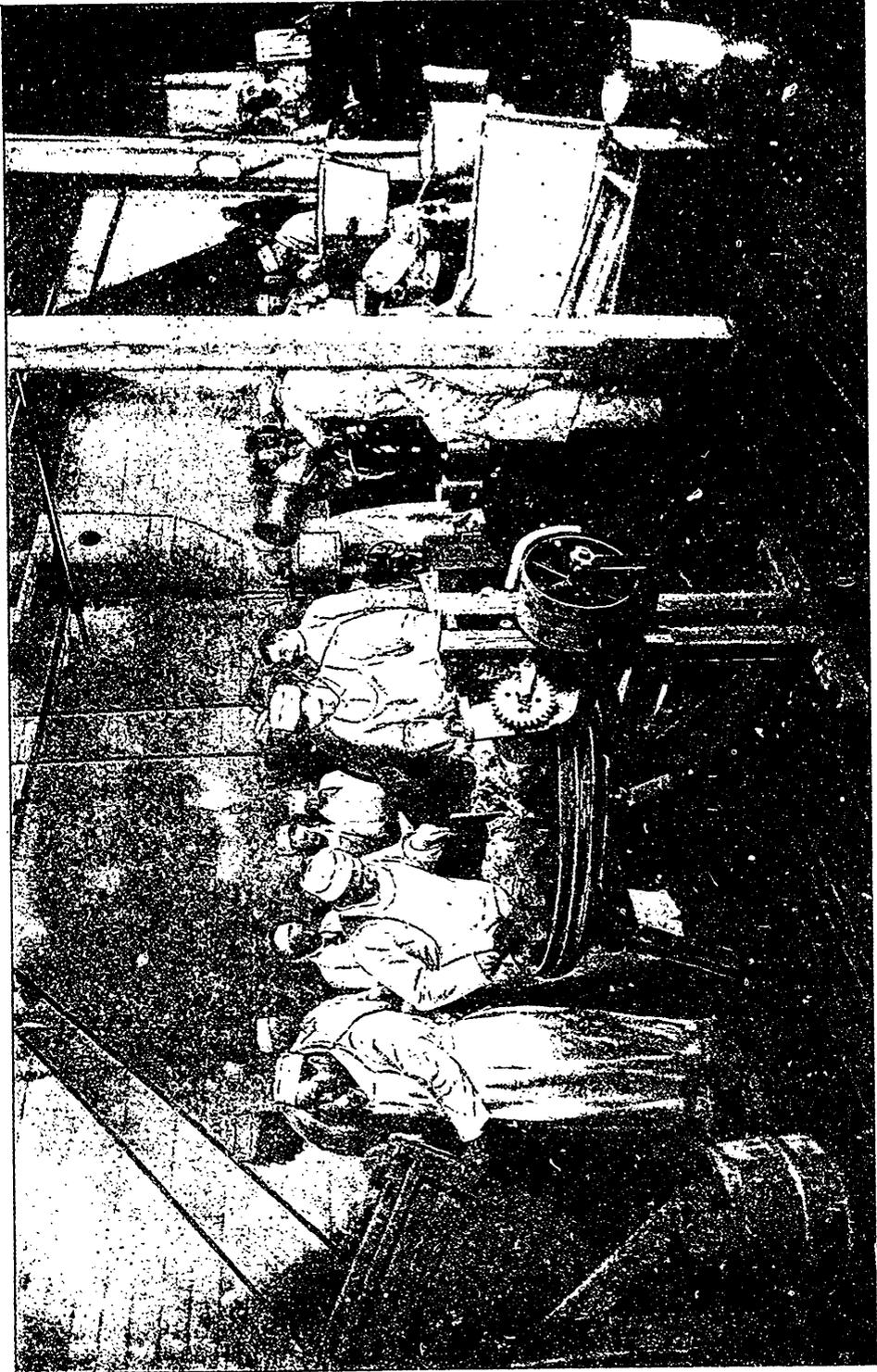
All butter manufactured has been disposed of to a local firm, J. Y. Griffin & Co., and has found a ready market in the city. During part of January it sold at 30c. per pound retail, while butter from other establishments was selling at 20c.

The milk used came from different parts of the province, being sent in by rail, a small amount only being supplied by city milkmen. The milk coming from such a variety of dairies has given a very special value to the instruction in "testing."

The butter was put up in square pound prints, wrapped in parchment paper, all the paper being stamped with the words, "Manitoba Government Dairy School." The cheese were branded with the same words.

In addition to the instruction during the day, the following lectures were delivered in the evenings: "History of Breeds," Dr. Rutherford, M.P.P.; "Veterinary Science in Relation to Cows," Dr. Thompson, Government Veterinary; "Scientific Feeding of Cattle," Dr. McNaught, M.P.P.; "The Feeding of Dairy Cows," Richard Waugh.

The term was divided into two courses. The first, called cheese and buttermakers' course, was open to those who had spent at least one year in a creamery or cheese factory. Thirty-five stu-



Students of the Manitoba Dairy School Churning and Working Butter.

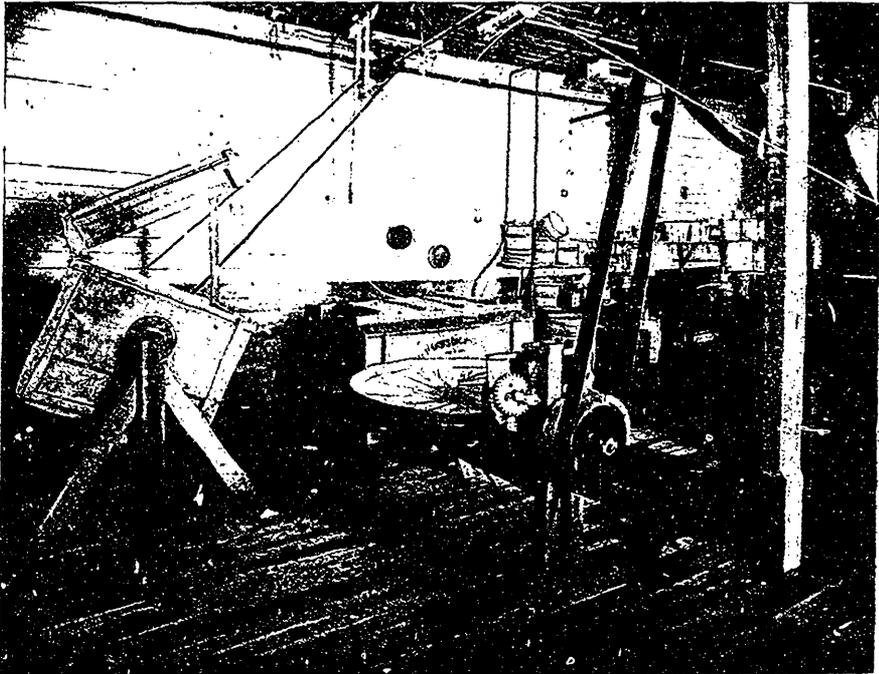
dents entered this course, twenty-three taking cheesemaking and milk testing, and twelve buttermaking and milk testing. The course extended from January 5th to February 25th, while February 26th to 29th, inclusive, was devoted to written and oral examinations on the work done during the course, the results being highly satisfactory, eighteen having passed in cheesemaking and milk testing, and eight in buttermaking and milk testing.

On March 1st the second, or farm dairy, course opened. This was for the daughters and sons of farmers who intend making butter at home. This course was subdivided into terms of two

quality of the work done, and the very pleasant feeling existing between pupils and instructor, speak volumes for his executive ability.

### Central Dairy School, Guelph.

The dairy school opened January 14th with a smaller attendance than usual, due, no doubt, to two causes—the somewhat poor year for dairying during 1895, and to the fact that the dairy schools of Eastern and Western Ontario at Kingston and Strathroy would naturally draw some students who would otherwise have come to the central school in connection with the Ontario Agricul-



Manitoba Dairy School.—A View of the Churns and Butterworker.

weeks each, to give an opportunity to all who desired to attend. Sixty-five students entered for the first term of March, thirty for the second, and fifteen for the first term of April.

The school was a free gift from the government, no entrance fees being charged. The only expense to students was the cost of their board while in town, and the white uniforms they were required to wear at their work.

Too much can hardly be said of the efficient manner in which Dairy Commissioner Macdonald has conducted the school. The entire burden of instruction has fallen upon him, and the good order maintained in the school, the excellent

tural College at Guelph. A new feature has been introduced this year in determining the practical standing of the men in the different departments in the examinations. One-half of the marks for practical work in each department were given on the general conduct and work done during the second month, and the other half on the results of a trial test in each of the departments. Each student was thus placed on his own responsibility as to practical cheesemaking, buttermaking, and milk testing. Lectures have been given by nearly all the members of the college staff. In addition, there have been lectures on dairying proper, and discussions on topics in connection

with the manufacture of dairy products. The judging of cheese and butter by experts who have been brought to the school have formed a prominent feature of the instruction given. Students have had considerable experience in handling tainted milk. For two seasons we were not troubled much with tainted milk, but this year we have had a good deal of trouble. Lack of bedding for cows has caused "cowy" and stable flavors.

related to the dairy. The care and management of boilers and engines have not been forgotten.

It seems to the writer that the three dairy schools should be placed on a similar basis of working. Greater uniformity in the length of term required for a course, in tuition fees, and in methods of conducting, etc., are improvements needed in the management of our dairy schools. The fact that one or two schools have a two



Manitoba Dairy School.—Students Making Cheese.

The worst flavor we have encountered this year is one which resembles potatoes. Potatoes are cheap, and many have been fed to milk cows. I consider this potato flavor one of the most difficult to overcome that we have met with, except the flavor from feeding brewers' grains.

Students have also done some work in pasteurizing milk, and taken lessons on microscopy as

weeks' course, another a six weeks' course, and another a two months' course, is not in the interest of the best teaching of practical and scientific dairy knowledge. Let there be more uniformity in this direction. A similar standard should be required in dairy education to that in education for other professions.

H. H. DEAN.  
Dairy School, Guelph.



## The Bill of Fare on a Farm.

It has often been a subject of comment that those who live on farms, notwithstanding the opportunities that they have for a varied and abundant menu, are accustomed to a very limited bill of fare. Salt pork or fish, potatoes, dried apples, porridge, palatable though they may be, figure with lamentable monotony on country tables. It should not be so; and happily it is becoming less so year by year. There is no class in the community who should fare more sumptuously than the farmers; and there is surely nothing in the best philosophy of life that forbids us surrounding ourselves with as many comforts and enjoyments as are consistent with temperance and thrift. A horticulturist can see treasures of delicate viands and dishes in every back yard, just as the ancient sculptor could see an angel in every block of stone. A garden of fruits and vegetables can supply the farmer's table with the choicest eatables all the year round, if only he is disposed to apply some care and patience to the cultivation of it.

Think what a series of luxuries any farmer can provide for his family from the resources of a small garden! Fruits and vegetables, many of which were unknown or undeveloped only a few generations ago: strawberries, gooseberries, currants, raspberries, blackberries; rhubarb, lettuce, onions, radishes, cucumbers, beets, carrots, beans, garden peas, sweet corn, tomatoes, cabbage, cauliflower, parsnips, celery—who would want to live anywhere but on a farm?

Let it be every farmer's ambition to have a rich and well-cared-for garden. He takes endless pains to provide choice food for his cattle, and choice cattle for his city customer or for the foreign buyer; let him work for himself and his own as well. If the whole list is too long let him make a judicious selection, not omitting garden peas, sweet corn, and cauliflower. What greater luxury can be found on a king's table than an ear of boiled sweet corn, beautiful and white, its long, even rows crowding one another with their fatness, and served with the simple accompaniment of melted butter.

A few cents spent in the nearest seed store at this season will provide an abundant bill of fare for the rest of the year, and will add very much to the pleasures of farm life, and the resources of hospitality and entertainment as well.

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## Mushrooms.

Mushrooms are not common as an article of diet. They are not grown except by a few gardeners who make a specialty of them. Yet they form a delicious morsel even to the epicure, and are in steady request among those who are not adverse to enjoy the good things of nature. What mushrooms we get are mainly procured from meadows where they grow wild. If anyone wants all the pleasure of the chase, without any of its perils or cruelty, let him go early in the morning mushroom hunting. There is something particularly exhilarating in the search—the cool, fresh morning, incense-breathing; the disappointment of the discovery of a toadstool or puff ball; the triumph of a successful find. But why leave this appetizing vegetable to the caprice of chance? It can be grown under domestic auspices; and if raised for profit will yield good returns, for the supply is far short of the demand.

A mushroom bed may be planted out of doors, and will thrive well there; but the best method to follow is that of indoor cultivation. The mushroom is a fungus, and does not require sunlight. Any shed, cellar, or dark room will do, provided the temperature is equable, and does not exceed sixty degrees. Prepare the soil of the mushroom bed as follows: Mix garden earth and horse manure free from straw or litter, in the proportion of one to two; fill the bed with the mixture to a depth of fifteen inches, and pack it down well. Fermentation will soon begin; and when it has subsided, but while the bed is still warm, plant the fungus germs or spawn, as they are called. The fermentation of the manure is very important. Let it be thorough, so that insects and seeds are killed that would otherwise become injurious to the mushrooms. Neither must the bed become too hot—140 degrees is the limit. The spawn should be planted about two inches deep,

covered over with light soil and pressed down all over the bed. Place two or three pieces of spawn about the size of a hen's egg in each hole. Cover the bed with straw, and moisten this covering carefully with lukewarm water whenever there are signs of dryness. The mushrooms may be expected to make their appearance in six or seven weeks after the spawn is planted.

No doubt the reason why there is a prejudice against mushrooms is that they are liable to be mistaken for toadstools. There are several ways of distinguishing these fungi. The "gills" or underside of the mushrooms are a delicate pink or flesh color, whereas toadstools are white, yellowish, or dark, there. This distinction, however, does not hold in the case of an old mushroom. The skin of the mushroom peels off easily, that of the toadstool adheres. The gills of the toad-



Mushrooms.

stool turn yellowish when salt is sprinkled on them.

Mushrooms, indeed, occupy among vegetables a place similar to that occupied among animals by oysters. They are both far down in the scale of development, and are equally delicious as food for the lords of creation.

Mushroom spawn can be procured through the agency of any good seed company. It comes from England and France. The English spawn yields more, but the quality is less excellent than the French.

While mushroom culture is recommended as profitable, and by no means difficult, yet it is subject to disappointment. Failures occur sometimes that do not seem to be the result of special neglect; and one must not be too sanguine with his apparently whimsical vegetable.

FOR FARMING.

### Fruit Notes.

The season for spraying has once again come round, and it is evident that the interest in this comparatively new part of the horticulturist's work is steadily increasing. On April 2nd a spraying contest was held at Grimsby under the auspices of the Board of Control for Fruit Experiment Stations. This was an excellent idea, and the board was abundantly justified in initiating the competition. There is always a difficulty in deciding what pump to buy, and, like other wares, each pump is advertised by its maker as the "best of all."

That the idea was a thoroughly popular one was amply evidenced by the number of fruit-growers who turned out to witness the contest. That the manufacturers recognize that this is a "live" question was proved by the fact that about twenty different firms were represented.

Unfortunately, though the previous two or three days had been ideal days for spraying—both warm and still—the weather on the eventful day was the reverse of favorable. A strong west wind, snow flurries, and a low temperature did a good deal towards spoiling the whole affair. The mixtures in some of the pumps got frozen while the owners waited their turn to go to the orchard, and the men who did the spraying were looking, if possible, more "shivery" than those who watched. The cold, however, was not great enough to chill the enthusiasm of the crowd, and, notwithstanding the adverse conditions, a good general idea was got of the working and merits of the various pumps. Before this article appears, I imagine the report of the judges will be published, in pamphlet or bulletin form, probably, and I strongly advise all who are interested in spraying to get a copy.

Fruit-growers who are not in time for the first spraying, before the leaves appear, should by all means make a start later on. There is more or less scepticism even yet about the value of spraying, but, apart from the good it will accomplish by preventing rot and killing insects, here is a point, and a strong one—it *will wonderfully strengthen the foliage*. If anyone asks, What of that? the answer, of course, is that, unless you have good foliage, you cannot have good fruit; and, moreover, a weak and sickly foliage means that the young wood will not thoroughly ripen, and will, consequently, be far more likely to be affected by frost. Take a case to prove this. In 1894 I sprayed—three times in all—two rows of plum trees, chiefly Imperial Gage and Lombard, omitting the two end trees in each case. In August—the season being very dry—those two

unsprayed trees had completely shed their leaves, while up to the first week in October the foliage of the remaining trees was fresh and strong. Comment is needless.

The moral of the disastrous frost this winter is, "Don't put all your eggs in one basket." I fancy the men who had the "peach fever" so badly, and planted little or nothing else, will be kicking themselves this summer. It is true that sweet cherries, and some varieties of pears and plums, are somewhat injured, but it is the peaches which have principally suffered. Take the chief peach districts, Lincoln, Welland, Wentworth, and Essex, and I fear from fifty to eighty per



Sweet Peas.

cent. of the crop is gone, and more in some localities. The peach is a noble fruit, but —

The wise man will grow all kinds of fruit that his soil will permit, and will be picking some thing or other from June till October.

M. BURRILL.

### Sweet Peas.

The sweet pea is not an old, time-honored flower in English literature or tradition. It was not introduced into England until about the year 1700; but it speedily found its way into popular favor, and is now one of the most esteemed of garden flowers. Indeed, at present, there seems to be a sort of fad for its cultivation; not a fad

either, for the plenty, profusion, and endless variety that this flower shows amply justify any preference that may be given it. So great is the demand for seed that one florist in California had no less than 150 acres in 1895 devoted to sweet peas.

Only a few years ago there were but eight distinct varieties of sweet peas, but now, owing mainly to the enthusiasm of an English amateur, Mr. Eckford, there are over a hundred; so that one has no lack of kinds to select from.

The seeds should be sown early, as soon as the frost is out of the ground; but the plant is hardy, and excellent results follow planting as late as the first of May. Plant the seeds at intervals of two inches in furrows about four or six inches deep, if early; two or three, if late. The soil should be heavy and rich, and well pulverized. When planting, cover the seeds about one inch deep with soil, and keep adding more soil as the plants force their way up. For a support, either brush or trellis will do. The plant will climb a distance of four or five feet. A trellis running north and south is considered best, but this is not important provided the plants have plenty of sun and moisture. Keep picking off the pods; otherwise the plants will go to seed, and the flowers will cease to bloom. A bed may blossom continually from the 1st of July to the 1st of November.

Some of the standard varieties are the Lady Beaconsfield, the Duke of Clarence, Dorothy Tennant, Countess of Radnor, Mrs. Gladstone, Blanche Ferry, Apple Blossom, and Emily Henderson.

FOR FARMING.

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

BY M. BURRILL, ST. CATHARINES.

(Concluded)

Of the positive methods to be adopted by farmer and horticulturist, one is thorough tillage, and the constant cleaning up and burning of rubbish, decaying vegetable matter, etc. Dirty fence corners, and the accumulation of various forms of garbage, form excellent breeding grounds for some of our worst pests. The other, and, in a direct way, more important, weapon is the use of poisons. Here, in particular, knowledge is power, for the poison which proves certain death to one insect is absolutely harmless to another. We must be largely guided by the mouth-structure of the enemy. Broadly speaking, insects are divided into two classes—those having jaws, and those having a beak or snout. The former class, of course, includes all beetles and all caterpillars, or larvæ of butterflies and

moths. The latter embraces all the true bugs and lice.

Naturally, a poison like Paris green, sprinkled in diluted form on the foliage, will kill the biting insect, but it will be perfectly useless for the bugs and lice, which would simply insert their snouts through the poison into the leaf, and suck up the juice of the plant without receiving the slightest injury. For these we must use preparations that kill by contact with the body, such as kerosene emulsions.

One thing especially should be borne in mind, viz., the necessity for prompt action. Insects like the larva of the currant row fly are simply animated stomachs, and appear in such numbers that in a very few days a whole bush is stripped of its foliage. The different species of lice increase at an incredible rate. From a single louse the fam-

ily circle is enlarged to a membership of *hundreds of millions* in five or six short generations, so that the old proverb, "A stitch in time saves nine," is eminently true in this department of life.

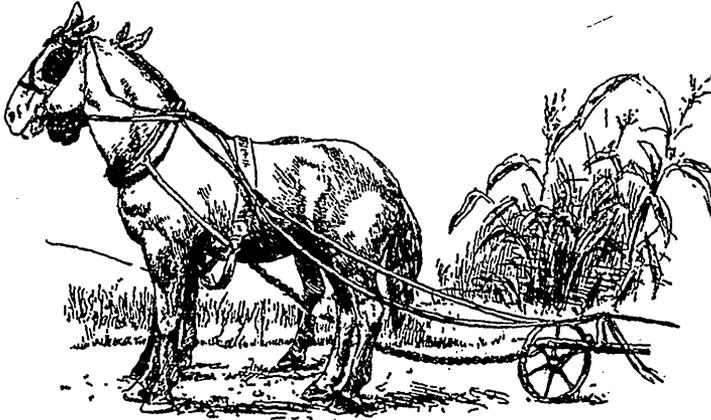
Finally, we maintain from the foregoing, and a hundred other reasons which could be advanced, that economic entomology should receive a far greater share of the farmer's attention than it now gets; and venture to promise every man who turns his studies that way an abundant reward for his expenditure of time.

FOR FARMING.

**Notes on Horticulture.**

By JAS. SHEPPARD, Queenston.

When fruit trees arrive from the nurseries, they are often quite dry. If planted in this condition,



**Harness for Orchard Work.**

when dry, warm weather comes, they do not start quickly or evenly. Lay them down in water for half a day or a day. It will not hurt them to put an old rail or log on top to keep them down. You will be pleased with the result.

Thin out the old canes from the raspberry patch, and shorten the long ones to 3 or 3½ feet. The quality of fruit will be improved, and time will not be wasted in picking small, crumbly berries.

**Harness for Orchard Work.**

Ordinary harness for use in field plowing will not answer for the cultivation of orchards. A tree should receive no injury of any kind either in bark or root. A careful fruit-grower will no

Spraying has now passed the experimental stage. The proof is that whenever a fruit-grower once begins to spray, he will not get along without it. With good spraying outfits at \$10, no man that wants to succeed in fruit-growing can afford to let the worms and fungi have their own way.

Graft those old apple trees into some of the popular kinds. Many old, and now useless, varieties can be changed in two years into fruit that will bring good prices, and in many cases put new life and thrift into the trees. Trees along the fences or on the sides of ravines might be grafted, and in a few years bring in quite enough to pay the taxes or buy a bicycle for the boy. Boys, go and see someone who knows how to graft. You can learn in fifteen minutes; go home and start right in. You will not make a beauty of the first one you tackle, but never mind, no man ever did. You will improve, and a few hours or days spent in grafting will be very profitable.

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### About Potatoes.

Subscriber: How is the productiveness of the seed potato affected by cutting?

ANS.—No vegetable has been made the subject of more experiments than potatoes, and no experiments have shown such varied and apparently unaccountable results. If, through some climatic reason, the stalk withers before the tubers are thoroughly ripened, the crop from such potatoes next year will be disappointing, no matter how the seed is cut. This is supposed to be the main cause of the degeneracy of certain varieties that were once unrivalled. If the seed is laid by in the fall from well-ripened potatoes, neither too large nor too small in size, there is no reason why the varieties so planted should not keep improving. The best results will be obtained from cutting the potato into one or two eyes, according as the equal division of the heart of the potato will admit.

I may as well state here other conditions that affect the productiveness of the potato much more than the cutting of the seed. The plowing of the potato field should be *deep* and *thorough*. The manure or fertilizer should be, at the same time, well mixed with the soil. Spread it first over the field, and afterwards plow it under with a uniform broad but shallow furrow of three or four inches only in depth. Then when the field is gone over in this manner it should be plowed again, this time with two plows, one following the other in the same furrow, the first one cutting a furrow four or five inches deep, the second following up with a furrow a foot still deeper. Two spans of horses will be necessary for this second plow. Thus the soil of the potato field will be thoroughly pulverized and fertilized to a depth of at least fifteen inches. The process must, however, be *gradual*. Soil which is not accustomed

to deep plowing should not be plowed so deeply all at once. Plow a little deeper each year. It is not usual to prepare the soil so thoroughly before the planting of the seed, but results show that such care is amply repaid. A short time ago the *American Agriculturist* gave a prize for the greatest authenticated yield from an acre of potatoes. Nineteen competitors, by cultivating and fertilizing as above, succeeded in raising upwards of four hundred bushels per acre. In fifteen cases the seed was cut into parts containing from one to three eyes. In one the potatoes were planted whole, in two the seed was halved, and in the remaining case the potatoes were cut to a given uniform size, regardless of eyes. The seed of the most successful yields were planted twelve inches apart in the rows, and the rows were thirty-four inches apart.

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### Planting Strawberries and Raspberries.

Subscriber: In what month should strawberries and raspberries be planted?

ANS.—Strawberries should be planted early in April or the middle of August; raspberries early in April.

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### A Question in Raspberries.

“Enquirer”: How many quarts per bush will a good raspberry patch produce?

ANS.—The term “bush” is a rather vague one as applied with reference to a raspberry patch. Raspberries are usually planted in groups or stools, two or three plants forming a group. Suckers soon spring up in all directions, but early in the season each year the stools are thinned out until six or eight of the strongest canes are left in each. Such groups or stools should be three or four feet apart in the patch.

A raspberry patch cannot be called “good” unless the soil is rich and deep, well drained, exposed to abundance of sunlight, and kept in good cultivation. The matter of drainage is very important; raspberries soon perish in a wet situation. All these conditions are more or less controllable, but there are many uncontrollable or unexpected conditions that affect the crop, chiefly those that pertain to variety, disease, climate, and weather. All things favorable, 300 crates of twenty-four quarts may readily be procured from an acre; but year in, year out, one has to be contented with a good deal less.



REPORTS go to show that where bees were properly prepared for winter, they have come through in good condition. Many, however, got discouraged last fall on account of the poor honey season, and an insufficiency of stores and other causes have made some beekeepers to lose heavily.

FROM an item in *Gleanings on Bee Culture* we learn that the United States in 1895 consumed 3,899,488,000 pounds of sugar. Dr. Miller wants to know if the nation would not be stronger if one pound out of ten had been honey.

THIS is the time of year when the inexperienced often do much harm by handling combs in the brood chamber of the hive, and intentionally or otherwise changing the position of combs. Some do it to try to increase the amount of brood in the hive; others see no special order, and replace the combs at haphazard. Even the ends of the comb should not be changed without due consideration. To expand the brood nest during a warm spell, but at a time when cold weather may be expected to follow, is dangerous. The cluster of bees contract and expand according to temperature. When the weather is warm they can cover a larger brood chamber than when the nights are cold. Only a very skillful beekeeper should attempt to change the brood chamber until after settled warm weather sets in, and even the skilled apiarian is running a risk in so doing.

### A Few Facts in Relation to the Importance and Development of Beekeeping.

(1) The constituents in honey being taken from the atmosphere and the crop take nothing from the fertility of the soil.

(2) As bees avail themselves of the blossoms which grow in a state of nature or in connection with regular crops in the vicinity, and the hives themselves occupy but little room, the honey crop displaces no other crop on the farm.

(3) Those settling and clearing land can, without having an acre of land cleared, establish an apiary and get a crop which will be of much assistance to the new settler.

(4) The capital required to equip and properly run an apiary of 100 colonies is about \$800, and experience, care, and intelligence. A farmer's son or daughter may, however, begin in a small way, and with a small capital and but little experience work up as success warrants. In this way many a child who cannot be supplied with sufficient capital to buy a farm may remain at home, and with 100 colonies, in many localities, one year with another, bring in as much as the average farm of 100 acres.

(5) The primary object of the existence of the bee is not to gather honey, but to assist in the distribution or pollenization of flowers, such as fruit blossoms, clover seed, etc. Where these crops are grown and bees not kept in the vicinity, it will pay to keep bees for this purpose alone. This is particularly true of Canada. Our early and abundant spring blossoms are an artificial condition in plant life. The bee is not a native of our country, and the many workers which live over the winter with the queen give us an artificial condition in insect life to assist in fertilizing blossoms and act as a balance in nature.

(6) Experienced beekeepers who are also farmers say that they would sooner produce a pound of honey than a pound of pork. Honey brings about twice as much as pork.

(7) If only enough bees are kept to produce honey for the home table much is gained. Honey has in it essential oils of great merit, and during the slow process of gathering nectar it undergoes in the bee the first stages of digestion, thus making it doubly wholesome.

(8) The natural history of the honey bee is of so fascinating a nature that it often leads to a further study of insects and plants, making farm life more enjoyable and more profitable. A useful hobby to occupy the youthful mind often prevents it from being occupied with that which is a positive injury.

### Swarming.

In some apiaries there appears to be a good deal of loss from absconding swarms; from others the reports are quite emphatic that a swarm is rarely, if ever, lost. Why there should be so great a difference in experiences it is difficult to determine. Some detect a swarm quickly, but in a large apiary it is necessary to keep a sharp watch for swarms. Those having only a few colonies would do well to use a queen trap or the self-hiver. To the beginner it will be well to give a few hints: A swarm is not likely to

issue unless the hive has become crowded with brood or honey, and honey is coming in freely. If the upper story is empty, but has been placed on the hive after the bees have received the swarming impulse, a swarm may be expected in spite of the empty super. The bees are likely to hang out at the entrance several days before swarming, but this is not a certain guide.

lowing morning is warm and fair, the swarm may issue before 7 a.m. If a hive is handled and smoked several days before, under other conditions, it would swarm, it may throw a swarm. I do not know why this should be. One reason may be that under those conditions (handling and smoking) the bees fill themselves with honey, and they do the same when preparing for swarming.

When a swarm issues it is desirable to have some small trees in the vicinity upon which they can cluster, and from which the swarm can readily be removed. The bees rarely leave at once for the woods, but generally cluster first.



Apiary of R. F. Holtermann, Brantford.

They may remain in that way for days, or only for a few minutes. All is uncertainty; hive them, therefore, as quickly as possible. If a swarm is determined to leave, ring bells to drown the sound of the queen's flight. She is of a different shape, and the sound of her flight is peculiar to herself. If you drown the sound—not at intervals, but continuously—the swarm will alight again. Never mind if some one calls you an old foggy beekeeper, and laughs at the idea; just tell them that this is one of the old and correct ideas which the modern beekeeper has discarded, but will come back to.

The majority of swarms are likely to issue on a fair day, between 9 a.m. and 3 p.m.; but if the previous day was wet or cool, and through this the swarm was prevented from issuing, if the fol-

# RECENT INVESTIGATIONS

## Potatoes.

L. R. Taft and U. P. Hedrick, Michigan Experiment Station, report as follows :

Potatoes stored in a barrel in a potato basement, September 30th, lost in weight 5 per cent. by March 28th following, and 11.5 per cent. by May 1st. Potatoes not sprouted yielded more than those which had sprouted before planting ; tubers planted in the ordinary way more than those from which the seed end had been removed, and selected seed more than ordinary seed potatoes.

## Protein for Milch Cows.

Experiments by J. B. Lindsey, Massachusetts Station, indicate that the amount of protein recommended for milch cows in the German and American feeding standards is too low. He obtained the largest and most economical returns when the cows received 3.76 lbs. protein per 1,000 lbs. live weight. The conclusion is that rations with from 2.5 to 3 lbs. protein per head daily are more profitable than those with 2 lbs. and less. These conclusions, however, are based on a single experiment.

## The Smut of Oats.

The following summary is taken from Bulletin 64 of the Ohio Experimental Station :

"Smut of oats, a disease long known and generally regarded as unimportant, really causes large losses among growers. The amount of smut varies. It formed about 20 per cent. of the whole at the station in 1895, and 6 per cent. is said to be a conservative estimate of the smut in the state. The losses caused by smut, therefore, amount to \$480,000 annually in Ohio, and more than \$18,000,000 per year for the United States.

"Oat smut is due to a parasitic fungus, *Ustilago avena*, or its variety *levis*, whose spores adhere to the seed grain and germinate with the seed ; the mycelium enters within the seedling, finally reaches the grain-bearing parts, and destroys them.

"The smut is prevented by the destruction of all these attached spores, which is possible by seed treatment, without injury to the grain.

"Immersing the seed oats for fifteen minutes in hot water, at a temperature of 133° F., not only destroys the smut, but increases the yield beyond mere smut prevention.

"Soaking the seed for twenty-four hours in a  $\frac{3}{4}$  per cent. solution of potassium sulphide, made by dissolving 1  $\frac{1}{2}$  pounds of the salt in 25 gallons of water, is equally efficient in smut prevention.

"The net increase in yield beyond smut prevention appears sufficient to defray cost of seed treatment."

## Composition of Animals.

Investigations at Rothamsted bring out the fact that the entire bodies, even of lean animals, may contain more fat than nitrogenous compounds, while those of fattened animals may contain several times as much. That of the fat ox contained more than twice as much, that of the moderately fat sheep nearly three times, of the very fat sheep more than four times, and of the moderately fattened pig about four times as much fat as nitrogenous substance.

Further calculations go to show that the increase in fattening oxen contains seldom more than 7 to 8 per cent. of nitrogenous substance, and seldom less than 60, and generally nearly 65 per cent. of fat. In the case of oxen fattened very young, the increase may contain about 10 per cent. nitrogenous substance and 50 per cent. fat. With sheep the increase usually contains less nitrogenous substance than with oxen, and about 70 per cent. of fat. The increase of pigs contains, 6.5 to 7.5 per cent. of nitrogenous substance and 65 to 70 per cent. of fat. In the latter part of the period of fattening sheep and pigs the increase contains less nitrogen and more fat.

## Sources in the Food of the Fat Produced in the Animal Body.

Experiments conducted at Rothamsted upon between four hundred and five hundred animals showed that much more fat was formed than could be accounted for by the fat in the food ; and it was believed to be established beyond doubt that much, if not the whole, of the fat formed in the bodies of the herbivora fed for the production of meat was derived from the carbohydrates of the food.

"In fact, the experimentally determined relation of the non-nitrogenous and of the nitrogenous constituents of the food, respectively, to the amount of increase produced ; the composition of fattening increase generally ; the relatively

greater tendency to grow in frame and to form flesh with highly nitrogenous food; the greater tendency to form fat with food comparatively rich in non-nitrogenous substances, and especially in carbohydrates; and common experience in feeding—all pointed in the same direction."

### The Economic Production of Pork.

Bulletin 40 of the Utah Experiment Station gives details of hog-feeding experiments for three seasons. Some of the conclusions are noted below:

(1) Pigs allowed to run at large over eighteen acres of good pasture, and fed a full ration of grain, made the most rapid growth, and required the least grain for one pound of gain.

(2) Pigs confined in movable pens in the pasture grew more slowly than those running loose, and required an increase of twenty per cent. of grain to make one pound of growth.

(3) Pigs at pasture, fed under three different conditions, gained 92.5 per cent. more and ate but two per cent. more than the pigs getting grass and otherwise similarly fed, but confined in pens.

(4) As nearly as can be judged, exercise alone increased the gain twenty-two per cent., and the amount eaten but 1.5 per cent., but decreased the amount required for one pound of gain twenty-two per cent.

(5) Grass, when cut and fed green to pigs, whether fed in pens or yards, or with full or part grain ration, or without grain, proved to be of very little value.

(6) Pigs confined in pens and fed on grass alone, mostly lucerne, for ninety-one days, lost over a quarter of a pound per day.

(7) Pasturing, either with full or with part grain rations, appeared to be by far the cheapest and best way of making pork.

### Effect of Food Upon the Composition of Milk.

Though much has already been written upon this subject, it will still be of interest to note the results obtained by the veteran experimenters, Lawes and Gilbert, of Rothamsted; nor is the interest lessened from the fact that their results seem to be somewhat in opposition to those of American stations. Sir J. H. Gilbert is quoted as follows:

"Exercising such care and reservation in regard to the numerous results of ourselves and others which are at command, it may be taken as clearly indicated that, within certain limits, high

feeding, and especially high nitrogenous feeding, does increase both the yield and the richness of the milk. But it is evident that when high feeding is pushed beyond a comparatively limited range the tendency is to increase the weight of the animal; that is, to favor the development of the individual, rather than to enhance the activity of the functions connected with the reproductive system.

"It may be observed that direct experiments at Rothamsted confirm the view arrived at by common experience, that roots, and especially mangels, have a favorable effect on the flow of milk. Further, the Rothamsted experiments have shown that a higher percentage of butter-fat, of other solids, and of total solids, was obtained with mangels than with silage as the succulent food. The yield of milk was, however, in a much greater degree increased by grazing than by any other change in the food, and with us, at any rate, the influence of roots comes next in order to that of grass, though far behind it in this respect. But with grazing, as has been shown, the percentage composition of the milk is considerably reduced, though, owing to the greatly increased quantity yielded, the amount of constituents removed in the milk while grazing may, nevertheless, be greater per head per day than under any other conditions."

### Field Experiments with Wheat.

W. C. Latta, Indiana Experiment Station, reports upon various matters in connection with wheat culture. The following points may be of interest to our readers:

*Quantity of seed.* In 1895 two pecks of seed per acre afforded a larger yield than three, four, five, six, seven, eight, nine, or ten pecks. Taking the averages for eleven years, the results indicate that, at least, six pecks, and not more than eight pecks, should be used.

*Effect of change of soil.* In 1893 seed wheat was sent from the station to localities in the northern, central, and southern parts of the state, and seed from the resulting crops was sown at the station in 1894, in comparison with the same varieties grown continuously on the station farm. Velvet Chaff, grown continuously at the station, averaged 19.22 bushels per acre; seed grown elsewhere averaged 19.17 bushels. Michigan Araber, grown continuously at the station, produced 18.42 bushels per acre; from seed grown elsewhere, this variety averaged 22.19 bushels. Thus the change of soil was not followed by marked results.

[In this connection, see "Recent Investigations" for January.—Ed.]



## FARMING

AN ILLUSTRATED MONTHLY MAGAZINE DEVOTED TO FARMING  
IN ALL ITS BRANCHES.

Succeeding *The Canadian Live Stock and Farm Journal*.

Published on the first of each month by

THE BRYANT PRESS,

20 BAY STREET TORONTO, CANADA.

EDITOR-IN-CHIEF, - - - G. W. GREEN.  
BUSINESS MANAGER, - - - S. S. BOND.

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W. W. CHAPMAN, Representative for Great Britain and  
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Fitzalan House, Arundel St., Strand, LONDON, ENG.

## Canadian Horse Show.

(Continued from page 521.)

### TANDEM.

The tandem turnouts made a very showy appear-  
ance. The rules laid down for them were that the  
wheeler should have conformation, substance, qual-  
ity, and action; the leader to be a showy, well-bred,  
all-round actor, with good manners. For the  
wheelers the Hackney type of a good, stout, high-  
stepper seemed to be the most taking style, with a  
Thoroughbred leader. The rule for the harness tan-  
dem, as that the wheeler should be over 15 hands.  
This rule was all right, but it said nothing about the  
leader, and in some of the tandem pairs the leader  
was lower than the wheeler. This makes a ten-  
dency to down draft on the wheeler, which should  
always be avoided. When the wheeler is a thick-set,  
blocky type and the leader a trifle higher, the best  
combination for a straight line of draft from the  
whiffletree to the front collar can be secured.  
First place was taken by the Toronto Horse Ex-  
change, the leader of this pair being a fine blood-  
like stepper, with good knee action. S. S. Howland,

of New York, was second, and Thomas A. Crow,  
Toronto, third. In the class for gentlemen drivers,  
appointments considered, G. W. Beardmore got  
first, with G. A. Stimson second, and five others  
were close up with very good pairs.

### FOUR-IN-HANDS.

There were two classes for four-in-hands. The  
first for road teams brought out four competitors.  
Of these there were some that had not been properly  
schoolled and were not well handled, and, as a con-  
sequence, they had very soon to leave the ring to  
avoid disaster. D. T. Lowes, of Brampton, was a  
popular winner, with the Toronto Horse Exchange  
second. In the class for teams and appointments,  
G. W. Beardmore and the Toronto Horse Exchange  
divided the honors and the money. Some of the  
driving was quite creditable, but the brilliant feature  
of this parade, and, indeed, for that matter, of the  
whole show, was the driving of Mr. Aurel Batonyi,  
of New York.

In the unicorn or spike team class the driving was  
only moderate, and there does not seem much to  
commend this style of driving. There was a lively and  
close competition for the best performance of pro-  
fessional coachmen, Walter Keeling, coachman for  
T. G. Blackstock, coming out the winner. For cabs  
and best and best appointed pair of cab horses the  
interest was keen, and all the friends of the com-  
petitors were out in force to cheer for their favorites.  
Patrick Maher, Toronto, deservedly won the \$50  
prize with a choice turnout of horses, cab, and har-  
ness, while F. Doane was a close second.

A. & S. Nordheimer, Toronto, had the best team  
shown in double harness to delivery wagon. They  
were a nice pair of bays, 15.3 hands, five years old,  
of a type in demand for the old country trade, blocky  
and strong, with a good walking gait, and fit to take  
away a fair load at a rot. John Macdonald & Co.  
were a good second.

For single horse, mare or gelding, shown in har-  
ness to a delivery wagon, The Harry Webb Co.  
(Ltd.), Toronto, got first for a very fine gray gelding.

### ROADSTERS.

There were fifteen entries of roadsters. They  
were certainly a very good lot, though of variable  
type. The class was not confined to standard-breds,  
though many were entitled to that honor. As defined  
by the catalogue a roadster, when mature for driving,  
should not be under fifteen hands high. Conforma-  
tion, style of going, manners, hock and knee action,  
whether driven with ordinary or heavy shoes to force  
action, and as the horses are and appear at the time  
of showing in the ring, were considered in judging.  
Mr. Edmund Taylor was the winner with Bell  
Howard, a very showy bay mare, 15.2 hands, a  
good type of a road mare. C. A. Burns, Toronto,  
came next, and H. Cargill, M.P., Cargill, got a  
highly commended for his black mare, Victoria,  
standing fifteen hands, four years old, and the type  
of a good goer. For a pair of roadsters C. A. Burns,  
Toronto, was first, with H. Cargill second and third  
for two black teams very much after a type, and  
standard-bred. For the best saddle and harness  
horse combined, first prize went to a big upstanding  
Hackney mare shown by Mr. Cochrane, of the Hill-  
hurst Farm, Quebec. She was a good type, and

moved well. Second went to Fred Doane for Viola, a brown mare and a good mover.

**SADDLE HORSES.**

There were twenty-nine entries for the class of saddle horses over 15 2 hands, and a grand field they made when they filed in and filled the ring uncomfortably full. There were many good ones, and many types—Thoroughbred blood being very much in evidence. The gray gelding, *Royalty*, which carried off the honors at *Boston Horse Show the previous week*, did not get a place here. Most of the outside judges did not think that he was entitled to any more than he got. The winning mare, *Queen*, is a sweet one, with fine legs, was well handled, and has a blood-like head. She is owned by John A. Gunn, of Toronto, and also came out first in the class for lady's saddle horse. She was a popular winner, and looked and behaved very well. The chestnut gelding, *The Earl*, from S. S. Howland's stables, Mount Morris, N.Y., was second in the class, and also third in the lady's class. He is a fine goer, but is not as sweet as his more fortunate rival. Second place in the lady's saddle class fell to *Black Beauty*, owned by A. S. Chisholm, Oakville. The lady riders showed this class to good advantage, and it was one of the popular features of the show. In the gentlemen's saddle class third place went to *Frederick Wyld*, Toronto, for a fine type—a big, upstanding brown mare, with grand shoulders and good all-round action. In the light-weight saddlers under 15.2 hands first went to *Blazer*, a nice chestnut gelding, owned by S. B. Fuller, of Woodstock. There was no class for gaited saddlers, an omission that might well be considered for another year. Hunters and jumpers made a very popular feature in the show, but the riding was often below par.

# Do You Want Eggs for Hatching from Thoroughbred Stock?

It is not yet too late in the season for setting eggs; and if any of our readers who are beginning in the poultry business would like to get a start in one or more of the best varieties of thoroughbred fowls, they will now have an opportunity to do so at a very small cost.



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*These eggs are from the finest stock.*

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Three trial subscribers at 30 cents each count as one new yearly subscriber at \$1.00.

Send us a card for a few sample copies of **FARMING**.

**FARMING**

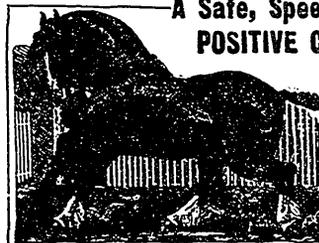
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HORSES IN HARNESS.

The first class called in the show was for mare or gelding over 14.1 and not over 15.1, in harness. There were fourteen entries in this class, which nicely filled the ring, and made a fine display for the light weights. They had not gone around till the knowing ones had marked the wonderful action of a light bay mare with Clyde markings, white blaze down the face, and white stockings, driven by Dr. Grenside. Her hock action was specially grand, and, while only 14.2, she had substance enough to take the heavy dog-cart over the tanbark with the greatest ease. She has a nice blood-like head, and very high knee action, with only a fair amount of throw-out. She secured first place. She is named Shelah, and is owned by S. S. Howland, Mount Morris, N. Y., who also got second place for a brown gelding 15 hands, a good goer. Third prize was gained by W. A. Lawrence, Milton, for Jessie A., a black mare, four years old, and the highly commended ticket by T. S. Weld, of London, for the dark bay gelding, Conceit, a good goer, and a strong horse.

In the next class, 15.1 and under 15.3, S. S. Howland was again first and second, and A. R. Curzon, Guelph, was third with the bay gelding, Quero, 15.2½, a horse with good style and splendid action. There were no less than twenty-seven entries in this popular class. In the class 15.3 and over, first place went to Q. C., a big bay, 16.1, shown by the Toronto Horse Exchange, and third place was taken by Cid, a nice brown, 16 hands, owned by R. Beith & Co., Bowmanville. This was a fine actor, and a good all-round horse, and many thought he should have been first. Second prize went to the chestnut gelding owned by S. S. Howland. All these harness classes were well filled with very good animals.

PAIRS IN HARNESS.

The lighter pairs, not over 15.1 hands, were a small class. D. T. Lowes, of Brampton, had a nice pair of six-year-old bay geldings, just about the limit in size. They got first, while R. Beith & Co. got second for a cobby pair of good ones, and Mrs. J. H. Spinks took third place. There was a much better turn-out of the medium pairs, thirteen entries. S. S. Howland again came to the front with a beautiful brown pair of good-going geldings five years old. D. T. Lowes, Brampton, was second with a pair of bays, fine actors. Third went to T. S. Weld, Lon-

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Has, during the season of 1895, given the best satisfaction on account of Purity, evenness of crystal, and splendid working qualities.

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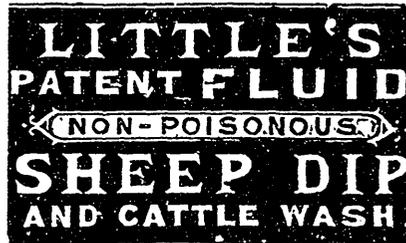
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The following letters from the Hon. John Dryden, Minister of Agriculture, and other prominent stockmen, should be read and carefully noted by all persons interested in Live Stock:

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BROOKLIN, ONT., Sept. 4th, 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.

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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

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Sole Agent for the Dominion.

don ; and fourth to Albert E. Gooderham, Toronto. There were sixteen pairs of 15.3 hands and over, George Gooderham, Toronto, getting first, and S. S. Howland second. There were a lot of very good horses shown in this class, and it was hard work to place the ribbons. The winners of this year only got third place a year ago. For best and best appointed gentleman's pair (dealers excluded) G. A. Case got first, and John Macdonald, Oaklands, second. The class made a fine show, and were very well driven. John Macdonald also got first for a pair of brougham horses, and A. E. Gooderham second for a nice bay and gray. Both pairs acted very well.



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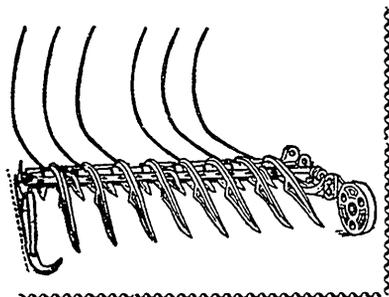
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ALL OR ANY INFRINGEMENTS WILL BE PROSECUTED BY PATENTEE.

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A WRENCH IS ALL THAT IS REQUIRED TO ATTACH THEM

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**TOLTON BROS. - GUELPH, ONT.**

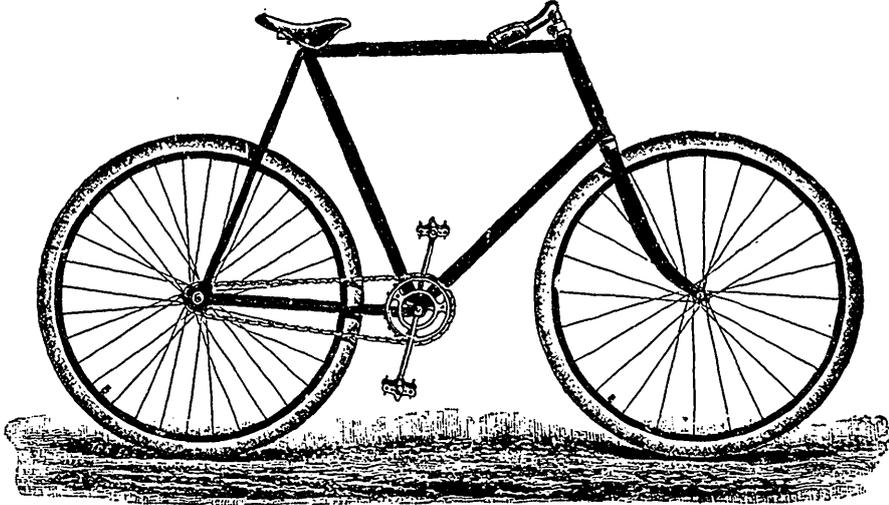
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When you think of what a marvel in simplicity, strength, and speed the modern bicycle has been made, and find what a pleasure it is to feel yourself mounted on one and see the ease and rapidity with which it is possible to travel, it is not at all strange that people should become so enthusiastic in its use.

There is nothing to compare for pleasure with "wheeling," and people are finding this out. The number of wheels being sold this year is enormous. Manufacturers are working night and day to supply the demand.

No doubt many of the readers of FARMING would like to have a bicycle, and could use one to very good advantage, but do not exactly see the way clear to laying out the amount of money required to buy them.

Now, we have been fortunate enough to make a very favorable connection with one of the largest and most reliable bicycle manufacturing concerns in the Dominion, namely, MESSRS. HYSLOP, SON & MCBURNEY, and are thereby enabled to offer to our readers a *High Grade Wheel at a Very Small Cost*. The name of this wheel is the *Fleet No. 1*, and you will be able to get from the following engraving a fair idea of its general outlines.



## FLEET NO. 1

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### SPECIFICATIONS

Latest model frame; highest grade English weldless steel tubing of large diameter; steel connections, reinforced at each joint; 28-inch wheels; wood rims; tangent spokes, tied at crossing; dust-proof bearings; detachable front and rear sprockets; square cranks, 6½-inch throw, tread 5½ inches; 1 seat post; Perry's chain; rat-trap pedals; Harrison's saddle; New York tires, unless otherwise specified. Height of frame, 23 or 24 inches; wheel base, 43½ inches, gear 64, 68, or 72.

Weight—25 lbs.

FINISH—Black enamel, highly polished, nickel spokes and fittings.

**PRICE, - - \$75.**

We will send this wheel complete fitted, as ordered, and with tool bag and tools—inflator, oil can, tire repair outfit, etc.—to anyone who sends us

133 new yearly paid-in-advance subscribers to FARMING; or

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50 new yearly paid-in-advance subscribers to FARMING at \$1 and \$48 cash.

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We often hear people remark: "Bicycles are too expensive. There is not the money in them." Well, under present conditions, they cannot be sold at prices any lower. We will not attempt to explain these conditions here, as we have not the space to spare; but whether prices are too high or not, you may rest assured that there will be no reduction in them this year, as the demand is too great.

Now let us hear from all who want wheels. Canvassing for FARMING will be found easy work. All like it when they have looked through it. Write for a few samples and forms, and begin canvassing at once.

## FARMING,

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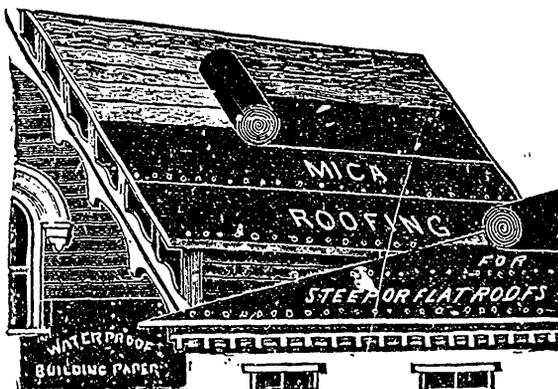
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### White Maine Oats

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.

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A good yielder and reliable, at 50 cents per bushel.

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## Simmers' Select Seed Oats

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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.

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60 cents per bushel.

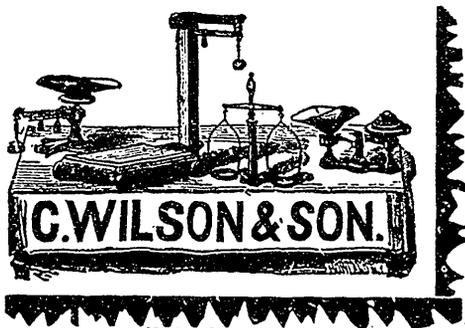
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Send your orders at once, and get our Catalogue of Seeds, which gives full description of Oats etc., mentioned in this advertisement. Clover and Timothy Seed at Lowest Market Prices.

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THE DAILY MAIL AND EMPLOYER, SATURDAY, MARCH 25, 1911. TWENTY-EIGHT PAGES.



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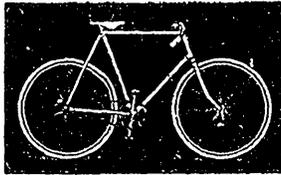
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There are other grades of wheels—but the Hyslop is in a grade by itself—the highest of the high.

There are others—of course they are second to the Hyslop—but to none other Here they are:

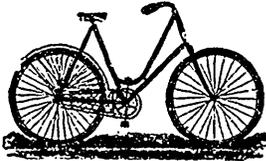


The Hyslop possesses, amongst others, the following

- 8  
Essential Qualifications—
- Strength,
  - Swiftmess,
  - Simplicity,
  - Lightness,
  - First-Class Material,
  - Skilled Workmanship,
  - Beautiful Finish,
  - Graceful Appearance.

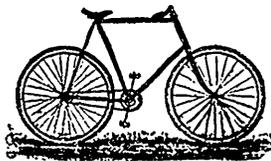
## The Regent

Is built by ourselves—and there is only one better wheel made—the Hyslop. It compares with the best made of either Canadian, English, or American. For ladies and gentlemen. Price..... \$85



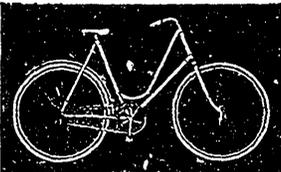
## The Spartan

Has the latest model frame, highest grade English weldless steel D tubing of large diameter, New York tires, or the new patent leather tires. For ladies and gentlemen. Price..... \$50



## The Fleet

Has all the best points of the solid English-made bicycle—is right up to the times in both design and quality—for its price is unequalled. For ladies and gentlemen's wheels..... \$75



## The Special

To which we particularly ask attention, is a good, honest, English bicycle, better value than the most of \$60 bicycles—a bicycle that is strong and reliable. For ladies and gentlemen. Price... \$47.50.

## The Crescent

Is made by the Western Wheel Works. We have it in all sizes for men, women, and children—and the line will be found most complete and varied.

All our wheels except the Crescent are fitted with Perry's pen steel bushed chains. They cost double what other chains cost, but—

## No. 9 and 10

OUR SPECIAL is a Crescent, and must not be confounded with the Special at \$47.50. They are different machines.

15 CARLOADS—The only special train load of wheels ever shipped—were sent last week from Chicago to New York. There's always a big demand in Gotham for a good thing.

You are invited to spend your leisure moments at our



Uptown Showrooms and Riding School

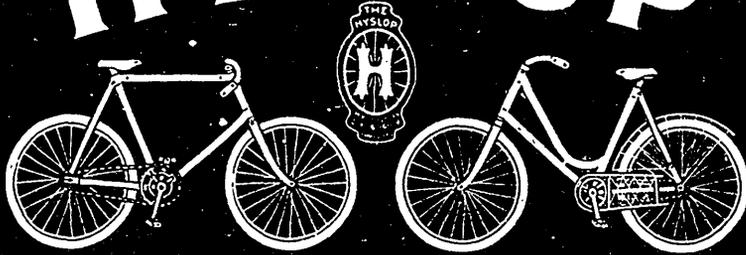
—AT—

14 and 16 KING STREET EAST, and at

13 FRONT STREET WEST, TORONTO.



# HYSLOP



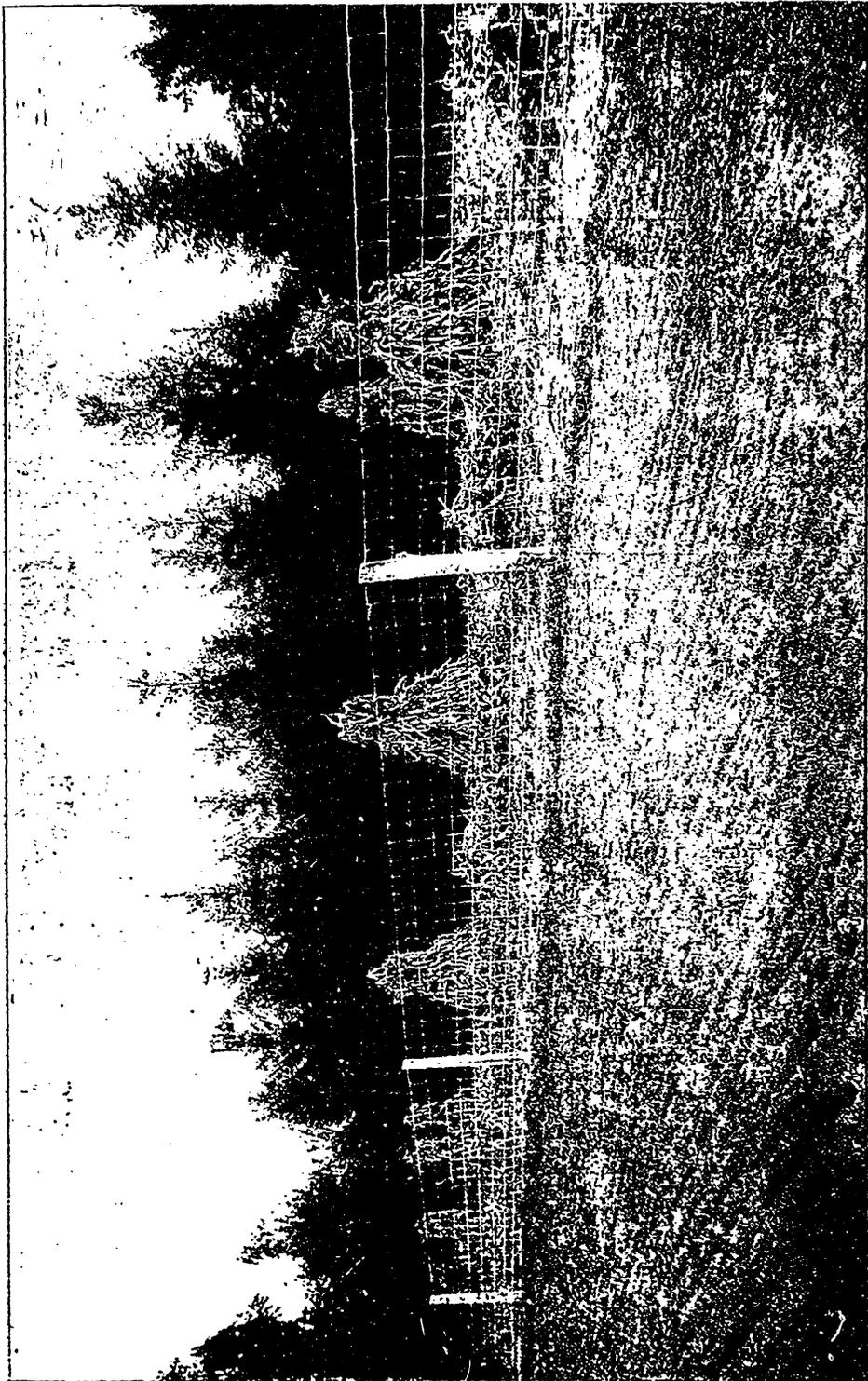
*Both in Mens. Womens,  
or Childrens. Are the  
best & Cheapest in Canada.*

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SPARTAN & CRESCENT

WE CHALLENGE COMPÉTITION

HYSLOP, SON & M<sup>c</sup>BURNEY.  
TORONTO.





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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

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**"DON'T HAVE SOUR MILK."**

NOTHING is of more importance in the proper handling of your milk for any and every purpose than cleanliness.

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NOTHING costs so little and saves so much for you as this same Champion.

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**CHAMPION MILK COOLER CO.**

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**FOR SPRING CROPS**

High-grade Bone Fertilizers furnish the cheapest and best plant food known. Freeman's Fertilizers furnish just the plant foods needed; they are of the right kinds for each stage of growth, so that there is rapid and healthy growth from germination to maturity.

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 about 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.

**"THOMAS CURTIS, Clappison, Ont."**

Send your address for catalogue giving the experience of hundreds of our leading farmers and fruit-growers who have used our fertilizers.

**THE W. A. FREEMAN CO., LTD.**

**HAMILTON, ONT.**



Patented in Canada and United States  
September 21, 1893; July 17, 1894.

# Spramotor Stands at the Head

And at less than one-half the price of the nearest competitor. The Spramotor Co. wishes their friends to understand they have no rush of blood to the head, although "Blood will tell," and the Spramotor is the best blood in the land. If you will read their catalogue, you will find they stated the facts strictly as they are. This they will continue to do and use their best endeavor to hold the confidence of their friends, the fruit-growers, to sustain their reputation as makers of high class spraying appliances at reasonable prices, and make good their statement that all apparatus sold under the name of "Spramotor" will be the very best of their kind, and always reliable, high grade, and "up-to-date."

Just note the progress they have made and the time in which it was done.

### AWARDS IN 1895.

|                                           |                                              |
|-------------------------------------------|----------------------------------------------|
| Diploma 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, Gederich |
| Diploma at Howard Fair, Ridgetown         | Diploma at Huron County Fair, Seaforth       |
| Diploma at Norfolk Fair, Simcoe           | Diploma at Huron Centre Fair, Blyth          |

### AWARDS IN 1896.

HIGHEST AWARDS at GRIMSBY, April 2nd, under the Judges, appointed by the Fruit-Growers of Canada.

Write to the Department of Agriculture of Ontario for a copy of the judges' report.

OUR No. 1 Spramotor will be found large enough for two nozzles, for apple spraying, and three nozzles for bush work. Our No. 2 Spramotor is satisfactory for four Spramotor nozzles, or six of the vermorel. All goods made by us are fully warranted. If you are interested in the subject of spraying, keep your eyes open, and watch the progress of this company's goods, for when they can, in one year, rise to the top with the world against them (for as far as spraying pumps are concerned, the world was represented at Grimsby, and competed, and was found wanting), you can judge what the future will show.

### TESTIMONIALS.

Windsor, April 20th, 1896.  
Spramotor Co., London, Ont.  
Dear Sirs,—We have finished spraying for the first time, and your pump gives entire satisfaction.  
Yours very truly,  
A. McNEIL.

Round Hill, N.S., April 15th, 1896.  
Spramotor Co., London, Ont.  
Dear Sirs,—My first outfit arrived yesterday, and I am greatly pleased with it. It is as nearly perfect as it possibly can be. Enclosed please find Post Office Order for another outfit same as you shipped me last, and oblige,  
Yours faithfully,  
R. J. BISHOP.

These are a few of the users of the Spramotor:

A. H. Pettit, Grimsby.  
A. Bogart, Newmarket.

J. L. Hilborn, Leamington.  
Thos. Plunkett, Meaford.

A. C. Attwood, Vanneck.  
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JAPANESE MILLET

And the best substitute for Hay

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The Finest Strains of

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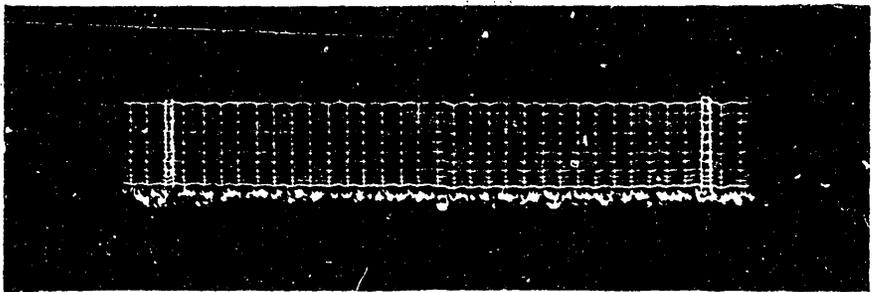
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When buying a Set of Harness demand our Hames and Trimmings from your Harness Maker, and remember that our Swing Socket Scythe Snath is the best Snath made.

### DIRECTIONS FOR USING OUR SOLID CAST STEEL IMPROVED PATENTED PEA HARVESTER

Commence at the root end of the vines, stand close to them and walk the way they lean. Reach in as far as convenient, placing the head and teeth of the Harvester as much as possible between the vines in vacant or open spots. Keep the handle well up, so as to cause the head and steel-plate to lay nearly flat on the ground, draw it toward you with a quick motion, and, before raising it, press it lightly on the ground, and give it a quick shove from you, which is done to free the steel teeth from any fine grass, etc., that may stick between them; draw the vines to within about two feet of where you stand, leaving about two feet swarth or row not cut, which will be cut in the operation of rolling the peas up in bunches. In gathering in swarth, draw the vines as much as possible sideways, and, in rolling them in bunches, against the way they lean. Where there are many thistles raise the handle higher, so as to keep the back edge of the steel-plate lower than the teeth. It may with some seem a little awkward at first, so would the scythe or plow in the hands of those who never used them. By following the above directions, and becoming accustomed to the use of it, one man, in short peas, will cut more than three men with scythes, and take them off cleaner, and shell less peas.

788



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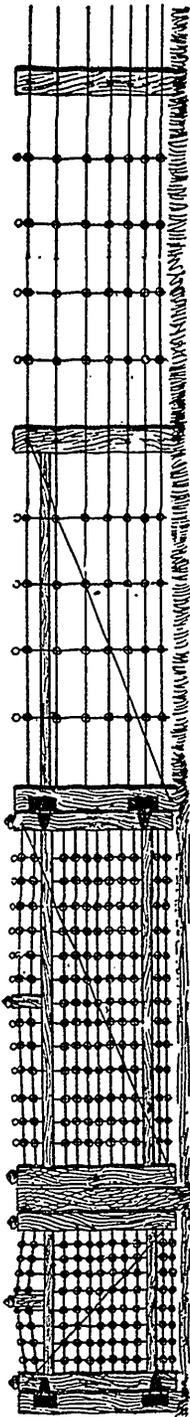
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COMPANY**

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Recollect, we are the only firm which is furnishing the genuine material in the form of the corrugated hardened steel stay and Bessemer steel clamp.

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**Successful**

growers of fruits, berries, and all kinds of vegetables, know that the largest yields and best quality are produced by the liberal use of fertilizers containing at least 10% of

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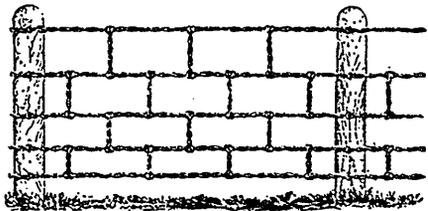
Without the liberal use of Potash on sandy soils, it is impossible to grow fruits, berries and vegetables of a quality that will command the best prices.

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**Without a Doubt**

we have **The Cheapest and Best**



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in the market to-day.

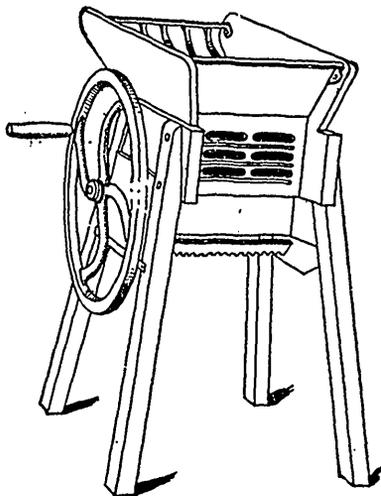
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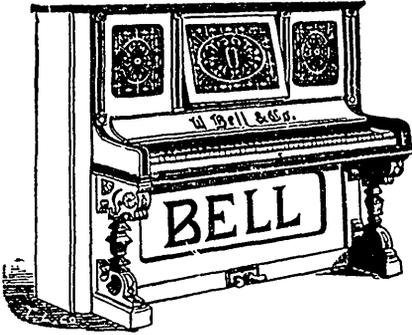
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When an animal is all run down, has a rough coat and a tight hide any one knows his blood is out of order. To keep an animal economically he must be in good heart.

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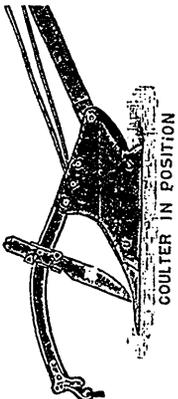
Is a necessity where the best results from feeding would be obtained. It tones up the system, rids the stomach of bots, worms and other parasites that suck the life blood away.

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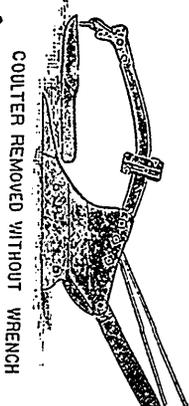


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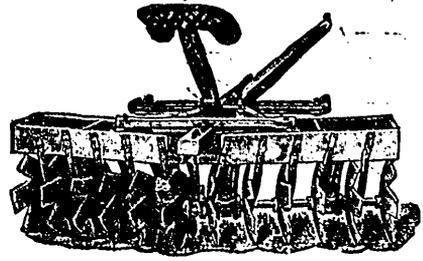
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