

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Title on header taken from: /
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

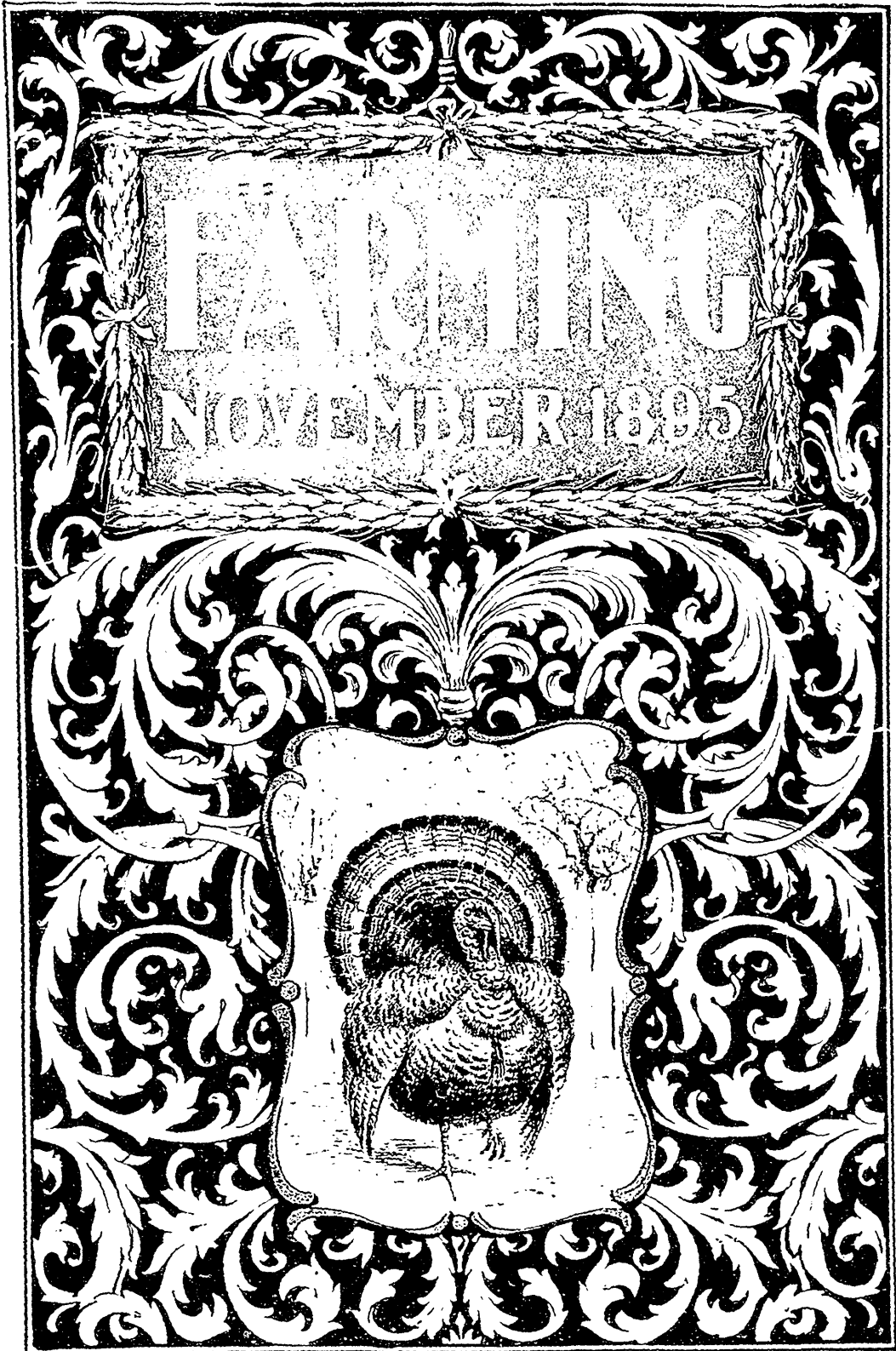
Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments: /
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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

Rock Salt

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

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

(Cash with Order.)

TORONTO SALT WORKS,

122 Adelaide Street East, - Toronto

498

AMERICAN AND CANADIAN HORSES

EXPORT TRADE TO SCOTLAND.

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

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

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

Canadian and States Cattle and Sheep.

Macdonald, Fraser & Co., Limited, also handle carefully, and have done so for many years past, large numbers of Canadian and States cattle and sheep.

Postal address: **MACDONALD, FRASER & CO., Ltd.;**

63 Bellgrove St., Glasgow.

Cable address: "Fraserco," Glasgow.



THE Coleman PULPER

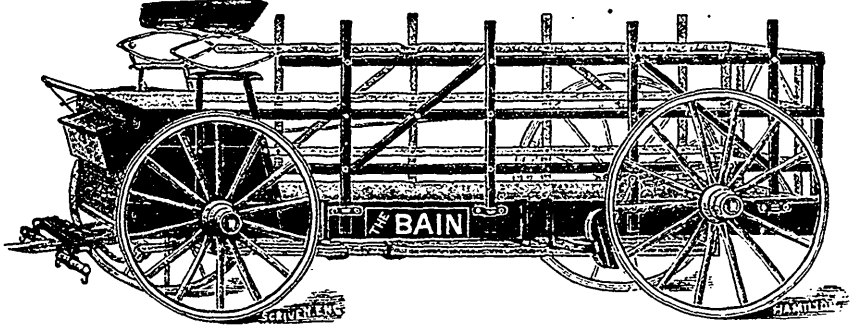
IS popular, not only on account of its many good qualities, but chiefly because it is not necessary for the operator to endanger his hands, and because the roots will not block in the hopper. Ask local dealers, or write direct to

THE ESTATE OF T. T. COLEMAN

Seaforth, Ontario, Canada

The Bain Holley Patent Low-Down Wagon

The Latest Invention and Greatest Success in Wagon Building

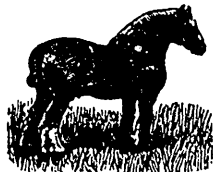


Especially suitable for handling **LIVE STOCK, FRUIT, DAIRY PRODUCTS, HEAVY MATERIAL.** No slatting of pole—**BODY HANGS LOW**—therefore no high lifting in loading. Will be on exhibition at principal fairs. Call and see it. Further particulars and prices cheerfully furnished on application.

276 **BAIN BROS. MFG. CO. (LTD.)** - - **BRANTFORD ONT.**

THORNCLIFFE STOCK FARM.

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



237

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

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

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



ROBT. DAVIES, PROP., TORONTO, CANADA.

ROBERT NESS

IMPORTER AND BREEDER OF
CLYDESDALES

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

WOODSIDE FARM,

484

HOWICK, Que.

IMPORTED CLYDESDALE STALLIONS.



I have three imported Clydesdale stallions bred from the most popular lines, guaranteed to be sound, sure, and excellent getters, that I wish to sell at reasonable prices. Drop a card for particulars.

481

G. S. Stewart, Howick, Que.

Clydesdales For Sale

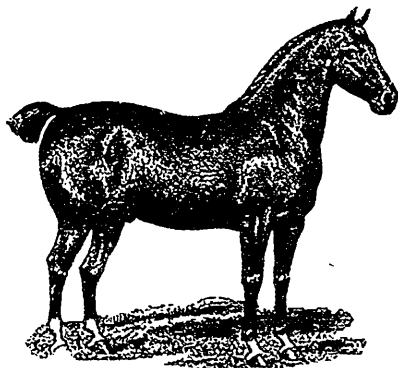
A grand pair of mares by Lord Rollo (imp.), dam Nellie (imp.), by the Monarch of the Glen. One a sweepstake mare at Montreal in 1893, and has a fine yearling filly. Also choice Ayrshires of all ages.

480

THOMAS CAIRNS,

Athelstan, Que.

SANDY - BAY - STOCK - FARM



The above stud, though only commenced in 1890, has achieved greater success than any of the same age and kind in Canada. During the five years of its existence it has taken over seventy prizes at first-class shows, including Halifax, London, and Doncaster in England; Chicago World's Fair and Philadelphia in the States; Canadian Horse Show, Montreal Exhibition, and Western Fair, London, in Canada. Shires and Hackneys always on hand for sale.

523

HORACE N. CROSSLEY,

Sandy Bay Stock Farm

Rosseau, Muskoka.

LORDS A. & L. CECIL, Orchardmains, Tonbridge, Kent, ENGLAND

Breeders of Clydesdales, and successful exhibitors of the same at all the chief shows of Great Britain. Numerous prizes have been won in the closest competition. Only the best and most fashionable strains are kept. The stud, which can be seen at any time, is always kept in a natural condition, and is under the direct personal management of the owners. The whole of the colts and fillies, being reared in a hardy way, can be thoroughly recommended. Mares, colts, and fillies always for sale. Foreign orders executed, and stock shipped by experienced men.

SHORTHORNS.

DAVID MILNE ETHEL, ONT.

Breeder of Scotch Shorthorns

Stock of either sex for sale. Also a number of Berkshire pigs of different ages, at lowest prices.

389

"THE BRIARS"

SUTTON WEST, ONT.

100 Head of Registered Shorthorns

Including bulls of various ages.

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

F. C. SIBBALD.

J. CARSON, Agent, Yorkton, Assa.



240

H. I. ELLIOTT

Breeder of Scotch Shorthorns and Southdown Sheep

Imported King James at the head of herd.

335

Riverview Farm, Danville, Que.

SCOTCH SHORTHORNS AND BERKSHIRE PIGS

For Sale—Choice young cattle of both sexes of the most select breeding. Also young Berkshire pigs from sows selected from the herd of J. C. Snell, Edmonton, Ont. Write for prices. **W. WARD,**

Birehton, Que. bvc.

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



246

SHORTHORNS, SOUTHDOWNS, LEICESTERS, BERKSHIRES

All stock is first-class, and registered. You will find our prices right, and all stock as represented. Always pleased to show stock, or to answer correspondence.

E. JEFFS & SONS,

Bond Head, Ont.

300

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



PINE GROVE STOCK FARM, Rockland, Ont.
 Special bargains on young bulls of superior merit and select Scotch breeding. Also thick young heifers at the right prices. Two imported Cruickshank Bulls for sale; also Ayrshires, Jerseys, Shropshire Sheep, and Clydesdale Horses.
 Post Office, Telegraph Office, and Steamboat Landing, Rockland, Ont., on the C.P.R.
JOS. W. BARNETT, Manager.

LAURENTIAN STOCK and DAIRY FARM, North Nation Mills, Que.
 Ayrshires, imported and homebred; herd headed by Imported Emperor of Dromore 5434 C. A. H. R. and 1868 S. A. H. B. Jerseys, all of the celebrated St. Lambert family; herd headed by Lingar Pogis of St. Anne's 25701, A. J. C. C. Berkshire Pigs. Young stock of all the above breeds for sale.
 Post Office, Telegraph Office, and Railway Station, North Nation Mills, P. Q., on the C.P.R.
A. E. SCHEYER, Manager.

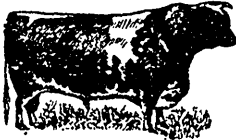
Twelfth Annual
 ONTARIO PROVINCIAL
FAT STOCK and
DAIRY SHOW

TO BE HELD IN THE
CITY OF GUELPH
December 10, 11, 12, 1895

Under the auspices of
 The Agriculture and Arts Association of Ontario
 The Sheep and Swine Breeders' Associations
 The Dairymen's Association of Western Ontario
 And the Guelph Fat Stock Club

Prize lists can be obtained from the secretary,
H. WADE, Toronto

Shorthorns For Sale



Choice young bulls and heifers, including the first-prize herd of calves at the last Industrial. All sired by the grand imported show bull, Aberdeen = 18949 =. Also a few registered Southdown rams. Write for prices, or come and see stock.

JOHN MILLER,
 Markham, Ont.

227
 Stations—Markham, G.T.R.; Locust Hill, C.P.R.

SHORTHORNS



We have now on hand for sale some good young bulls and heifers at reasonable prices; first-class colors and pedigrees. The farm is about one mile south of Clinton Junction. Send for particulars to 489

W. J. BIGGINS
 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.

JOHN DAVIDSON,
 332
 ASHBURN, ONTARIO

SCOTCH SHORTHORNS FOR SALE.

Choice young bulls and heifers by Abbotsford 19446, sweepstakes winners at Western Fair. Drop a card for full particulars.

256
H. & W. D. SMITH,
 Half mile from Exeter Station. Hay, Ont.

GLENBURN STOCK FARM.

Shorthorns and Berkshires.



We now offer for sale, at very reasonable figures, a splendid lot of young Boars ready for immediate use, and Sows of fine form and breeding, by (imp.) Pandolph. Also a few good bull calves, mostly red in color. For prices and description address

John Racey, Jr., Lennoxville, Que. 248

- CARGILL HERD of SHORTHORNS -



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

For particulars, address

444

H. CARGILL & SON, Cargill, Ont.

SHORTHORNS



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

D. ALEXANDER,
Brigden,
446 Lambton County, Ont.

SIMMONS & QUIRIE

Shorthorns and Berkshires.

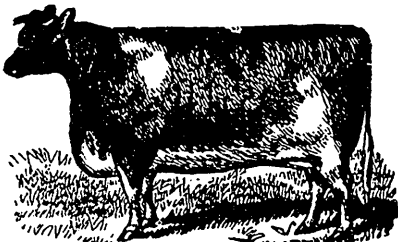
The herd is headed by the Matchless bull, Royal Saxon =10537=, by Excelsior (imp.) =2693=(51232), with Barmpton M. =18240=, sired by Barmpton Hero=324=, as reserve. Among the females are representatives of the Strathallans, Minas, Golden Drops, Mysties, Elviras—all pure Scotch breeding, except the Elviras, which are Scotch crosses. The herd of Berkshires includes many prize-winners, and are an exceedingly choice lot. Farm 7 miles from Iderton Station, G.T.R. Stock of all kinds for sale. Apply to

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

449

Arthur Johnston

GREENWOOD, ONT.



ADVERTISES 17 EXCEEDINGLY GOOD

Young Shorthorn Bulls

and a grand lot of young cows and heifers

We are also breeding Registered Berkshires of the best English strains. Send for 1895 catalogue. "No Business, No Harm," is our motto.

**CLAREMONT STATION, C.P.R., or
PICKERING STATION, G.T.R.**
486 Greenwood Telegraph and P.O.

JERSEYS.

A. J. G. G. JERSEYS

Stock of Any Age
For Sale :::::

For particulars and prices, write

H. FRALEIGH, St. Marys, Ont.

For Sale.—THE JERSEY BULL, STATISTICIAN

Dropped August, 1893, a first-prize winner; great-great-grandson of Mary Ann of St. Lambert. His sire is Heir of St. Lambert, and his dam Matina of St. Lambert 87304; his granddam, Lisgara, tested 5.19% (Agricultural College Report for 1894, p. 151). Also some

FINE REGISTERED BERKSHIRE PIGS

234 WM. CLARK, Meyersburgh, Ontario

THE CANADIAN HOLYWELL HERD JERSEYS, YORKSHIRES, and BRONZE TURKEYS

My Yorkshire herd was founded on stock purchased from Jos. Brethour and Ormsby & Chapman, and is rich in Spencer blood. I ship none but A1 stock. Also some grand young Gobblers and Hens. Prices right. Give me a trial!

543 LEVI BOWLES, Springville, Ont.

THE MANOR FIELD FARM OF JERSEYS

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

**WILLIAM BACON, Prop.,
Orillia, Ont.**

548

THE BRAMPTON HERD

OF JERSEYS won the First Prize at Toronto Exhibition for the best four calves, against the crack herds of Canada. All four were sired by Sir Ollie. A few of his get for sale.

**B. H. BULL & SON, Props.,
Brampton, Ont.**

544

JERSEY COWS AND HEIFERS.

The highest testing strains.
Rich breeding and good colors.
ALSO TAMWORTH PIGS.

544 JOHN PULFER, - Brampton, Ont.

GUERNSEYS.

GUERNSEYS

THE GRANDEST OF ALL DAIRY BREEDS.

OR SALE—Two choice bull calves, also some grand

IMPROVED YORKSHIRE

boar pigs fit for service, showing stock pedigrees. Price right. Come and see, or write.

W. H. & C. H. McNish

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

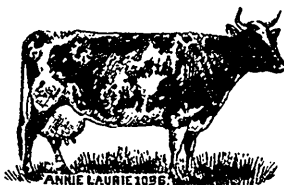
AYRSHIRES.

Glengarry Stock Yards

My **AYRSHIRE HERD** comprises the best business strains. Bull and heifer calves descended from the importations of the late Thomas Brown. One very fine bull calf by Saladin and Glenrose suitable for fall exhibitions. Drop a card for particulars.

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

Menie Stock Yard



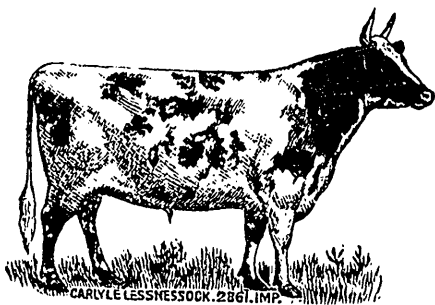
Breeder of Ayrshire Cattle and Berkshire Pigs. First-class pedigree stock always on hand and for sale.
First-class milking stock a specialty.

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

AYRSHIRE BULLS FOR SALE.

One yearling bull, one two-year-old bull, heifer and bull calves. All from choice milking stock. Prices reasonable.

287 Address, WM. KIDD, Petite Cote, Que.



MAPLE GROVE **AYRSHIRE** STOCK FARM

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

Largest in points 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 imported females of not 1 individual records. I am in a position to offer none but performers at reasonable prices. Do not fail seeing my stock at all leading exhibitions this fall.

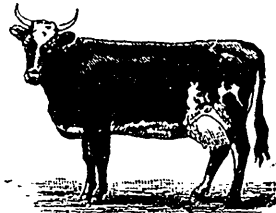
Registered rough-coated Scotch collies from imported stock.

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. Inmense choice. First-class quality. 560



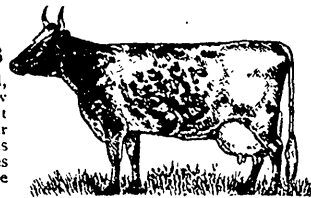
ALEX. HUME & CO.

Importers and Breeders of

Ayrshire Cattle and Yorkshire Pigs

Have for sale a few large cows, yearling heifers (just served by imp. bull, Prince of Barcheskie, 1st-prize yearling bull at Industrial, Toronto, a few prize-winning heifer calves, a beautiful prize bull calf, Dominion Lad at Industrial, Toronto, that would mate with any above females; also other bull calves. As we intend to reduce our number of dairy cows of various crosses, we will sell any of different ages. A few prize-winning Yorkshires of all ages for sale. Now that the shows are over, we will sell any of the above lines of stock at reduced prices.

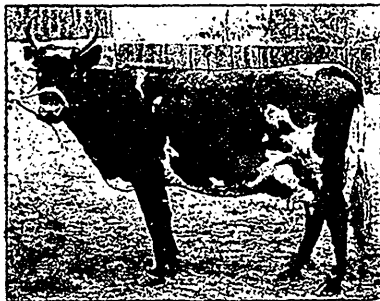
Telephone: Hoard's Station, G.T.R.



346

Burnbrae P.O., Ontario

Ayrshires and Shorthorns



Of the finest breeding. A number of bull calves sired by Dominion Chief; dams, Amy, Ella, etc. A beautiful light colored yearling bull from Amy, and several Shorthorn heifer calves sired by Gibson Duke. Send for all particulars and prices.

JOHN H. DOUGLAS,
Breeder and Importer, 212 Warkworth, Ont.

DOMINION PRIZE HERD PUREBRED AYRSHIRE CATTLE

RECORD FOR 1893

54 Prizes 54

37 FIRST II SECOND

WITH

Gold, Silver and Bronze Medals

MONTREAL, TORONTO, LONDON AND OTTAWA

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

JAMES DRUMMOND & SON,

Petite Cote, Que.

292

Dispersion Sale

WE will sell by public auction on Wednesday, October 30th, 1895, our entire herd of Shorthorn cattle, consisting of thirty-five females and ten young bulls; also eighty Southdown and Leicester sheep, and a number of Berkshire pigs.

Catalogues ready by 10th of September, and sent free on application.

Our herd is of very choice breeding, having used only "Carlyle" or "Lord Pol-warth" bulls for the last fifteen years.

Sale to commence immediately after lunch at 12 o'clock.

TERMS—Eleven months' credit on approved notes.

E. JEFFS & SONS - Grange Park - BOND HEAD, Ontario.

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.
Come and inspect our stock. Prices to suit the times.
197 **ROBERTSON & NESS** - Howick, Que.

Ayrshire Cattle.

DAVID BENNING, Glenhurst
Williamstown, Summerstown Station, G.T.R.,

BAERDER OF
Ayrshire Cattle, Leicester Sheep, and Berkshire Pigs. The bull, Tom Brown, and heifer, White Floss, winners of sweepstakes at World's Fair, were bred from this herd. Young stock always for sale. 340

NEIDPATH STOCK FARM

THOS. BALLANTYNE, Stratford, Ont.

Breeders of **Purebred Ayrshire Cattle**. Herd consists of the imported bull, Beauty Style of Auchenbraun, and ten imported cows of the highest milking strains and their progeny, by imported bulls. 355

GREENHOUSE STOCK FARM

W. B. COCKBURN, Nassagaweya, Ontario
Breeder of Ayrshire Cattle, Oxford Sheep and Berkshire Pigs.

I have several choice bull calves from imported cows for sale, at prices to suit the times; also a nice lot of shearing Oxford ewes, and some very promising Berkshire pigs. Write for prices and particulars. 521

Choice Ayrshires.

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

Please address **D. McLACHLAN**,
Petite Cote, P.Q.

535

:: AYRSHIRES ::

Eight choice bull calves by several of the most noted Ayrshire sires of the day, together with my two-year-old bull, Earl of Percy; also a few choice cows and heifers. Prices reasonable.



F. W. TAYLOR, Wellman's Corners P.O.
Hoard's Station, G.T.R.

AYRSHIRES FOR SALE

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

549

R. E. WHITE, Perth, Ont.

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. Grant's Corners, Ontario.

AYRSHIRES

Purebred, of different ages and both sex. 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. 337



HOLSTEINS.

FOR PRICES ON HOLSTEINS

WRITE TO

F. A. FOLGER,

393 **RIDEAU STOCK FARM**
BOX 577 KINGSTON, ONT.

HOLSTEIN-FRIESIANS

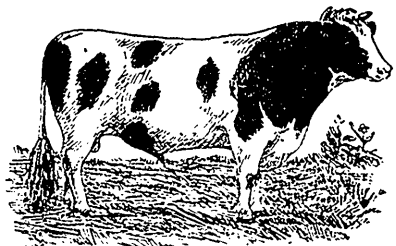
Richly bred Netherland, Peel, Johanna, and Moore strains. Stock of all ages, male and female, for sale at lowest prices.

519 **JOHN MCGREGOR**, Constance, Ont.

Meadow Brook Fruit and Stock Farm, St. David's,
Niagara Township, Lincoln Co., Ont.

CHOICE

HOLSTEIN-FRIESIANS



Count Mink Mercedes at the head of herd. He is choicely bred and a superb individual. The cows are from the highest producing families and directly descended stock imported from Holland. Choice young bulls from dams with large milk records now on hand.

SAMUEL & W. H. COLLINSON,
236 Sherbourne Street, TORONTO.

HELBON 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. choice Oxford Down rams. A.50



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

GEM HOLSTEIN HERD.**6 MONTHS' CREDIT GIVEN . . .**

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

ELLIS BROS.,

306

Bedford Park P.O., Ont.

**FAIRVIEW FARM****E. PANNABECKER**

Breeder of Grand Milking Registered Holstein Cattle. A specialty in females of all ages at present.

244

HESPELER, ONT.**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 or sale, 1 month and 6 months old. First quality.

A. & G. RICE,

490

Brookbank Stock Farm,

Currie's Crossing, Ontario, Canada.

MAPLE HILL**Holstein-Friesians**

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

550

G. W. CLEMONS, St. George, Ont.**SPRING BROOK STOCK FARM**

Holstein-Friesian Cattle, Improved Yorkshire and Tamworth Swine. This herd is again to the front for prize-winners. Will give bargains in prize-winning stock (males and females) from now till December. Stock excellent quality and breeding. Write at once for bargains. Over 50 head of choice Tamworths on hand.

Waterloo Co.

A. C. HALLMAN,

413

New Dundee, Ont.

A RARE BARGAIN IN HOLSTEINS

On account of failing health, I feel compelled to reduce my choice herd to at least one-half before winter. They must go at a sacrifice. Write for prices, and I will astonish you. Some very choice young cows due to calf in December, yearlings in calf, and calves, of the greatest individual merit and breeding, second to none in this country. Address,

339

H. BOLLERT, Cassel, Ont.**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

**CHOICE HOLSTEIN-FRIESIANS.**

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

S. K. BECK,
South Cayuga, Ont.**PUREBRED HOLSTEINS AND TAMWORTHS**

Carmen Sylvia, the Sweepstakes cow by milk points over all breeds at Toronto and Gananoque, was bred by me. **Pietertje Jewel** strains. **Sir Henry** of Maplewood at the head of the herd. Tamworths from imported stock.

Brookville, on
G.T.R. and C.P.R.**THOS DAVIDSON,**

577 Spring Valley, Ont.

SHEEP.**Oxford Downs.**

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

**Turner & Jull,**

448 Burford, Ont.

WHITESIDE BROS.The Glen, Innerkip,
Oxford Co., Ont.

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

In writing mention this journal

31

**MONTROSE STOCK FARM**

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

218

HORACE CHISHOLM,
Paris, Ont.**Minnie Miles.**

Twice Winner Over all Breeds.

200 OXFORD DOWN SHEEP

for sale, all ages and both sexes. Won many prize at World's Fair. Prices reasonable.

HENRY ARKELL, Arkell, Ont.

Guelph—G.T.R.

Telegraph—Guelph.

403

Arkell—C.P.R.

Telephone—Arkel.

AUCTION SALE

....OF....

100 Dorset Horn Sheep and Rams

From the flock of Mr. John A. McGillivray—the greatest prize-winning flock in the world—will take place at

UXBRIDGE, ONTARIO On the Grand Trunk R'y
40 miles from Toronto

FRIDAY, NOVEMBER 8th, 1895

At 1 o'clock p.m.

Mr. McGillivray will then sell forty ram lambs and yearlings from his best rams, which were first-prize winners at Chicago, and prize winners at the Royal and other great English exhibitions as well.

According to Professor Craig, of the Wisconsin Agricultural College, and other well-known authorities, these are the best rams to cross with all the well-known kinds of sheep.

Parties attending the sale can return to Toronto in the evening in time enough to catch the east and west bound trains from the city.

Fairview's Shropshires

Again the leading winners, having won at Toronto, Montreal, and Ottawa exhibitions more first and second premiums than any other flock.

Only a few rams left, and they are good ones. A lot of ewes now being bred to Newton Lord 30983, and of the very best breeding, are offered for sale, at prices to suit customers who want choice sheep at good value.

Come and make your own selection, or write for what you need.

JOHN CAMPBELL,
Woodville, Ont.

238

Hillhurst Farm

Oldest Stud of Hackneys in America.

1864.



1895.

Shorthorn and Aberdeen-Angus Cattle.
Dorset Horn and Shropshire Sheep.
Shearling Rams and Ewes.
Ram and ewe lambs of the best blood and quality.

M. H. COCHRANE,
Hillhurst Station, Que.

483

BELVOIR STOCK FARM

FOR SALE . Shropshire Sheep
—AND—
Yorkshire Swine

Of winning strains, and bred to the highest type. Prices as low as such breeding and quality will permit.

RICHARD GIBSON
DELAWARE, ONT.

557

41 FIRST PRIZES 41

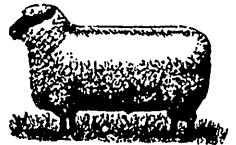
Won by our flocks, and 5 by our ponies at Toronto, Montreal, Ottawa, and Markham. Shropshire rams and ewes and ponies of finest quality for sale, at lowest prices. Write us

JOHN MILLER & SONS
Brougham, Ontario

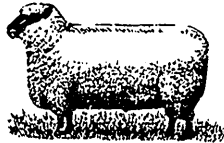
OXFORD DOWNS

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

SMITH EVANS,
491 GOUROCK, ONT.
BREEDER AND IMPORTER



LINDEN OXFORDS.



Do you want a ram lamb sired by the Royal winning ram, Royal Warwick 3rd, or Bath and West? If so, write, or come and see us. Also some fine young Yorkshires.

R. J. HINE, Dutton, Ont.
K. FINLAYSON,
Campbellton, Ont.
Stations—Dutton, M. C. R.
414 Glencoe, G. T. R.

GOOD LEICESTERS

We have some of the best Leicesters to be found in the country, and if we cannot please

you your case is hopeless. We have shearling ewes; ewe and ram lambs; shearling, two-year-old, and aged rams. Let us furnish you with all particulars.

212 **E. Archer & Sons, Warwick, Ont.**

FOR SALE.

OXFORDS (54 prizes in 1895)
Several choice ram lambs.

AYRSHIRES (38 prizes in 1895)
Bull and heifer calves by Norman of Robertland, a son of Silver King.

BERKSHIRES (44 prizes in 1895)
A grand lot of boars and sows by Knowlton, a son of (imp.) Enterprise and (imp.) Hilderse.

225

A. TERRILL, Wooler, Ont

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

SHROPSHIRE

Our flock, the oldest Shropshire flock in Canada, was founded in 1881. Importations made from time to time, selected in person from the best English flocks. This season's lambs, along with a number of shearing rams and ewes of this year's importation, for sale. Orders can now be taken for pick.

JAMES COOPER & SON,
492 Kippen, Ont.

A CHOICE LOT TO PICK FROM.

Consisting of ram and ewe lambs, and ewes in lamb. The finest lot of Shropshire Lambs we ever bred, and you cannot object to the prices we ask. Let us hear from you.

ALLEN McPHERSON,
219 Forest, Ont.

**OXFORDS.**

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

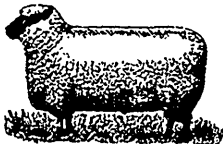
John COUSINS & SONS,
290 Harriston, Ont.

**OXFORDS :**

FOR SALE: One 4-year-old imp. ram, first-prize ram when shearing at the Bath and West of England show. One two-year imp. ram. 15 homebred shearing rams. ram lambs, also ewes of all ages, at prices to suit the times. Also first-class Bronze Turkeys.

462

JAS. TOLTON, Walkerton, Ont.

**SWINE.**

If you want Improved Chester White Swine or Dorset Horn Sheep of first-class quality at rock-bottom prices, write to

423

R. H. HARDING, Breeder and Importer,
MAPLEVIEW FARM, Thorndale, Ont.

TAMWORTHS

410

J. L. REVELL, Putnam, Ont.

Fifty young pigs of both sex. Boars fit for service, and sows ready or mating. Also a few one-year-old sows. All stock guaranteed.

Drop a card for all information.

BERKSHIRES FOR SALE

My Berkshires secured a large number of the most important prizes at Toronto, Montreal, and London exhibitions; also several prizes at the Fat Stock Show in Guelph, including sweepstakes for best purebred sow of any age or breed.

A choice lot of all ages for sale.

Please mention FARMING.

GEO. GREEN, Fairview, Ont.
Stratford Station and Telegraph Office. 263

POLAND-CHINAS FOR SALE CHEAP

Choice pigs, farrowed April and June, bred from imported stock. Registered pedigrees furnished. Only first-class pigs shipped. 463



R. B. McMULLEN, Goldsmith, Ont.

BERKSHIRES FOR SALE.

17 pigs, five weeks old, at farmers' prices, or will exchange for Poland-China pigs or Oxford Down sheep. My pigs are from prize-winning stock. Write for prices.

C. J. WRIGHT,
DIXVILLE, Que.
385 P.O. Box 114

**GOLD MEDAL HERD OF BERKSHIRES**

Young boars and sows of spring litters, bred straight from imported stock. Sires weigh from 650 to 840 lbs. Size and quality combined. Orders booked for September and October pigs at eight weeks old, and for sows bred to imported boars.

426 J. C. SNELL - Edmonton, Ont.

EXHIBITION 1895 STOCK.

PUREBRED TAMWORTHS
SPECIAL BARGAINS.

For 30 days special offers will be accepted for my boars and sows farrowed last spring. In grand shape for immediate shipment.

229

LEVI MASTER, Haysville, Ont.

LARGE ENGLISH BERKSHIRES

The sweepstakes herd at the Western Fair, London, 1895. Headed by the famous boar Bright Prince, assisted by two grand yearling boars. Twenty choice boars and thirty choice sows for sale. 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.

453

T. A. COX, Brantford, Ont.

**BERKSHIRES**

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

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

**POLAND-CHINAS**

at Williscroft.
ARE THE RIGHT KIND

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

493

R. WILLIS, Jr., Glen Mayr, Ont.

**LARGE ENGLISH BERKSHIRES**

3 Extra fine Breeding Sows, 1 and 2 year old this fall, sired by Perry Lad, and Enterprise. 1 grand show Sow that has won 17 first prizes. 1 one-year-old Boar, winner of 5 first prizes. 1 two-year-old Yorkshire Boar, winner of 5 first prizes this fall. For sale by

433 Dennis Hawkins, Woodville, Ont.

G. BENNETT & PARDO,
CHARING CROSS, ONT.

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

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

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



H. J. DAVIS, WOODSTOCK, ONT.

Improved Large Yorkshire Boars, very fine, fit for service. Also young pigs supplied not akin. Berkshire Boars of good breeding, fit for service, and young pigs ready to ship; also Shorthorn Bulls and Shropshire Rams from imported stock for sale at moderate prices.



KEEP YOUR EYE ON THIS SPACE

MAPLE LANE FARM.

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

CHOICE COTSWOLDS—Our flock have won at the principal exhibitions, 2 diplomas, 17 first and 8 second prizes. Our rams, two shears won first and second at Toronto. Shearling ewes third, and ewe lambs third. We have some fine ram and ewe lambs fit for any flock, and stock rams and show ewes at very low prices. Also some fine young Berkshire boars. All stock guaranteed as described. Visitors welcome.

C. T. GARBUTT, Claremont, Ont.

TAMWORTHS POLAND-CHINAS.



Some grand young pigs of each variety of the best prize-winning strains.

WM. ROW,
358 AVON, Ontario

LARGE ENGLISH BERKSHIRES FOR SALE.

Three sows in pig, also young stock, both sexes. Address

R. J. DIXON
Gleneden, Ontario.

PLEASANT VIEW HERD

of REGISTERED TAMWORTHS



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

E. H. KOLB, Berlin, Ont.

NINTHSIDE FARM HERD OF BERKSHIRES

Choice young Boars and Sow of all ages, also pigs. I have aimed to breed strong bone, extra length, and quality in my pigs. I also have for sale a choice lot of Silver Grey Dorkings, Cockereels. Satisfaction guaranteed.



E. E. MARTIN,
Paris Station, G.T.R. 46, Canning P.O., Ont.

THOMAS DOLLIN & SON, Chatham, Ont.

IMPORTERS and Breeders of Ohio Improved Chester White Swine. Young stock of above always for sale. Satisfaction guaranteed, and prices to suit the times. Pedigrees furnished with all sales, and nothing but first class stock shipped. Four choice brood sows for sale. registered. Correspondence solicited.



THE SWEEPSTAKES HERD OF

TAMWORTHS



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

WALTER. T. ELLIOTT, Hamilton, Ont.

It is No Trouble

To make No money in breeding Tamworths if you can get the best blood to start with. Let me hear from you if you want something good. I have them at all ages, both sexes, and lowest prices. Also a few Yorkshires.



J. F. Master, New Dundee, Ont.

OHIO IMPROVED CHESTER WHITES AND ENGLISH BERKSHIRES.

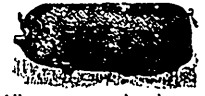
My stock of Ohio Improved Chester Whites are imported from the celebrated herd of L. B. Silver & Co., Cleveland, Ohio. I also have a choice stock of registered Berkshires.



GIDEON SNYDER, Jarvis, Ont.

MAPLE LEAF STOCK FARM . . .

Improved Yorkshire Pigs of the best strains of breeding. Large English Berkshires

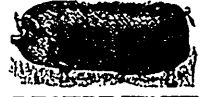


Large thrifty pigs are my type, that is the way I breed them. All ages now on hand.

THOMAS WATSON, Springvale, Ont.

LARGE ENGLISH BERKSHIRES

Stock by Major, that beat Black Prince, the never-beaten winner, and from sows that won 1st and 2nd in same class at nearly every fair this fall. Boars fit for service. Stock all ages. Prices moderate. Call and see stock, or write.



C. R. DECKER,
2 1/2 miles from Bright Station, Chesterfield, Ontario.
298 G.T.R. Please mention FARMING

Yorkshires

For Sale. One of the best herds in the province. Also

GARRIAGE HORSES

from Standard-bred and Heavy stallions



J. M. HURLEY & SON, Belleville, Ont.
Box 442. Kingston Road Stock Farm. 372

E. D. GEORGE
FUTNAM, 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.



IMPROVED CHESTER WHITE and TAMWORTH SWINE

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



395

H. GEORGE & SONS, - Crampton, Gatario

RED TAMWORTH AND DUROC-JERSEY PIGS

A grand lot ready to ship, and selling two for the price of one. Also some registered Ayreshires very low, as feed is scarce.

217

CALDWELL BROS., Orchard, Ont.

MY POLAND-CHINAS

WON OVER 50 PRIZES

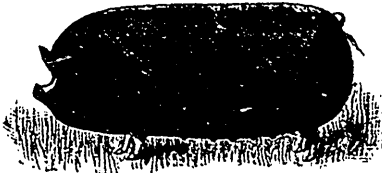


This fall. They are in splendid shape. I will sell at a bargain a number of No. 1 Boars and Sows from 6 weeks to 7 months old. Also a few dandy sows in pig, and a number of Aged Boars and Sows. In Poultry I can supply Prize Birds in Black Minorcas, Dorkings, Langshans, and Brown Leghorns. Special prices quoted, as I need room.

221

WESLEY W. FISHER, BENMILLER, ONT.; Goderich Stn.

LARGE ENGLISH BERKSHIRES



My breeding stock has been selected from the best English herds. Two imported boars, and eight imported sows all breeding. Pigs of all ages to select from.

230

ISRAEL CRESSMAN, New Dundee, Ont.

TAMWORTHS



I have some extra fine boars and sows ready for mating. Also September, 1895, pigs. Will supply pairs not akin of the best quality at prices to suit the times. Satisfaction guaranteed.

JOHN G. NICHOL

Habrey, Ontario.



S. W. SMITH, Cochranville, Chester Co., Pa.

BERKSHIRE, Chester White, Jersey Red & Poland China PIGS. Jersey, Guernsey & Holstein Cattle. Thoroughbred Sheep, Fancy Poultry, Hunting and House Dogs. Catalogue

Oak Lodge Herd

- OF -

Yorkshire Swine

Having again secured the first prize for the best herd at the Toronto Industrial Exhibition of 1895, for the fifth time, I am prepared to supply the very choicest stock at moderate prices. A number of choice-bred young boars on hand fit for immediate use. All stock guaranteed. Write for prices.

J. E. BRETLOUR,

Burford, Ont.

214

BERKSHIRES.

A CHOICE lot of sows for sale, bred to farrow in February and March, and some to breed yet. A few boars fit for service. Young pigs of various ages. Call and see stock, or write for prices and description.

J. H. SIEFFERT,

NORTH BRUCE, ONT.

362

MAPLE LEAF FARM.

IMPROVED LARGE YORKSHIRES

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



JOHN PIKE & SON,

202

Locust Hill, C.P.E., Markham, G.T.R.

MODEL BERKSHIRE HERD

D. A. GRAHAM - IMPORTER AND BREEDER

Offers some choice brood sows of all ages. Also some choice young boars fit for service, bred from imp. stock. Prices to suit the times.



Poultry.—W. and B. Plymouth Rocks, W. & S. L. Wyandottes and Bronze Turkeys, cheap. Write for prices.

Box 135

PARKHILL, ONTARIO

IMPROVED LARGE YORKSHIRES.

The winners of twenty first prizes at the World's Fair.

A number of young Boars and Sows for sale.

ALL CHOICE STOCK.



JOSEPH FEATHERSTON,

PINE GROVE FARM.

336

STREETSVILLE, P.O. and Telegraph, Ont.

RED TAMWORTHS.



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

ANDREW DUNN,

Ingersoll Ont.

411

Polands

BEST HERD IN CANADA.

ALL STOCK GUARANTEED.

March pigs nearly all gone. Some excellent April and May pigs ready to ship.

Address,



W. & H. JONES,

488

MT. ELGIN, Ont., Oxford Co.

Pine Grove Herd

Duroc-Jersey Swine

A grand lot of choice pigs ready to ship. Also three choice young boars fit for service. Very low prices. Write for particulars.

CHARLES ANSTICE

Springford, Ontario

POLAND-CHINAS

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

OLIVER DRURY,
Fargo, Ont.



345

For the Finest Strains

of **LONG**

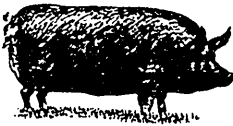
ENGLISH
BERKSHIRE
PIGS

BOW PARK

Apply
Bow Park
Co. (Ltd.)

BRANTFORD Canada.

Tamworths, Polands, Chesters.



231

Some choice Tamworth boars fit for service, and sows bred to farrow in September. Chesters from 10 to 14 weeks old. Polands 3 to 3½ mos. Tamworths 4 months. A post card will bring you all information.

HERRON & DAFOE,
AVON, ONT.

CANADA WILKES

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

Send for illustrated catalogue of



The Corwin herd, which now consists of over one hundred head of both sex, and all ages. Pairs and trios furnished not akin, as low as from any herd in Canada, quality considered.

Correspondence solicited, and personal inspection invited. Address,

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

399

IT PLEASURES US

To have folks come to see our stock, or to write about them. There is always pleasure and satisfaction in handling Poland Chinas and Chester Whites when they are really well bred. The prices, too, will surprise you.

DANIEL DeCOURCEY,
Bornholm, Ont.

250

Some of the Best

Yorkshires in the country are to be found at the Woodroffe Stock Farm.

I have them for sale, cheap, from three months to two years of age. Both sexes. Young sows to farrow in October.

J. G. CLARK,
OTTAWA, ONT.

289

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.

Chester Whites

To make room in winter quarters, I offer a fine lot of fall pigs at reduced prices. Also some fine spring pigs ready for breeding purposes.

JOS. CAIRNS,
Camlachie, Ont.

375

FOR SALE.

AYRSHIRES

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

John Sandilands, Williamstown, Ont.

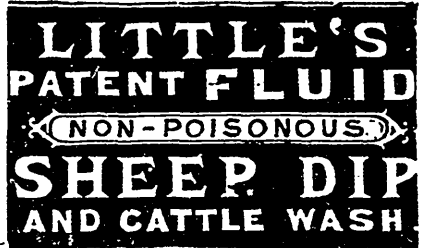
FOR SALE

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

DANIEL DRUMMOND
Petite Côte, Que.

187

TOSTOCKMEN AND BREEDERS



For the destruction of Ticks, Lice, Mange, and all Insects upon Sheep, Horses, Cattle, Pigs, Dogs, etc. Superior to Carbolic Acid for Ulcers, Wounds, Sores, etc. Removes Scurf, Roughness and Irritation of the Skin, making the coat soft, glossy, and healthy.

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

"MAPLE SHADE" HERDS AND FLOCKS.

BROOKLIN, ONT., Sept. 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.

JOHN DRYDEN.

17 Gold, Silver, and other Prize Medals have been awarded to "Little's Patent Fluid Dip" in all parts of the world. Sold in Large Tins at \$1.00.

Special terms to Breeders, Ranchmen, and others, requiring large quantities. Ask your nearest druggist to obtain it for you; or write for it, with pamphlets, etc., to

ROBERT WIGHTMAN, Druggist, Owen Sound.

333

Sole Agent for the Dominion.

DEALER IN

GRAIN AND PRODUCE

Established 1868.

James Kerr

239 Wellington St., Montreal.

Shippers' Headquarters for Live Stock Supplies. Pressed Hay a Specialty.

270

DUFF'S - - -

White and Black Minorcas
Barred Plymouth Rocks

My birds have won highest honors at the largest exhibitions in the United States and Canada. To farmers who desire to increase the laying qualities of their flock, I hereby offer to supply them with cockerels of any of the above varieties for \$1.50 each. These will not be exhibition birds, but will be of the same blood as my winners, and quite as serviceable for improving the laying qualities of your flock. See prizes won at last Industrial. 518

THOMAS A. DUFF, Toronto, Canada.

BARRED PLYMOUTH ROCKS
GOLDEN WYANDOTTES
LIGHT BRAHMAS
HOUDANS, ROSE COMB
BROWN LEGHORNS

All varieties of Games and Game Bantams.

See our record at the Industrial and other shows. 545
Write for Catalogue and prices.

KENT & OLDRIEVE, Kingston, Ont.

BARRED PLYMOUTH ROCKS
INDIAN GAMES

Winners at Toronto Industrial, 1895. Specially fine young birds for sale cheap. Write for prices.

546 W. T. GIBBARD, Napanee, Ont.

WHEN
IN **WANT** OF

Barred Plymouth Rocks, Silver Grey Dorkings, Black Spanish, White Leghorns, Pekin Ducks, and Bronze Turkeys of the HIGHEST quality, at the LOWEST figure, write

J. L. CORCORAN
"Web-Foot Villa" Poultry Yards
1380 QUEEN STREET EAST
TORONTO

N.B.—Now is your chance for Pekin ducks. Your pick of a thousand cheap. 508

Mammoth Bronze Turkeys, R. C. White Leghorns, Light Brahmans, Silver Spangled Hamburgs, Houdans, Aylesbury Ducks. First and second premiums on Leghorns and Turkeys, Montreal and Ottawa.

WRITE FOR PRICES.
JAMES A. STEWART, Jr.
MENIE, Ontario.

THE BEST
POULTRY MEN
IN CANADA

ARE TALKING ON THIS PAGE.

Where is YOUR Announcement!

ATTENTION!

7 Black Minorca Cockerels; 3 White Leghorn Cockerels; 25 Barred Plymouth Rock Cockerels; 25 White Plymouth Rock Cockerels; 5 Black Hamburg Cockerels; 5 White Wyandotte Cockerels; several Golden Wyandotte Cockerels. All the above for sale at \$1.50 each. Now is the time to improve your stock. These are from the best prize-winning strains in America.

ROBERT H. ESSEX 563
13 Emerson Ave., Toronto, Ont.

SILVER POLANDS
HOUDANS
DARK BRAHMAS

BLACK MINORCAS
BLACK SPANISH and
BLACK LEGHORNS

Young and old stock for sale. Highest awards at Montreal, Kingston, and Ottawa Exhibitions. Write for prices.

A. W. GARRETT, 558
P.O. Box 262 Brockville, Ont.

The "Toronto"
INCUBATOR AND
BROODER . .

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

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

T. A. WILLITTS
542 Manning Ave. 517 Toronto, Ont.

Mammoth Bronze Turkeys
Silver Grey Dorkings
Black Minorcas Brown Leghorns

BIRDS OF OUR BREEDING HAVE WON HIGHEST HONORS AT LEADING SHOWS THIS SEASON. A LARGE NUMBER OF CHOICE YOUNG BIRDS OF SIMILAR BREEDING. PAIRS AND TRIOS FURNISHED NOT AKIN.

T. & H. SHORE . . . White Oak, Ont.

BREEDERS' DIRECTORY.

Cards under this head inserted for one year at the rate of \$1.50 per line when not exceeding five lines. No card accepted under two lines, nor for less than six months.

HORSES.

DANIEL BRIMS, Athelstan, Que., Breeder of purebred Clydesdales, Shorthorns, and Shropshire Sheep. Stock for sale. 523

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

SHORTHORNS

ALEX. BURNS, Maple Lodge Farm, Rockwood, Ont., Breeder of Shorthorn Cattle. Young stock for sale. 422

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

WM. DOUGLAS, Caledonia, Ont., Breeder of Shorthorn Cattle. Young stock for sale at all times. 394

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

H. K. FAIRBAIRN, Rose Cottage, Thedford, Ont., Breeder of Scotch Shorthorn Cattle. Stock for sale. 407

GALLOWAYS.

A. M. & R. SHAW, Brantford, Ont., Breeders of Galloway Cattle. Choice young animals for sale. 360

DAVID McCRAE, Janefield, Guelph, Canada, Importer and Breeder of Galloway Cattle, Clydesdale Horses, and Cotswold sheep. Choice animals for sale. 251

AYRSHIRES.

T. GUY, Sydenham Farm, Oshawa, Ont., Breeder of Ayrshire Cattle, Southdown and Leicester Sheep. 398

J. McCORMACK, Rockton, Ont., Breeder of Ayrshire Cattle, Toulouse Geese, and Colored and Silver-Grey Dorkings. 252

W. M. & J. C. SMITH, Fairfield Plains, Ont., Breeders of World's Fair prize-winning Ayrshires, Merino Sheep, Poland-China Pigs, and Poultry. Stock for sale. 526

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

W. F. & J. A. STEPHEN, Brook Hill Farm, Trout River, Que., Breeders of Ayrshire Cattle and Yorkshire Pigs. Young stock for sale at reasonable prices. 243

THOMAS IRVING, Montreal, Importer and Breeder of Ayrshire Cattle and Clydesdale Horses. Choice young Ayrshire bulls and heifers bred from Chicago winners for sale. Write and get prices and other particulars. 296

WALTER NICHOL, Plattsville, Ont., Breeder of Ayrshire Cattle and Leicester Sheep. Choice young stock for sale. 527

DEVONS.

W. J. RUDD, Eden Mills, Ont., Breeder of Devon Cattle, Cotswold and Suffolk Sheep, Berkshire Pigs, Plymouth Rock Fowls, and White Turkeys. 380

JERSEYS.

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

HAIG BROS., Menie, Breeders of Jersey Cattle of the best prize-winning strains. Farm close to Hoard Station, G.T.R. 225

D. H. KITCHESON, Menie, Ont., Breeder of A. J. C. C. Jerseys, Shropshire Sheep, and Berkshire Pigs. Stock for sale. Hoard's Station (G.T.R.). 368

ROBT. REESOR, Locust Hill, Ont., Breeder of Jersey Cattle and Shetland Ponies. Young stock for sale at reasonable prices. Locust Hill is 20 miles from Toronto on the C.P.R. 361

J. H. SMITH & SON, Willow Grove Farm, Highfield, Ont., Breeder of St. Lambert and St. Helen's Cattle. Prize herd at the last Industrial. Young stock for sale. 297

SWINE.

WM. SINCLAIR, Varna, Ont., Breeder of Poland-China Swine. Stock for sale. Write or call. 451

FOR the finest Tamworth Swine correspond with H. FEARMAN, Hamilton, Ont. 266

M. H. PARLEE, Sussex, N.B., Breeder of Large Yorkshire and Berkshire Pigs, Light Brahmans, Silver Laced Wyandottes, and Black Plymouth Rocks. Choice stock for sale. Write for prices. 359

W. H. O'DELL, Belmont, Ont., Breeder of Registered, Tamworth Pigs. Stock for sale. 374

TAMWORTH Swine, Oxford Sheep, Collie Dogs, Bronze Turkeys, Toulouse Geese, Pekin Ducks, and Buff Leghorns. 406 A. ELLIOTT, Pond Mills, Ont.

SHEEP.

JAS. P. PHIN, The Grange, Hespeler, Ont., breeding and importing Shropshire Sheep a specialty. 363

A. TELFER & SONS, Paris, Ont., Breeders and Importers of registered Southdown Sheep. Stock for sale. 247

JNO. A. MCGILLIVRAY, Q.C., Jerseyville Farm, Uxbridge, Ont., Breeder and Importer of Dorset Horned Sheep, Jersey Cattle, and Tamworth Pigs. 494

JOHN JACKSON & SONS, Abingdon, Southdown Sheep. Champion flock at World's Fair. Awarded 20 prizes—10 firsts. 253

S. P. GOUDEY, Yarmouth, Nova Scotia, Importer and Breeder of Leicester and Shropshire Sheep, Jersey Cattle, and Chester White Swine. All registered. 495

WM. E. WRIGHT, Glanworth, Ont., Breeder of Shropshire Sheep and Chester White Swine. 528

POLLED ANGUS.

WALTER HALL, Washington, Ont., breeder of registered Polled Angus Cattle of the choicest strains. 562

WILLIAM STEWART & SONS, Willow Grove Farm, Lucasville, Ont., Breeders of Polled Angus Cattle. Young stock for sale.

BRITISH ADVERTISEMENTS.

Secretary to the National Sheep Breeders' Association of England and the Southdown Sheep Breeders' Association; Hon. Secretary Kent Sheep Breeders' Association.

W. W. CHAPMAN,
PEDIGREE LIVE STOCK AGENT
AND EXPORTER.

All kinds of Registered Stock, Horses, Cattle, Sheep, and Pigs supplied on Commission.

References—**JOHN JACKSON & SON**, Abingdon, Ont.; **N. CLAYTON**, Selsey, Chichester, Eng.

Offices:

Fitzalan House, Arundel St., Strand, London, England.

Registered address for cables—"Sheepcote, London."

H. PENFOLD Selsey, Chichester, Eng.

REGISTERED SOUTHDOWNS, No 4.

Established over a century. One of the best and purest of Southdown Flocks in England. Many prizes have been won for the last 30 years. Rams and Ewes always for sale; full pedigrees kept.

Edwin Buss, Elphicks, Horsmonden, Kent, Eng.

Breeder of Pedigree Large White Yorkshire and Berkshire Pigs. Highest awards at Royal Shows. Boars, Yelts, and in-pig Sows of either breed always for sale. Yorkshire boar in use, Holywell Bath (1799), winner of 10 firsts, 4 seconds, 2 reserves.
A few pedigree Bates-bred Shorthorns kept.

KENT OR ROMNEY MARSH SHEEP.

The Walmer Court Flock, established in 1852, duly registered and recorded in "The Flock Book of the Kent or Romney Marsh Sheep Breeders' Association," has long been considered a leading flock, and has won over \$2,500 at the R.A.S.E., and other leading shows. Inspection and enquiries invited. Apply to the owner,

H. PAGE, Walmer Court, **WALMER, KENT, ENGLAND.**

JAMES LAWRENCE, Stall Pitts' Farm,
Shrivenham, Bucks., England

... BREEDER OF ...

Registered Berkshire Pigs, from stock unsurpassed for true characteristics, size, and quality. One of the oldest established herds in England.

Enquiries Solicited. - - Prices Moderate.

F. N. HOBGEN, F.S.I.

T. C. HOBGEN, F.S.I.

HOBGEN BROS.

Auctioneers and Cattle Commission Agents,

CHICHESTER, SUSSEX, ENGLAND

Appointed Auctioneers to the Southdown Sheep-Breeders' Association.

H. T. LOCKE-KING, Brooklands, Weybridge,
England.

Registered Southdown Flocks, 10 and 11.

Ewes individually numbered and all individual pedigrees of every sheep recorded in private flockbook. Rams and ewes always for sale, descended from all the best and purest blood. Shire horses also kept, bred from noted prize-winners.

SIR THOS. BARRETT LENNARD, Woodingdear
Rottingdean, Brighton, England.

Registered Southdown Flocks 7 and 8 at Belhus in Essex and Woodingdean in Sussex. Winner of many prizes, including the gold medal given by the Emperor of the French at Poissy; first prize, Fat Stock Show Lewes, 1892; and commended at Chichester, 1892. Full pedigrees kept, and all ewes numbered.

PAGHAM HARBOUR CO.,

Selsey, Chichester, England.

Flock of 1,000 ewes, winners Southdown Challenge Cup, 1893-4, 1st prize Wool; Jubilee, Royal, and Royal Pri-Ram Lambs in 1892-93-94.

SIR THOS. BARRETT LENNARD, Woodingdean,
Rottingdean, Brighton, England.

Large White pigs of prize-taking blood, bred entirely from the stock of Sanders Spencer, Walker Jones, and Duckering, and Berkshire pigs from the stock of Benjafield. Boars, yelts, and sows always for sale at very moderate prices.

KIDNER EDWIN,

LICENSED VALUER AND SALESMAN, breeder of Registered Dorset Horn Sheep, Shropshire Sheep, and Devon Cattle. All commissions personally executed. Address: **MANOR FARM**, Cothelstone, Taunton, Somerset, England.

Messrs. J. R. & R. R. KIRKHAM . . .

Own a flock of about 2000 Lincoln sheep, having always rams and ewes for sale. Individual pedigrees recorded, and given with every animal. Enquiries and inspection solicited. Address:

Biscathorpe House, Lincoln, England

REGISTERED SOUTHDOWNS,

Flock No. 6, Southdown Flock Book.

Property of **F. N. Hobgen**, Appledram, Chichester, Sussex, England.

Sheep always for sale. Inspection invited. The best only are kept. Specialty, good wool and mutton combined.

Registered Red Poll Cattle.

Property of **LORD HASTINGS**, Melton Constable, **NORFOLK, ENGLAND.**

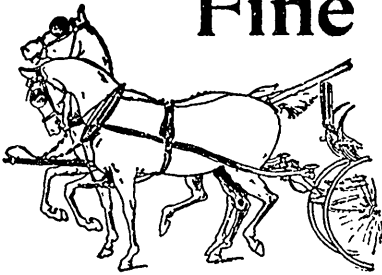
Bulls, cows and heifers always for sale. Messrs. Miller's, of Nebraska, celebrated cow **RUPERTA** came from this herd. Pedigree Tamworth pigs also for sale. Inspection invited. Quotations given. Apply Estate Office, Melton Constable, Norfolk, England.

Jottings.

Guelph Fat Stock Show.—In printing the prize list for the above show, the class for Poland-China swine was accidentally omitted. We are requested to inform our readers that similar prizes are offered for them as for other breeds of swine.

English Shropshire Flock Book.—Our thanks are due to Messrs. Alfred Mansell & Co., College Hill, Shrewsbury, England, for volume 13 of the Flock Book of Shropshire Sheep, which is a most creditable number. An interesting feature is the index to winners at the Royal Show from the year 1853 to the present date.

Fine Drivers:



cannot be made out of horses that are out of condition. Merely to feed plenty of oats is not enough. A horse gets run down the same as a man and needs a general toning up.

Dick's Blood Purifier

is a scientific preparation in the form of a powder. It purifies the blood, strengthens the digestion, turns a rough coat into a smooth and glossy one and puts the animal "in condition." He then has "good life" and feels like holding up his head and lifting his feet.

MILCH COWS are greatly benefited by it. The whole system is toned up. The digestive organs being strengthened, more nutriment is drawn from the food and the flow of milk increased.

Dick's Blood Purifier will pay for itself ten times over.

For sale by druggists, at general stores or sent post paid on receipt of 50 cts.
Dick & Co., P. O. Box 482, Montreal.

SASKATCHEWAN BUFFALO ROBES

Received the highest award at the World's Fair.
 Have had six years' experience in Canada.



We guarantee every robe to be absolute wind, water, and moth proof, and will not wear bare in spots like a skin robe. They will dry quicker and never get hard, are as strong as leather and far more durable and warmer than any cheap fur robe.

The robe is made in three parts—the Fur Cloth, the Astrachan Lining, and Rubber Interlining. All these parts are without seams.

The increased sale of these Robes is the best evidence of their popularity.

Others having noted the great sale and popularity of these Robes have undertaken to imitate them. We would caution the public that none are genuine unless bearing this Trade Mark.

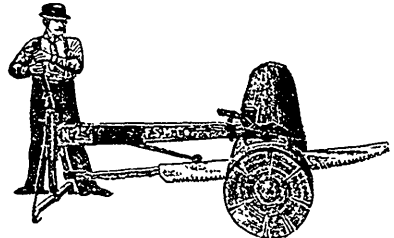
MANUFACTURED BY

**NEULANDS & CO., Galt, Ontario, and
 AMERICAN BUFFALO ROBE CO., Buffalo, N.Y.**

Jottings.—Continued.

College Sale.—The seventeenth annual sale of purebred stock at the Ontario Agricultural College, Guelph, takes place on Wednesday, October 30th. There are catalogued 9 calves, 53 Improved Yorkshire swine, 4 Berkshires, 22 Tamworths, 4 Chester White pigs, 27 sheep and lambs, and, for the first time, there is also catalogued a large lot of fashionably bred poultry.

Guernsey Herd Register.—We have read from the secretary, Mr. W. H. Caldwell, Peterboro, N.H., the last quarter of the Guernsey Herd Register for the current year. We notice, from a hasty inspection, that the club is in a most satisfactory condition as regards receipts, and that the entries of cattle still continue to increase, thus showing the growing popularity of this excellent breed of dairy cattle. Included in this number is an illustration and sketch of the life of Dr. Charles R. King, the first president of the American Guernsey Cattle Club, and an enthusiastic admirer of the breed.



For the benefit of our readers who have wood to saw we illustrate above the Folding Sawing Machine, which is made by the Folding Sawing Machine Company, of 62 to 66 South Clinton street, Chicago, Ill. It is a machine that makes wood-sawing easy in comparison with the old way of sawing. This machine can be folded up and easily carried to the woods on a man's shoulder. It saws down trees and saws the tree up into any lengths desired after it is cut down, and always cuts the log square in two. One man can saw more wood with it, and do it a great deal easier, than two men can in any other way, as he never has to bend his back or get down on his knees in the mud or snow. Don't saw your wood until you have thoroughly investigated the merits of this great labor and money saving machine.

CONTENTS.

GENERAL—	PAGE	PAGE	PAGE
British embargo on live stock.....	132	Care of eggs.....	164
Can alkali lands be brought into cultivation?.....	131	Clover.....	167
Electricity and farming.....	129	Clover and eggs.....	166
Farming as conducive to long life.....	130	Cold in the head.....	167
Farm pupils.....	130	Geese.....	167
Guelph Fat Stock Show.....	132	Poultry illustrations.....	162
Life of a Turkish farmer.....	131	Shipments of poultry to the British markets by cold storage.....	164
Notes from Great Britain.....	133	Stray feathers.....	166
Ottawa Exhibition.....	134	THE FARM—	
Registration of live stock.....	132	Applying nitrate of soda.....	175
HORSES—		Benefactors of the farmer.....	173
A bit of trotting history.....	142	Clover as ensilage.....	170
Breeding of Kremlin.....	143	Ditching wet places.....	169
Hackneys.....	142	Grasses for wet lands.....	169
Noises in horses.....	143	Green manuring.....	175
Short items.....	138-142	Keep the plow running.....	168
Silage.....	143	Look after the corn fodder.....	168
The Clydesdale stallion, Claymore.....	142	Soil for field roots.....	175
Warts.....	143	Stick to the farm.....	169
CATTLE—		The influence of light on potatoes.....	171
Collynie and Uppermill Shorthorn sale.....	145	To the girls of the farm.....	172
Cowpox.....	148	Turnip leaves.....	168
Dead weight of fat steer.....	149	Wood for winter.....	168
Feeding molasses to cattle.....	146	Writing for the agricultural press.....	174
Forcing heifers and calf breeding.....	147	THE DAIRY—	
Inflamed udder.....	149	A study of udders.....	178
Prizes for grade bulls.....	144	Cotton-seed feeding.....	176
Shorthorns at the Toronto Industrial.....	148	Cream-raising systems.....	177
Simmenthal cattle.....	145	Dairy markets.....	176
TEXAS FEVER.....	146	Danish butter.....	176
The Australian live cattle trade.....	144	Keeping butter in jars or tubs.....	183
The passing of the horns.....	144	Pasteurized milk.....	177
SHEEP—		Preparing for the winter dairy.....	178
A talk about wool.....	153	Scrubs.....	176
Ear-tags.....	155	The butter-fat system of paying for milk.....	182
Gid or staggers.....	152	The sanitary condition of cheese and butter factories.....	180
Mutton for the farmer's table.....	150	To cure warts on a cow.....	183
Putting the ram to the ewes.....	154	Water in butter.....	177
Sheep going into winter quarters.....	151	What the English market requires.....	177
Sheep in the newer sections.....	151	HORTICULTURE—	
Sheep on western ranges.....	155	About pecans.....	184
Shipping store sheep.....	155	Apple packing.....	184
The kind of ram to reject.....	151	The eating of fruit.....	184
The luxury of good mutton.....	151	The old apple orchard.....	186
The prairie wolf.....	152	The yellows of peach trees.....	185
SWINE—		APIARY—	
A word to beginners.....	156	North American beekeepers' convention.....	128
Dentition in pigs.....	161	RECENT INVESTIGATIONS—	
Diarrhoea or scours.....	160	Insects injurious to stored grain.....	191
Earth for pigs in winter.....	156	More about alfalfa.....	190
Pasturing hogs.....	157	Soil temperatures and retention of water.....	190
Pig-feeding on meals.....	158	Souring of milk.....	190
Pigs in the south.....	159	Wheat—Relation of maturity to germinating vigor.....	191
The Poland-China.....	159	PUBLISHERS' DESK—	
To our readers.....	157	Montreal Exhibition.....	xxviii
POULTRY—		Western Fair prize list.....	xxv
Bad eggs again.....	162		



Simmental Cow, Owned by Theodore A. Havemeyer
Mountain Side Farm, Mahwah, N. J.

(See Cattle Department.)

FARMING

Vol. XIII.

NOVEMBER, 1895.

No. 3.

Electricity and Farming.

The present has been fitly described as the electric age. In every civilized country we find large numbers of intelligent men devoting their time and money to the development of electricity as a motive power, and to the discovery of new uses for the same. There are many who think that electricity will eventually drive steam power altogether out of use, as, in fact, it has done already to a certain extent.

Up to the present time farmers have not paid much attention to electricity, as it seemed to be something out of their line, and of little use to them. It has generally been regarded more as a foe than anything else, on account of the substitution of electric for horse power in street cars all over this continent abolishing the demand for horses of the street-car stamp, thus reducing the profits formerly derived from horse-breeding, while enthusiastic inventors claim that they will soon drive the horse out of the market altogether, as they promise us electric horseless carriages for private use in a short while.

In spite of all this, however, electricity promises to be of vast usefulness to agriculturists. In the line of harnessing it for work, a Danish farmer has made a successful experiment of its use for threshing. He has hitherto had an old-fashioned threshing-machine drawn by horses. Three pairs of horses have worked the machine with about 800 turns per minute, the horses being changed four times per diem. The power transmitted in this way was, owing to the nature of the machine, irregular, occasioning considerable loss of time to the workmen employed. By the use of an electric motor to propel the threshing-mill, this disadvantage is removed. The power is transmitted evenly, stoppages are avoided, the threshing is more speedily effected, and the machine itself is spared considerable wear and tear. A stationary steam or oil engine drives the dynamo, and the current is conducted through cables of suitable length to any given point

in or outside the barn where the threshing takes place. Even where the threshing mill is placed several hundred yards from the working power, two-thirds of the power can be reckoned on as serviceable for the threshing mill. At the farm where the experiment has been tried the force has been generated by a six horse power oil (petroleum) engine, and in order to protect the electro-motor from dust it is enclosed in a wooden frame.

It is not, however, as a motive power alone that electricity promises to assist the agriculturist. French scientists have been at work experimenting with it as to its influence on growing crops. They have succeeded in hastening the germination of peas, beans, and corn by the use of the electric current. Renouncing batteries and powerful engines, which are too expensive and intricate for farmers to use, they have used a new invention called the geomagnetifere, which consists of an ordinary pole 40 to 50 feet high, on top of which is insulated a row of copper spikes to collect electricity from the atmosphere. An insulated wire transmits the fluid to a network of galvanized iron wires buried 4 to 6 feet under the crops to be experimented on. The electricity seems to act as a powerful fertilizer.

It is claimed that an increase of 30 per cent. in yield is obtained by the use of the geomagnetifere, and that grapes grown over the wires contain a higher percentage of sugar and alcohol, while the perfume of the flowers thus treated was stronger. It is also said that a geomagnetifere 60 feet high will fertilize the ground as much as ten times its worth of manure.

It will thus be seen that electricity promises to be a valuable ally of the farmer in his operations. There is no doubt that he has all along been receiving silent assistance from this agency in regard to his crops. Further investigations are sure to establish this. Even if it is considered as a fertilizer only, electricity promises to be a boon to those who have worn-out farms, and who are anxious to bring them into a better condition.

Farming as Conducive to Long Life.

We are not aware whether any statistics have been drawn up in this country as to the comparative length of life of persons following different occupations; but, should any one follow out research in this line, it would doubtless be found that the results obtained would not be very different from those brought out by two British physicians, Drs. Ogle and Arlidge, in which comparison is made between persons following different occupations in the country and in the city of London.

In this list we find that farmers, agricultural laborers, and gardeners and nurserymen, live, on an average, three times as long as town laborers and some other classes. The comparative mortality figure is lowest for clergymen; next in order come gardeners and nurserymen, then farmers and agricultural laborers, schoolmasters and teachers standing next.

These figures go to show the greater healthiness of outdoor occupations as compared with a sedentary and town life. Three out of the five classes named spend a large proportion of their time in the open air, while the other two, as a rule, are also able to obtain more or less fresh air. Of the fifteen callings showing the lowest mortality most are rural, the balance including well-to-do persons in town, while the fifteen highest are nearly all townspeople, belonging mainly to the working classes.

The reasons given for the higher mortality among the inhabitants of towns are bad houses, bad drainage in houses and workshops, and the tendency of poor surroundings and hard work to induce the workmen so situated to take to drink. The excessive death-rate among children is another cause that swells the list, while the sharper competition for work in town, and the consequent increase of poverty and starvation, is another great factor.

We commend these figures to the attention of our readers. They are very instructive as bearing on the increasing tide of emigration from country to city. That the tide will have to turn the other way sooner or later we firmly believe. While the deleterious effects of town life may not be quite so pronounced in this new world as they are in Great Britain and Europe, owing to the efforts made in most cities to provide breathing spaces and parks for the public health and benefit, yet the comparison between life in the country and city is

sufficiently in favor of the former, as regards healthiness, to make the farmer, who would transfer his abode to the city, pause and reflect well before so doing.

Farm Pupils.

The tragic death of Benwell some years ago at the hands of Birchall threatened to put a damper on the schemes of those individuals and societies who were living on the moneys obtained from credulous young Englishmen who paid these people large sums, in return for which they were to procure them employment on farms or in lucrative positions in the United States and Canada. The folly of paying money in this manner has been frequently exposed in the press, but, notwithstanding, the number of those forwarded to this country in this manner is quite large. Recent revelations have shown that the system is still in force, and that the list of victims is by no means a small one. Of course, when once the money is paid over to these agents, the unfortunate immigrants get nothing back. Their fare only is paid to their destination, and such as wish to go on farms are handed over to the first farmer who will take them, who is oftentimes the worst farmer in the district. This is done in spite of the promise of the agents to furnish these young men with decent situations, and on respectable farms.

It is time that a stop was put to these schemes. These agents are no benefit to the country, but rather the contrary. Any smart young man who desires work can obtain it quite as easily if he comes himself and seeks for it, without the interposition of an agent, and he will be so much better off in that he has saved his money from the voracious craw of the wily agent. As things are now managed, the young man lands at his destination pretty well "stranded," and, after a short time spent on the farm selected for him, gets disgusted, and comes into the nearest town, there to become a hanger-on and dependent on the kindness of such as pity him. We have seen a great many cases of this sort. Of course, some of the plodding ones, who have, perhaps, got into a better berth, manage to continue on and do fairly well, but this is certainly not the case with the majority of them. The advisability of keeping out of these agents' hands cannot be too strongly impressed on all young men who are contemplating coming to this new land to seek their fortunes.

Can Alkali Lands be Brought into Cultivation?

The question of the practicability of changing the character of the alkali lands of the western part of this continent so as to bring them into a state where successful cultivation would be possible has been engaging the attention of men of science for some time. The question is a most important one in view of the fact that the proportion of good land fit for settlement becomes less each year, and must ere long be all taken up, and that, in districts, such a large portion of that western country consists of these alkali lands, which at present cannot be cultivated successfully. The larger part of these so-called "bad lands" is to be found in the Western States of the Union, but they run up over the border into the Canadian Northwest Territories, although the proportion of them there is not as large as in the United States.

There are two kinds of alkali, black and white. The latter is much less injurious than the former, which consists of carbonate of soda, and not only dissolves the humus of the soil, but also the bark of plants growing in it. It has been found out that black alkali can be converted into white by the use of gypsum, which changes carbonate of soda into sulphate. It is quite possible, however, for even the white alkali to interfere seriously with, and even destroy, crops.

The California Experiment Station has been studying the question of these alkali lands, one of the branch stations being located on such soil. It was discovered that the main mass of these salts existed in the soil and subsoil within a short distance of the surface, and that the amount was limited. The chemical analysis of the alkali, moreover, showed that it consisted, as a rule, of such compounds as are known to be formed in all soils in consequence of weathering, and that it contains all the ingredients useful, as well as those useless, to plant growth, the alkali lands having extraordinary intrinsic and permanent fertility, fully justifying their reclamation.

It was also found that these alkali salts penetrated downwards through the soil each year as far as the rainfall wetted the soil, and that from this depth it partially or wholly reascended towards or to the surface by evaporation during each dry season. It is possible for flowers and herbage to grow in the spring on unirrigated land after winter rains, because these have washed the salts to a depth below

the reach of the roots of these plants, and, when this growth is going on, all the evaporation takes place through the roots and leaves, and the alkali does not move up to any great extent. Hence, a crop of alfalfa may flourish for years on ground which, as soon as it is left bare during the dry season, will become so impregnated with alkali as to kill any fall crop. Irrigation, too, has the effect of bringing alkali to the surface, owing to the excess of water brought to the soil.

Since evaporation from the soil surface is the cause of the rise of the alkali, one of the chief preventive measures must be the reduction of surface evaporation to the lowest possible point. This can be done by mulching or shading, the best mulch being a well and deeply tilled surface soil on which a crust is not allowed to form. The growing of hoed crops is therefore indicated.

Life of a Turkish Farmer.

The lot of the Turkish farmer is not a happy one. Inured as he has been to a struggling existence, it has had the effect of making him gloomy and taciturn. In place of a neat farmstead, we find a hovel constructed of sun-dried mud bricks. This one-roomed hovel, without any windows (the only light and air admitted comes down the chimney), serves him and his family as their residence. Adjoining this we find a cellar-like building which serves to house his live stock. All the surroundings are dirt and untidiness. In the place of a garden we see heaps of manure. The walls round the premises are studded over with lumps of cow-dung undergoing the process of drying for fuel. Frugality is a great characteristic of the Turkish farmer, and it is owing to this that he has been able to eke out a miserable existence. His tastes are simple and his requirements few. He produces everything for his sustenance at little cost; his food consists for the greater part of bread, for which he grows the wheat. This is sometimes varied by a soup made of sour milk and crushed wheat boiled; this is a most nourishing and satisfying dish. He also cooks another dish, equally good, of crushed wheat boiled and flavored with fresh butter. Sometimes he indulges in a dish of fried eggs. Coffee he drinks occasionally. This completes his dietary, and, simple as it is, he is strong and healthy and generally of fine physique. He thinks nothing of a twenty or thirty-mile walk, or of doing a day's work of

sixteen hours. He would fare badly with the eight hours system. His clothing costs him even less than his food. He cultivates the cotton from which the women spin the yarn and weave the calico for his clothes. He also allows himself a jacket made of bright colored Manchester print. The sheep find him material for a warmer covering; he knits his own stockings. Boots are unknown to him; he manufactures out of a piece of untanned cowhide a pair of sandals. His cattle find him fuel; he collects all their manure and dries it in the sun. This warms his house; it makes a good bright fire, and also serves to light his room. Lamps and candles are too great a luxury. Tobacco he sometimes indulges in. In spite of all this frugality he remains poor. The low price of cereals in the past, and occasionally bad seasons, have been against him.—*St. James' Gazette.*

British Embargo on Live Sheep.

The British agricultural papers are urging on their government the necessity of issuing an order that all American and Canadian sheep be killed at the port of landing. This step is urged because of an alleged discovery of scab among some consignments of sheep both from America and Canada. The *Live Stock Journal* says that the spread of scab in the United Kingdom is due to the dispersion of these sheep over the country, many of them having been purchased for grazing purposes.

If, as is alleged, scabby sheep have been shipped from this side to Great Britain, then shepherds have been practising a suicidal policy. The privilege of landing alive is worth something, especially when a consignment of sheep arrives on a dragging market for dressed meat. The embargo on cattle might have taught them caution, as well as the fact that this is not the first discovery of scab among American sheep that has been noted by the English papers. Let them be more careful, then, for the future, although, even now, it may be too late to avert the embargo.

Guelph Fat Stock Show.

The twelfth annual Ontario Provincial Fat Stock Show, which is once more to be held in the city of Guelph on December 10th, 11th, and 12th, has a new departure this year in that a dairy show will be held in connection with it, under the auspices of the Dairymen's Association of Western Ontario. This should

increase the interest shown in this exhibition. Good prizes are offered all through, and a splendid show should be assured. Special rules have been drawn up for the guidance of judges in the dairy department, allowing 20 points for constitution and conformation, 1 for each pound of milk, 20 for each pound of fat, 4 for each pound of solids not fat, and 1 for each ten days in milk after the first twenty days, the limit being two hundred days. Ten points will be deducted from the total score for each per cent. of fat below 3 per cent. of fat in the milk.

In the sheep department special prizes are offered by the American Shropshire Record Association and the British and American Southdown Breeders' Associations for their respective breeds, while the challenge cup offered by Messrs. William Cooper & Sons, Galveston, Texas, will once more call forth a close contest among breeders anxious for the coveted trophy. This cup was won in 1893 by Mr. H. Arkell, Arkell, with an Oxford Down ewe, while last year Mr. J. Campbell, Woodville, was the successful competitor with his Shropshire ewe lamb. Should either of these gentlemen win the prize this year, the cup would be theirs finally.

FOR FARMING.

Registration of Live Stock.

This subject is one which has been, perhaps, more fully discussed than many items concerning farming, but nevertheless I think a few words on the question will still be of interest to your readers. Registration of live stock means, to my mind, not only the recording of the sires and dams in the herd, flock, or stud book, but also means that not only should each animal be individually known, but that each and every one should be able to be individually identified, and that in such a manner that no possible doubt could arise, nor fraud be easily committed; hence the questions I wish to bring most prominently to notice are:

First, the importance of every sire and dam used for producing animals for breeding purposes being duly recorded in their herd, flock, or stud books.

Second, that every animal so recorded should be able to be without doubt individually identifiable.

Now, as to the first question, I think every one will agree that it is perfectly right that every animal used for these purposes should be recorded. Therefore, I would ask, Are they?

Possibly here again the answer would be yes. Now comes the question which brings in number two. Prove that they are recorded. It strikes me at once that, if each committee of the various societies were to insist upon this question being answered definitely, there would be many animals that are yearly recorded, not only in your records, but in those of other countries, that would have a very hard job to get recorded. And why? Because they have not individual marks by which their identity can be determined. Therefore, it is quite certain, if records are to be properly kept, that every animal must be properly marked in such a way, before it leaves "the hands of his breeder," as will render it identifiable, wherever it goes. This being the case, I hold that every council of management of your breed societies should so make their rules that no animals should be recorded in their herd or flock book unless the same were duly tattooed in their ears in such manner as the several councils should order and determine. If some such rule as this were adopted, it would be a means whereby the value of the record would be much enhanced, and it would also be of the greatest service to those breeders who are, regardless of cost, breeding the best animals.

Then, as regards imported animals for breeding purposes. Here, again, I think that there is great room for improvement, for, under the present system, any breeder who has not recorded his animals can give a pedigree, and that signed pedigree can be used for any animal the purchaser may desire, so long as it is of the same sex, breed, and color. Is this right? Surely not. Then why not protect yourselves, and insist that no animal shall be recorded in your herd, flock, or stud books unless the same is duly recorded in the stud, flock, or herd book of the country from whence it comes, and is accompanied by the export certificate, duly signed by the secretary of the society, and stamped with the common seal of the society in whose stud or herd book the pedigree is recorded, and, further, that each and every animal shall have an individual certificate, and be so tattooed in its ear or ears by numbers or registered trade mark, or both, which numbers and marks shall be distinctly stated in the said certificate so as to render the substitution of any other animal impossible?

If this or something like it were adopted, it is quite possible it would lead to a vast improvement in the stock imported into your country.

ENGLISH BREEDER.

Notes from Great Britain.

(By Our Own Correspondent.)

HORSES.

The demand for horses of all descriptions is very good, particularly for those of the best types of the respective breeds.

The sales of studs during the past few weeks have been well attended, and prices have ruled very strong.

Our autumn foal shows have been held in quick succession, one after the other, and an excellent lot of foals have been brought out, particularly Shire colts. The value of these shows cannot be fairly estimated unless one has attended them year by year, for it is only in this way that the great good they are doing can be fully realized. One great reason why they do so much good is that many of them are more or less local, and they thus bring out many foals whose owners would never send to large shows, and, in this way, many a good foal is found and bought by the larger breeders. In this way the farmer is well repaid for his trouble, and others in his district are induced to try to do likewise.

The sale of Sir Humphrey de Trafford's Hackneys and ponies deserves some notice, for, in the case of these well-known ponies, some extraordinary prices were realized; hence I give them in detail. The Hackney mares sold well, as did the whole of this class of horses, the stallion King, foaled in 1892, making £750.

PONY MARES.

Name.	Date of Birth.	Purchaser.	Price.
Snorer II., brown	1887	Southern	£3,000
Her filly foal, Snorer IV.	1895	Hollins	325
Georgina V., bay	1890	E. Warwick	1,500
Dorothy Derby	1887	Sir G. Greenall	3,000
Her filly foal, Agnes Derby	1895	F. E. Coleman	525
Dorothy Derby II.	1800	Southern	3,600
Pepper		G. Taylor	250
Jennie II.		H. Proter	325
Her colt foal, Go-Bang	1895	Hollins	275
Black Pearl	1892	Hollins	375
Jewel	1892	Harrison	160
Black Pearl's filly foal	1895	Hollins	200
Lightning	1892	Proter	235
Snorter II.	1893	Hollins	3,500
Jacqueline	1893	Hollins	250
Miss Cassius	1893	Doolette	225
Jackdaw	1893	Bayars	750
Miss Sniff	1894	Hollins	4,500
Jennie III.	1894	Proter	230
Julius Cæsar	1894	Jones	1,050

STALLIONS.

Roman Warrior.	...1893	Doolette	..\$ 775
Snorter	...1892	Hollins	.. 1,750
Young Sir George.	...1886	Doolette	.. 500
Sir James	...1888	Hollins	.. 250

CATTLE.

The dispersion of the celebrated herd of Shorthorns at Inglewood (Mr. Robert Thompson's) took place early in September, when about 1,000 persons were present. The demand was brisk and active throughout for every lot, and the sale for the bulls was one of the quickest we have seen for some years.

The best price for bulls was \$1,300, for Royal Spice, Mr. Ross, the same buyer, also paying for Marie Millicent \$775, and \$625 for British Banquet, for South America. Balmoral Butterfly, at \$610, and British Cheer, for \$550, were purchased by Mr. Kellert for South America. Col. North purchased, at \$550. Shapely Bride, and Belgravia Butterfly at \$450. Many other animals made from \$400, the averages being, for sixty-five cows and heifers, \$195, and for twenty-one bulls, \$319.50.

Lord Faversham's sale of a portion of his herd averaged, for thirty-nine cows and heifers, \$157; for fifteen bulls, \$161.

Mr. Christopher Craddock's herds averaged, for forty-seven cows and heifers, \$103; for five bulls, \$83.

At the thirty-eighth Birmingham show and sale the entries were fewer than usual. There was a considerable attendance of buyers from all parts at home, North America, South America, Germany, etc. Cows and heifers went cheaply, but the trade for bulls was very brisk, and most satisfactory prices were realized, \$455 being the highest price, a very large number making \$350 to \$400.

Col. Lucas had a most satisfactory sale of Red Polled cattle, and a brisk demand existed for every lot.

Mr. Robinson's Sussex herd met with an excellent demand at an average of \$80 for eighty-three lots of cows, calves, etc.

SHEEP.

The English sheep trade as regards breeding sheep is very good, and fairly satisfactory prices have, as a rule, been made throughout the country.

The Lincoln ram fair is one of the most important of the Lincoln sheep sales. There was a most active demand and high averages were made. The highest price was made by a Dudding ram, *i.e.*, \$675. This ram clipped

26 lbs. of wool. A Wright ram came next, at \$625. Others went at \$525, \$440, \$405, etc.

The following are some of the chief averages: Eleven head belonging to Mr. Robert Wright averaged \$234.50. This is, we understand, the highest average in record for this breed at a public auction. Seventeen of Mr. H. Dudding's averaged \$203. Twenty of Mr. J. E. Caswell's averaged \$185. Twenty of Mr. J. Pears averaged \$153.

Kent and Romney Marsh sheep sales have just now (Oct. 4th) begun, and that at Ashford on October 1st was the first of importance this year. A very good demand existed, particularly for registered sheep, and no less than 71 of them were purchased for export to Buenos Ayres by one buyer alone. Prices ran from \$35 to \$185.

Lewes fair, the largest of the Southdown sheep fairs, was held on September 21st, when about an average supply were penned, amounting to 16,000. The trade for ewes and lambs was fairly active, and about the same as last year, whilst that for rams was a very dull affair; in fact, the supply was far beyond the requirements.

Ottawa Exhibition.

The Canada Central Exhibition at Ottawa was this year a decided success. The weather was all that could be desired. The attendance was large, and the various departments of the show were fairly well filled. In some classes of stock the competition was not as great as could be desired, but in others it was close and keen. The officers and directors of this show are popular with the stockmen and judges who patronize the show on account of the fair and liberal treatment accorded to them, and we venture to predict a growing interest in future exhibitions here.

HORSES.

Horses were a good show. In the Thoroughbred class, June Day, a bright bay stallion, was very prominent. In the grand parade he appeared, followed by two've of his get—foals from ordinary mares—and they were a fine exhibition of the value of good blood. June Day was bred by A. J. Alexander, Woodburn, Kentucky. Tyrone, winner in the Thoroughbred class at Toronto, was also shown, with other good ones. The female classes were not so well filled, and some of the mares with foal by their side looked as if the dry weather in the Ottawa

valley had left the pastures very bare indeed.

While there were a few very nice foals in the light-legged classes, the sections for the young stock were not overfilled, and some of the animals out were not in first-class show trim. There were some very good and promising youngsters in the carriage class, and in many of these there was a Thoroughbred look, showing that they were well bred. Most of these were of good size and showed considerable style, but in the whole class there was much more of the Thoroughbred than of the heavier coaching stallion strains. J. T. Anderson, of Dominionville, was there with his Montreal winner.

Among the standard-bred trotters there were some very good ones. Ottawa seems to have a number of horsemen who are admirers of the trotter. The racing prize also help to bring out anything there is in this line that is at all presentable. There were a great many roadsters present, including a fine lot of mares, which were good, clean-legged animals. Some of the very best of these were crossbred, by a Thoroughbred sire out of mares with more or less trotting blood. There was a good field of single roadsters, and also a fine lot of double teams shown. While some of the roadsters were undersized and common-looking, others had a good deal of quality and a pleasing appearance.

Hackneys were shown by Graham Bros., Claremont, and by H. N. Crossley, Rosseau, Muskoka. They had the same lots which were shown at previous shows this year. Hackneys played a very prominent and popular part in all the horse parades. Kilnwick Fireway was going well, and was a special favorite. Rosseau Performer came in for a good deal of approbation from the grand stand. His color is not quite in the fashion, but his going is grand. There were a good many local saddle horses shown, and a lot of promising hunters. The latter performed over hurdles in front of the grand stand. Ponies, while present not in great numbers, were a good class, and were much admired. Mr. Brook, of Ottawa, had a nice Shetland. Of Percherons there were only a few head on the ground; not enough to take the half-dozen prizes offered. In the class for mares a bright bay got first, a rather unusual color for a Percheron, but the pedigree was produced to show that her breeding was all right, and in conformation she deserved the place.

The agricultural or general purpose class

was well filled. Few large shows retain stallion prizes for this class, but they are still given at Ottawa. The modern idea is that stallions should be of some pure breed before they receive the commendation and prizes of a large fair. There were some fairly good fillies and young stock in this class. In heavy horses there were some very good animals shown, both in the Canadian-bred class and that for Clydes and Shires. These latter showed together in the regular heavy draught classes, but there was also a separate section open only to Shire stallions. Mr. Crossley was an easy first with Bravo II. [250], winner at Toronto, and the McKay Milling Co. won in the class for mares, with a big well-topped mare in great flesh, and very good above, but hard work had put her feet and legs a little out of show shape. Mr. Crossley won second place. There were three or four very good Clyde teams shown, and while they showed evidence of hard work, they came out in good shape, and made a fine exhibit for the class. For heavy draught stallions, Shire or Clyde, James I. Davidson & Son, Ashburn, won with Tofty [2123], a fine, big bay, with dark legs. He had no white except a small star on the face. He is a big, thick horse of great substance, and a good goer. He was bred by S. Campbell, Kinross, Scotland. The same exhibitors won several other prizes, notably for best mare with foal by her side. Graham Bros. won several prizes in this class, as well as first in the Canadian-bred class with Bold Boy II. [2099], the winner at Toronto. There was a very close contest in the three-year-old filly class. Mr. Davidson had Boydston Lass VI. [2222], by Lewie Gordon, a fine, big bay, with a well-topped body, and in the pink of condition. Graham Bros. had Lady Flashwood [1915], a light bay, with scattered white hairs, by International. They were rivals at Toronto, and in a close contest the latter won; the decision was reversed at Montreal and confirmed at Ottawa, but it was the closest contest the judges had to decide. In some of the classes there was a good deal of rivalry between the Shires and Clydes, but the latter generally came out best. The whole horse exhibit was one of which the Ottawa directors may well be proud.

Cattle.

As might be expected in an exhibition held in eastern Ontario, where dairying has become the leading industry among farmers, the classes of dairy cattle were well filled, and the com-

petition was, in many cases, very close. A remarkable feature in this connection was that the gold medals offered for best herd in the four dairy breeds were all won by herds from the county of Leeds, which for the present bears the palm as the banner county. Ayrshires were shown in large numbers and of high character. There was perhaps more than the usual amount of criticism indulged in with regard to the judging at Ottawa. Previous decisions were, in many cases, reversed, and in some instances it was difficult for onlookers to understand why the rating was made as it was. Among those exhibiting the largest numbers were R. G. Steacy, Lyn, Ont.; Jas. Drummond, Montreal; D. McLachlan, Petite Cote; Joseph Yuill, Carleton Place; Wm. Stewart, Menie; and Reid & Co., Hintonburg.

Mr. Stacey was successful in winning first honors with his imported three-year-old bull, Carlyle of Lessnessock, and the sweepstakes for best bull, any age. He also won the herd prize, a gold medal. His bull shows good dairy points, descended as he is from the best milking strains in Scotland, and the same can be said of his fine females on exhibition.

Mr. Drummond's grand cow, Nellie Osborne, winner of the sweepstakes in her class at the Columbian Exhibition, was placed 1st at Ottawa, but was beaten in the sweepstakes competition by Mr. Stewart's 1st prize three-year-old cow, White Lily. Mr. Stewart's cow is a good one, but she beat an extra good one.

Mr. Yuill was successful in winning 1st prize in the ring for two-year-old bulls with Leonard of Meadowside, a bull of fine dairy character and good constitution. He also won 1st with his bull calf, and 1st for heifer calf over six months, and under six months, a good record in a strong show, though many considered that Mr. Drummond's bull calf, a son of Nellie Osborne, should have stood at the head of the list. He was certainly a very fine type of the breed, and was bought by Messrs. Robertson & Ness, of Compton and Howick, to head their herd.

Mr. McLachlan's Silver King, a son of Nellie Osborne, won second honors in the class for aged bulls. He is a bull of grand character and fine quality, a peer among his peers anywhere. Mr. Heaslop was the judge in this class.

HOLSTEINS.—There was a large entry of the black and white cattle, and they well represented the breed. A. Hoover, Emery, won 1st prize and sweepstakes with his grand four-year-old bull, Emery Prince, and 1st with his

two-year-old heifer, Edgeley Frena. Messrs. Rice, of Curries, whose grand old cow, Eunice Clay, winner of 1st prize and sweepstakes at Toronto last year, was here placed 2nd in the prize list, had a number of choice animals present.

Mr. G. W. Clemens, St. George, had the 1st prize two-year-old bull, Netherland Consul, and the 1st-prize three-year-old cow, Madge Merton. C. J. Gilroy & Son, Glen Buell, were fortunate in securing the gold medal for best herd, and their 1st-prize cow in the milk test at Toronto was here awarded the highest honors in her class, securing the championship for best female, any age. The judges were Mr. Robertson and Mr. J. C. Snell.

JERSEYS.—There was a large and strong show in this class. The two well-known herds of Mrs. Jones, of Brockville, and Mr. Reburn, of Montreal, here came into competition. The other exhibitors were Dr. Ball and C. C. Coleman, Stanstead, and E. B. Eddy, Hull. Mrs. Jones won 1st and sweepstakes with the four-year-old bull Lilimur's Rioter, 1st for two-year-old heifer, yearling heifer, and heifer calf, and the gold medal for best herd. Mr. Reburn had the 2nd-prize aged bull, 1st-prize yearling bull, 1st-prize and sweepstakes cow, 1st-prize three-year-old cow, and 2nd-prize heifer calf. The closest match in the class was between Mrs. Jones' cow, Gipsy of Sprucegrove, and Mr. Reburn's Jolie of St. Anne's 3rd, where the judges "split," and the referee gave the casting vote in favor of Mr. Reburn's cow.

GUERNSEYS were shown by W. H. & C. H. McNish, Lyn, and Isaac Holland, Culloden, Ont. Mr. Holland won 1st prize and sweepstakes with his aged bull, May's Rosebery, and 1st with his two-year-old bull, Dandy of Oxford. Messrs. McNish won the gold medal for best herd, 1st for cow, and sweepstakes for best female. Mr. Robertson was judge.

The beef breeds were all represented by what might well be called representative animals of their classes, but in two or three classes there was only one exhibitor, which, of course, made it less interesting to the onlookers. Mr. Robert Miller, Brougham, was the judge.

SHORTHORNS were shown by W. C. Edwards & Co., Rockland; Simmons & Quirie Ivan; James Rennie, Wick; James Oke & Son, Alvinston; and J. I. Davidson & Son, Balsam. Mr. Edwards carried off the bulk of the prizes, including the herd prize, and sweepstakes for bull and cow. Simmons & Quirie came in 1st with their yearling bull

and heifer calf, and Mr. Davidson's bull calf, 1st prize at Toronto, was also 1st here. He was bought by Mr. Oke, and goes into good hands.

HEREFORDS were shown only by H. D. Smith, of Compton, Que., who always shows a good herd, well up to the standard of first-class. His young bull, Amos of Ingle-side, and his famous cow, Lady Tushing-ham 3rd, are magnificent specimens of the breed.

POLLED ANGUS were well represented by selections from the fine herds of Wm. Stewart & Son, Lucasville, and James Bowman, Guelph, and the prizes were awarded in about the same order as at Toronto.

GALLOWAYS were a strong class here, as they have been at all the shows this year. D. McCrae, Guelph, A. M. & R. Shaw, Brantford, and John Sibbald were exhibitors, and the prizes were distributed about the same as at former shows. There were some grand representatives of the breed shown.

DEVONS.—Mr. Rudd had the show all to himself in this class, and he filled it with a lot of very useful cattle.

A grand lot of grades were shown by James Kennie, James Oke, and others.

There was a capital class of dairy grades, a class which we think should figure in the prize list at more shows.

Sheep.

All the classes of sheep were represented at the Ottawa exhibition, but in most of the classes there was but one exhibitor, and hence no competition, a fact which somewhat lessens the interest to judges and the public, however visitors may regard it. The quality of the exhibits was very creditable, and they would have stood well in any competition.

LEICESTERS were represented, by the excellent flock of John Kelly, Shakespeare.

COTSWOLDS, a very choice lot, were shown by John Miller & Son, Brougham.

LINCOLNS were exhibited by Gibson & Walker, Denfield, and **DORSET HORNS** by John A. McGillivray, Uxbridge. These were awarded all the prizes they entered for.

SHROPSHIREs made a strong show, there being three flocks represented, those of John Campbell, Woodville; John Miller & Son, Brougham; and Robert Davies, Toronto. All three exhibitors brought out first-class specimens in the pink of condition, and the competition was close and keen. Mr. Campbell won 1st on aged ram, aged ewe, and ewe lamb; and was awarded the flock prize,

which was a reverse of the Toronto awards, where Messrs. Miller were given first place. John Miller & Son had 1st on shearing ram and ram lamb, and Mr. Davies came in for a fair share of the prizes.

OXFORDS and **HAMPSHIRE**s were classed together. The former were represented by the fine flock of Peter Arkell, who won the bulk of the prizes, including the flock prize. John Kelly, Shakespeare, showed a few very fine Hampshires, and in one or two cases won first honors over the Oxfords.

SOUTHDOWNS were a strong class, and the prizes were divided between John Jackson & Sons, Abingdon, and R. Shaw & Son, Glandford, the majority of 1st prizes and the flock prize going to the Abingdon flock.

MERINOS were shown by W. M. & J. C. Smith, Fairfield Plains, and a local exhibitor, who had a pair of good ones. The flock prize and the bulk of the prizes went to the Fairfield flock.

The judges were J. C. Snell, Edmonton; James Main, Milton; and John Dawson, Bell's Corners.

Swine.

The pens of swine were fairly well filled, and the quality of the exhibits in most of the classes was first-class.

BERKSHIREs were not up to the standard of former years, nor of the western fairs this year, but a few very good ones were shown by James Dawes, Lachine, and D. W. Hennigan, Vankleek Hill, and the prizes were nearly equally divided between these two; Gill & Chugg, Ottawa, coming in for 2nd prize for litter of five pigs under three months.

YORKSHIREs were shown by J. Featherston, M. P., Streetsville; W. H. & C. H. McNish, Lyn; J. G. Clark, Ottawa; and E. B. Eddy, Hull. Mr. Featherston won all the first prizes, including the herd prize, and the balance was divided among the lot. The class was good.

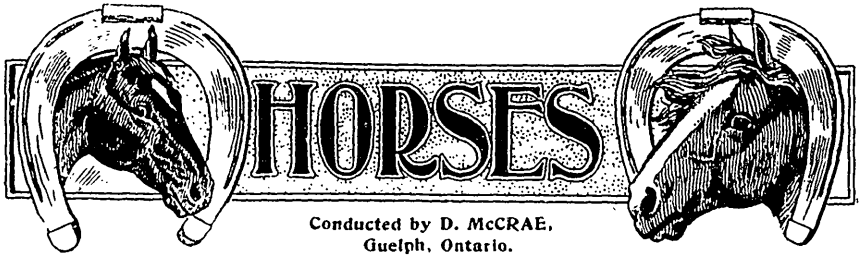
SUFFOLKs were exhibited only by Robert Dorsey, Burnhamthorpe, who was awarded prizes for all his entries.

CHESTER WHITES.—Wm. Butler & Son, Dereham Centre, and H. George & Son, Crampton, were the exhibitors of Chester Whites, which was a good class, and the prizes were distributed between them, Butler & Son winning the herd prize.

POLAND-CHINAS made a very good showing. W. & H. Jones, Mount Elgin, were awarded all the prizes.

TAMWORTHs were represented by the herds of H. George & Son and Wm. Butler & Son, who divided the prize list, the herd prize going to H. George & Son.

S. Butterfield, Sandwich, was judge.



A FAST walker is more useful than a fast trotter on the farm.

GOOD air is as necessary to the horse as is good food. No horse can long remain perfectly healthy in a foul and badly ventilated stable.

LOOK after the foals in the wet autumn days, when the nights are cold and damp, and the only field shelter is the lee side of a rail fence. Careful housing and extra feed will be well repaid.

WINTERING trotting horses in California has not proved the boon it was expected to be. The stables that have tried it are not likely to care to repeat the experiment.

RACHEL 2.08½ is the fastest goer of the year that had not a record at the beginning of the season. She is an inbred Wilkes, both her sire and her dam being by George Wilkes.

MORGAN horses have a separate class at the Illinois State Fair, and this year there was a splendid turnout of the old breed, such prime favorites with so many.

THE export trade has been fairly good in England this fall. South Africa has taken the largest number, which included Hackneys, Thoroughbreds, and a few Suffolks. Prices were fairly good.

A CONSIGNMENT of Canadian horses was lately sold in London, England. The whole shipment consisted of twenty head, and they brought \$4,220, an average of \$211. They were the property of Mr. Bright-Smith, and were bought in Canada by Mr. Foulkes.

WONDERFUL ESCAPES.—In an old work, "The Horse and His Rider," Sir Francis Head tells of an officer in the West Indies who, riding home after dinner, the night being very dark, rode by accident over a precipice which has a height of 237 feet. The horse was instantly killed, and almost every bone in its body broken, while the rider escaped alive.

HORSE OF THE SIXTEENTH CENTURY.

Round-hoofed, short-jointed, fetlocks shag and long. Broad breast, full eye, small head, and nostril wide. High crest, short ears, straight legs, and passing strong. Thin mane, thick tail, broad buttock, tender hide.
—Shakespeare.

THE HORSE AND THE BICYCLE.—Professor Bell, of Bell telephone fame, in speaking about this subject, stated that in the near future we may expect to see the horse raised from the ground and propelling a vehicle at a very high rate of speed—doing, in fact, the leg work for an enlarged and improved family bicycle.

TROTTING races are often lost by a bad break. Now that everything about the trotting track is closely calculated, a quarter of a second will win or lose a race. The horse with a cool head, who steadily pegs away, is the one with the best chance to win, other things being equal. We may yet see a rule of the trotting race that a break loses the race.

HORSES for export have been freely taken lately at regular prices. One firm is shipping, from Buffalo, 150 head per week for Paris, France. They are taking horses of about 1,000 lbs. weight, chiefly for cab purposes. If not exported, these would be a drug on the market here. There are many firms in the business, and they are finding a steadily increasing trade.

PHOTOGRAPHY has shown that on level ground, at all paces, the horse touches the ground first with the heel. The fact gives significance to the structural differences in the front and back portions of the foot. At the back we find the movable elastic frog, the frog pad, the lateral cartilages, and the thinner wall, a mechanism best adapted to meet shock and avoid concussion.

PONIES.—The wee hardy Highland pony is now scarce. It is hard to get specimens of the old breed. The present race have been crossed and recrossed with Thoroughbred

blood. The old barrel type, strong and hardy, able to carry all day a stalwart Highlander over the hills, and yet so low that he had to shorten his stirrups to keep his feet off the ground, are almost a breed of the past, more is the pity. They were a grand sort, though they lacked the style of the present ones.

SALT should on no account be neglected in the food ration. It is the only earthy constituent in which forage seems to be deficient. That it is essential to the animal economy is shown by the fact that in the wild state all grass-feeding animals travel long distances to reach the "salt licks." It should always be within reach of the horse, if not regularly fed in small quantities with his food.

BARLEY is inferior in feeding value to oats, and is little used for horse feed in this country. A ration of boiled barley once or twice a week is, however, favored by some good horsemen. In Egypt and other Eastern countries barley is the staple food of the horse. It is not fed raw, but is bruised and mixed with finely-cut straw, also bruised till it is soft and fine. This is called "tibben," and makes a fine horse food in Eastern lands.

HACKNEYS.—At the recent sale of Hackneys at Elsenham Hall, Essex, England, Sir Walter Gilbey obtained an average of \$400 for twenty mares, seven fillies, and fourteen foals. Twelve of the animals brought over one hundred guineas each. The highest price of the sale was got for County Lily, by County Member, a six-year-old mare purchased by the Prince of Wales.

SUNLIGHT is necessary for both horse and man. In his wild state the horse keeps much in the sunlight. Horse owners should all see that their animals have in the stable plenty of sunlight, and abundance of pure air. Too many stables are very dark, and therefore more or less unhealthy. Sunlight is a splendid disinfectant. If you want your horse to be full of life, and in the best of health, look out for plenty of sunlight in your stable.

CASTLEREAGH.—This celebrated Clydesdale stallion, bred and owned by Lord Londonderry, recently died at the age of fourteen from rupture of the diaphragm. He was by Darnley (222), out of a mare by Prince of Wales (673). In his young days he was a prize-winner at many shows both in England and Scotland. In 1891, Lord Londonderry

got at his sale an average of \$650 for twelve of the get of Castlereagh, and in 1892 the average for his get was \$725. He had proved himself a good sire, and will be missed at Seaham Harbour.

WATERING is very important to the horse. All horses are particular about the water they drink, but may be accustomed to any water fit for human use. Running water is best. Ponds without outlet or inlet are the worst. Water should be given before feeding. In hot summer weather water frequently. Only a few quarts should be given at a time, as a heated horse, if allowed, will take more than is good for him. A few mouthfuls may be given to moisten his throat, and his mouth and nostrils washed when much heated, and then small quantities till he is cooled.

CAVALRY purposes have not been much thought of in the production of Canadian horses, and yet there are many horses in Canada very suitable for both cavalry and artillery purposes. Many years ago, when horses were scarcer than they are now, an officer came to Canada and bought a few for a trial. It is satisfactory to find, in an army record, that they turned out well. Alluding to them, the riding master of one of the regiments said: "Four of them came to the 19th Hussars, and all I can say is that there was not a bad one among the lot. If all the Canadians are like these, they will do."

MEMORY is well developed in most horses. Most horsemen have noticed the power horses have of remembering where their drivers have stopped on previous journeys. Recently the driver of a baker's cart, when he had started with his load, was run over, severely injured, and sent to the hospital. A new driver had to be got at once, and he knew nothing of the route or the customers. The matter of calls was left to the old mare, and she called at over one hundred dwellings, every one of which was found to be the house of a customer.

PRIZE-WINNERS at the Toronto show brought good prices at auction recently in Buffalo. Messrs. Grand & Co. passed most of their Toronto string under the hammer. A brown mare, winner of the second prize in the cob class, 15½ hands, brought \$450. The chestnut cob, Nicola, 15 hands, also winner of second prize, sold for \$525. The first-prize winner, Alarm, 16½ hands.

a fine upstanding horse, able to trot in three minutes, and with good knee action, brought \$1,100. The carriage team shown by J. D. Graham, of Toronto, and which won fourth place for pair of matched carriage horses, sold for \$680. These were taken to Boston, while Alarm goes to New York.

SHIRE HORSE.—The origin of the name "Shire," as applied to the English draft horse, traces back to the year 1541. An act was then passed, and approved by King Henry VIII., wherein it was enacted that within the shires of Norfolk, Cambridge, Bucks, Essex, Kent, etc., no person should put in any forest, common, or waste, where mares and fillies used to be kept, any stoned horse above the age of two years, unless the said horse was fifteen hands high. This was to keep up the standard of size, and the horses so bred became known as "Shires."

THOROUGHBRED horses sell for good prices in England. At the great sale of yearlings annually held at Doncaster some very high prices were paid. The best are usually kept till near the close of the sales. On the Thursday's auction the record was broken for one day's sales; 110 animals changed hands for \$280,000. This is an average of \$2,545. Sir Tatton Sykes made the best average with \$9,155 for eight animals. Mr. Simons Harrison came next with \$8,215, and Mr. J. Snarey, third, with \$5,010. Only these three breeders got averages above the four sterling figures. Nearly all the breeders made very much better averages than last year.

SADDLE HORSES.—The exhibition of gaited saddle horses has become quite a feature at the leading American shows. At the late St. Louis show there were six classes for gaited saddlers, two for stallions, four years old and over and three years old and under, two for mares, and two for geldings. Five gaits only are allowed those in use on the road. Special decorations on horse or saddlery are not allowed. There is also a stake of \$1,250 offered in this class. None of the Canadian fairs have taken up this matter, and there are but few horses in the country properly gaited, but it is a class that should be encouraged, and now is the time to have the matter before the public ready for next year's shows.

TROTTING STOCK from Roslyn Farm, Chatham, the property of Angus Sinclair, sold

fairly well at Silver & Smith's, Toronto, on October 8th. Prices were not high, even allowing for the depression in the horse market, and for the number of young foals in the lot. An average of \$113.55 for nineteen head was certainly below the value of the stock. Most of the young stock were by Wild Brino 10073, whose record is 2.19½, he by Mambrino 2.21¼.

TEETH.—It has become quite the fashion in our large cities to have horses' teeth regularly attended to by veterinary dentists. From the nature of the horse's food the grinding surface of the teeth should be rough. When worn very smooth the food is apt to be swallowed before being properly masticated. To remove this difficulty it is usual to have the teeth rasped. In all instances where horses grind their food the teeth should be carefully examined. If decayed teeth are found, or very long ones injuring the mouth, an expert should be employed to have the trouble removed.

RACING.—The great event of the month in racing circles was the Futurity Stakes for three-year-olds at Lexington, Kentucky, on October 8th. The first was a dead heat between Oakland Baron, by Baron Wilkes, and Katrina Baron. The filly was not able to keep up after the first heat, and the colt had it then all his own way. Time, 2.16¼, 2.16½, 2.16½, 2.18. At the same meeting, in the free-for-all pacing, the black stallion, Joe Patchen, won a gamey race, of five heats, for the \$2,000 purse. The best time was 2.05½. John R. Gentry took second place, Robert J. third, and Coleridge came last, not having been able to win a heat in the race.

HANDLING FOALS.—All foals should be handled from the first week of their life. This should be done with care and kindness, should be very gradually commenced, and carried on steadily. A foal so handled will allow its feet to be lifted, its head and ears rubbed, or any other part handled without taking offence, and will often take pleasure in the handling. About the fourth month, or before weaning, a light halter should be put on. When the novelty of this has worn off, a leading rein may be buckled on, and the foal taught to be led without any forcing. At the same time it should be held firmly, so that it can feel that resistance is useless. If it begins to pull, it should not on any account be allowed to get away.

AUSTRALIA is trying the experiment of shipping live stock to England. The s.s. *Southern Cross* left Sydney on July 9th with 550 steers, 448 sheep, and 29 horses, in charge of thirty herdsmen. To avoid the great heat of the Red Sea, she took the longer route, by Cape Horn, where very severe weather was encountered. The animals also suffered a great deal from heat while in the tropics. Fifty-two cattle, eighty-two sheep, and one horse died. The horses were heavy draft animals, of Clydesdale breeding, eight of them being Clydesdale colts. The charge for horses and cattle from Sydney to London, including freight, feed, attendance, and insur-

was left in third place. The race was a grand one, as between the first two, and the time 2.06 $\frac{3}{4}$, 2.05, and 2.03 $\frac{3}{4}$, and was won in straight heats by John R. Gentry. From thence they went to Sioux City, Iowa, where Joe Patchen turned the tables on his rival and won. The first heat was won by Gentry in 2.05, the last quarter being done in 28 $\frac{1}{2}$ seconds. This seemed to be too much for him to keep up, as Patchen took the next two heats in 2.04 and 2.04 $\frac{1}{2}$, doing the last quarter of the last mile in 30 seconds. It does not seem that there is much chance of getting the two-minute mark this season, which practically closed the middle of October.



THE CLYDESDALE STALLION, CLAYMORE (3522).

The property of Lords A. & L. Cecil, Orchardmains, Kent, England.

ance, was \$70 per head; for sheep, \$6.25. These rates would seem to leave but little for the shippers, and yet it is said they are going to try it again.

SOME FAST PACING.—The pacing kings of the turf, John R. Gentry and Joe Patchen, have made some good racing lately. At Milwaukee the time was not very fast, 2.05 $\frac{1}{4}$, 2.05 $\frac{3}{4}$, and 2.07; but the day was bad, and the wind and dust very disagreeable for the 20,000 people who had gathered to see the race. From Milwaukee they travelled by express to Dubuque, Iowa, where Fidol tried issues with them, but

FRENCH COACH HORSES.—These horses are favorites in Paris, and it is creditable to the breed that they have so well won their way to the front in the capital of France. Fifteen or twenty years ago few animals of this breed were to be seen on the streets of Paris. Now they are common, and very fine specimens may be seen every day. It is difficult for any one who has not seen Paris to appreciate the many turnouts there to be seen. The Champs Elysées and the Bois de Boulogne are full of them. Paris is rich, and the people love fine horses. They want quality, finish, style, and action, and with

this there must be strength, considerable speed, endurance, and perfect soundness. French carriages are heavy, and the driving is faster and harder than in any other European city. Poor feet and weak knees stand no chance there. Of course, some specimens are seen that are quite inferior, as in every breed, but, altogether, the French coaches make a fine display. Many good saddle horses are also seen. The favorite seems to be a half-bred from light coach mares, by Thoroughbred sires. This cross produces some fine saddlers.

BOTS.—The common gadfly has been very annoying to horses at pasture the past summer, and an extraordinary number of eggs may be seen on many horses still. If not removed, they hatch out by the heat of the sun, and then they, as maggots, take their chances to be carried into the horse's mouth, from which they make their way to the stomach. A great many perish before reaching the horse's stomach. Once there, they fasten themselves by a pair of hooks to the walls, and, unless numerous, do little harm. If in great numbers, they may interfere with the horse's digestion, but it is very seldom that they are any injury to the horse. After they have become full-grown in the horse's stomach they loosen their hold, and are carried out of the bowels with the dung. They may remain eight months within the horse. When passed out with the manure they bury themselves in the soil, remain there some six weeks, and then emerge as a perfect gadfly. No medicine can be given the horse to remove them that will not do greater harm than good. They do not seem to hurt the horse's stomach, and not once in ten thousand cases cause the horse any great amount of trouble.

HACKNEYS.—Mr. James A. Cochrane, of Hillhurst, Quebec, one of the oldest Hackney breeders in America, writes to the *Breeder's Gazette* on the points of a good Hackney as follows :

"The qualifications which go to make up a first-class specimen of the Hackney of course include many which are of importance in all light-legged sorts, but the essential points in his conformation may almost be summed up in the words *substance with quality*, while his action must be full of fire, elasticity, and style, bold, true, and graceful, with a proportionate flexion of every joint, behind as well as in front, thus producing the well-balanced, all-

round rhythmical action so highly appreciated by the experienced judge. A good walk is considered of great importance, and is characteristic of the Hackney; it should be springy and smart, without twisting of the joints or feet.

"Perhaps the most striking points which are seen in the best specimens of the breed are the breadth of chest, depth and slope of shoulders, length and spring of ribs, shortness of back, width and roundness of quarters, with muscular development of the entire frame, which go to make up the typical appearance of weight-carrying or moving power and size that is not due to length of leg; the clear-cut head (not too fine in the stallion), prominent eye, arched neck, springing well from the shoulders and gradually tapering, but not lean and long, as in the hunter; the short top and long underline, the gaily-carried tail; clean, cordy, flat legs; sloping pasterns; and deep, round feet—in a word, the carriage horse *par excellence*, but one which a gentleman might ride with pleasure at any time."

The Clydesdale Stallion, Claymore.

In our October issue we gave a fine full-page half-tone of a number of Clydesdale mares, the property of Lords A. & L. Cecil, Orchardmains, Kent, England, and on page 141 we are enabled to present our readers with an illustration of one more of the horses of this well-known Clydesdale stud. This is the twelve-year-old stallion, Claymore (3522), a son of Macgregor (1487), and out of Cornelia (2035), by Bonnie Scotland (1076), his grandam being Camella (2033), by Lord Lyon (489). Claymore has been at the head of the Orchardmains stud for some time, and has been a most successful sire.

A Bit of Trotting History.

A bit of inside history as related by a famous starting judge to the writer may be interesting. The stallion is owned by old man Rivenburg, and driven by the old man's son, a gentlemanly, unassuming, straightforward driver, whose successes have not turned his head a hair-breadth from the way it should be set. Fido!, the horse, is one of the game, hard-trying sort that never knows when he is beaten, and no matter if Frank Agan is getting the chain at the rate of forty-eight strokes to the minute

right at his girths he keeps pegging away at the pace, and the general result is that the other end of the combination breaks up into a tangled jintown, which is not straightened out before the wire is reached and passed. At the close of 1892; Fidol had a record of 2.20, and at the close of the following year he had clipped nine and one-quarter seconds from that point. Last year, 1894, he was the terror of the half-mile rings, and, as he only clipped another half-second from his mark, it was very popularly supposed that 2.10 was about his limit; in fact, that opinion was very generally voiced in the turf press and on the race-courses. It appears that old man Rivenburg and his son knew, as the writer's informant put it, "a blamed sight different," for in his work one day in 1893 Fidol reeled off a mile a fraction better than 2.07; but, nevertheless, 2.10½ was the best record he took into winter quarters last fall. As might very naturally be expected, there was little to be made in the pool box with such a universal favorite, Fidol \$10, field \$3, being something like the ruling odds whenever he started last year on a half-mile track. It is not necessary to enumerate his victories, but this season the "2.10 hoss," began his campaign in his usual way. After a week or two, Strathberry cut the half-mile race record all to ribbons, and when he reached the mile track at Davenport, Ia., to take part in the free-for-all Fidol and his 2.10 clip were thought to be absolutely out of the race. The son of Rosebery sold a two-to-one favorite over the field, and old man Rivenburg was as busy as a bee seeing that not a single ticket at these odds got away from him. The old man tuckered the job out, and, when Strathberry went off and won the first heat in 2.06½, "I told you so" could be heard all over, Fidol finishing back in the bunch. Next time young Rivenburg let his horse go along, and when he stepped home comfortably in 2.05½ the change in sentiment was pronounced. The story of the race is an old one now, but the barrel of money carefully packed in salt that was shipped from Davenport to Cedar Rapids was fully enough to keep the old man and his son and their horse in comfort for the rest of their natural lives. With it all, Fidol was never pulled in a race, was always driven to win, and it was only correct placing that enabled his owners to successfully campaign in for two seasons, and yet reserve him for a killing. Just how fast Fidol will yet go is an unanswerable query, for he seems

to have an extra link to let out whenever called for.—*Breeder's Gazette.*



Noises in Horses.

J. K. D.: What is the cause of a rumbling noise made by a horse when trotting?

ANS.—The noise alluded to is made in the horse's sheath, caused by the air working out and in while trotting. It is generally only heard in horses that have a large, pendulous sheath.

Silage.

A. R. H.: Is silage good winter feed for horses?

ANS.—I have not had any experience in feeding horses silage. Perhaps some of our readers could answer the question. Cut corn fodder has been used with good results.

Worms in Foals.

Ontario: I have two heavy draught foals, just weaned, not doing well. Their coats stick up. I find they have worms.

ANS.—Consult a V.S. Horses are liable to several varieties of worms, and it is well to know which. Santonine in three or four grain doses, in a bran mash, is given for round worms.

Breeding of Kremlin.

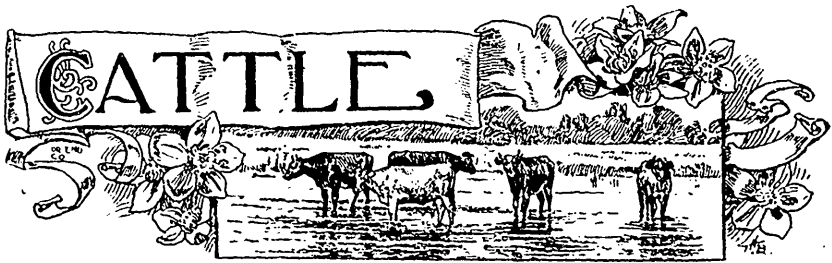
J. C.: How is the trotting stallion Kremlin bred?

ANS.—Kremlin 2.07½ is by Lord Russell, full brother to Maud S. 2.08½, he by Harold, by Rysdyk's Hambletonian. Kremlin is out of the mare Eventide, by Woodford Mambrino 2.21½.

Warts.

H.R.S.: Can I use oil of vitriol to remove a wart which is annoying and unsightly, and, if so, how should it be applied?

ANS.—Oil of vitriol or sulphuric acid is a very severe and painful remedy. Nitric acid would be better, but the surgeon's knife in competent hands is usually better still.



Conducted by "STOCKMAN."

A LARGE SHIPMENT. — The steamship *Scotsman* of the Dominion Line, which left Montreal in September, carried the largest shipment of live stock that ever left that port, consisting of 1,050 cattle, 2,080 sheep, and 47 horses.

A BIG YOKE OF OXEN.—What is said to be the largest yoke of oxen in the world is a pair owned by J. D. Overy, Massachusetts. They are thoroughbred Holsteins, and weighed, in 1893, when purchased by their present owner, 41,000 lbs. They have drawn 4,600 lbs. on a drag eight feet at one pull in the dirt on a dead level. They are now seven years old and weigh 61,000 lbs., are 17 hands high, girth 9 ft. 4 in., and measure 14 ft. 9 in. from tip to tip, and each weighs the same. In markings and general appearances they are almost alike.

POLLED ABERDEEN-ANGUS cattle have not been bringing such good prices this year as in previous years. Sir George Macpherson Grant, of Ballindalloch, lately sold a draft from his herd, which has for many years been the leading herd of that celebrated breed. There was but one bull sold, and forty cows and heifers. The bull brought \$165. An Erica heifer calf brought \$250, but the whole average of the sale was only \$175, while the average of forty head at the sale in 1893 was \$280. Several of the animals sold had been prize-winners at recent shows.

Prizes for Grade Bulls.

We are sorry to see that at certain local exhibitions prizes are still being offered for grade bulls. What makes the matter worse is that these exhibitions are not being carried on in back and newly-formed townships, where there might be some excuse for such proceedings, but are held in districts that have been settled for years, and in the neighborhood of which plenty of purebred sires are available.

Surely the directors of these associations must be unaware of the serious injury that

they are doing to the cattle interests of their neighborhood by the offering of such prizes, or is it because they hope, by so doing, to retain the patronage of a few short-sighted farmers, who think that grade sires are good enough for the country? Whichever the explanation may be, it is full time that they made a change and brought themselves into line with other and more enterprising societies. If they will not do so, we believe that the government grant should be refused to them until they renounce their mistaken policy. There is no excuse at the present time for men continuing to breed grade bulls, when they can either buy good ones at reasonable figures, or else obtain the services of one at prices that are low enough to tempt any one who has any ambition to improve his stock. The grade bull may have been of some use in the early days of colonization; in the present day he is not wanted, and the sooner this fact is recognized, the better it will be for all concerned.

The Passing of the Horns.

The rage for dehorning cattle that has become so prevalent of late years has had a curious effect on certain branches of trade. When the western markets were supplied with horned cattle, before the days of dehorning came, the price of horns was low. Now, however, it has risen, in consequence of the limited supply and the increasing demand from eastern manufacturers of combs, knife handles, and novelties. All supplies are readily purchased by agents, and it would seem that the manufacturers will have to look to other countries for the material for their businesses.

The Australian Live Cattle Trade.

The steamer *Southern Cross*, which left Sydney, New South Wales, on July 9th, with 550 bullocks, 448 sheep, and 29 horses, and which carried the first large consignment of live stock from Australia to Great Britain,

arrived at London last month. The route taken was round Cape Horn, calling at Montevideo, in order to avoid the heat of the Red Sea. Boisterous weather, however, and exposure caused a heavy mortality, no less than 52 head of cattle, 82 sheep, and 1 horse dying during the voyage. The remainder landed in pretty good condition. All the cattle and sheep were slaughtered at Deptford. It is reported that some cases of pleuropneumonia were found among the cattle when their lungs were examined, and the British authorities are inclined to believe that the death of some of the cattle that died on the voyage was due to this disease.

Collynie and Uppermill Shorthorn Sale.

The combined sale of the drafts of Shorthorn bull calves from the herds of Messrs. Duthie & Marr, held last month at Tillycairn, Scotland, was indeed a record one. The splendid average of £61 js. 4d. was realized for the forty-seven bull calves sold, and the attendance of buyers was the largest seen at any sale this year, visitors being present from almost every part of Great Britain. Mr. Fraser, of Macdonald, Fraser & Co., Perth, the well-known firm of auctioneers, conducted the sale in a most satisfactory and expeditious manner, selling the whole number in something under an hour and three-quarters. The first few lots sold comparatively cheaply, and, with the exception of lot 5, Asteroid, one of Mr. Duthie's draft, which brought 85 guineas, there was not much enthusiasm until lot 10 was reached. This was Staff Officer, by Pride of the Morning (Mr. Duthie's). After much competition he was knocked down to Lord Middleton for 165 guineas. Morning's Pride, another by the same sire, brought 150 guineas, as did Scotland's Pride, yet another from Pride of the Morning. The latter was bought by Mr. Philo L. Mills, Ruddington Hall, Nottingham. Marengo, by Scottish Archer, also fell to Mr. Mills, at 190 guineas, while the sensation of the sale was Royal Archer, sired by Scottish Archer, which the same buyer secured at the high figure of 235 guineas, the best price ever paid for a Shorthorn bull calf eight months old. This calf is out of Rosebud I., and is said to be the best one ever bred at Collynie. The first bid was 100 guineas, made by Mr. McWilliam, Stonetown. Mr. Earle and Mr. Garne bid against Mr. Mills, until the end.

The sons of Scottish Archer were greatly in demand. Murat sold for 145, and Bright Archer for 75 guineas. The twenty-four bull calves from the Collynie herd averaged £79 8s. 1d., and the twenty-three from Uppermill, £42 2s. 8d.

Simmenthal Cattle.

Our principal illustration this month is one of a Simmenthal cow, imported with a number of others by Mr. Theodore A. Havemeyer, Mountain Side Farm, Mahwah, N.J.

In importing these cattle Mr. Havemeyer has two objects in view: (1) To breed them pure, and (2) to cross the bulls on his Jersey cows. He is thoroughly conversant with the ability of the Jersey as a dairy cow, but considers that the cross will result in increased health and stamina in the offspring. The results will be watched with interest.

Simmenthal cattle have been bred pure in the Canton of Simmen, Switzerland, for over two hundred years. They are celebrated for their enormous production of milk and butter on little else than pasture in summer and hay in winter. These animals are the pets of the Swiss farmers, and under their system of handling give in a year 9,000 to 12,000 pounds of milk, from which is made 450 to 500 pounds of delicious butter. The cows of this breed are very quiet and gentle, and the bulls are exceedingly good-natured, not from any lack of virile power, but from the innate docility of the breed. The distinguishing characteristics of the Simmenthals are: Small, light head, with gentle, lively expression, and fine horns, pointed well forward and upward; neck fine, rather short, with a strong dewlap; body well rounded at the ribs and locked at the loins. The hindquarters are broad and long, with prominent caudal bone. The fundament is very low and remarkably regular; the upper parts are strongly provided with muscles, and the parts under the knees are fine. The udders are well formed, often having six teats, and the skin of the udder is like molten gold—of a peculiarly soft, silky texture. The hide is in most cases very fine and tender, and very loose and yellow. The color is cream and white, with a preponderance of cream. The Swiss farmer uses his cows to plow the land, haul the manure, harvest his hay crop, and at the same time earn his living. The hay comes from the celebrated Mattens that go to make up so much of the beauty of Swiss scenery. These Mattens are

seeded with knaul-grass, meadow fox-tail, and that wonderful clover whose many-colored blossoms delight the eye of the traveller. The yield of hay is something enormous, giving three cuttings in a season of four or five months, but the glacier water is constantly used for irrigation, more thoroughly understood there than in any country on earth.

◆◆◆◆◆

Texas Fever.

It is well known that Texas fever is transmitted to native northern cattle through the medium of southern cattle ticks which infest the southern cattle. It makes very little difference whether the southern cattle are brought north from the permanently infected territory, or whether susceptible northern cattle are taken southward into the infected country; they are attacked by the disease. It is probable that the disease is more severe when northern cattle are taken south into the permanently infected and warmer region. After the animal has recovered from the disease, it is immune, or vaccinated, as it were, against a further attack.

With the increased emigration from the north and west into those southern states wholly or partially within the permanently infected region come inquiries, both from northern and southern stockmen, as to the best method of treating northern cattle that are taken south, in order to reduce the loss as much as possible from this very fatal disease.

Recognizing the fact that every northern animal must take the disease, it is obvious that measures should be adopted that will tend to render the attack as mild as possible. The fall of the year after the first frosts come is probably the best season to take northern cattle south, as the cooler weather modifies the disease somewhat. The southern cattle ticks are less numerous and less active at this season than when the weather is warmer. It has been observed in attacks of the disease in Kansas that the fewer ticks there were on native cattle, the milder was the outbreak. It would seem, therefore, that the fewer southern cattle ticks that are allowed to get on the northern cattle, the milder will be the disease; but persons of experience generally agree that when northern cattle are taken south in the fall ticks should be placed on them, a few at first, and the number gradually increased until the number ordinarily found on southern cattle is attained. The ticks should invariably be placed upon the cattle *in the fall*.

It is quite probable that in some portions of the south the surface water, and also the water of streams, is infected with the germs of Texas fever. It would seem best, then, to water the susceptible cattle for a time from a well or any other source where the water was pure.

It seems to be well established that calves do not suffer from the disease so severely as older or adult cattle. Whenever practicable, then, calves should be taken in preference to older cattle.

Green corn fodder seems to modify the disease somewhat, and should be fed, if possible, when animals are affected with the disease.

If susceptible northern cattle are taken into the permanently infected region during the spring or summer, care should be taken to keep them as free as possible from the southern cattle ticks for thirty days, at least, or until they have had an attack of the fever. The mortality from this disease among northern cattle taken south is quite high, probably more than fifty per cent. dying, under ordinary conditions. On this account animals for breeding purposes are the only ones shipped, and when they have recovered from the fever their value is correspondingly increased.—*Dr. N. S. Mayo, in the Industrialist.*

◆◆◆◆◆

Feeding Molasses to Cattle.

The results of some experiments in the use of molasses and sugar in the feeding of cattle made at the sugar factory at Libnowes, Austria, are given by Mons. Vivien in *Le Fermier*. The trials extended over thirty days. Twelve beasts had added to their usual rations, for seven days, 2 lb. 3 oz. of molasses per day; for the following fifteen days, 3 lb. 4 oz.; for the last eight days, 4 lb. 6 oz. The average weight of each beast before the experiment was 1,120 lb., and after the experiment 1,204 lb., being a gain of 84 lb. per head, or a total of 1,008 lb. This is equivalent to a daily gain per head of over 2 lb. 9 oz. Twelve other beasts were experimented upon at the same time, and fed in the same way as the former, with the exception of molasses. In thirty days they increased 784 lb., corresponding to 65½ lb. per head, or an average of 2 lb. 3 oz. per head per day. As to the profits, the net gain was calculated as equal to 3s. 8d. per head in favor of the molasses-fed animals. A further experiment is said to have demonstrated that even better results can be obtained by the use of red crystallized sugar instead of molasses.

Forcing Heifers and Calf Breeding.

By C. MORGAN RICHARDSON, of Noyaddwilym, Wales.

When you have your herd, make it arduous never to fatten or to part with a heifer under two years old. Save and keep all you can—the greater your field for selection. I am strongly opposed to the system of forcing heifers, and, therefore, to the practice of exhibiting them even at local shows. To show a beast you must do a certain amount of forcing. You know that if you don't some one else will. But there is nothing that has done so much to injure the Shorthorn sale, and, if all breeders had pursued the same insane practice, it must have long ago been extinguished.

Buy the very best bull you can. This means half your herd, and it is no economy to buy an inferior animal, however cheap it may be. To your bull belongs the credit and half the disgrace of every calf you breed. If your purse is a long one, you will buy a yearling; but if money is in any way an object, you will buy a four-year-old, or even an older bull. For my own part, I prefer an old bull. I believe that the best calves are got by a bull between his third and sixth year. The usual practice is to work them far too early, and it stands to reason that it is better for your herd to use matured bulls in the prime of life, rather than calves of twelve and fourteen months, whose strength and constitution are already severely taxed to complete their own growth and development. In Yorkshire they use bulls at twelve, thirteen, and fourteen years of age. The famous bull, Sir Walter, was used at sixteen or seventeen. Sir Arthur Ingram gave a good crop of prize-winning calves in his twelfth year, and, if I mistake not, the celebrated Hereford bull, Lord Wilton, was sold at the same age to the Americans for 4,500 guineas. I sold my own bull, Reformer, last year, when nearly twelve, to go into Shropshire, and I believe that he is doing useful work there at the present time. See your bull's dam and grandam.

If you want milk in your herd, select the son of a great milker. His shape is also important, as many a bull reproduces in his heifers. Spare no money in buying, and every time you buy make it a rule to get a better one than the time before. So many farmers make the mistake of using their own calves. A good calf is bought once, and he proves to be a success; one of his more

promising sons is saved, and for the sake of so-called economy is used in the herd. He is probably mated with his own sisters, but whether he is, or is not, the stock he leaves is never equal to that left by his sire. The step gained is lost, and the herd deteriorates again accordingly. Farmers ask how they are to afford to buy good bulls in bad times. I ask how can they afford to buy a bad one. It is cheaper for a man who has twelve or fifteen cows to pay twenty guineas for a yearling bull than to give £10 or £12 for some of the wretched crossbred males which are a disgrace to the fairs.

Bull buying in co-operation. I often wonder, too, why they don't co-operate more than they do in matters of this kind. Why should they not join together to buy a bull? I have frequently seen two farms, one on each side of a high road—a wretched nondescript male grazing with each herd—and I have wondered why they could not arrange to keep one good animal between them. There would be the saving of keep, and a first-rate bull got instead of two fifth-rate ones. I think that there should always be a fee for the use of a bull. What is worth having is worth paying for; and there should be a proper scale varying according to the value of the bull. There are a lot of mean people, I know, who expect the services of a first-rate bull for nothing, although they would not expect to get the services of an entire horse without paying for it. But the whole principle is bad, and the present system acts as a discouragement to good breeding.

Farmers must breed bulls. Some farmers should make it a practice to breed bulls. It is to be regretted that so many country gentlemen have ceased to take an interest in their home farms and in cattle-breeding. Their herds were generally well bred; and their bull calves sold to the farmers at moderate prices did an incalculable amount of good in the country. Besides, there was this further advantage, that they gave the free use of their sires to tenants on their estates. Welsh farmers are not as a rule able to go to Bingley Hall and pay Bingley Hall prices for young bulls, and I confess that I see no chance of our being able to breed anything like the number of bulls required for this country unless some of the farmers themselves take up the breeding of bulls as a separate business. I think there is a very good opening for a trade of this sort, and that fresh milk in this way would keep better than in creaming it and turning it into butter at present prices.

Cow Pox.

Cowpox is a disease which has been known for many generations to those having charge of cows in Great Britain. It occurs, however, in certain districts only, and mainly in those in which dairying is carried on.

Fortunately it is a mild or benign disease, and, if animals affected by it receive reasonably careful treatment, it runs its course in about three weeks' time in a regular manner, and is not followed by permanent ill results. If, however, animals are exposed to inclement weather or other lowering influences when suffering from it, important constitutional disturbance results, with inflammation of the udder; and, if the lesions are localized in the limbs, destruction of the bones and the structures surrounding them may take place.

The fever which accompanies the affection is slight and benign in character, not sufficient, in fact, to interfere with the general health of the animal, which consequently eats, masticates, and milks as is its usual wont. The disease spreads from animal to animal most largely by the medium of the milkers' hands, but probably also by the matter of the udder sores becoming dried and detached, and afterwards carried by the air or by small animals, and lodged on the moist skin of the udder, or possibly on sores on the skin of other cows at short distances from the affected herd. Thus the affection is a contagious one, and it is also contagious to the human subject, the milkers frequently becoming inoculated on hand or arm or on both, and when so inoculated they become protected from attacks of smallpox. It was by the observation of this fact that Jenner and his coadjutor (Cecley) were led to adopt the system of vaccination as a protective measure against smallpox.

The local lesions of the malady are, on the whole, characteristic. In the course of two or three days after the advent of the fever—a stage, he it remarked, often overlooked—the skin of the udder, usually around the base of the teats, is observed to become hot, swollen, red, and tender, and somewhat hard in the centre of the swollen patches. In other two or three days an eruption (rash, outbreak, or surfeit, as it is usually called) makes its appearance on the surface of the swollen patches of skin. The eruption is in the form of blisters, of which there may be several or only one, varying in size from a threepenny bit to a shilling; fluid is thrown out underneath the false skin (cuticle) and raises it in the form of

a bladder or blister—hence the term blister-pox. The contents of these bladders or vesicles are, at the outset, a clear, limpid fluid of a pale straw color and of albuminous character. In the course of from a few hours to twenty-four, or more, pus is formed, and, mixing with the limpid contents of the vesicle, renders it opaque and turbid, constituting a pustule. After a time the delicate and softened scarf skin yields to the pressure exerted upon it by the fluids beneath it and allows of their evacuation. The evacuated fluids, the cast-off cuticle, and the hair form a scab or crust about one-sixteenth of an inch thick.

The crust so formed clings with some tenacity to the structures on which it is formed; it ultimately separates and is cast off; it clings most tenaciously at its centre, so that a knife-blade may be passed readily under its circumferences while yet its central parts remain firmly adherent to the skin. If the crust is prematurely detached a suppurating sore is exposed, and the healing process is prolonged. A circular bald patch is left on the site of the eruption after the scab is cast off and the surface of the skin is slightly depressed—a superficial scar being sometimes seen.

Shorthorns at the Toronto Industrial.

Editor Cattle Department, FARMING:

SIR,—I feel somewhat diffident in making remarks on the above, as I am aware that there are so many more qualified, by longer experience, as breeders of pedigreed stock, but I think very few can have failed to observe how the natural beauty and grace of the Durhams is being sacrificed for the sake of gaining a prize. The judges of this breed seem gradually to have come to the absurd conclusion that the piling on of flesh is the main point. Now, we all know that any animal can be made unseemly and uncomfortably fat if fed liberally, shut up in a dark stable, and carefully protected from flies and other insects. Nearly all the Shorthorns which gained prizes were abnormally fat, but one in particular attracted my attention; it was so overloaded with fat that it was simply an oval mass quite devoid of any of the points of beauty and grace of the natural animal, and on one occasion, when I was watching, it made eleven attempts to rise: however, like Bruce's spider, it succeeded the twelfth time. Now, if I were a judge, I would draw the line

of fatness a good way below that. But the Toronto judges are not the only ones that have gone wrong on that point, for I recollect showing a very fine bull against another one some fifteen years ago. The other one was groomed, blanketed, and very fat: mine was taken from the herd that morning, but still was in very fair condition, and handsome; however, the pampered animal took the red ticket and mine the blue. On speaking to a cattle man afterwards about what I considered the unfairness of the judgment, he replied: "Well, you see the Durhams are a beef breed, and therefore must be fat." "Yes," I granted, "if it is going to the butcher, but certainly not if it is intended as a stock-getter," as, in fact, too much fat is a frequent cause of unproductiveness in both sexes. I have never kept my animals in anything but a good thriving condition, and the prepotent fruitfulness of the herd is something quite unusual. I don't know a prettier sight than a good field full of thrifty Shorthorns; but these fat, bloated monsters only fill one with compassion, especially on a day like the eleventh of September. I heard a man say that the system would have to be altered. I have noticed that the entries in the Shorthorn class are getting smaller, no doubt owing to this pernicious tendency of running to fat before they are wanted for the shambles. After writing the above, I happened to take up an old number of THE LIVE STOCK JOURNAL and found an article written by Mr. Robert Miller, of Brougham, from which I will make a few extracts, as they go, in a manner, to corroborate my own opinions. In the first paragraph he says: "We have been showing horses, cattle, and sheep without intermission for over half a century, and we have long ago decided that the most important and difficult part is to show the animals in proper condition to compare with others shown, and to suit the judges, without impairing their usefulness as breeders. . . . Show cattle, even when young, begin to show a tendency to get hard and roll their flesh, and by the time that the females are old enough to be breeding they are so hard and filled up inside with flesh that they are often with the greatest difficulty got to produce one or two calves that are seldom good animals. . . . To be satisfied with a preparation not keyed up to the last notch as now, the better it will be for the cattle business. We can ill

afford to lose the use, even to a degree, of the animals we are forced to select if we wish to show. . . . Judges can do as much as exhibitors to bring about this necessary change. Hardness in an animal's flesh is most objectionable, and inclination to roll is a great fault. Let the judges say so, and it will be surprising how quickly the change will be brought about. The same may, to a great extent, be said about the sheep usually shown." I hope the vast importance of the subject to intending exhibitors will be a sufficient excuse for my taking up so much of your space.

F. C. SIBBALD.

Sutton West.



Dead Weight of Fat Steer.

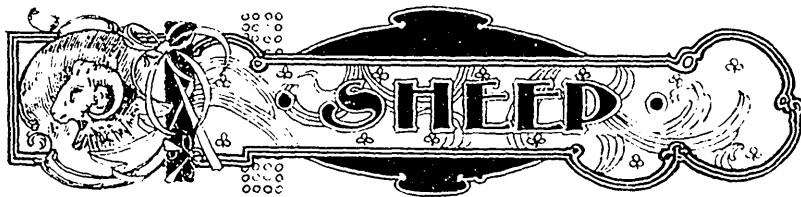
E. J.: How much dressed beef would a steer weighing 1,246 lbs. turn out?

ANS.—If the steer is in pretty fair condition, the dead weight should be in the neighborhood of 710 lbs. Inferior cattle will weigh less than this, and prime cattle more.

Inflamed Udder.

Dairyman: A heifer that calved three weeks ago has a badly inflamed udder. Milking her seems to give her much pain, and blood comes with the milk from the teats. Please tell me what to do.

ANS.—Keep the heifer in a loose box, well bedded. Give her a dose of salts, and feed only dry food in order to discourage milk secretion. Apply poultices to the udder, and rub in vaseline and belladonna extract in equal proportions three or four times daily. Continue the physic and dry feed, and rub in iodine ointment when the acute inflammation subsides. If abscesses form, they must be opened as they mature, and treated with anti-septic lotions. Draw off the milk by teat siphons three or four times daily, as the accumulation of milk aggravates the trouble. It will be best to consult a veterinary surgeon if abscesses form.



Conducted by "JASON."

CHICORY.—Mr. R. H. Elliot, of Clifton Park, Kelso, has been writing in Scotch papers on clover sickness, and recommends the use of chicory. As chicory has become a bad weed in many parts of eastern Canada, it may be well to look at its advantages. He says it is good food for sheep. With orchard grass it will make a good growth and make a fine pasture. Where clover fails, he says, a change to chicory will greatly help the soil; the roots improve the land, and, when the latter is again broken up, it will be found that clover will do well on it.

WOOL.—Since the clip was put upon the market there has been a substantial advance in the price of wools, and the dealers must have made good profits. Long lustre combed wools show the greatest advance, while Down qualities have been neglected. Unwashed Leicester and Cotswold grades have sold for 15 cents, while washed brings 24 to 26 cents. At the colonial wool sales in England recently, Australian wool advanced about 15% in price. Strong, lustrous crossbreeds made even more than this, and were eagerly purchased at the advanced price. Cape wools showed an advance of about five per cent.

KELSO RAM SALES.—Prices this year at the annual ram sales have made a decided advance. It was not that the advance was large, but it was general. The best animals were selling higher than last year, while poorer sorts were more neglected. In Border Leicesters the Mertoun flock of Lord Polwarth still heads the list with an average for 30 shearing rams of \$220. The highest price paid for one of this lot was \$755. Mr. Twentyman, of Hawkrigg, sold one shearing for \$325, and got an average of \$90 for 28 animals. Mr. Tampelton, of Dromore, got \$375 as his highest, and an average of \$38 for 16 animals. Another flock averaged \$66 for 30 animals. The British farmer finds the annual ram sales the best way of getting his new stock, and we hope to see the time when ram sales will be established in this country

JUDGING SHEEP.—A very strange case has made a good deal of trouble for the directors of the Ayrshire Agricultural Association, Scotland. At the last show at Ayr, the judges of Leicester aged rams drew out four in line for the awards, and the tickets were handed out by the attendant to the owners. Some breeders at the evening meeting criticized the awards of the judges, when it was found that the tickets had been misplaced. The attendant had begun at the wrong end of the line, and had given the fourth animal the first-prize ticket, and so on, to the fourth. The one who got the first-prize ticket refused to give up his claim, but the directors have decided to make the change and award the prizes as the judges intended.

PERTH RAM SALES were very largely attended by farmers and breeders from all over the north of Scotland. The sales lasted two days. Leicesters and Shropshires were sold the first day and Blackfaces the second. Most of the Leicesters sold for from \$26 to \$36, the bulk of the trade being between these figures. Only four small lots fell below the lower figure, while a lot of 12 brought \$52 each, and a lot of 40 averaged \$37. There were but few Shropshires, and they did not sell well. Some sold as low as \$15, and the highest price was \$52. Blackfaces sold lower than last year. The highest priced one went for \$200, and the best average was \$56 for 13. All these quotations are for shearing rams, which are always preferred by British breeders.

MUTTON FOR THE FARMER'S TABLE.—This luxury is not as often on the farmer's table as it ought to be. Many of those farmers even who have sheep do not use the meat to any great extent, but sell all the sheep that can be spared. It should not be so. Every farmer in Canada whose farm is fenced should raise some sheep for his own table. Mutton is a very wholesome food, and, when properly raised, it is also very delicious. Those who keep flocks of average size, and who sell the bulk of their produce, should not fail to use the meat of some of the animals at home on their

own tables. On the principle that the farmer, as far as possible, should provide his own living, he should do so, and he also should do so for the reason that fresh mutton is a very wholesome food. The keep of a few sheep will never be missed on an average farm. In fact, if well handled, they will half pay their way by eating weeds and preventing them from going to seed. Any kind of good grade sheep will be suitable.

THE LUXURY OF GOOD MUTTON.—Good mutton is a great luxury. "Jason" is exceedingly fond of it, and he has good reason to be, for it has done very much for him. He wonders how any person should not be fond of mutton. But there is mutton and mutton. There is leathery mutton from old scrub ewes. The very dogs don't crave for that unless they are hungry. Then there is the great fatwether, with rolls of fat all around his body, which only the burly man with strong stomach can eat. Then there is the nice plump, juicy lamb, with fat and lean intermixed, which one can scarcely stop eating when one gets a taste of it. The last mentioned is the kind that is wanted, and it is the kind that every farmer should grow. He should be content with nothing less. Farmers, give your boys good, substantial food. Good, juicy mutton on the table is just as potent as good fruit in mooring the young boy to the farm. Don't sell all your mutton. Give the family some of it, and they will gladly help you to grow more of it.

THE KIND OF RAM TO REJECT.—We get lots of lecturing nowadays on the kind of ram to use, but we don't get too much of it. But it may be well sometimes to look at the other side of the question, viz., the kind of ram not to use. Don't use a lamb chosen from your own flock, if he is closely related to the ewes of the flock. Some men with very large flocks can choose rams from within the same, but very few men can do so with safety. They should, therefore, avoid this shoal, and grade rams should not be used when pure-breds can be got. But a very inferior pure-bred is decidedly inferior to a good high grade. A ram with a ewe's head, with sluggish movements, and with a long neck, should never be used. Likewise reject a ram with long legs and light breast, light body or light hindquarters. Don't use one with a ridged back, or sunken crops, or depressed back.

And likewise reject a ram with an uneven fleece; that is, a fleece uneven in length and also in quality on the different parts of the body. A ram with any of the weaknesses named will do harm in a flock, and one with several of these is certain to do serious harm.

SHEEP IN THE NEWER SECTIONS.—Sheep should be kept in all the newer sections of the country. Oftentimes they are introduced last among the domestic animals. It is natural that it should be so. Horses or oxen are first wanted to plow the land. Then cows are needed to give milk for the family. Swine are needed to consume the offal of the dairy and the garden. The need of sheep does not seem to be so much felt at first by the settler in this age when clothing is so much made by machinery. Long ago the settler was obliged to work up his own wool; hence the sheep had to come along with the cow. But the sheep can render excellent service to the settler, notwithstanding. It can give him meat at any season of the year, and it can trim up his newly-cleared cuttings in the forest in fine shape. By cropping down the early growth of weeds and twigs, it prepares the way for blue grass and white clover. These will soon take possession, and, as soon as they do, they give a quietus to weeds. The early settler, therefore, should not neglect sheep. They will prove his best friends in keeping the land clear.

SHEEP GOING INTO WINTER QUARTERS.—Care should be taken to have sheep go into winter quarters in fine condition. If they are allowed to fall away before the arrival of winter, it is not easy making up for the loss. Look out, then, for cold rains in the late autumn. They are bad for sheep. Such rains often prove fatal to them, and they are sure to injure them more or less. And look out for bare pastures. If the pastures are very bare, give some extra food, even though it has to be given in the field. Keep the sheep in that strong condition of thrift in which the middle fall months leave them, and it will be very much better for them in the winter. As good a food as they can get just before the approach of winter is a blue grass pasture which has not been eaten closely. The dead grass and the young fresh grass which has grown up through it makes an excellent food for the sheep. And it is also a very safe food. In any event, give the sheep due care at such a time. It will pay well in the end.

The Prairie Wolf.

The prairie wolf, or, as it is sometimes called, the coyote, is still rather common in many parts of the Northwest. It is about the size of a full-grown collie dog, but is longer relatively in the body. It is usually of a gray color. It frequents the bluffs along the banks of rivers, and does not seem to vanish with the settlement of the country. This may be owing in part to the fact that other wild animals, which lived practically on the same kinds of food, are becoming thinned; hence more is left for the prairie wolves. They are a serious menace to the sheep industry, even within fifty miles of St. Paul and Minneapolis. The owners of sheep require in some parts to fence against these rovers, by using netted wire along the bottom of the fence, and barbed wire strung along above this. In some parts the keeping of sheep has been given up, notwithstanding the high bounty that has been offered for the skins of those animals. They are very wary and can run very fast. The effort is frequently made to reduce their numbers by trapping, but they are not easily trapped. A piece of meat is suspended amid the trees. It is so high that the wolves cannot reach it. Traps are placed in the vicinity which are carefully concealed. In some instances the efforts of the trapper are crowned with success, but oftener the wariness of the wolf is more than a match for the hunter's cunning.

Gid or Staggers.

Fortunately this disease is not very prevalent in this country. When it does attack sheep, however, only a very small percentage recover. It is popularly known by various names, as, for instance, sturdy or turnsick, but is more commonly termed staggers. Much valuable information may be found regarding it in "Animal Parasites of Sheep," published in 1890 by the United States Department of Agriculture.

Gid is technically known as *Tenia caninus* in the adult state, and as *Cenurus cerebralis* in the cystic or developing stage, which is the stage at which it infects sheep. The term *cerebralis* has reference to the brain. The parasite is a species of tapeworm. In the adult stage it is found in the cranium or spinal canal; hence it is a great mistake to allow dogs to eat the heads of sheep that have died of this disease, unless they have first been subjected

to prolonged boiling. They should rather be burned or buried deeply.

The eggs of the tapeworm which produce this trouble are taken into the stomach of the sheep with their food and drink, from pastures, where they are commonly deposited by dogs, or from waters in which they bathe. In this country they are also deposited by wolves and foxes. When taken into the stomach of the sheep they hatch there, and make their way through its walls into the circulatory system. By the circulatory system they are carried to various parts of the body, but only those seem to thrive which reach the spinal canal and the cavity of the brain.

Although the parasite becomes fairly well developed in two or three months from the time it reaches the brain, it continues to increase in size for from six to eight months. The number of its heads also increases, and finally it kills the sheep. Fortunately very few of the eggs which leave the intestines of dogs ever reach the stomach of the sheep, and of those which are taken up by sheep fewer still find their way into the brain. Were it otherwise, this disease would soon become a great scourge.

Symptoms. The symptoms of gid are dependent upon the stage of development, and, to some extent, upon the part of the brain invaded. Among the symptoms that manifest themselves at such a time are a stretching forward of the head, holding it sideways, and turning it backward. The parasites at this stage are about the size of flaxseeds, and they may cause the death of the animal in six days from the first appearance of the symptoms. But, more commonly, no symptoms are apparent for from four to six months later. These later symptoms include turning the head to one side, walking in a circle, staggering, convulsions, and inability to eat or drink. The animal dies in pain four to six weeks after these secondary symptoms appear.

Preventive measures. Although it is possible for the skilled veterinarian to effect a cure in some instances, this trouble is practically incurable; for, except in the case of very valuable animals, the cost of the treatment would be more than the animal is worth, since the cure involves a delicate surgical operation. Preventive measures are, therefore, all-important. Dogs and wolves are bad enough because of the direct loss which they cause in decimating the flocks of sheepowners in the Northwest; but, from what has been said, it will be apparent that they also cause an indirect

loss in the way already pointed out. It is clearly apparent, therefore, that decisive measures should be taken for the extermination of wolves, and for preventing the undue increase of dogs. The coyote, though not a serious menace to the sheep industry in many parts of this state, will certainly gradually decrease in numbers with the more complete settlement of the country. But dogs are likely to increase more and more. The useless dogs in the country are a great nuisance. In many countries dogs are more numerous than sheep, and probably nine-tenths of the former are worse than useless. They are so serious a menace to sheep husbandry that in many instances they have caused its abandonment. Sheep are worth very much more than dogs, and for the sake of the sheep industry we should give up the questionable luxury of worthless dogs; for, with the decrease of the dogs, there would be a decrease of invasion from the tapeworm in its various forms.—*Professor Thomas Shau, in Farm, Stock, and Home.*

A Talk About Wool.

Possibly, no body of men interested in the breeding of stock differ more upon the good or bad points of any animal than do sheep-breeders upon the merits of any given breed of rams, and that, I think, arises from the reason that few attach significance to the most important fact that different climates have different effects upon different breeds of sheep. A strain of blood that produces a profitable sheep in one district, where the conditions of food and climate are favorable to it, may be quite a failure in another. In proof of this, the soft, silky, bright wools, grown so successfully in the western districts of Victoria, cannot be reproduced in the saltbush areas of north-western New South Wales. High-priced rams from the former districts have failed in a marked degree when tried in the latter. It requires years of practical experience, close observation of the results of actual experiment, to gain a full knowledge of the powers of a particular breed or strain of blood to adapt itself to a given district, to produce a sheep with a profitable fleece, and to hold its wool with age. It is a want of this knowledge that keeps so many back.

But if I were asked, "What do you think is the chief cause of so many growers breeding the mixed type of sheep they do?" my unhesitating answer would be, "Because they use so many different breeders' rams." Many

painstaking men complain that, after years of trouble and expense in ram buying, they have not succeeded in producing a uniform type of sheep, and that their clip is uneven, in quality and irregular in length. One will say to you, "My sheep are light on the bellies. I got Brown's rams, which are noted for their covering underneath, to correct that fault. They are frothy on the backs; I got rams from Jones to rectify that. They are too short in staple, and Robertson's were got to set that right, and with a dash of Smith's blood to give them the necessary quality I, at least, should be in the right way to breed a good sheep; but I find I have a nondescript animal as the result." To a man like that I would say that sheep-breeding is not like salad-making. The A B C of profitable wool growing is first to ascertain what breed of sheep do best in your district, and, when once you have chosen, keep to that one strain, and class against climatic influence. Cull out the young sheep showing the weaknesses you complain of. Fix a mental standard of the kind of sheep you wish to breed, class up to it, and use only one breed of rams.

No surer finger-post pointing out the road to success in wool growing exists than the example set by our most prominent ram breeders and wool growers—the colonial Napoleons and Wellingtons of our wool industry—the use of whose rams leave their mark at once upon any flock to which they are introduced, because of the purity of their breeding. They never go outside for strange blood to correct any weakness in their sheep. When they find it necessary to replenish their flocks with fresh sires, they go to the source from which their studs originated, and the result of the trueness of their breeding is found in the fact that their sheep reproduce themselves as surely and faithfully as a painter can color a wall to any hue he desires. Uniformity of type, both in frame and quality of wool, is what every sheep-breeder should aim at, and you can only arrive at that by using true bred sheep.

Another bit of advice I venture to give you who have done me the honor of reading this so far is, "Don't run too much after length of staple," be satisfied with a moderate length; but never be content with your density. You can never have too much of that. If you doubt the correctness of this, have a talk with any of the foreign wool buyers who attend our sales every year. They will tell you that an excess in length does not increase the value of

your clip. They can tell you that modern machinery for manipulating wool is now so much improved that wools are combed which formerly could only be spun, and that when a staple exceeds a certain length there is too much waste. Besides, it is from denseness you get your weight of fleece; also without density you can never get a sheep to retain its fleece intact with age. Any one can breed a sheep with a lengthy staple, but wool is not sold by measurement, but by weight, and you cannot get weight without density. I preach the doctrine of density everywhere, because I know much of its importance. Another thing I would like to tell you is—that it is not the quality of your wool that enables you to beat your neighbor in price; it is its condition, and the manner you prepare it for market. However, I will not speak of that now.

The object of what I am writing now is to impress upon you the necessity of obtaining a type of sheep, and you can do that only by the means I have endeavored to point out to you. You can never succeed if you listen to all the cheap advice that is so readily given you by those who know more of your business than you do yourself. Brown tells you that his sheep cut half a pound more than yours do; you immediately get some of the rams that Brown breeds from. Don't do that; cull heavier, and you will soon beat him. It is this fickleness and want of stability that has enabled the crossbred craze to get such a hold upon many of our good breeders, and I believe that all of those who are seized with it, except a few, perhaps, who breed for carcass only, and whose holdings are favorably situated to means of quick transit to market, are on the eve of suffering a bitter disappointment; and such disappointments are always lying in wait for those breeders who try to produce a wool to suit every trend of fashion. Speaking generally, the whole of the pastoral area of this colony is eminently adapted to the production of merino sheep of large frame, quite big enough for freezing purposes, growing a combing wool of medium quality of a kind that finds buyers in all the markets of the world, let the fashions be what they will, and those who have kept steadily by the sheep, that have taken so long to bring to the state of excellence they have reached, will reap the reward of their consistency. The days of random breeding are past and gone, and the man who does not advance with the times must take a back seat.—*J. C. Darke, in the Sydney Woolly Festival.*

Putting the Ram to the Ewes.

By ALFRED MANSELL, Shrewsbury, England.

One of the chief points to be considered before putting the ewes to the ram is, when will the farm be able to keep the lambs growing and thriving without a check? In a pedigree flock, it is desirable to have the lambs as early in the year as possible; because, for showing purposes, an early-dropped lamb has a considerable advantage over a March or April lamb. At the same time it is of equal importance that lambs should suffer no check, but continue to thrive during their whole career, if successful results are to be obtained. If the spring keep is likely to be short, and the farm rather cold and exposed, it might be advisable to put a limited number of the ewes to the ram early, so that lambs for showing purposes may be secured, and to put the bulk of the ewes to the ram at a somewhat later date. If this course be adopted, the ewes most likely to breed well should be selected for the purpose.

MATING.

All the rams for service should be branded in pitch with a distinctive number—say, 1 to 10, or any smaller or greater number, according to the rams in service—and their breeding, etc., entered against that number. The ear-tags of each ewe drawn to No. 1 ram should be entered in a small memo. book; and so on until the respective numbers of each ewe are taken, with the number of the ram each is served by.

If any changes are subsequently made, a note must be taken of the same, and at the end of the season, when the ewes are all served, the mating can be entered up in the private flock book.

The utmost care should be given to mating, because it is rarely, if ever, that we get perfection in any one animal, and it is only by judiciously mating a ewe which is deficient in some points, with a sire strongly developed in those particular points, that we can hope to arrive at approximate perfection; if both sire and dam are deficient in the same points, these will only be accentuated in the offspring.

If possible, in mating, profit by experience; that is to say, call to mind or actually see the result of previous mating. This is such a complex question that the best of judges are deceived; and some of the best stock in Great Britain have been bred from animals that might easily have been passed over by experienced judges in the showyard.

Again, it is often the case that an undersized ewe or other female produces large-framed stock.

When the ewes are first put to the ram, flushing (*i.e.*, placing them on a fresh pasture), or folding on rape, mustard, or kale, is considered a good practice, usually resulting in an early and prolific crop of lambs.

It is sometimes dangerous to give a sudden change, and so care should be exercised for the first few days, and the ewes only allowed to remain some three or four hours on the green fold. This will minimize, and eventually overcome, the danger. If any of the ewes are very low in condition, they should, if possible, be treated more liberally than the rest of the flock. The great point for success in breeding is to have both the ewes and rams in a healthy and thriving condition, and to get as small a percentage of barren ewes as possible. Ewes must not be too fat or too lean, but of the two extremes the latter is preferable.

As to whether a ram should be allowed to run with the ewes or the latter should be hand-ridden, and a teaser used, one must be guided by circumstances. If the ram has been prepared for show, is excessively fat or inactive, or a valuable one, a teaser would undoubtedly be desirable, as the ram with this help would serve many more ewes, and probably much more effectually, than if allowed to do all the work in the field. In reference to the teaser—a good-looking one should always be used, as several authentic cases can be quoted where bad results have followed the use of an ugly ram for this purpose.

A ram, as a rule, should not be used extensively the first year—that is, until his lambs have been seen—because, should he prove a bad getter, the flock would suffer greatly; and, secondly, after seeing what his first get develop into, it is an easier matter to draw ewes likely to nick well with him the next season. There are exceptions to all rules, and, in the case of a very superior ram from a flock which can be thoroughly trusted, a deep dip may be made the first season with an almost absolute certainty that good will result.



Ear-Tags.

C. F., Muskoka Falls: Where can I get ear-tags for sheep?

ANS.—Up to a short time ago, there was an agency in Toronto for the sale of ear-tags; but since the death of the late agent, we do not know of any one handling them. It would be well to write to C. A. Dana, West Lebanon, Vermont, who can supply you.

Sheep on Western Ranges.

A. H., Galt: Are the western ranges so stocked with sheep that more cannot be grown upon them? It seems to me that the answer to that question will have a bearing upon the outlook for better markets for mutton.

ANS.—No, the ranges are not stocked to their full capacity. The industry, however, is not as flourishing as formerly. Sheep were raised on the ranges more for wool than for mutton, and since wool fell so low in price in the United States sheep production on the ranges has not been very profitable. There is yet much room, however, for increased production of sheep in North and South Dakota and the states further west.

Shipping Store Sheep.

G., Welland: Is it as profitable to ship store sheep as to first finish them and then export them to England?

ANS.—Much will depend on the way in which the grower is situated. If the sheep are reared in sections where land is cheap, and where foods for finishing are not cheaply grown, then it may be wise to send them over the sea as stores; but where there is food to fatten them, it would certainly be better to prepare them for being shipped in the finished form. The principle is just the same as in the case of cattle. FARMING has always consigned shipping live stock in the finished form.

SWINE

Conducted by "BRISTLES."

A RECENT SALE IN ENGLAND.—At the sale of the celebrated Handley herd of Large Whites, held last month, the sow Lady Handley, winner of five first prizes, sold for £31 (\$152).

PORK PACKING.—The total number of hogs packed at the Union Stock Yards, Chicago, this season up to the 1st of October amounted to 2,505,000, as compared with 2,469,000 for the same period last year.

DRENCHING A PIG.—The simplest way we know of drenching a pig is as follows: Take a length of half-inch rope, make a running loop on one end, slip this over the lower jaw, and then tie the other end to a post firmly. Piggy will generally sit down and squeal. Then take an old shoe, cut off the point of the toe, and thrust it in between the patient's teeth, after which the medicine can be easily poured down the funnel formed by the shoe.

BONE.—Every breeder should aim at growing a sufficiency of bone of good quality. Coarse, spongy bone is always objectionable, as it invariably denotes a slow feeder, and meat of poor quality; while a light-boned hog is usually inclined to lay on more fat than he can carry, and, as a result, breaks down. Good strong bone of good quality is always a sign of a good constitution, and is associated generally with a fair proportion of lean meat.

HOG CHOLERA IN ESSEX.—Just as we go to press we are advised that the reported outbreak of hog cholera in the county of Essex not only proves to be true, but that the disease is of a most virulent nature. We need hardly impress on our readers the absolute necessity of taking the most stringent precautions against allowing the outbreak to spread any further. We have no doubt the Government will insist upon the necessary quarantine measures being enforced; but even then most valuable assistance can be rendered by the local breeders in using their individual efforts to prevent the germs of the disease being carried from one farm to another.

A Word to Beginners.

We are constantly asked by those who are about to start a herd of swine, What is the best breed? Our answer to such a question has invariably been that we know of no breed that is superior to all others under all circumstances. We believe that there is room for all breeds, and our advice to any young breeder who is about commencing a herd, and has not made up his mind as to what breed he will select, is this: Study well the class of pig that your market calls for, the conditions under which your pigs will be placed from the time of farrowing till they go to the butcher; and, further still, if it is your intention to use only a purebred male on grade sows, consider carefully the type of pig that has been principally bred in your neighborhood, and then select a boar that, when coupled with such sows, will produce the class of pig that is in most demand in your market.

For example, the export trade in bacon now calls for a lengthy, deep-sided pig, not too broad or fat on the back, and showing, when cut up, a large proportion of lean meat. Suppose, then, that the farmers in your neighborhood have been for years in the habit of using boars of the smaller and very easily fattened varieties, such as Suffolks, or very finely bred Berkshires (we use the word *finely bred* here, not as regards pedigree, but as regards the constitution), there is no doubt in our mind that if you wish to raise a class of hog that will be in demand by packers for the foreign trade, the introduction of a Tamworth or an Improved Large Yorkshire boar will be of the greatest benefit in your neighborhood. On the other hand, should your sows be principally of the larger and coarser varieties, such as what were known in this country for many years as Yorkshires, probably a boar of the modern Berkshire type will prove of as much service to you as any. Should the sale for the products of your hog pen lie largely among such a class of people as the shanty-men and river-drivers of the northern country, or the French-Canadians of the lower St. Law-

rence, both of whose tastes run in the same direction, viz., very heavy pork with as large a proportion of fat as possible, our advice would be to try one of the larger American breeds in preference to any English breed. There is no doubt that a very large proportion of the heavy barrelled pork put up by Chicago packers is supplied from regions in the Western States, where the Poland-China reigns supreme. What we are most anxious to impress on our readers is this, however, that every breed has its own good points, and that the wisest plan for a young beginner in every case is not to be carried away by listening to the champions of any one breed until he has carefully studied the various circumstances which will affect his own venture.

In conclusion, we may say that we are perfectly satisfied that, where the production of meat alone is intended, and the raising of pigs for breeding purposes is not in view, a cross between two purebreds will give far the best results; some of the grandest pigs we have ever seen were the result of an Improved Yorkshire and Berkshire cross, while the victory gained by a pair of crossbred Tamworth and Berkshire pigs at Guelph last fall in the class for the best pair of packers' pigs, open to all breeds, is still fresh in our readers' memory.

To Our Readers.

As in the past, so in the future, the Swine Department of FARMING invites correspondence from the breeders and feeders of the continent on all matters affecting their interests. We are not anxious to be known as the champions of any one breed, for, as our readers will see in another column, we believe that there is room for all breeds, and our greatest object is to promote the breeding of well-bred hogs, let the breed be what it may, to such an extent that there will be no room left on this continent for the *scrub*. This latter animal we look upon as a relic of the dark ages, and we are firmly convinced that there should be no more use for him in the nineteenth century among an intelligent community of farmers than there would be for the bows and arrows of the original possessors of the soil among modern troops armed with rifles of the latest patterns. In these days of keen competition, it is only the man who is always striving to have the best, and the best only, in his line, who can hope to make a success of his business; and the man who has got his ideas fixed so tight in one groove that it

is simply impossible to move them, or, to refer to one particular subject, the man who can see no good in his neighbor's Berkshires because he breeds Yorkshires, is apt to get left behind in the race by some younger breeder who has allowed his views to broaden and his ideas to expand by a careful and unprejudiced study of the different breeds and different methods of feeding.

We are anxious to make this department of the paper of benefit, not only to the breeders of purebred swine, but also to all breeders and feeders of swine, from the laboring man who keeps one pig to the wealthy farmer who feeds one hundred and upwards at a time; and with this end in view, we invite discussion in these pages of all matters pertaining to what our cousins across the line sometimes call *hogology*.

Pasturing Hogs.

While there is no doubt but that the practice of pasturing hogs is becoming more popular every day, still there is certainly room for a great deal more to be done in this way.

When we speak of pasturing hogs, we do not refer to the old-fashioned method pursued by some farmers of turning a number of hogs loose on the roadside, or in a lane, as the case may be, to fight for a living with the inevitable roadside cow, or possibly with two or three colts and half-a-dozen head of young cattle, or else in a pasture field that has been eaten bare and dried up by the sun till it becomes a genuine case of "Root, hog, or die"; we refer to the intelligent use of clovers and certain grasses as a large proportion of the summer feed for a herd of pigs that are looked upon not simply as scavengers, but as one of the most valuable and remunerative possessions a farmer can have.

Our own experience in this direction has been almost entirely confined to brood sows and young stock pigs that were being raised for breeding purposes, and we are free to say that the result of that experience has been such that we would no more attempt to raise hogs on any scale without a sufficiency of good clover pasture than we would attempt to raise sheep successfully without a proper amount of suitable pasture land.

In our own experience we have tried the following grasses: Natural pasture, composed almost entirely of June grass (or Canadian blue grass), red clover, alsike clover, timothy, cocksfoot (or orchard grass), and meadow

fescue, and we have found the best results undoubtedly from red clover and orchard grass. In Prof. James Long's excellent work, "The Book of the Pig," we find timothy referred to as an excellent grass for pigs, either as pasture or as a soiling food, but we found our pigs very much preferred orchard grass; in fact, where they had access to both grasses, they showed their preference very plainly by leaving the timothy untouched. In one field on which we pastured a number of brood sows one summer, the following mixture was sown: Timothy, orchard grass, and meadow fescue, and red and alsike clovers. Here we found that, while the pigs picked out the orchard grass and the greater part of the meadow fescue, they hardly touched the timothy; in fact, it almost all grew up and went to seed. As a practical instance of what can be done in the way of pasture for brood sows, a few words on our success with the piece referred to may interest our readers.

In the first place, the seeds were laid down with a crop of wheat and oats mixed, the ground, which was oat stubble, being manured at the rate of about twelve wagon-loads to the acre. The crop of grain was a fair one (about thirty-five bushels per acre), and the seeds looked well. It was our intention to mow the piece, but, as it was near the barns, and we needed a pasture badly for our breeding sows, we decided to use it for that purpose, very much to the disgust of some of our neighbors, who were not slow in declaring that we were simply crazy to turn hogs into such a nice piece of hay land.

However, having a tinge of either obstinacy or self-confidence in our character, whichever it may be called, we stuck to the plan we had laid out, and about the 24th of May we turned eighteen sows into the lot, which was a scant four acres in extent. On the 1st of June we put in four more, making a total of twenty-two, and this average number was kept up till October 1st, there being sometimes one or two more, and sometimes one or two less. During the first ten days we fed a trifle under five bushels of dry corn, and then we stopped it entirely, and from that on the pigs had nothing but the pasture and fresh water, of which there was an ample supply (a creek running through a corner of the lot), excepting a couple of pails of kitchen refuse, which were emptied over the fence every day by the resident of a house close by. Any sows that were due to farrow during this time were taken out of the field ten days or two

weeks before their time was due, and others put in in their place. We never had better litters than from these sows, and on the 1st of October the pigs in the field were all in good breeding order, although not fat; in fact, we might say that they had just held their own during the summer, while there was enough grass left in the field to have cut nearly a ton of hay, for it had not been stocked nearly heavily enough. After the 1st of October, although all our pigs were housed at night and fed night and morning, a number of them had the run of this field all day.

We estimated that the yield of hay, had the field been mown, would have been nine tons, and, at \$7 a ton, the highest price paid in our neighborhood, the crop would have yielded \$63. Deduct \$6 for labor of making the hay, *i. e.*, \$1.50 per acre, and add the cost of the corn, \$3, and we have \$60 as the cost of keeping twenty-two sows for four months, about 64 cents per head per month. Had the field been stocked to its full extent, I feel satisfied that it would easily have carried thirty head, which would have reduced the cost to 47 cents per head per month. In another issue we shall give the opinions of some well-known writers on this subject, and we shall be glad if some of our fellow-breeders will give us the benefit of their experience in this line, touching more especially on such points as the best grasses to grow for this purpose, and the advantage or otherwise of feeding grain in addition to pasture, etc.

◆ ◆ ◆

Pig-Feeding on Meals.

The pig-feeder will soon be "licking into shape" his porcine family for the November and December markets. In pig-feeding, as in every other branch of stockbreeding, early maturity pays—although I might say with truth that it pays even better in pig-feeding than with any other class of stock. It is very desirable that, in feeding the pig, variety be a leading consideration. Possibly, of all meals, barley meal is the coping stone in the masonry of the pig-feeder. Used singly, it gives far better results than any other meal similarly fed, and is, to a large extent, necessary in the production of high-class pork. As I have said, however, a variety or mixture of meals is desirable. Maize, bean, or peameal will mix well with barley meal. Too much maize is to be avoided, owing to its effect upon the pork. With the other meals the feeder can feel himself quite at home. Old pigs thrive

heartily on it, but oatmeal I object to on the score of expense. For producing young pork of the highest quality for the London market, it may be used; but only in cases where extra prices are paid would I recommend its use. Coconut meal is considerably enquired after by pig-feeders, and with good reason, for it blends well with barley meal. It is inexpensive, and if given in the proportion of 15 per cent. of the ration will prove a valuable adjunct in the ripening of pork. Cod-liver oil, which is frequently used for horses in winter, is a sustaining food, and for young pigs and stores does much to push them towards the ripening stage. The price, which varies very much with good and bad seasons, is the only barrier to its more expanded use. A good ration which may be relied on is a mixture of barley, wheat, maize, and bean meals mixed in equal proportion. To three parts of this add one part of sharps. If forcing food is required, a little linseed or spiced food may be profitably added. Scald before using. Those who contemplate exhibiting at the fat stock show may find the system of ball feeding of advantage. Take as a good example the ration above mentioned. Mix a quantity with skim or new milk, and roll into balls about the size of a hen's egg. Dip each ball, before offering to the pigs, into a pail of milk. After feeding a few meals, the pig will sit up to receive the dainty morsels, and consume about a gallon of the food thus balled. I may have a word to say on other foods in an early issue.

EXHIBITOR.

We would draw our readers' attention to the above clipping from the *Farmer and Stockbreeder* (London, Eng.), as it more particularly emphasizes the good results obtainable from feeding barley meal. We have frequently heard the opinion expressed that barley meal was not a satisfactory food for fattening hogs in this country, but we have never been able to obtain a satisfactory answer to the question, Why? It is, as "Exhibitor" states, undoubtedly the mainstay of the English producer of what is known as "choice dairy-fed pork," and our own personal experience in feeding it in Canada has been most satisfactory, although we have found decidedly better results when the barley was ground as fine as possible than when only chopped in the manner usual in country districts. As regards coconut meal we have never used it, and so can express no opinion on its merits, and we doubt very much if it could, at present, be obtained in this country

at a price that would put it within reach of breeders.

The use of cod-liver oil, however, should be worth a trial. The cheaper grades of what is known as Newfoundland oil can be purchased at a price, we understand, that would make such a trial a comparatively inexpensive one; and, as we have known of very good results from its use in some cases in England, we do not see why it should not prove a valuable aid to feeders on this continent.

Pigs in the South.

According to the latest reports, the South promises to play an important part in the pork industry of the future, as breeders and feeders are finding that alfalfa (or lucerne) is a very important factor in making cheap pork, while the southern regions have a very decided advantage in their climate, which permits farrowing at any season without danger to the young pigs, and also ensures a good supply of green food all the year round. In New Mexico we understand that the swine industry is already looked upon as a very important one indeed.

The Poland-China.

What the exact origin of the Poland-China hog is never seems to have been definitely settled; but it seems very clear, at all events, that the credit of bringing out this highly popular breed belongs to no one breeder, but is rather the result of careful and judicious work on the part of a number of the farmers in Warren and Butler counties, Ohio.

As early as 1816 there is a record of the introduction into Warren county of what were known as "Big Chinas." These pigs were supposed to be either imported, or directly descended from pigs imported, from China. They were largely used by the Shakers, who had a big settlement in the county, and also by the other settlers. Previous to this, mention can be found of two breeds known as the Russia and the Bye-field, but we fail to find many particulars as to the style of hog they were. Whatever their merits were, the cross of the "Big Chinas" seems to have proved very beneficial, for the Warren county pig soon became famous throughout the country, and, as a result, other importations of Chinas were made, although these latter seem to have been pigs of a smaller variety, and showing more quality than the first mentioned.

The next known cross seems to have been made in 1835, when Berkshires were introduced, and for some time freely used to cross on the hogs then common to the neighborhood, being followed about five years later by a breed known as the "Irish Grazier." What this breed was has never been clearly established, but we are inclined to think that they must have been simply pigs of the White Yorkshire breed, which had been bred in Ireland, as there is certainly no record of any such a breed as "Irish Graziers" in Ireland at that time, and the description given of the pigs answers, in many respects, to the White Yorkshire of that date.

Since 1840 we can find no mention of any outside cross being taken in, and how the name Poland came to be associated with the word China appears to be a vexed question, some breeders claiming that pigs of a Polish breed were largely used throughout Warren and Butler counties in early days, while others state that the name was derived from the fact that one of the earliest breeders, a Major Asher, was by birth a Pole, and was known to his neighbors as "the Poland."

For the last fifty years it would appear, then, that the Poland-China has been improved by selection and judicious breeding only, and undoubtedly to-day there is no breed as popular in the Western States as it is, the claim being made for it that it will make more pounds of pork to a bushel of corn than any other breed known. Whether it is as well suited to the smaller farms of the Eastern States and Canada there is, of course, a difference of opinion, and that is a question we shall not attempt to answer, although we must admit that of late years the breed has undoubtedly pushed its way well to the front in Ontario, and there are to-day several herds on this side of the line that should be able to hold their own in any company.

The following is a scale of points as adopted by the National Poland-China Swine Breeders' Association:

1. <i>Color.</i> Dark spotted or black.....	3
2. <i>Head.</i> Small, broad, slightly dished.....	5
3. <i>Ears.</i> Fine and drooping.....	2
4. <i> Jawl.</i> Neat and full.....	2
5. <i>Neck.</i> Short, full, slightly arched..	3
6. <i>Brisket.</i> Full.....	3
7. <i>Shoulder.</i> Broad and deep.....	6
8. <i>Girth around heart.</i>	10
9. <i>Back.</i> Straight and broad.....	7
10. <i>Sides.</i> Deep and full.....	6
11. <i>Ribs.</i> Well sprung.....	7

12. <i>Loin.</i> Broad and strong.....	7
13. <i>Belly.</i> Wide and straight.....	4
14. <i>Flank.</i> Well let down.....	3
15. <i>Ham.</i> Broad, full, and deep.....	10
16. <i>Tail.</i> Tapering, not coarse.....	2
17. <i>Limbs.</i> Strong, straight, and tapering	7
18. <i>Coat.</i> Thick and soft.....	3
19. <i>Action.</i> Prompt, easy, and graceful	5
20. <i>Symmetry.</i> Adaptation of the several points to each other.....	5
	100

Diseases of Pigs.

DIARRHŒA OR SCOURS.

This is, among pigs, essentially a disease of infancy, for we find it almost entirely among pigs that are either suckling, or else lately weaned, it being very rare among older hogs. In our own experience we have suffered very much from this trouble, especially in the winter time, and we have come to the conclusion that it is largely due to faults in feeding the sow while suckling, although it may also be brought on by cold or damp pens, sudden changes in temperature, etc. We have seen it caused by suddenly changing a sow with a litter from a ration principally composed of meal to one consisting largely of green food, and we are satisfied that in many cases a supply of rods and earth given to the sows that farrow during the winter, when they have to be kept indoors, will prevent an occurrence of this trouble. When the trouble does occur we have found quite as much benefit from treating the sow as from dosing the little pigs themselves. In the first place, care must be taken to see that the pen is warm and dry, and *well ventilated*, while a little plaster should be scattered over the floor. The sow's diet should be changed, a liberal supply of salt and ashes left in the pen, and a fair amount of outdoor exercise allowed. We have also found considerable benefit from using the following powder: Mix together 2 lbs. fenugreek, 2 lbs. anise seed, ½ lb. gentian, 2 lbs. powdered chalk, and 2 ozs. carbonate of soda, and always give the sow a tablespoonful in her feed. If the little pigs are scouring to any extent, when discovered, give them each a tablespoonful of boiled milk together with a small teaspoonful of whisky, and from eight to fifteen drops of laudanum, according to their size and age. In some cases a teaspoonful of alum water given twice a day will prove useful.

But the old saying, "Prevention is better than cure," will be found to fit this trouble exactly, and a careful attention to the sow's diet and comfort, together with a liberal supply of earth in the winter time, will do more than anything else to avert danger from this source.

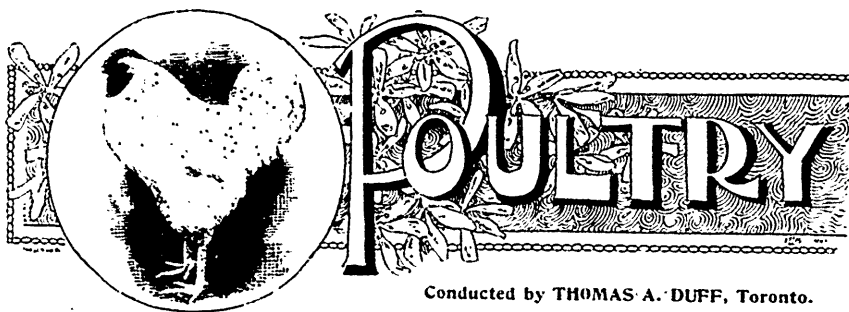
Dentition in Pigs.

From Professor Malden's book on "Rational Pig-keeping" we make the following extract on the dentition of pigs: The modern highly-developed state to which pigs have been brought has somewhat affected their dentition. The result is that the age of a pig cannot always be definitely estimated by the teeth. It can be approximated fairly closely, but, as some show precocious dentition, it is possible to pass off some of those as being older than they really are. In the same way those which show this early dentition are unfavorably placed in exhibitions, where the entries in particular classes are restricted to age as shown by dentition. Undoubtedly, many honest exhibitors show animals which are eligible for entry under a certain age, but which showed dentition usually associated with pigs of a greater age.

A danger was incurred in that, as there was no other means of arriving at the age of the pigs, except that of the word of the exhibitor, dishonest exhibitors were tempted to take advantage of the loophole afforded by this abnormal dentition, and showed pigs in classes which they were not in reality eligible for. The leading agricultural societies rightly decided that, to prevent unfair entries being made, a standard of dentition according to age should be decided upon, and that it should be abided by. In that useful pamphlet on "Dentition as Indicative of the Age of the Animals of the Farm," by Professor Brown, published by the Royal Agricultural Society, a section is devoted to pig dentition, in which are several illustrations indicating the age of pigs.

A full-mouthed pig has six incisor or single teeth in the front of both upper and lower jaw—two central, two lateral, and two corner teeth. Behind these are the four tusks, one on each side of both the upper and lower jaws. Between the tusks and the molar or

double teeth, there are usually four small teeth which are called pre-molars, one on each side of both jaws, and twenty-four molars, six on each side of the upper and lower jaws. At various stages the teeth undergo changes from birth to eighteen months, when the last molar comes through. At twenty months all teeth are well up. At birth two small tusk-like teeth are found laterally placed in each jaw, leaving an open space in the front of the mouth. There are then no molars or other teeth showing. At one month these temporary molars are cut on each side of the jaw, top and bottom. The second and third are well up, the first just coming through the gum. Two central incisors are cut in each jaw. At two months the temporary central incisors are fully developed. The gum shows signs that the lateral temporary incisors will soon come through. The first temporary molar is level with the second. At three months the temporary set of teeth is complete. The temporary corner teeth are further removed from each other, owing to the growth of the jaw. From three to five months no fresh teeth appear. At five months there are signs of cutting of the pre-molars. The fourth molar, which is seen behind the temporary teeth, is evidently shortly coming through. At six months the wolf teeth, between the tusk and the pre-molars, appear; also the third permanent molars. At nine months the corner permanent teeth are well up, and the permanent tusks may be up. If the permanent tusks are well developed the pig is over nine months. At one year the central permanent incisors are expected to be cut, but not up. Often, however, the temporary incisors are still in their place. The fifth molar is cut at from ten to twelve months, so it should be well up at a year. Shortly after a year the three anterior molars disappear; at fifteen months they are replaced by the three anterior permanent molars. At seventeen or eighteen months the sixth molar is cut, and the lateral temporary incisors generally give place to the permanent. At twenty months all the teeth are well up. The sixth molar stands quite free from contact with the angle of the jaw. The other molars show signs of wear. The age subsequently cannot be definitely fixed; and even at the age mentioned some latitude must be allowed for precocious dentition.



[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 inquiry. The name of the writer will be withheld if desired. Let us not only profit by each other's successes, but also by each other's mistakes.—EDITOR.]

Poultry Illustrations.

I trust that the readers of FARMING will appreciate the efforts we are making to illustrate the various breeds of fowl. Two cuts of favorite varieties were used in the September and October numbers, respectively; while in this issue we have three, as well as a half-tone engraving of a wing in the poultry building at the Toronto Exhibition. I believe that good illustrations do more towards instructing poultrymen in the difference between a good and a bad specimen than anything else, unless it be a personal visit to an exhibition where an opportunity is offered of comparing the various birds shown.

On the opposite page, we present a view of the wing in the Toronto Exhibition in which were exhibited cage birds, bantams, incubators, brooders, and poultry appliances, such as bone mills, water fountains, grit, etc. This wing was probably the most crowded of any department of the exhibition.

We also present a half-tone engraving of the first-prize Black Langshan cock, owned and bred by that well-known and enthusiastic Langshan breeder, Mr. E. McCormick, Newmarket, Ont. Mr. McCormick has been one of the most successful breeders of White and Black Langshans in America, and has always been successful in the showroom. Few men in America are better posted on what a Langshan ought and ought not to be than Mr. McCormick, and his stock is always of the best.

We also present a sketch by the late Mr. Lee of the Barred Plymouth Rock cock, "New York Champion's Son," bred and owned by Bradley Bros., of Lee, Mass. For several years past this firm have been associated with the very best specimens of this grand variety, always winning highest honors at New York. "New York Champion's Son" won first prize as cock at New York in 1894. His sire, and the sire of his dam, also had the honor of winning first at the same show, both being bred by Bradley Bros. The dam of "Champion's Son" was, they write, one of the best layers they ever owned, her eggs being very large, with brown shells. The plumage of "Champion's Son" was perfectly clear on the outside, and barred to the skin in back, wings and tail, and legs were solid yellow from a chick up. They state that his cock plumage is almost exactly represented by the cut. Later on, we shall publish cuts of other noted birds belonging to this firm.

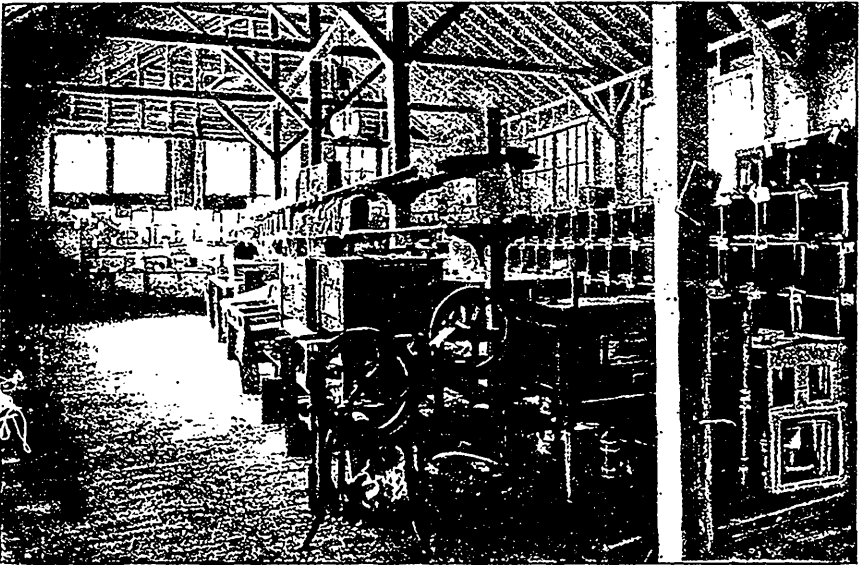
We have much pleasure in publishing a sketch of the first-prize breeding pen of Silver Wyandottes, owned and bred by Mr. J. E. Meyer, Kossuth, Ont. Mr. Meyer has for years been an enthusiastic lover of the Silver Wyandotte, and is amongst the most successful breeders of that variety in America, winning highest honors wherever he has exhibited, including the World's Fair. This pen was a grand one, particularly the three hens. Mr. Meyer won the "Duff" medal for largest and best collection of Silver Wyandottes at Toronto.

Bad Eggs Again.

When passing along one of the main streets of Toronto the other day, I was stopped by one of the largest egg dealers in Ontario, who asked me if I would step into his store, as he desired to show me a case in which a person had shipped him thirty dozen eggs. He first of all handed me a letter from this shipper, in which he assured the dealer that he could sup-

ply him "with a case of fresh eggs," and inquired what price would be paid. The dealer replied, quoting a figure, and the eggs were shipped. I was then shown the egg case, and it is not putting it a bit too strongly to say that one could not come anywhere within six feet of it without being sensible of a most disagreeable odor. The case smelled of almost everything conceivable, from coal oil up. I was then conducted to the room where the eggs are candled, and out of this thirty dozen there was not a strictly "fresh" egg in the lot. Some were fairly good, others barely fit for cooking purposes, while three or four dozen were absolutely bad, the majority con-

of coal oil. Even had all of these eggs been of a high quality when shipped, they would have been of a poor quality when they reached Toronto on account of being tainted. As much care should be taken of eggs as of butter, and as soon as persons who ship eggs learn to do this the sooner will the price go up, and, as the consumer gets confidence in the produce, a greater demand will follow, and higher prices will be the result. I cannot but help thinking that the reason why a man sent out eggs in such a fashion is his ignorance of how to care for them. This person had evidently neglected to gather the eggs regularly, but had left them in the nests, the



A WING IN THE POULTRY BUILDING, TORONTO EXHIBITION, 1895.

taining chickens in various stages of incubation. The egg dealer asked me to send a copy of the September issue of *FARMING* to the shipper of these eggs, and requested me to mark the paragraph dealing with "Care of Eggs," which appeared in that number.

It seems an utter impossibility to get people who sell eggs to understand how to care for them. Would any one think of sending butter to a dealer in a pail which smelled strongly of coal oil?

It has been repeated time and again that the shell of an egg is porous, and, if placed in an ill-smelling box, it gets to taste of what is nearest. To prove that this is so, we broke some of the eggs, and they smelled strongly

result being that they commenced to incubate on account of other hens sitting upon them. I sincerely trust that all readers of *FARMING* will give the egg business more attention, and, if they do, I can assure them that they will be highly gratified by the result. If, however, they neglect the matter, the result will be lower prices, and the loss of many dollars. Poultry can, with proper care, be made the most profitable branch of live-stock farming; but if you do not make up your mind to give them the same attention as you do to the other branches of stock-raising, the sooner you are out of the business the better, because you are only losing your time and money, and that is what no man can afford to do.

Shipments of Poultry to the British Markets by Cold Storage.

Mr. A. G. Gilbert, poultry manager at the Central Experimental Farm, Ottawa, has issued a circular, directed to the various poultry associations throughout the Dominion, calling their attention to the fact that during the last session of Parliament a sum of money was voted to promote the shipment of dairy products by cold storage, and that the dairy commissioner was authorized to arrange a cold storage service, which includes:

- (1) Cold storage transportation on railways.
- (2) Refrigerating chambers in Montreal.
- (3) Cold

storage compartments on steamships.

Butter shipped by the cold storage service has proved a great success, and in a circular Mr. Gilbert says:

"It is thought that the shipments of fine poultry by similar cold storage conveniences would result in the development of a large and profitable trade; and my object in addressing you is to secure the lively co-operation of your association and yourself in an effort to inaugurate shipments of the choicest poultry from your district."

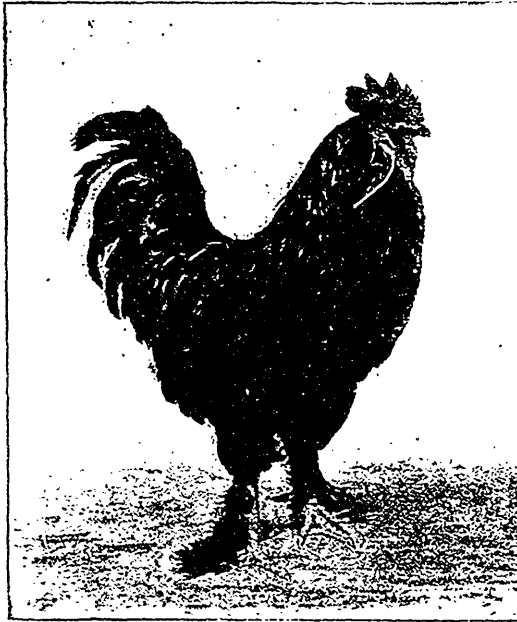
Mr. Gilbert has our hearty approval in the scheme, and we trust that shipments may be arranged for. I should be glad to have a report of the result of a trial lot. Accompanying the circular are two bulletins, entitled, "The Egg and Poultry Trade," and "The Poultry Trade with Great Britain." They contain some very useful information relative to prices, etc., in England, and some seasonable suggestions as to the preparation of turkeys for the English market.

"Care of Eggs."

Editor Poultry Department, FARMING:

I consider your article in the September issue of FARMING on the "Care of Eggs" as important and opportune. I have long been under the impression that the farmer pays too little—if he, indeed, gives any—attention to the condition in which he places his eggs on the market during the summer season. At several meetings of farmers I attended last winter, I laid the subject fairly before them under the caption of "Where do all the bad eggs come from in summer?" I made the statement that we could not, during the

months of July and August, purchase eggs from the farmer and, after boiling them, place them before our friends with any sense of security. I also made the statement—singular as it might have seemed—that there is a good market in the summer for new-laid eggs of a superior flavor. To make this contention good, I pointed out that the great majority of persons would rather pay a little



BLACK LANGSHAN COCK.

1st, Toronto, 1895. Owned and bred by E. McCormick, Newmarket, Ont.

more per dozen and get eggs with the good flavor intact than pay a small price for a bad article. I mentioned our own home experience, where we had bought almost daily several dozen of eggs, during the summer, at 12 cents per dozen. Half, or nearly half, were bad, making the price 25 cents per dozen. And few of the remaining half had the flavor of new-laid eggs! Now, where did all these bad eggs come from? Where do the bad eggs we get in such numbers on the market come from? I also plainly stated that the farmers, in most cases unwittingly and unknowingly, brought partially hatched eggs to market.

SOME REASONS.

The questions above asked immediately affect our domestic economy. In giving explanation to the farmers, I stated as among the causes of so many bad eggs being brought to our summer markets the following:

(1) Having male birds running with the laying stock.

(2) Eggs from that cause being fertilized, that is, containing the germ of chicken life.

(3) This germ only awaits favorable conditions to start on its mission of developing into a chicken.

In proof of this, let me give the statement of a farmer in the neighborhood of New York city, who sends thousands of eggs to that market every week. He made the statement in the *Rural New Yorker* to the effect, that if by carelessness, or accident, a brooding hen is allowed to sit on a new-laid fertilized egg for twelve hours, the flavor of that egg is ruined. And I believe him. Experts with incubators know the progress made by the embryo in thirty-six and forty-six hours. It is well known to such that, on examining the fertile egg on

the fifth day, the embryo and the veins radiating from it can be seen by means of the test tube.

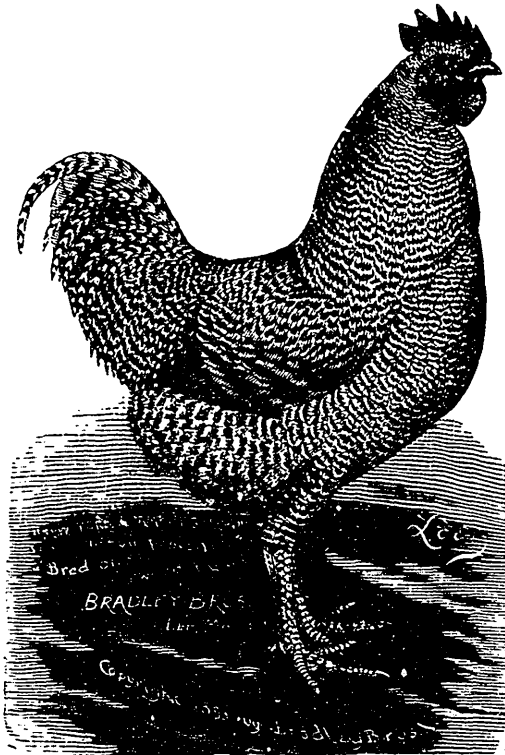
Messrs. Foster and Chard note similar changes by microscopical observation on the third day after incubation has commenced.

Other causes of bad eggs are not collecting the eggs every day; gathering them from nests discovered under barns, in hedges, and fields, etc.; allowing them to be placed near contaminating substances, etc.

NON-FERTILIZED EGGS NECESSARY.

Of course, where there is no germ there can be no chicken; there can be no partial development. But the non-fertilized egg requires to be kept in a clean, cool place for the reason given in your article—porosity of the shell. It is best, then, to have the male bird kept away from the laying stock both during winter and summer seasons. The hens will lay better without his presence. The farmer can easily select eight to eleven hens, in early springtime, to set apart for breeding purposes. The male bird, kept by himself meanwhile,

will be in good breeding condition. When the farmer has saved the number of eggs he requires to hatch out chicks from, he can either kill or dispose of the cock bird. Let him keep the hens he has used as breeding stock together for a week or ten days longer, until the influence of the male bird is lost, and then let them run with the other laying stock with whom there is no male bird. He should make it a rule to allow no male bird with his laying stock. When this is done by the farmers of the country, we shall have few partially hatched eggs



BARRED PLYMOUTH ROCK COCKEREL.

Owned and bred by Bradley Bros., Lee, Mass.

brought to market, or sold by dealers. We may have stale non-fertilized eggs with bad flavor, from being kept too long, and in or near foul-smelling places and things, but we shall have no partially hatched or rotten eggs.

WHAT IS A ROTTEN EGG?

A rotten egg is one in which the germ has made certain progress. From change of temperature, or overfat condition, etc., of parent stock, the progress of the germ has been arrested and decay and decomposition take place, and you have the rotten or bad egg.

Ask an expert in artificial incubation what an addled egg is, and he will tell you.

SAFEGUARDS.

To have eggs with good flavor for our home markets, or for shipment, it is necessary, then, for our farmers to observe the following :

- (1) Keep no male birds with laying stock.
- (2) Collect eggs once every day. Twice if necessary.
- (3) When collected, market frequently. Meanwhile keep the eggs in a cool place with sweet atmosphere.
- (4) Sell no eggs collected from stolen nests, under barns, or that you are not certain are new-laid.
- (5) Keep your hens' nests free from lice. Hens will not lay in lice-infested nests.
- (6) Care in not allowing the layers to eat decaying animal or vegetable substances.

I have in the foregoing only hurriedly touched on certain points of a subject which is of very great importance. There can be little doubt that we shall continue to have ill-flavored, partially hatched, rotten and addled eggs put on the market until the farmers give the subject their practical attention. I do not say the farmers intentionally sell partially hatched eggs; but I do say that until they adopt intelligence and system in the management of their egg-producers, we shall have a poor article of consumption in the shape of so-called new-laid eggs in the summer months.

A. G. GILBERT,

Manager Poultry Department.

Central Experimental Farm,

Ottawa, Oct. 11th, 1895.

STRAY FEATHERS

The *British Fancier* says: "A good cure for roup is to put three drops of camphor on a piece of bread to give to the fowl. In two or three days it will be all right."

During the next four or five months, FARMING will present to its readers illustrations of several of the winning birds at the late Industrial Exhibition. I believe illustrations do more to instruct the poultryman than anything else, except, perhaps, being personally present at the large exhibitions, seeing the best the country can produce, and comparing hem for himself.

Give the poultry house an application of hot whitewash before the winter sets in, so as to

destroy any vermin that may remain, and also to make the interior of the house light. The whitewash on the walls, and that which may be spilled on the floor, will serve to purify the premises and keep disease away. It would not be out of place to supply whitewash as often as once a month, and also to scatter air-slaked lime freely, for, if this is done, roup may be prevented better than by any other method that can be used.

Now is the time for all those who contemplate getting a good supply of eggs the coming winter to see that everything is made tight about their poultry buildings. It will not do to delay another moment. In fact, this should have been attended to before, but, if not already done, see that you give it your attention at once. Repair all leaky roofs, put in new glass where the old is broken, and generally look over your building to see that there is no crack or crevice where wind, rain, and snow may find a ready entrance. A comfortable and cleanly poultry house is one of the first essentials towards success.

I had the pleasure of attending the Uxbridge, Scarboro, and Milton fairs in the capacity of judge of poultry, and at Markham as a visitor. I was delighted to see such large exhibits. At Uxbridge there were some 700 birds, at Scarboro about 200, and at Milton about 600, and about the same at Markham. What delighted me most was to see so many farmers showing. At only one of the above-named exhibitions did I see a regular poultry dealer exhibiting. It is certainly a good sign to see so many of the farming community taking such an interest in poultry. The exhibits at all of the above places were of an exceptionally high order, and show what farmers can do in this direction, and I hope another year to see still greater strides made.

Some of the associations should, however, be a little more liberal in the matter of their prize lists. There are not enough classes given. The poultry buildings were crowded all day, and evidently one and all took a lively interest in the display.

Clover and Eggs.

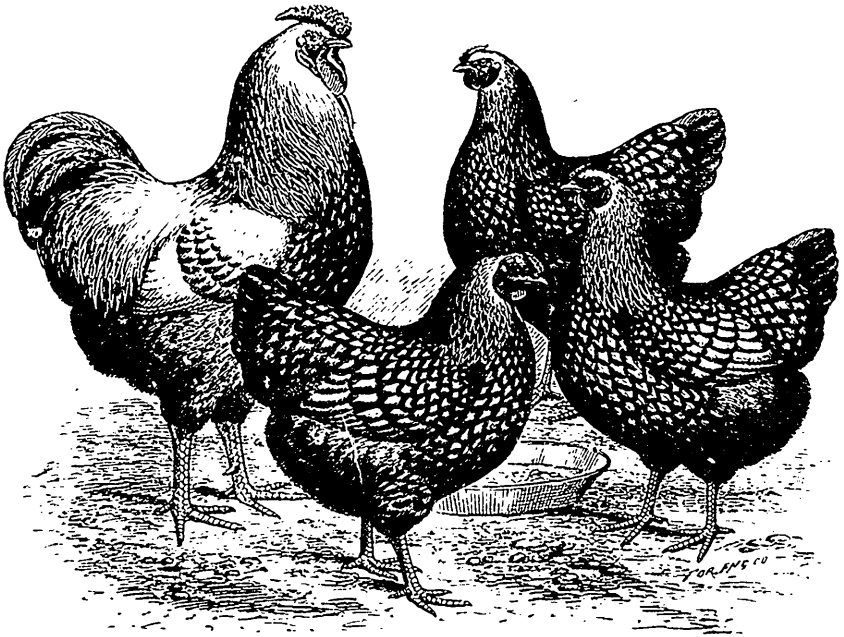
Clover is as much an egg-producing material as it is a producer of milk. It is rich in nitrogen and mineral matter, thus providing the hens with substances that are derived from it in forms most suitable for the purposes desired. Lime is an essential substance in

the production of eggs, and there are some who use oyster shells for supplying the hens with lime, but clover contains lime in a soluble form and ready prepared for use. The various grains are deficient in lime, and when poultry receive no food but grain it is impossible for the hens to lay. When the needed elements are supplied, and the hens lay regularly, the carbonaceous matter is appropriated by the eggs; but, if the hens do not lay, they become fat, and remain in a condition which invites disease. Clover, by displacing grain, supplies the hens with substances which are lacking in the grain, and also provides bulky food and heating. When the hens have the

Cold in the Head.

J. S., Toronto: Some of my Silver Wyandottes seem to have caught a cold and are running at the nose. The head is not swollen. Would you kindly suggest a cure? Would it be advisable to isolate the birds affected?

ANS.—My own remedy is to remove the affected birds to separate quarters, where they are entirely free from draughts. I fill a common machine oil can with coal oil, and, night and morning, squirt a little of the oil into each nostril and into the head, placing the point of the can into the opening in the roof of the mouth. I have been very successful with this simple remedy, and have great faith in it.



FIRST PRIZE BREEDING PEN OF SILVER WYANDOTTES.

Toronto Exhibition, 1895. Owned and bred by J. E. Meyer, Kossuth, Ont.

use of a clover field they should lay a large number of eggs during the whole season.—
Poultry Keeper.

Clover.

E. K., Arthur: In a recent issue of your paper the feeding of clover to hens was advocated. How should it be saved?

ANS.—I think it would be well to cure it in the field, and then put it away until required. I should imagine the second growth would be better for feeding purposes, as it would not be as coarse as the first. As you desired to use it, you could take the quantity wanted, place it in a tub, pour scalding water over it, and then let it stand for half an hour or so. It might then be mixed with shorts or bran and fed. You will find the fowls relish it very much.



Enquirer: What is the best breed of geese?

ANS.—Perhaps the best breeds of geese are the Embden, with its pure white plumage, and the Toulouse, with its gray. The former will often dress from twelve to fourteen pounds, while the Toulouse have now and then reached the enormous weight of fifty pounds.



Conducted by "AGRICOLA."

KEEP THE PLOW RUNNING.—Keep the plow going as long as possible where plowing is to be done. Every acre turned now is one less to be turned in the spring, and time then is very precious. Let nothing, then, hinder the progress of the plow, not even the plowing match in the neighborhood, unless there are good reasons why it should be attended. "Agricola" favors plowing matches, and thinks it very proper that people should go, but those who are behind with their work should hesitate before they go. Fall plowing in Canada is decidedly conducive to increased yields, whatever may be said of it in other lands. The upturned soils are mellowed and warmed, and plant food in them is let loose by the action of the elements. In Manitoba and the Northwest, soils thus plowed become more settled than spring-plowed lands, and hence they are better capable of resisting drought. Keep the plow running, therefore, so long as there is a single furrow to be turned, or until the ground freezes up tightly.

WOOD FOR WINTER.—The winter is coming. Let us get ready for it. On most farms there is yet some woodland left. In the wood lot, which is also a sort of pasture in many instances, some trees have been blown down by the fury of the tempest during some portion of the year. These are unsightly, and where firewood is wanted they should be utilized for that purpose. If cut up into lengths for handling, and then piled up carefully, such wood can be drawn at any time desired. But if left until snow falls and drifts among the tops, they will be so hidden that the labor of cutting will be greatly increased. When the ground has frozen and caused other work to cease, such labor may be conveniently done. But with the pressure of other work it is apt to be overlooked. In these days of depression care should be taken to utilize everything to the very best advantage. Fuel obtained from such fallen trees may be made to serve a good

end. It is much better to utilize it than to pay cash for coal and draw it a goodly distance from the market, while the wood is allowed to rot.

LOOK AFTER THE CORN FODDER.—Look well after the corn fodder. Hay is both scarce and dear. Although we may have a goodly supply of corn fodder, we do well to heed lest it be wasted, or at least a portion of it. The moment a shock of corn sags badly or falls over in a wet climate, it begins to take injury. We should certainly prevent that by drawing such shocks and putting them under cover. We may possibly arrange to feed them out without storing them. It is usually a good plan to feed the stalks early in the season and to keep the hay until a later period. When it can be done, it will be found a good plan to store at least some of the corn fodder in the mows above the hay or straw, or in some other place that has been vacated for the present. Some seasons corn keeps very nicely in the field on into midwinter, but at other times the sleet and rain give it a rough coating. It becomes frozen to the ground, and great heaps of snow may get piled up around the shocks. It is well, therefore, to try to so secure the corn fodder or to so use it that it will not be wasted. The economy of foods cannot be too carefully studied during the present season.

TURNIP LEAVES.—Turnip leaves are possessed of a high feeding value relatively, and yet, oftentimes, no other use is made of them than to fertilize the land on which they grew. When food is very plentiful, it may be well to use them thus; but when food is scarce, as it is now in many parts of the country, it may be well to give some attention to the turnip tops, as a good crop of roots produces a good many tons of tops per acre. The best use cannot be made of the tops by turning the stock into the field to feed upon them at will. They are apt to scour the animals, and they soon get so tramped and fouled that much of

them is left un-eaten. More value will be got from them by collecting them in heaps, and carting them to the stock. If, say, half the fodder ration is turnip tops, and the other half something else, most excellent results should be obtained. There is the item of labor to consider, of course, and in some seasons it may be an item that could not be afforded. But when short supplies and a long winter face us, we do well to take advantage of any help that may thus come to us in feeding our stock.

DITCHING WET PLACES.—Many a man plows around a boggy, wet place for a score of years when a few days' labor would drain it. His horses paint their legs with mud as they turn in the edge of that ditch when plowing, and now and then they leave a shoe there. The low land produces no crop, unless it be rice or the coarsest grass. It is an eyesore to the owner, or, if it isn't, it ought to be. Such lands should be drained when the outlay is not large. They possess the richest soil. They can be made to produce more twice over per acre oftentimes than any other part of the field. Let those who have such lands, therefore, go and look at them again. Let them stay till the spots become hateful in their sight, and there and then let them resolve to drain them. The nature of the draining will depend upon the character of the bog. Sometimes an underdrain carried from the lowest spot will suffice. It may be necessary to carry it through a hill of no little depth. At other times an open ditch, made with the plow and scraper, will be the best thing. In rare instances, a hole may be dug through hardpan to gravel below, through which the water will escape, and yet, again, it may not pay to drain the bog. At any rate the cost should be considered, and where the benefit is likely to be greater than the outlay the work should be done. Look into this question, and see if there are not some places on your farms that should have been drained long ago.

STICK TO THE FARM.—Very few of us know when to let well enough alone. We are restless creatures, and oftentimes we are the most restless when we are doing the best. Why men who are making a good living on the farm should conclude that they must sell their farms and go into the city has always been a mystery to me. When a man who knows nothing of farming leaves the city for the country to make a livelihood upon a farm, those amid whom he settles look on with a

sort of curiosity, and with the expectation that he will not succeed. But it should be borne in mind that he will be more likely to succeed than the man who goes to the city to take up what is to him a new line of business after he has spent much of his previous life at farming. That feverish desire for change should be kept in check. And that mischief-maker, Discontent, should not be allowed in the farm home, for when once he gets a foothold there he does much harm. And be careful, farmers, about looking at other places through deceitful glasses. It is not all gold that glitters. Other soils and other climates may have charms for those who visit them only in favorable seasons. But the conclusions reached may be very different if these places are visited at other seasons. The boy whose notions of farming are drawn from a visit to the farm in midsummer, and who rides home on loads of hay which he has not built, has very different notions of farming from the boy who has stood behind the carriers of the threshing-machine all day long. The former has only seen one side of farming, whereas the latter has seen it in its various phases. And men who visit other places only when the face of nature is radiant with smiles know nothing of the frowns that may disfigure her at other seasons. Let well enough alone, farmers, so long as you are making a good livelihood. That is all that any man gets out of the world in the end.

Grasses for Wet Lands.

We sometimes find lands submerged during a considerable portion of the year. These produce grass in summer more or less coarse in character, as the land is wet or not so wet. The wetter the land, the coarser is the grass that grows upon it. It may be desirable to try to get better grasses in such lands. The chances of doing so are not very encouraging while the waters remain deep, but there may be conditions where some improvement can be made.

The success that will attend such efforts will be somewhat dependent, first, on the character of the soil; second, on the depth of the water; and, third, on the nature of the climate. The more solid the soil, speaking in a general way, the more favorable is it to the growth of cultivated grasses. The success with these will also be largely dependent upon the shallowness of the water and the mildness of the winter climate. Where ponds

are covered deeply with water, and where the water all turns into ice during the winter season, it will be difficult to find any cultivated grass that will live. But where the water is shallow, and the winters not very cold, several of the improved varieties will live and flourish fairly well. Notably is this the case with red top, blue grass, alsike clover, and orchard grass. But when the water is at all deep, and lies for months at a time upon the soil, these varieties will fail.

To show that grasses will bear being under water for a long time, under certain conditions, in the winter season, we have but to refer to the meadows of Great Britain and the Continent, which are submerged for periods, longer or shorter, in the winter and early spring. But when so submerged the water is not very deep. Instead of injury there is a positive benefit from such submergence, as the roots of the grass are prevented from injury, which, under other conditions, might accrue more or less from heaving.

But where water is at all deep, and lies at the same time during the whole of the winter upon the land, only coarse grasses can live, and, when the water gets beyond a certain depth, even these cannot live. The outlook, then, for growing good grasses on winter submerged soils is not very encouraging, even though the waters should disappear in the summer. Grasses which grow on such lands are invariably coarse and lacking in palatability, but sometimes a good yield in quantity may be obtained.

The references above relate, of course, to winter submerged lands which cannot be drained. Where they can, this should be the very first step taken, and, when thus dealt with, it would be found that the quality of the grasses would at once improve, and also that improved varieties could be introduced.

When such lands are drained they are usually very excellent for grass production, owing to the large amount of vegetable matter which they contain. As a rule, they are better suited to growing grasses than clovers. But alsike clover is quite at home in such lands, when they rest upon a clay subsoil.

When swamps are drained, at the first they do not grow grasses as well as they do at a later period. This is owing to the spongy character of the soil, and the deeper and the more spongy the soil, the less favorable the results for a time. But gradually the lands impact, or, rather, become more firm,

and, as this process advances, they become better adapted to the growth of such grasses. If, therefore, the results immediately following drainage are disappointing at the first, the owner should not be too much disappointed.

Such lands are well worth looking after. Their powers of production are very great. In every land where attention has been given to the drainage of swamps and marshes, especially those with a clay subsoil, such lands have greatly risen in value, and they have proved by far the most productive when compared with the uplands. In some countries where the upland will not bring more than \$25 per acre, the drained marsh lands will sell for twice or three times that sum.

Clover as Ensilage.

We have not been as enthusiastic over making clover into ensilage as some persons are, but there may be times and seasons when it not only can be done, but when it will prove very profitable to store it thus. When the season is dry and the weather is favorable, hay is so easily cured in this bright and happy climate that there is no real difficulty in curing clover. But sometimes it makes trouble enough. We have seasons in mind when much of the clover grown either spoiled so completely that it was quite unfit for food, or it was so injured that its feeding value was much impaired. In such seasons a silo for receiving the clover would prove a very great boon. In Great Britain with its damp climate, clover ensilage should certainly be made without reserve by the farmers.

A. F. Noyes, of Wisconsin, writing in the *Prairie Farmer*, enthusiastically advocates the ensiling of clover, even in that climate, but we observe that Mr. Noyes is careful at the same time to cure a part of his clover in the dry form. He claims, however, that they have found, all things considered, that they have got the best results from the clover made into ensilage. They can go right on making the clover into ensilage, let the weather be foul or fair, and when it is fair they can store some of it in the cured form, as they have the storage room for it, and it is very convenient to have a certain proportion of it in that form.

Experiments of former years were not very favorable to ensiling clover, as much of it spoiled; but is not so now in this age of advancement. We are learning by experience. For many years it was thought unprofitable to ensilo corn, as much of it would spoil; but we

have got past that stage in the ensiling of corn. It seems that clover wants more weighting than corn in the silo, and that it needs less weighting when run through the cutting box than when ensilaged in the long form. We should naturally suppose, therefore, that it should get more tramping than corn.

Green clover may be loaded with certain kinds of loaders. Some kinds, however, do not seem well adapted to such work. It is taken right up from the swath. Of course, it may be loaded by hand, but pitching green hay is heavy work, which men naturally dislike in hot weather. Nor does a horse fork make good work when unloading the hay. It dumps so heavily into the silo that the pressure is uneven, and some of it seems to mould in spite of all precautions that may be used to prevent this.

In feeding the clover ensilage, it has been found that it can be handled more conveniently in the cut form, more especially when it can be fed from an alley in which a car or truck can be used. It can be thrown down into the truck and fed with much convenience when the conditions are correct. And it certainly makes an excellent food.

Clover ensilage in itself is more nearly a perfect ration for animals than any other winter food. It is also worth more per ton. But it is not a suitable ration to feed alone. It has been estimated by competent authorities that twenty-five pounds of clover ensilage may be fed daily with much advantage to steers or cows. Horses and colts may get from ten to fifteen pounds, and ewes two pounds before the lambing season and three pounds after that period. It will be observed that these amounts are less than is commonly fed of corn ensilage.

Clover ensilage has other advantages over corn. When the farmer has to do the work himself, he has more time to handle the clover, as it is ready to be cut early. And where a part of the crop consists of clover of the common variety, and a part of it of the mammoth variety, the farmer has time to make his ensilage without being too much burdened.

Of course, where the farmers are without a silo, the wisdom of building one to hold clover ensilage alone is open to question; but where there is a silo already, it would certainly be a good plan to utilize it sometimes by making it the receptacle of clover ensilage. And where dairying is extensively carried on, it is well to consider whether it would not be well to have a silo for clover and also one for corn.

The Influence of Light on Potatoes.

When potatoes are growing, if they come to, or quite near, the surface, they turn green in color, and this loss of color, of course, they never regain, that is to say, they never again regain their natural color, even though they should be buried ever so long beneath the soil, and the discoloring, even at that stage, affects the quality of the tubers, so that they are not suitable for food, although they grow well when used as seed. To prevent the tubers from being thus discolored, some hilling is necessary; but where there is no danger that the potatoes will become uncovered, level cultivation is probably preferable.

After potatoes are dug they should not be left lying long on the ground exposed to the light, much less to the sunlight. If thus exposed for a few hours, they may lose that fine glossy bloom which characterizes them when they come out of the ground, and they never again regain it. It follows, therefore, that the pickers should keep close to the diggers, or, in other words, the diggers should not get far ahead of the pickers. But there may be instances when, in moist and somewhat clayey ground, the earth adheres somewhat to the potatoes. It may, in these instances, be wise to let the potatoes dry for a while before lifting them.

If potatoes are exposed to the light when stored, they deteriorate in edible qualities. They lose flavor, and in the spring of the year, or even when that season is approaching, they will shrivel and become soft. When they get in such a state, their value as food is very much impaired. We have no better evidence of the fact that potatoes should be kept in a dark place than the fine condition in which they come out of the pit when they have been thus stored in the same over winter. In no way can potatoes be kept more perfectly, and yet, while so kept, they are, of course, entirely shut away from the light. Were it not for the extra labor, this is a model way of keeping potatoes.

But while it is indispensable to keep potatoes away from the light as much as possible when they are intended for table use, such a mode of handling them may not be the best when they are intended for seed. If they are kept in the dark in a cellar, as soon as the temperature becomes warm they begin to sprout. On the top of the bin where they lie deeply the sprouts may be only starting,

whereas away down in the bottom of the same they will be quite long, and, it may be, even matted. Now, such a condition is very unfavorable to the growth of the potatoes when planted. Just as soon as a sprout in a potato becomes long, that means that so much energy is gone that would otherwise be devoted to the future growth of the crop. It is well, therefore, to prevent such a result, and it can be at least measurably prevented. In the first place, it may be prevented by selecting the seed potatoes in the autumn, it may be at digging time, and storing them in a pit. The covering of the pit will have to be removed gradually in the spring, as the weather gets warm, to prevent injury to the seed from too much heat. Or they may be thus saved and stored away in the cellar. It is a good plan to put them in boxes, and to store these boxes one on the top of the other. When the weather begins to get warm in the spring, the cellar windows may be opened and light let in. The boxes may then be spread around on the floor, or in some such way that they will not stand more than one tier deep. The potatoes may then be occasionally emptied from one box into the other, and, when thus managed, they are kept from sprouting. They will, of course, shrivel on the outside, and assume an appearance that is not by any means attractive, but they will, all the same, make first-class seed.

When they have not been thus exposed to the light, it may be a good plan to expose the seed to the sunlight. One result would be that the seed would sprout much more quickly when put into the ground. The exposure may be continued for two or three days, and it may be effected by simply spreading the seed thinly over the ground in any convenient place.

To the Girls of the Farm.

Much attention is given to the boys of the farm in the agricultural press. Why should the girls not come in for a larger share? The girls of the farm are quite as indispensable as the boys. The education of the girls of the farm should be no less important than that of the boys of the farm, and it should receive at least equal attention.

But is it not a fact that strange notions have got abroad as to the nature of the education that should be given to the girls of the farm? Is it not true that the education which many parents are most anxious to give them is more

likely to lead away from the farm than toward it? Do they not aim to give them an education that consists, to a considerable extent at least, of what may be termed accomplishments which they expect will help them to shine in some other sphere than on the farm? So long as this course is adopted, we should not murmur if our girls come to the conclusion that the farm has no charms for them.

Now, girls, don't be deceived by the appearance of things. It may be that in some other lines of life women have less of work than on the farm, but they have also less of strength for work and very much more of worry. Life on the farm has a charm and a peace about it, and a freedom from the tyrannical exactions of society, that should make it desirable to any one who can possess it.

The education of girls should, of course, be of a character to fit them for their future work. If that work is to be in the direction of a farm home, the education should be shaped accordingly. The study of agriculture in many of its phases should no less engage the attention of girls than of boys. Such knowledge will be helpful to them. It will be helpful because it is interesting and important; because it will fit the possessor thereof to be a useful counsellor to a husband whose life is put into the work because of its direct bearing upon some of the important duties in which the women of the home are usually more directly interested, as, for instance, the care of milk and of poultry; and because the more we know about a branch of industry that engages our attention, the more enjoyment do we get from pursuing it.

The co-education of the sexes has not yet been introduced into our agricultural colleges; at least it has been introduced only to a limited extent. Its day, however, is coming, and it ought to come. There are some branches of agriculture which it may not be necessary for a girl to study, but there are other branches which she should study without fail. Among these, domestic economy is one. Of course, domestic economy is important as a part of the education of all girls, but it is even more important for the farm girl than for the girl of the town, as in the town more of the food used is prepared outside of the home.

Now, girls, try to equip yourselves for discharging handsomely the duties which devolve upon you in the farm home. We do not simply mean prospective duties, but present

duties as well. No girl was ever intended for a household doll, much less a farm girl. For girls as well as for boys, it was intended that life should be earnest and real.

Much of the education that girls receive will be gleaned in the school of experience. We mean that school of everyday routine in which the dutiful daughter will be found standing side by side with the mother, helping her to bear the brunt of the battle of everyday farm life. The wise girl will not only be ambitious to render herself thus helpful, but she will always be ambitious to do what she does in the very best possible manner.

The range of the work done by a young girl will depend upon conditions. Clearly, there are kinds of work upon the farm which no woman should have to do. But there may sometimes be work even out of doors which a girl upon the farm should never try to shun. Gardening, so far as it relates to making provision for the table, and the care of flower-beds, should always furnish ennobling and health-giving work for young girls. When it is necessary, they should not scorn to milk and to take care of the same. And there may be occasions when it may be very necessary for women, and even maidens, to go with the horse and buggy to the town to market produce. Whether all of these duties shall be done by the maidens of the farm will depend very much upon circumstances. For a maiden to do these things, and thus do her part in sustaining a struggling family, is far more noble than for her to cling a dainty, idle parasite, feeding upon the substance of a needy family and giving nothing in return. Such is not the character of the average girl of our farm homes. Hers is the ambition to be useful in life. She is aiming to grow great in life as true greatness can only be attained, viz., by faithful, loving service in the discharge of present duty.

Benefactors of the Farmer.

When men make an important discovery in the line of machinery, they secure a patent on the same, and, in some instances, they reap a handsome reward. To encourage the spirit of invention, the governments of various countries have seen fit to protect such patents. Under such protection invention has been greatly stimulated. Without it discovery would languish, for then men would cease to strive to discover what would bring no more of substantial benefit to them than to their

neighbor, who would at once avail himself of the advantages of the new discovery.

But there is another class of discoverers who cannot be thus protected. Where will their reward come in? We mean that class of experimenters who are discovering better modes of tilling the soil, and consequently more remunerative methods of growing crops. What are we going to do with them? It may be that they are benefactors of the farm, even to a greater extent than the man who invents a machine which lightens the toils of the husbandman, but who is careful to acknowledge the benefit which those men have rendered.

It has been said of the man who introduced the Concord grape that he was the benefactor of mankind to the extent of thousands and thousands of dollars, yes, to the extent of hundreds of thousands of dollars, and yet he made practically nothing out of his discovery. It is even said of him that his last days were spent in a poorhouse. Men are introducing new kinds of grain and proving their value, and soon these become the property of every one. They are making discoveries with reference to better modes of feeding live stock, which result in great saving, and in great benefit in various ways to the farming community, and yet, beyond a passing notice at the time, the name of the discoverer is seldom mentioned again. In fact, the tendency nowadays is for the agricultural press, when noticing a bulletin, to credit the station only which issued it, without even mentioning the name of the writer. Is it fair, we ask, to treat men so who have proved themselves benefactors of the race?

Well, what is to be done? Something ought to be done. Something must be done, if effort in the direction of agricultural discovery is to be maintained. No man cares to put his life into a work when, it may be, after years of toil, he makes a hit, and it, at once, becomes the property of every one, and the name of the discoverer even is ignored in all reference made to the discovery.

Two things may be done. First, when an experimenter has hit upon something that is likely to be for the general good, his work should be recognized by associating his name in connection with the same when reference is made to the experiments and its results by the press; and, second, when subsequent writers refer to the same, they can well afford to take time to give credit to those to whom credit is due.

Of course those who are able to place themselves on record by way of book production can secure the needed protection. What they have succeeded in doing in this way becomes a matter of history, and no man can henceforth rob them of the credit which is their due. But few, relatively, are able to do this, and, in the absence of such inability, there should be some way devised of securing to them the credit which is their due.

Would it do any harm for the province or country in which such discoveries are made to devise some plan of publicly rewarding the men who have done such faithful work? Would it not be easily possible to offer medals to the experimenters who have discovered what must evidently prove helpful to agriculture? These medals could be awarded by a committee in some way connected with the Board of Agriculture, and they could be awarded from time to time as occasion might demand. The discoveries thus introduced would be recorded in the records of the agricultural board, and the credit of the same would for all time be secured to the proper parties.

Writing for the Agricultural Press.

The average of the contributions to the agricultural press is immeasurably better than it was years ago. In former times contributions were usually furnished by a class of professional writers who wrote on agriculture simply for the bread and butter which it brought to them. Men had not learned the duty and privilege of communicating knowledge to their fellows as they have learned it now. They were much prone to try to keep the secrets which they had learned hidden, as far as possible, that they might have a chance to reap the full advantage from the possession of knowledge to which their fellows had not yet attained. Because of this, much that was written with reference to the grandest of the sciences was pure theory.

But it is very different now. As the careful reader cannot fail to have noticed, much of what appears in the agricultural press has a thoroughly practical ring about it. There is no mistaking the fact that the men who contribute, or, at least, many of them, are possessed of much valuable knowledge with reference to the topics of which they treat.

To so great an extent does this feature prevail in agricultural papers that it would not

be incorrect to say that they are the repositories of advanced knowledge with reference to practical agriculture. The needed textbooks have not yet been written, and when they are written the writers of the same will, in one way or another, be largely indebted to the agricultural press for their information.

It is well that farmers can be secured to write to so great an extent in the farm papers as they do at the present time. The practice of having a practical farmer of sound judgment edit one of the departments is a good one. The reader can usually depend on the soundness of the statements of the writer. When he sends a question to that department he feels quite sure that he will get a sensible answer that he may turn to good account. It is certainly a privilege to the agriculturist to be thus favored. He is thus put in a position to obtain valuable knowledge simply by asking for it, whereas in former times he could only get such information by seeking for it himself, or by paying the possessor of the same something substantial for the new light.

A new element has entered into the agricultural press during recent years which is adding much to its value. This would have been impossible years ago, for it did not then exist. We refer to the contributions which are now becoming so frequent from the pens of the various professors who are engaged in teaching at the various agricultural colleges, and who are also engaged in experimental work at the experiment stations. The writings of these men, as a rule, are well worth reading, and those of them which are not will soon be excluded from the pages of all respectable agricultural papers. The age of the world has now been reached when even professors cannot pose as teachers of practical men unless their teaching is possessed of the right ring.

The number of those contributors is rapidly on the increase. Any one who has carefully read the farm papers during recent years cannot fail to have noticed this. The motive which prompts those men to write thus may have an element of selfishness in it. They have found that it gives them publicity and adds to their prestige in the eyes of the public; hence, it is, happily, not difficult to obtain contributions from many of those men on terms that are reasonable. It is very much to the advantage of the general public that it is so. It may be that in some instances their writings lack somewhat in the

genuineness of the ring of everyday practicality; but, notwithstanding this, they are usually accurate. Those men cannot afford to be careless as to what they write. They cannot afford to hang up an exhibition of either innocent or culpable ignorance before the gaze of the general public.

And there is every prospect that the supply of contributors from this source will increase rather than decrease. It is likely to increase because it furnishes an avenue by means of which ambitious young men can bring themselves before the public. It may be that the old veterans will drop out and do less and less of this work. In fact, it is very probable that so it will be. The time is coming when the scientific agricultural papers soon to be issued will more and more absorb their attention, so that if they write at all for the public it will be in these. But in the agricultural papers for the general reader there will always be room for the aspiring young professor.



Answers by Prof. Thos. Shaw,
St. Anthony Park, Minn.

Soil for Field Roots.

J. B., Renfrew: I would like to get some information as to the soil best adapted to turnips and other field roots. The turnips I grew last summer on a black muck soil produced immense tops and had long necks, but the roots were small.

ANS.—The result mentioned by J. B. is just what would be looked for from such a soil. The excess of growth in the tops prevents the bulb from getting large, on the same principle that the excess of growth in the straw of cereals will prevent the full development of the grain. Carrots would have grown to perfection in such a soil. Mangels would also have done better relatively than turnips. The best soil for turnips is a deep, rich, sandy loam, with just enough sand in it to make it friable. A hard clay is not a good soil for any kind of roots. It is hard to start them in such a soil, and in it they grow slowly. Clay loam is probably the best soil for mangels, but a muck soil is also very good. Light sandy soils are not very good for root production, as they are generally deficient in moisture, and also in plant food. But, if well enriched, they will grow good crops of field roots in a moist season.

Green Manuring.

A Lindsay, Peterboro: By what method can land be fertilized quickly through green manuring? What crop or crops would you sow for plowing under?

ANS.—Plow the land after harvest and sow winter rye. Plow the rye under the following spring when coming into head. Sow buckwheat or peas, and plow under when in bloom. Then sow rape, and plow under late in the fall. Three crops would thus be plowed under, and the land would also be very much cleaned of weeds. There would be the loss of a crop for a year, but that takes place under the bare fallow system whenever land is thus cleaned. The enrichment would be about the same if the crops grown were eaten off with sheep, but the effect upon the texture of the soil would not be so good. Of course, if the green crops were pastured off, buckwheat could not be used as one of them. If peas were sown instead, oats should be mixed with them. And it would be better not to allow the sheep to the ground while the crop is wet, as pasturing then would spoil the crop, and it would also impact the land, more especially if there was an element of clay in it. There is no doubt that the plan outlined is one of the cheapest methods of fertilizing land that can be adopted.

Applying Nitrate of Soda.

J Conway, Ingersoll: Will FARMING give us some light on the mode of applying nitrate of soda?

ANS.—Nitrate of soda should be applied in the spring of the year. It may also be applied later, providing the weather is moist. It may be applied on all kinds of grain crops except peas, which can get their supply of nitrogen from the air. It should not be applied until the crops have commenced to grow, or it may pass down through the soil so quickly that the roots of the plants cannot follow it. It will then go out into the drainage water and will be lost. If nitrate of soda is applied to land from which the moisture has been exhaled, and the weather remains dry, then also the plants will not be able to get the benefit from the nitrate. Moisture is required to carry this fertilizer down into the soil in solution before the plants can take it up. It is not necessary to apply nitrate of soda to leguminous crops as clover, since these have power to get nitrogen from the air. It would not be wise, therefore, when soils are fairly fertile, to pay out money for a costly element of plant food so long as the plants can gather it for themselves.



Conducted by "DAIRYMAN."

Dairy Markets.

Since our last number there has not been much change in the condition of the cheese market. In fact, it is, if anything, somewhat duller. There does not appear to be any life about it. Factorymen are somewhat anxious to sell, especially those who have Augusts still on hand, but the buyers do not seem at all anxious for goods, even at the present low prices. The ruling figures for Augusts range from $7\frac{1}{2}$ to $7\frac{1}{2}$, while September goods go slow at from $7\frac{3}{4}$ to $8\frac{1}{2}$.

The make has fallen off very much in all factories. Many factories closed at the end of September, and the make during October in those that are continuing operations is exceedingly small; so, without doubt, the make of fall goods this season will fall far short of other years. Whether this will have any particular effect upon the market remains to be seen. If the supply of summer goods in cold storage is not too large, it does seem probable that, with such a shortage in sight, prices may go up toward the end of the year. It is doubtful, however, if they will come soon enough to benefit the producer.

The butter market, though slow, seems to be making some progress. Prices are advancing a little, and the demand seems to be steady, fine September creamery commanding from 18 to $18\frac{1}{2}$ cents for export, while the August make runs about one cent lower: dairy running from $13\frac{1}{2}$ to 15 at seaboard. As many of the local markets warrant higher figures than these, the quantity being exported is materially lessened.

Danish Butter.

The little kingdom of Denmark exported almost 118,000,000 pounds of butter in 1894. The area of Denmark proper, where the butter is made, is but little over one-fifth as large as Minnesota, and its population in 1890 was 2,178,000. The entire United States exported 11,812,092 pounds of butter in 1894. If little

Denmark, with not one-seventh the area of Ontario, can export so much butter, what ought not Canada to do under similar climatic and natural conditions. Our only disadvantage is a longer distance from the market. But this is not an insurmountable difficulty.

Scrubs.

The general-purpose cows are often scrubs. They make up the great bulk of the cows that are consuming more than they produce in the dairy, and are dying in debt after their hides have gone to the butcher. There is but little else to go. But these general-purpose cows fill a place; they just suit their owners. Butter cows would be out of place on their farms. It is a mistake to try to persuade a general-purpose farmer to substitute special-purpose purebreds for his general-purpose scrubs. The change is too great to be accomplished at once; it can only be accomplished by degrees. This is the place for the grades to get in their work.

Cotton Seed Feeding.

The Texas Experiment Station reaches the following conclusions relative to experiments on the effect of cotton-seed feeding:

First: Cotton seed increases and maintains the milk flow.

Second: It maintains the per cent. of fat in milk.

Third: It enables churning to be done at higher temperature, thus largely taking the place of ice.

Fourth: Renders the butter harder to color, to salt evenly, and print satisfactorily.

Fifth: It gives the butter a more greasy appearance, a stiff, waxy consistency, and a flat and somewhat tallowy taste.

Sixth: These defects, however, are not marked, and have been highly exaggerated by many, and, since cotton seed and its products are so cheap and valuable as food for dairy cattle, it is poor economy not to use it more freely.

These seem wise conclusions, and, using judgment always in the amount fed not to injure the dairy product, it should be worked into the ration as much as the "traffic will bear," or as the cow will assimilate to the best advantage and profit.

Water in Butter.

On the question of water in butter, a butter-maker says: "The amount of water that butter will retain depends on the temperature at which the creameries churn, the size of the granules, and the way the butter is handled afterwards. I have found out that to have butter contain from twelve to fifteen per cent. of water, the following conditions must be observed: The cream must be rich and fat and churned at a low temperature, washed just enough to get the milk out, and then worked once. I have had the butter analyzed every day for a year under these conditions, and it was found to contain about this amount of water at all times."

Cream Raising Systems.

In a series of trials in England to compare the separator, the Jersey creamer, the shallow pan, and scald cream systems, the proportion of the total fat in the milk which was recorded in the butter in two trials was as follows: Separator, 88 and 85 per cent.; Jersey creamer, 77.5 and 69 per cent.; shallow pans, 81 and 78.5 per cent.; scalded cream, 76.5 and 65.6 per cent. In the last named, the milk, after being set, was scalded on one of the milk scalders so commonly used in Devonshire.

What the English Market Requires.

Professor J. W. Robertson, in his evidence before the Agricultural Committee of the House of Commons, Ottawa, calls attention to the fact that the English people are critical as to the appearance of butter and cheese packages, and says that the merchant thinks nothing of knocking two cents a pound off his bid for a tub of butter if the tub looks shabby. The British importer is a great stickler for requiring a nice-looking package. Then, if he finds the butter inside to be of good quality, he will pay a good price for it. The tub should be well put together, and a coat of paint on the outside would never affect the

flavor of the butter, as some seem to imagine. The extra cost is more than offset by increased price. The Australian and New Zealand butter boxes are lined with paraffine paper. The result is that the butter, on arriving in Great Britain, has a sparkling appearance on the surface, and looks for all the world like fresh-made butter.

In taking into account how an Englishman chooses butter, a good idea may be gained as to the importance of paying attention to little matters. The British retailer goes to buy butter from the merchant in his warehouse. He will use a shilling, or the end of a knife, or a key, to take a very little off the very surface of the butter. If he uses the butter trier, he will run it down close to the side of the tub. In each case the butter is judged at its very worst points. Then, having tried the butter and fixed the standard in his own mind, he will endeavor to purchase the whole quantity he wants on the verdict of that examination.

On the other hand, the man who wants you to buy butter, and invites you to examine it, will bore down the middle of the tub, and ask you to judge the whole from that point. In commerce, the man who wants to buy tries to reduce the standard of quality to as low a point as possible, while the man who wants to sell desires to make the standard as high as possible. Now, if we pay attention to these little points, it will be money in our pockets. We want a nice, clean-looking tub, with good cover and proper lining. When these particulars are attended to, it will be to the material advantage of every butter producer.

Pasteurized Milk.

Pasteurizing milk is attracting much attention among dairymen just now. The importance of operating upon milk so as to control the germ life in it must be clear to every one who understands anything about milk and its products.

A bulletin recently prepared by Professor H. L. Russell, of the Wisconsin Experiment Station, contains the following:

"Pasteurized and sterilized milk does not suffer from decomposition changes nearly as readily as ordinary milk. The heating process eliminates by far the larger portion of the bacteria present in the milk, and with this diminution there is a corresponding increase in the keeping properties of the product;

either milk ought to remain sweet for a considerably longer period than raw milk. Pasteurized and often the sterilized product, however, undergo, sooner or later, a fermentation induced by the bacteria spores remaining in the milk. These changes differ from those we observe remaining in raw milk. The milk curdles, but the character of the curd is entirely different, and, to the taste, is not usually very sour. These conditions are brought about by the presence of bacteria that are able to excrete rennet, and the soft, jelly-like curd seen in boiled or heated milk is due to this ferment. Lactic acid or sour milk bacteria, as a rule, do not form spores, so that they are easily destroyed by heat. The destruction of these widely-spread organisms leaves the milk seeded with a spore-bearing rennet and butyric acid bacteria, which brings the peculiar change which is noted in pasteurized or sterilized milk.

"The physical characteristics of milk treated by heat, compared with raw milk, as a rule, are much less certain. With the sterilized milk there is a marked change in the physical constitution of the milk that cannot be readily detected. The application of heat at a temperature exceeding 158 degrees F., for fifteen to twenty minutes, produces a coagulation of certain proteid elements, and, at the same time, the milk acquires a peculiar cooked taste. With pasteurized milk this change is not so apparent; in fact, no cooked flavor should be perceptible. The physical constitution of the milk is, undoubtedly, somewhat modified, even with the lower degree of heat used. This is shown in the way rennet acts on pasteurized milk. The coagulation produced by this chemical ferment is entirely different in character, and appears much more slowly than when acting in fresh milk.

"For buttermaking purposes, or for milk or cream consumed directly, the pasteurizing process seems to have no injurious effects on the physical constitution of the material. Butter can be made from pasteurized cream, and, aside from the difference in flavor which is produced, there is no observable difference in the texture of grain of the product.

"Pasteurized cream can also be used indiscriminately for ordinary purposes, for ice-cream, whipped cream, and for general use. Milk treated by the pasteurizing process yields as large a per cent. of butter fat when separated or raised by the gravity system as the raw milk. By either process the milk is freed from any diseased bacteria that may have

been derived from the cow, or may have fallen into the milk after the milk has been drawn from the animal."

Preparing for the Winter Dairy.

Many thoughtful and successful dairymen do not have their cows served in early summer, so that they will not come in during the flush of feed and flood of milk. Neither cream nor butter brings so much then, and are really difficult to dispose of. If the cows rest any time it seems better to let them rest then (while farm work is driving), and calve in July, August, or September. Coming in at this time, they will give more milk than they would otherwise do when milk and all dairy products are high, and more nearly equalize the work of the year. Some foolishly fear that it will be impossible to get the cows with calf if service be delayed, but this is proved to be a fallacy. The cow's conditions should be watched, and she should be treated patiently while in season, but the time when she is next to calve may be controlled as easily as most things in business life. Nature calls for 90 per cent. of the calves in spring, when even a calf will scarcely sell because there are so many of them. But the sensible farmer does not always let nature dominate. He has the market and other artificial conditions to meet, and must cultivate fresh cows at the periods of greatest profit.

A Study of Udders.

Extract from an address by PROF. C. S. PLUMB, Purdue University, Lafayette, Indiana.

What relationship has the shape of the udder to the producing capacity? In the brief descriptions of model udders where a cow is described, it is usually specified that it shall be blocky, and extend well along the belly, and be carried up well behind. That will do, perhaps, so far as it goes. But that is not enough. I apprehend that the average man who purchases a milk cow does not even comprehend the real shape of the udder on his cow. One is easily deceived, unless he lowers his head on a level with the gland, and surveys it from various standpoints, so as to get the correct conformation, although a leg does partly obstruct the view. The udder may have a tilt, or a straight line in its greatest curve that will be easily misjudged or overlooked. A perfect udder is a difficult thing to find, but we find one now and then.

In such a case, the side outline of the udder approximately occupies the arc of a circle. The more perfect the udder, the further along the belly and the higher up behind toward the vulva will it extend. Ordinarily, the capacity of the hind part is greater than the front half, as I will soon show. It is also noticeable that the front udder is more frequently deficient in development than is the hind part. For this reason the American Jersey Cattle Club sets a higher scale of points for the front than for the hind part, crediting thirteen to a perfect fore, and eleven to a perfect hind udder. Would it not be a wise

of fifteen cows milked, each by itself, and separately weighed. These cows were owned by three different persons, and a part of them by Purdue University, and represented various classes of udders. These thirty different milkings show a gain of 31.0 lbs., or 22½ in favor of the hind part of the udder. These figures seem reasonable, and, I believe, fairly state the difference existing under average conditions.

If, however, we compare types of udders, we secure a different class of results. In making the sixty weighings involved in the above study, it was observed that all cows did not



Messrs. McLaren and Wheaton Scoring Cheese at the Toronto Exhibition, 1895.

decision for the other dairy breed associations to set a similar standard of valuation upon these parts? For example, the Ayrshire Association scores the perfect udder and milk veins thirty points, and the Holstein-Friesian Association the udder and mammary veins twenty-two points—twelve for the former and ten for the latter.

So far as I could learn, there were no statistics available showing the difference in milk yield of front and hind parts of udders. The impression existed with me that a poor front gave less milk than the hind part of the same udder. In order to secure data on this question, I had the milk of the front and hind parts

give the most milk from the hind udder. If the form was what one might term well-balanced, coming fairly well beyond the front teats to the belly and carrying up behind, so that a vertical line drawn between the teats practically divided the udder in two parts, the amount of milk given from the front part was very nearly the same as given by the hind part.

In view of these facts, I believe that it is desirable to practise selection and to increase the percentage of cows having udders of a high type. This certainly will appreciate the value of the individual and increase the milking capacity.

In connection with the preceding work the question arose, Is there any material difference in the capacity of the right and left glands of the udder? No figures were available on this subject that I could find, so a series of weights were taken. The sum total yield of each gland shows no material difference, only .9 lb. Seven of the fourteen weights were practically the same, the difference ranging from nothing to .4 lb. Consequently these figures would furnish us evidence for believing that in the same cow where the udder is not defective, the capacity of one gland is practically equal to the other.

In conclusion, I wish again to emphasize the necessity and desirability of making the milking feature of the dairy cow her most prominent one, and this through perfecting the development of the mammary glands. Let us breed more high types.

The Sanitary Condition of Cheese and Butter Factories.

At the annual meeting of the Provincial Health Association, held recently in Belleville, several interesting papers were read referring particularly to the wholesomeness of milk and its products, and to the sanitary condition of cheese and butter factories, dairies and dairy stables. Some of the suggestions and discussions should be of interest and value to every dairyman in the country. We agree, with a few exceptions, to what was said in reference to the dairy interests, and give below several quotations from the *Globe's* report of the meeting.

FOOD PRODUCTS OF MILK.

"Dr. E. E. Kitchen, of St. George, was then called on for his promised paper on 'Sanitary Preparation of the Food Products of Milk.' The first part of the paper contained some interesting statistics showing the vast proportions to which the consumption of the products of the dairy has attained, and in view of this he urged that it was high time that the sanitary preparation of such food product should be carefully looked after. He dwelt on the necessity of keeping the surroundings of the dairy cow clean and wholesome. The vessels in which the milk is contained should be kept perfectly spotless. The doctor suggested that if the proprietors of factories would adopt the plan of thoroughly cleaning the cans with boiling water before returning them to their patrons, much assistance would be given to the cause of sanitary reform. In

all cases, the return of whey in these cans should be strictly put down; and in this connection he said that it was a fact that over half the factories in the country were returning whey in the cans. He dwelt on the need of giving nothing but the cleanest and healthiest water to dairy cows. It was not unusual, however, to give water that was absolutely filthy. He had seen water given to dairy cows in which he knew, from personal examination, there were countless millions of bacteria."

It is an acknowledged fact that there is no substance more susceptible to foul odors and taints than milk. It is a very suitable medium for the growth of all kinds of bacteria and germ life, and what the doctor says in reference to keeping milking utensils, stables, dairies, and cheese and butter factories in a pure sanitary condition is well taken, and should be given some attention by our dairymen. It is an undoubted fact that many of our cheese factories, dairies, etc., are not kept in proper sanitary condition. This is partly due to neglect and partly due to ignorance of the consequences of allowing such conditions to exist.

A great many of our cheese factories were built years ago, when the country was not so thickly settled, and very little attention was paid to sanitary conditions in selecting a site; or in the erection of buildings. Many of these old buildings are in a process of decay, and do not meet the requirements of a modern factory. Nor can they be repaired so as to meet the needs of modern sanitary requirements.

As far as we can learn, factories that have been built during recent years (and we are pleased to state that their number is increasing) show marked improvement in regard to sanitary conditions, and, unless there is neglect on the part of the manager or owner, no difficulty should arise in regard to them. Factory owners and managers, where these modern conditions do not exist, should take warning from the signs of the times, and make preparations to have their old buildings and surroundings replaced or placed in a condition to meet all reasonable sanitary requirements. This becomes a necessity, not merely because of the effect it will have upon the quality of the product produced, but upon the health of the people living in the vicinity of the factory.

What we have said applies to dairy stables, private or home dairies, and all utensils connected with the handling of milk and its products. There is one remark in Dr. Kitchen's paper to which we would draw particular

attention. He condemns the practice of returning the sour whey to the patrons in the milk cans, and states that more than half of the factories adopt this pernicious practice. It is a very difficult task to educate the dairymen along this line. Many farmers would not supply milk to the factory unless they had the sour whey returned home for feeding the hogs, and the most convenient way of doing it seems to be by returning it in the same cans in which the milk was brought to the factory. The system is indeed a bad one, and hinders in many places the making of fine cheese, aside from the fact that the practice is not in accordance with some of the highest authorities on sanitary science.

— — —
In a paper on the "Sanitation of Factories," Dr. Dean, of Brighton, Ont., is reported as follows:

"He drew attention to the unsanitary condition of the surroundings of a cheese factory in his township, and, following this up, he pointed out the danger to the health of the community from the absorption of bacteria by cheese while in process of manufacture. While attention was paid to water supply, sewerage systems, etc., food was permitted to be sold which, without doubt, was responsible for many an epidemic which was attributed to local causes. He said that those living in the vicinity of a filthy cheese factory were not in half the danger that those who dwell in thickly-populated cities are in, and who might eat the cheese manufactured there. He said that a law should be passed to close any factory as soon as it got into an unsanitary condition."

The remark we wish to notice in this quotation is that referring to the absorption of some poisonous microbe by cheese made in some filthy factory in the process of manufacturing. No doubt there are a few instances where the cheese made in some filthy, dirty, cheese factory has become inoculated with some disease-producing germ that will communicate its peculiar qualities to the person eating the cheese, but we are of the opinion that the statement will not apply to the vast majority of the cheese factories in Ontario. True, in a badly ventilated or badly drained factory the cheesemaker has to contend with flavors in his curds caused by these conditions; but we are of the opinion, which has been formed from our own practical experience in cheesemaking as well as from the experience of others, that almost all the bad flavors and

unfavorable germ life which makers have to contend with are in the milk before it reaches the factory. We are also of the opinion that, if the maker receives the milk at the factory in good condition, and free from injurious bacteria or bad flavor, in nearly every instance the cheese, if the maker understands his business, will be free from bad flavors.

True, there are numerous bacteria around every cheese factory, which must inevitably get into the milk in the process of cheesemaking, but if the sanitary conditions have been looked after with any degree of care these living "micro-organisms" will not be such as will communicate any injurious quality to the cheese. It is not known definitely what species of germ life is connected with the curing of cheese, but we do not think that it is one that injures the cheese as a healthy food. In fact, in our opinion it tends to make the food more wholesome. It is also a fact that in many cases where foul flavors have been found in curds in the process of manufacturing, if conditions are made favorable for the germ to grow which produces the curing process, it will go on developing and permeating through the whole cheese till at the time when the cheese are ready for use these foul or injurious flavors cannot be detected, and their power is ineffective.

We do not wish to be considered here as in any way upholding the unsanitary condition of any of our cheese factories, for we coincide with every effort that is being put forth in this direction, and hope that the dairymen will profit by the agitation, but we were somewhat forcibly struck with the statement regarding disease germs getting into cheese from the filthy surroundings, and merely state what we think is the source of bad flavors in cheese in nearly every case.

If it be true that in our Canadian cheese, which has so high a reputation for excellence in the British markets, there is a vile disease-producing germ lurking around seeking whom it may devour, what a prodigious army of them there must be ready for action in Limburger, and some other brands that we have got a sniff of, but never allowed to defile our palate!

Towards the close of the convention a very strong resolution was adopted, memorializing the Dominion and Local Governments that steps be taken to bring about a better sanitary condition in regard to dairies, factories, etc., which we hope will be carried out. Anything that will tend to promote new and

better methods of sanitation in reference to factories, dairies, and utensils in connection with milk and its products should receive the approval of every one interested in the development of our important dairy industries.

The Butter-fat System of Paying for Milk at Cheese Factories.

By J. W. WHEATON, Secretary Dairymen's Association of Western Ontario.

During the past year there has not been very much agitation in Ontario in reference to the butter-fat system of paying for milk supplied to cheese factories. Many have concluded that the reason is because the system is at fault, and that in a few years it will be a thing of the past. But such a conclusion is not founded on fact.

The advocates of this new method have shown wisdom in discontinuing the agitation, and in allowing the system, in a way, to work out its own salvation. The agitation, however, has not been discontinued because the chief promoters have changed their views as to the accuracy of the butter-fat system in giving justice to all concerned. Every one who has considered the question carefully and without prejudice must be convinced of the fact that, of all the systems in use, the butter-fat basis of paying for milk supplied to cheese factories is the more nearly in accordance with justice.

This system of paying for milk should be considered in a relative sense, and not as being absolutely correct. When we compare it in every detail with the "pooling" system, there can be no question but that the butter-fat basis is the more nearly in accordance with justice. It has been carefully estimated that when milk is paid for by the percentage of butter-fat, there is a possibility of an injustice of three cents per cwt. of milk being done to the man who supplies the poor milk; while, on the other hand, when the "pooling" method is in operation, there is a possibility of an injustice of 23 cents per cwt. being done to the man who supplies the rich milk. If these figures be true, does it not seem the height of folly to contend that the butter-fat is not the proper one to adopt?

True, a large number of factories that adopted the system when first advocated have discontinued its use. But when we come to examine carefully the reasons why it has been discontinued, we find that in the majority of cases the system has been given up because of the extra expense incurred in making the test.

The patrons in many factories have been willing to have the system continued if the maker or company would agree to do it for nothing, and when it could not be done for nothing paying by test was discontinued. There are some factories, however, that have discontinued the system because of the dissatisfaction it caused among their patrons. In most of these cases there was a strong opposition to the test in the first place, which increased until the test was voted out.

From returns received from over one hundred factories in Western Ontario, we find that the average number of pounds of milk to make a pound of cheese in 1894, at the factories where paying by test was in operation, was 10.703; while the average at the factories where the old pooling system was in operation was 10.817. The averages where the milk was paid for by test ranged from 10.43 to 10.87; while those where the milk was pooled ranged from 10.40 to 11.45. These figures furnish another very strong argument in favor of the butter-fat system of paying for milk.

As many have, no doubt, concluded from the reports published from time to time of those found guilty of tampering with milk supplied to cheese factories, cases of watering milk and removing the cream are somewhat on the increase among the patrons of cheese factories. In fact, some of the factories where patrons have been fined for tampering with milk were last year paying by test.

If the removal of the safeguard, by discontinuing the use of the Babcock system, is going to encourage tampering with milk supplied to cheese factories, another strong reason is given why paying by test should be continued. Besides, if its adoption has the effect of removing the temptation to skim and water milk, it will be in the best interests of the maker, the manufacturer, and the patrons, to pay for milk by the butter-fat method, even if a little extra time and money is required in making the test.

There has been some little controversy as to the manner in which the dividends should be apportioned after the test is made. Some claim that one or two per cent. should be added to the fat readings when making up the accounts, while others are in favor of making them up from the actual fat readings. It is in some ways immaterial which one is adopted, as either one of the schemes is more nearly in accordance with justice than the old "pooling" system. A number of factories during the past season have adopted the plan of adding

two per cent. to the fat readings in making up the patrons' accounts, as it gives better satisfaction to patrons not in strong sympathy with the test.

Our object in reopening this question is to draw the attention of factorymen and patrons to the test system as being more nearly in accordance with justice than the old method, with the hope that many new factories will adopt it, and that those who have discontinued it may be led to reconsider the question. We know that considerable opposition to the test has sprung up during the last year or two, but we are led to believe that this opposition in many cases is largely a matter of sentiment and prejudice.

Occasionally, cheesemakers have objected to the test because they did not want to be troubled with the extra work of testing. Especially has this been so where the patrons did not want to pay anything extra for making the test. It seems only fair that if the cheesemaker has extra work to perform he should get extra pay. But if he does not receive anything extra, we think that it will be in the interest of every cheesemaker to do the work for nothing rather than allow the Babcock system to be discontinued, or that his refusal should prevent the system from being adopted. Reports show that where the test system is in vogue the maker has a better flavored and a richer quality of milk to handle. It is not necessary to make a test once a week. In fact, during the season just past, one or two leading factories have only made a test once a month, with the very best results. This can be done quite easily by taking samples every morning, and preserving them till the end of the month by putting small portions of bichromate of potash and resorcin sublimate in the jar containing the samples.

Some have suggested that the government would be justified in passing a law compelling all cheese factories to adopt the butter-fat system of paying for milk. In face of the present opposition on the part of so many patrons of cheese factories, no government is likely to pass such a law. The suggestion, however, has many strong points in its favor, and I believe that if such a law could be enacted it would do more to improve the quality of our cheese than anything else, and would put the apportioning of dividends on a more equal and accurate basis. I am also of the opinion that if every factory were com-

pelled to adopt the system a large share of the opposition to it would cease, as one factory could not use the adoption of the test as a handle to draw some of the patrons away from its neighbor.

In conclusion, I would ask that patrons and factory managers consider carefully the question of paying for milk supplied to cheese factories by the percentage of butter-fat as to its power to bring about the following :

- (1) A richer quality of milk.
- (2) A better flavored quality of milk.
- (3) To remove the temptation to add water or to take the cream of milk supplied to cheese factories.
- (4) To render to each patron more nearly the actual value of his milk than the old "pooling" system.
- (5) To put the apportioning of dividends at cheese factories on a sounder and more accurate basis.

To Cure Warts on a Cow.

When there are warts on the cow, one of the most approved methods is to apply nitric acid. Make a swab consisting of a stick with a piece of sponge fastened to one end. Dip the sponge in the acid, very lightly, and just touch the wart, being very careful not to get any on the skin, for it will burn any live skin or flesh as readily as a red-hot iron would. Consult a druggist in preparing the acid.



Keeping Butter in Jars or Tubs.

Subscriber: Will butter keep best in earthen jars or crocks or in wooden tubs?

ANS.—A well soaked, properly made wooden tub is to be preferred to any other kind of a package, unless it may be a tin-lined one. Earthen crocks are expensive, heavy to handle, liable to break, and butter will keep no better in them than in wooden tubs. In packing for one's own use the earthen crocks are better, because they can be used over and over again.



Conducted by E. J. McINTYRE, St. Catharines, Ontario.

About Pecans.

A subscriber from Chicago writes me, requesting advice with respect to a small piece of land which he owns in Florida, whether it would be wise to plant it with pecan nut trees. My personal knowledge of pecans is limited to the taste of them; but a friend in Texas with whom I corresponded on the subject informs me that these trees are hardy and prolific, that they require seven or eight years to come into bearing, and that a grove of them is considered valuable property. The pecan is a variety of hickory, native to the south central states. Before the nuts are sent to market, they are subjected to a process which polishes the shell and makes it thin. The tree is not indigenous to any of the Atlantic States, but thrives well when transplanted there.

So far as the trees themselves are concerned, there is no reason why good results should not follow planting a small plot of land in Florida with them. But, of course, other considerations will have to be taken into account, such as the nature of the soil, the exposure of the land, the care the young trees may receive, and the like.

The Eating of Fruit.

Fruit is a necessary and natural food. Insects, animals, children, hunger for it. The small boy in early summer, in his impatience, will not wait for it to ripen, but will run the risk of colic pangs, not to mention maternal punishment, in his eagerness to obtain it. The food of the wise man is fruit in plenty, with bread, milk, rice, and eggs. The children of the city alleys, with their pallid faces and inert bodies, do not suffer from lack of fresh country air alone. They need fruit. They are suffering from incipient scurvy, the one and only remedy for which is fresh fruit. Take them into the old apple orchard in harvest time. Give them the citizenship of the trees, and see how quickly the rosy cheeks of the apples will be transferred. Captain Cook prided himself more on losing only one man during his long

voyage of discovery than on the discoveries he had made; and he tells of the invaluable aid he obtained in the "rob" of lemons and oranges for preventing or curing scurvy. Lemon juice is of well-known use in the cure of rheumatism. There are in Germany institutions where the fruit cure is employed with remarkable success in cases of rheumatic, anæmic, and digestive troubles. Fruit is rather a necessary ally than an independent food. Its antiscorbutic action keeps the body healthy; and the sugar it contains is readily digestible. With meats that are fatty it has been associated from time immemorial—apple sauce with roast goose or pork, and more recently cranberry sauce with turkey. The fatty properties of the meat are, Addison says, "corrected" by the fruit. Let no fruit-grower be alarmed at the vast development that has recently been made in his industry. There is no fear that more fruit will be produced than people can consume.

Apple Packing.

When a farmer has sufficient apples to make a carload, it would pay him to pack them himself and ship them to a commission merchant or jobber in some British port. Indeed, there is no reason why several farmers should not combine together for this purpose. Only bear in mind the fact that while the British consumer will gladly pay a handsome price for handsome fruit, he does not want inferior fruit from us at all. He has enough of that at home. Send no wormy or misshapen apples; for if you do, you will surely regret it. But send choice fruit, and you will be surprised at the results. A neighbor of mine, two years ago, cleared, all expenses paid, over \$600 on a consignment of 100 barrels of Golden Russets. The year before, a gentleman from Edinburgh, travelling through this district on his way home, called on me as we were packing apples, and asked me to send four barrels at his expense to his address. He paid me \$16 for them. I told him that four dollars a

barrel was an absurdly high figure for apples, but he assured me that he was getting them cheaper than he could get them at home.

There are, of course, risks to run in shipping apples--risks due mainly to the wanton carelessness of transporting companies and their agents. The barrels are often handled brutally, or stowed near the engine, and, as a consequence, slacks or damaged fruit figure in the returns. Sometimes, also, the packer is to blame. If one could be sure of the apples getting careful handling, there would be no need of such elaborate pains in packing. But, as it is, the apples must be very carefully laid in the barrels and packed tightly, and the barrels firmly nailed, or they cannot weather the voyage. Why cannot we organize, dispense with the apple buyer and commission man, and dictate terms to the transporting agencies?

At the same time, it must be confessed, to the credit of the British commission firms, that they are fully deserving of confidence. There is nowhere in the world a higher standard of honesty than with them. When you send a consignment of apples to any well-known British house, you may be quite certain that you will get all that the apples sell for, after deducting their five per cent. and incidental expenses; and that is more than can be said of all houses nearer home.

The Yellows of Peach Trees.

There is one disease that has so far completely baffled the scientist. It is that known as the yellows of peaches. I do not think that there is a single peach-grower in Ontario or New York State who has not suffered loss from this insidious disease. I speak somewhat feelingly on the question, for some years ago I was obliged to cut down an entire orchard of 500 trees through its ravages. Tree after tree showed unmistakable signs, and the disease obtained such a lodgment that there was no hope of saving any part of the orchard.

The recognized authority on peach yellows is Dr. Smith, of the United States Department of Agriculture, who has devoted many years to the study of the disease, and is still employed upon it. But the true nature of the disease is still unknown, although many obscure things in connection with it have been cleared up, and an effective remedy has been secured. It is communicable from tree to tree, and no peach tree in the district can escape, if meas-

ures to check the disease are not taken. But how it spreads is not known. It is not through the soil, for young trees may be set with safety where trees affected with the yellows have been destroyed. Indeed, a very promising young orchard, and, I have every reason to believe, a perfectly sound and healthy one, is now waving where the 500 trees died. Nor is it always, if ever, as many used to think, conveyed by the bees from blossom to blossom, for trees too young for blossoming contract it. It is not in the roots necessarily, for peach trees grafted on other stock are liable to contract it. It has not been found that pruning knives carry it from tree to tree. It is not due to insects, to poverty of soil, or lack of any special food element, or inattention to proper methods of cultivation, or injury to the trees. It is, as far as known, not a fungus, and Dr. Smith, in despair, considers it almost certainly not due to bacteria.

Notwithstanding the failure of Dr. Smith and other investigators to discover and propagate any yellows bacteria, it is difficult to believe that the disease is of any other nature. The germs must be exceedingly minute; they cannot be detected by the closest microscopical search. Yet the habits of other forms of bacterial life must be ascribed to them: of incubating in a definite period, and, at the proper time of ripeness, being carried from tree to tree by the wind or any other communicating agency.

There are three signs of yellows in a peach tree. The first, and often the only, sign is in the fruit, which ripens prematurely, shows a speckled, unhealthy skin and reddened flesh. I think the most discouraging experience a fruit-grower can have is to see the tree that he had all spring and summer watched with care and pride bear, in the midst of rich, green, healthy foliage, fruit gradually developing the yellows. Such a tree, no matter how vigorous it looks, is doomed. Whenever I see one, it is cut out at once and burned, root, branch, fruit, and leaf. There is no other way by which a peach orchard can be saved.

The second evidence of the disease is the appearance of yellowish shoots at the tops of healthy branches. These shoots are likewise premature. They are, properly, buds of the following spring.

The third and least common sign, though, as a rule, the most conspicuous when it does occur, is the appearing of a growth, often thick and bushy, of sickly-looking shoots on the trunk and larger branches of the tree.

There is no case on record where a peach tree, attacked by yellows, has recovered. No remedial measure, among the many recommended, has succeeded in a single case of undoubted yellows. From three to five years after the first symptom the tree is dead.

Fortunately, the peach is not a long-lived tree, and an orchard can be soon replaced, and, with proper precautionary measures, this formidable disease may lose its terrors. If one secures stock from a reliable nurseryman who exercises care in planting healthy stones and in budding healthy buds, watches carefully for the first appearance of the disease, at once utterly destroys any tree affected, without giving the tree the benefit of a doubt, and, lastly, replants a fresh tree, there will be little danger to his orchard in general; and, if all peach-growers were to follow this course, the disease would very soon be totally eradicated.

The Old Apple Orchard.

I have before me a horticultural paper from Arizona, which, among other original and curious articles, contains a poem entitled, "You Can't Kill an Apple Tree." The abuse and neglect that the apple tree receives is detailed at length, and the burden of each stanza is the theme of the poem. But it is not necessary to go to distant countries or to poetry to find the vitality of the apple recognized. There is no other fruit that can compare with it in vigor and tenacity of life. Sometimes a few surviving apple trees may be all that is left to mark the spot of an old homestead, the very site of which, but for them, would have long since been forgotten; house, barn, garden, fence, have all disappeared. Nor is there any other fruit that has so many enemies to contend with. Over 230 insects are known that prey upon it; not to mention sun-scald, blight, and hardships of wind and weather. Its wonderful vitality enables it to survive a neglect under which the plum, the pear, and the cherry succumb; so that on most farms the orchard soon means the apple orchard.

There is no other fruit, either, that is so well adapted for general culture. The tree is long lived, and may be successfully grown in most temperate countries; and the fruit is not readily perishable. Yet it must be confessed that of late years many things have conspired to discourage apple growers. Many, in fact,

in this district are removing their apple trees, and substituting peaches and pears; but there are not wanting some who still maintain that the apple is the most profitable of fruits. If only a crop could be secured every year there would be no uncertainty as to the comparative place of apples among the fruits.

There are many causes that render an apple tree barren. In the first place, the variety may be a shy bearer. If this fault does not yield to kind and liberal treatment, the tree should be grafted. There is no lack of varieties that are well known, both for their productiveness and for the excellent quality of their fruit. See what varieties of a desirable kind there are in the rest of the orchard, or in the neighborhood, that are prolific, and graft the shy bearers with them. In three or four years you will have another tree and a good bearer.

It may be, also, that during the time of blossoming the weather is unfavorable. Sometimes a heavy frost at this time so impairs the vitality of the blossoms that the fruit falls very soon after setting; or a cold and damp week may prevent the pollen from being distributed by the bees or by the wind, and no fruit forms. There is, of course, no preventive in such a case as this. Yet, other things being equal, the strong tree will have stronger blossoms than the weak one, and weather that would injure seriously the prospects of the latter might be comparatively harmless to the former.

In old orchards the trees very frequently have what are called "off years." They blossom only in alternate years. This is a state of affairs that can be remedied by cultivating and fertilizing the orchard soil. The trees are barren one year through not having sufficient vitality to develop fruit buds for next season during the period of bearing. There should be no such thing as an off year in an orchard. With liberal feeding and free cultivation there is no reason why an orchard should not bear every year, provided none of the unavoidable causes mentioned above are present.

I have known the apples to fail through the ravages of the leaf blight. This, with unfavorable weather, was the cause of the failure last year. The preventive of leaf blight consists in spraying the trees with copper sulphate solution before the buds start.

So much for cases of absolute failure. Where the crop is scanty or poor in quality the measures to be taken to make it larger and better resolve themselves into four different

courses of treatment, namely, cultivating, pruning, feeding, and spraying.

An orchard should be cultivated regularly. The apple trees can remain longer in sod without hurt than other trees, but this is owing to their greater inherent vigor. Every peach grower knows how absolutely necessary it is to keep a peach orchard in good cultivation. There is no reason why the apple orchard should be treated differently. Still, in the summer time the soil should not be stirred deeply; otherwise the trees may be stimulated into too great a growth in the fall, and would suffer were the succeeding winter severe. The best course to pursue with regard to cultivating an apple orchard is to plow it in the spring, cultivate it frequently (once a week is not too often) through the summer, seed it down in August with rye or crimson clover, and plow this crop under the following May.

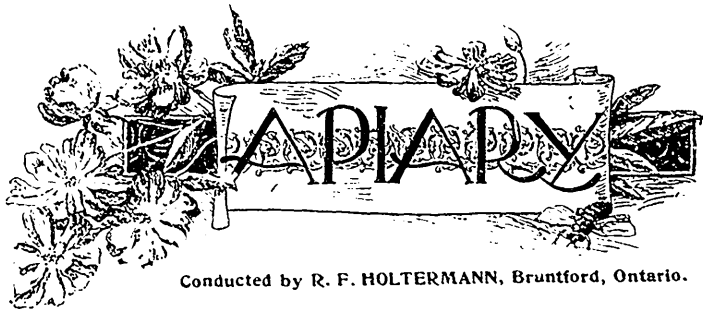
Pruning should have for its main object the equal distribution of the branches throughout all the space occupied by the tree. Remove all suckers first, and then cut out such small branches or shoots as prevent the sunlight from getting all through the tree. Avoid cutting off large branches, if possible. Where a tree is carefully watched from the time planted there will be no need of pruning, for suckers and shoots that are likely to interfere with one another can be broken off with the thumb. Remove all dead or dying branches, and scrape off the dead bark, if there is a thick layer of it, taking care not to scrape into the quick. Wash the trunks then with soft soap made thin with water. If borers infest the trees, add a teaspoonful of sulphur and another of carbolic acid to each gallon of the soap mixture. The latter should be of the consistency of ordinary paint, or a little thicker. Pruning can be done any time after the leaves fall.

Every orchard needs to be regularly fertilized. From fifteen to twenty loads of stable manure every two years will be enough for young trees; they require nitrogen mainly, for the growth of branch and foliage. But with bearing trees the case is somewhat different. The other two elements of plant food, potash and phosphoric acid, are more likely to be needed; and ashes and commercial fertilizers had better be used instead of, or at all events should be alternated with, stable manure. Yet, let no one be deterred from using the latter on the old apple orchard; and, where food has been denied for several

years, its use is all the more urgent. Forty loads to the acre will be gratefully appreciated. Avoid banking the manure against the trunk of the tree, and scatter over the whole surface. There are various sources from which potash can be obtained. The readiest is wood ashes, and as much as a hundred bushels to the acre can be applied to the orchard. Potash promotes a firm growth of wood, favors the production of fruit buds, and strengthens the tree against the severity of winter. It is the food that is very likely to be most urgently needed. Where a considerable quantity of potash is required, the best form in which to buy it is in the mineral known as muriate of potash. This article costs about \$50 a ton delivered. One ton contains fully ten times as much potash as a ton of hardwood ashes, and one can easily see the advantage of using it in preference. It is much cheaper to transport and apply than wood ashes, which, besides, vary greatly in value as a fertilizer. From two to four hundred pounds of muriate of potash will be sufficient for each acre of orchard.

Phosphoric acid can probably be best procured from ground bone. From five to ten hundred pounds per acre can be applied. Ground bone costs from \$25 to \$30 a ton.

The spraying of orchard trees is receiving more attention every year. The insects and diseases of the apple are many, and some of them are very formidable. The codling moth, the curculio, and the apple scab are the most injurious. Sometimes it will be necessary to spray five times. First, before the buds start, with a copper sulphate solution, for the apple scab. Secondly, just before the blossoms open, with Bordeaux mixture and Paris green, for the same fungus, the cankerworm, and the bud moth, mainly. Thirdly, just after the blossoms fall, with the same mixture, to destroy the codling worm. Fourthly, the same application, two weeks later. Fifthly, three weeks after, the Bordeaux mixture. In many cases it may not pay to give the five applications. The second is the most important, but all five had better be given if at all possible. Nothing further will be said just now about spraying, as it is not a live question at present. In the spring the readers of *FARMING* will not be left without full directions and cautions. I will only say this here, that to neglect spraying often means the ruin of a fine crop of apples. It is as if a vessel, after weathering the storms of a long voyage, should be wrecked through carelessness within sight of its harbor.



North American Beekeepers' Convention.

The North American Beekeepers' Association, which embraces the entire North American continent, and which has been in existence twenty-six years, met at the Normal School auditorium, Toronto September 4th, 5th, and 6th, 1895.

Owing to the poor honey season the attendance was not up to the mark, although some very distinguished men were present and some from long distances. Amongst those from the United States were such men as the Rev. L. L. Langstroth, Thos. G. Newman, A. I. Root, of *Gleanings in Bee Culture*; G. W. York, *American Bee Journal*; G. M. Doolittle, Ira Barber, W. Z. Hutchinson. The president, R. F. Holtermann, occupied the chair.

The question of securing a reduction on freight rates came up, and beekeepers will be pleased to know that the committee appointed by the association has secured important concessions on freight rates on honey. The main concession is on extracted honey in bulk, and that is just what beekeepers want and need, the bulk of the honey shipped being of this kind. The concession at present covers the Western Classification Committee grounds, not Canada, but there is every reason to believe that the other railroads will follow suit.

Next came a paper on "The Proper Size of a Brood Chamber, and How it shall be Decided," by James Heddon, Dowagiac, Mich.

"I am sure that every thoughtful honey-producer is forced to the conclusion that, to attain best results, a brood chamber must be elastic. It must be so constructed that it can be readily and practically made to embrace the various advantages rightly claimed by both the large and small brood chamber adherents. It was the dawning of the knowledge of this truth that caused Father Langstroth and other early inventors to suggest division boards, and two prominent reasons why these contractors were never universally adopted were, first,

because many beekeepers are neglectful, and, second, the practical honey-producers who are not abhor complication and tedious manipulation. Although experience proves that the advantages of changing brood chamber capacity at various times of year cost about all it came to, yet the fact that such capacity must be changed, if we are to realize the most from our bees, still remains. I think it would be bordering upon presumption for me to rehash what has already been so well said upon this subject in our bee journals during the last two years.

"I believe that locality, of necessity, makes a difference with regard to the best size for the brood chamber, upon the same principle that conditions changing with the season change their adaptability; but I do not believe that locality makes as much difference as some have contended, nor as much as a change of seasons and conditions in the same honey field.

"When, with the rest, I thought I must be contented with the use of a brood chamber the capacity of which remained the same throughout the year, I settled upon eight L frames as best, as splitting the difference between being too large at one time and too small at another. I have never changed that conclusion. I will admit, however, that some other size might average best in other localities. I cannot conceive of any sound argument in opposition to the almost self-evident statements herein made; nor do I believe there are many, if any, practical honey-producers present who would care to take an opposite position; but if I am in error in this, I trust that I have said just enough to lead to an interesting discussion of the topic, and yet I cannot think what will be said that has not previously been said in our late literature."

In the discussion which followed some favored an eight-frame Langstroth, and a few the nine-and-ten-frame.

The question of selling and marketing honey came up, and the importance of having

a good article, and putting it up in a clean and attractive way, was pointed out. Comb honey should be crated in good tight cases to prevent the absorption of moisture. Quite a discussion took place as regards the merits of buckwheat honey, in which it was shown that, whilst in localities where buckwheat honey was produced it was freely used and sold, in localities not producing buckwheat honey the people, not having been educated fully to its merits, did not use it so much.

In the presidential address which followed, the poor season, owing to frost and dry weather, was mentioned. In northwestern Ontario and Manitoba the honey season had been good, but unfortunately not many bees were kept in those parts.

This was followed by a paper by B. Taylor, Forestville, Minn., U.S. : "The Surest and Best Way of Raising a Crop of Comb Honey." Amongst other things Mr. Taylor said :

"If we succeed, we shall have to have our colonies strong in bees. When white and alsike clover bloom again, about June 1st, next year, and we shall begin at once to utilize present opportunity, be sure to have the bees. As we have already indicated, we are quite certain we can winter with certainty in almost any kind of hive, provided it is filled with a large colony of young bees and plenty of natural sealed stores at the commencement of winter, and we give intelligent care as to winter quarters, and this we give by putting our colonies into a dry, dark, well-ventilated cellar, and keeping them at a temperature as near forty degrees as possible. Each colony will be covered with a soft felt sheeting paper or a quilt of two or more thicknesses below, or cotton sheeting, and these fastened down tightly to the top of the hive (the corner being removed) so as to retain the natural heat of the bees. For I am now convinced, by repeated experiments, that the colonies should be covered warmly even in the cellar. We shall let the bottom boards of the hives remain, but shall have a wide entrance (the entire width of hive) both in front and rear left open. The bees will be put into winter quarters when real winter has apparently come. We have some second swarms that come late. These will at once be supplied with honeycombs of natural stores which we have in stock, regardless of the flowers yielding fall honey, for we want these young colonies to be stimulated to raise all the brood possible, and this they will not do if stinted for stores. These second

swarms will make our best colonies for next year. This fall we will give strong colonies all the supers of sections filled with full sheets of moderately heavy foundation. They will partly or wholly draw out, and, if any brood hives should be light in stores when these cases are removed, we will give them heavy combs of honey to make them rich in winter stores, and spring food for raising early the army of workers that are to gather a great crop of clover and basswood honey next year. The sections of honey made this fall will be extracted, and then set out some afternoon, so that the bees may clean them of every particle of honey. During the winter and spring these combs will be levelled to uniform thickness on a comb leveller, and then returned to the section cases with one of our slotted handy separators between each two combs, and then set in a proper place until ten days before clover blooms next year, when we will put one case on each strong colony. Previous to swarming in these cases, the bees will have no combs to build, and they will fill them as speedily as a set of extracting combs. The sections will have the combs built solid to them on all parts, and the honey will be very white and the combs the smoothest you ever saw. If we do not have enough drawn combs to hold our crop, we shall use full sheets of foundation in sections to supply the deficiency, putting the sections with foundation in the centre of the super and drawn combs on the outside. Next spring, as soon as there is a fair prospect that hard winter is passed, we shall move our colonies to the summer stands. Each will be examined on the first fair day after they have had a good fly, to ascertain the amount of bees and stores and to know they have a queen. These colonies will be in our handy hives of ten frames of 100 inches of worker comb, each 1,000 inches of straight worker comb, and, with not two square inches of drone comb in any hive, will be supplied with combs of honey, if lacking in stores. They will be united with others, if queenless, and covered warmly, and then left in quiet, unless something should call attention to some particular hive, when special attention will be given it. After some time the colonies have become strong in bees, we shall put an extra hive filled with worker comb under them. This doubling of hives will be done for experiment, to ascertain if this enlarging of brood room will give better results in comb honey than single hives.



RECENT INVESTIGATIONS

Conducted by "ENQUIRER."

Souring of Milk.

Farmers' Bulletin No. 29, issued by the United States Department of Agriculture, deals with the changes which take place in milk, and the manner in which these changes are brought about. One of the most common changes is that of souring, which is caused by bacteria which produce lactic acid.

It is asserted that pure milk drawn from a healthy cow contains no bacteria, and that all bacterial contamination of milk comes from external sources. At the same time, it is next to impossible to obtain from the cow milk that is free from bacteria. In explanation of this fact, it is stated that bacteria make their way from the atmosphere into the milk ducts in the cow's teats, and there develop in large numbers between the times of milking. These bacteria will be carried into the pail at the next milking, and will soon contaminate the whole of the milk.

Among the sources from which bacteria get into milk are mentioned the air of an ill-ventilated stable, the dust and dirt brushed from the underside of the cow's body during milking, the milk vessels, and the hands and clothes of the milkers. The most important of these sources is the dust and filth adhering to the hair of the cow, especially in the case of cows that are seldom or never groomed.

The souring of milk during thunderstorms is attributed to the sultry condition of the atmosphere prevailing at such times, which is particularly favorable to the rapid development of bacteria.

More about Alfalfa.

Farmers' Bulletin No. 31 deals with alfalfa, or lucerne. In addition to what has been previously mentioned in these columns regarding this important plant, it will be of interest to many to note the reason that alfalfa will not bear continuous close grazing. When the stems are cut or grazed off, the stalk dies down to the very base, and new buds spring up on the upper part, or crown, of the new root and produce new stems. The stems of many other forage plants, when cut or broken, branch out above ground, forming lateral shoots, which immediately grow up and take

the place of the old stem. But, if alfalfa is closely grazed, and if every young stem is eaten off as rapidly as it appears, the vitality of the root will be impaired and the plants may die, because the new growth comes directly from the root itself, and not from the bases of the old stems. Sheep are the most injurious to alfalfa.

Soil Temperatures and Retention of Water.

D. J. Crosby, of the Michigan Experiment Station, reports experiments with samples of different kinds of soil, relative to temperature and retention of moisture. Samples of sand, clay, loam, and muck were placed in granite ironware dishes, and then thoroughly dried in an evaporating oven. To each dish was added 16 ozs. of water, and the vessels were then placed in an exposed position outside, while a thermometer was placed in the soil of each dish. The vessels were left in this position from August 18th to 26th inclusive. At the end of 97 hours, the sand was dry, and at the end of 197 hours the clay had lost 99.2 per cent. of its moisture; the loam, 91.4 per cent.; and the muck, 62.5 per cent. At the same time, the temperature of the sand was the lowest, and increased through the clay and loam to the muck, which was the warmest.

Another experiment with different kinds of soil, under the same conditions, gave the average temperatures as follows: Sand, 96.3°; clay, 96.4°; loam, 99.2°; muck, 102.4°. Another set of readings at three different depths gave the following:

	Surface.	Three inches.	Six inches.
Sand	92.6	86.5	80.3
Clay	93	86.7	81.6
Loam	94.6	86.3	79.8
Muck	96.9	84.5	77

Thus, the muck, which was warmest at the surface, was the coldest at the depth of six inches.

To test the effect of color upon soil temperature, one-half of the box of sand was colored black with lampblack, and one-half the box of muck was covered with lime, and the average temperature for six days was ascertained for three different depths. Under these condi-

tions, the colored sand was found to be warmer at the three different depths than the uncolored sand and the muck which was covered with lime; but was not so warm at the surface as the uncolored muck, though warmer at the depth of three and six inches. The average temperature for the colored sand was 78.6°, and for the uncolored sand 76.8°, while the average temperature of the uncolored muck was 78°, and that of the colored (limed) muck 73°. No explanation is offered as to why the sand, both in the colored and in the natural state, was cooler at the surface, but warmer at the depth of six inches, than the uncolored muck. It is probable, however, that the lower temperature of the muck at the depth of six inches was due to the greater amount of water which it contained.

Insects Injurious to Stored Grain.

Bulletin 61 of the Alabama Experiment Station, prepared by J. M. Stedman, biologist, describes a number of insects which attack stored grain. Those described are the pea weevil, the bean weevil, the four-spotted bean weevil, the grain or corn weevil, the black or rice weevil, the angoumois grain moth, the grain beetle, the red grain beetle, the brown grain beetle, and the corn-sap beetle. Bisulphide of carbon is recommended as the best remedy for these pests. Regarding the remedy the author writes as follows:

"One pound of the bisulphide of carbon is ample for one hundred bushels of grain, provided it be in a comparatively tight bin or granary, and the grain is not in the husk or pod. If the bin or granary is quite open and contains many holes, it will be necessary to use more bisulphide of carbon, since it will evaporate and escape. The grain should not be stored in the pod or husk, since it is almost impossible for the fumes of the bisulphide to penetrate through the husk of an ear of corn, and much less through the pod of a bean or pea.

"In view of the fact that many grain insects attack the grain while it is in the field, and are thus carried directly into the granary, it is advisable to make one application of the bisulphide of carbon immediately or very soon after the grain is gathered and stored. The grain should then be examined at least once a month, and, if there appear signs of insects, it should receive another application.

"The bisulphide is best, or at least as well, applied by sprinkling it over the top of the grain. It will soon evaporate, and, as the fumes are heavy, they will penetrate through the grain. The germinating properties of grain are not injured in the least by any ordinary application. Some may prefer to saturate cotton with the bisulphide and place it in the grain, or to fill shallow dishes and place them about the granary. No harm can result, however, from sprinkling the bisulphide directly on the grain, since it evaporates almost immediately, and, if pure, leaves no trace of it on the grain. One can test the bisulphide of carbon to determine whether it is pure or not by dipping a black feather in it and allowing it to dry; if the bisulphide is pure, no residue will be seen.

"The only precaution in the use of bisulphide of carbon is not to have the least trace of fire about; the fumes are very explosive, and will ignite from a lighted cigar or lantern.

"Bisulphide of carbon evaporates so rapidly that it will disappear in a few moments, if some of the grain be removed to the open air.

"It is not necessary to mention any other remedy for insects in stored grain, as the above is much superior to all others."

Wheat—Relation of Maturity to Germinating Vigor.

Experiments conducted by L. J. Briggs, Michigan Experiment Station, gave the following results: Twenty seeds were taken from each of four samples of wheat that had been cut in the milky stage, dough stage, yellow ripe stage, and dead ripe stage, respectively. The seeds were placed in a Geneva seed tester and subjected to uniform treatment, to note the effect of the several stages of maturity upon their germination. The wheat gathered in the milky stage was much the earliest to germinate, but its percentage of germination was the lowest. It was also noticed at the time that the plants were feeble and pale in color, and were soon overtaken and passed in growth by those from seed that was more mature. Of the plants from seed in the other three stages, those from the yellow ripe seed were a little larger and more vigorous than those from either the dead ripe seed or from seed gathered while in the dough. The latter plants partook somewhat of the character of those from the seed collected while in the milk. From the experiment it would appear that in wheat nothing is gained, either in yield or in germinating vigor of the seed, by allowing the grain to become dead ripe before harvesting.



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.
STOCK EDITOR, - - F. R. SHORE.
BUSINESS MANAGER, - - S. S. BOND.

Subscription Price—

Canada and the United States, \$1.00 per annum in advance.

Great Britain and other foreign countries in the Postal Union, \$1.50 per annum in advance.

Single copies 10 cents.

All subscriptions are received on the understanding that we be notified when the subscriber wishes to discontinue. FARMING will be sent to all subscribers until a notice to discontinue is received and all arrears are paid up.

The date opposite the name on the Address Label indicates the time to which a subscription is paid, and the changing of this date is sufficient acknowledgment of payment of subscription. We should be notified when this change is not made promptly.

Remittances—

Remittances should be made by post office money order, express money order, or registered letter. All postmasters are required to register letters when requested to do so.

Silver should never be sent through the mail. It is almost sure to wear a hole through the envelope and be lost, or else it is stolen.

Discontinuances—

Returning a paper is not a notice to discontinue. A subscriber wishing to discontinue must notify us by postal card. In ordering change of address, be sure to give the old address, as well as the new. We cannot find a name on our books unless the post-office address is given.

All arrearages must be paid up before a name can be taken from our list.

Renewals—

Money for renewals should not be paid to strangers, and when subscribers do this it must be at their own risk.

It should be sent by each subscriber direct to this office. We do not request agents to collect money for renewals.

Advertisements—

Ten cents per line per insertion.

Special guaranteed positions, 15 per cent. extra.

DISCOUNTS.

250 lines used within one year,	15 per cent.
500 " " " "	20 " "
750 " " " "	25 " "
1000 " " " "	30 " "

For Breeders' Card rates see Breeders' page.

Nonpareil measurement (12 lines to the inch)

No advertisement inserted for less than One Dollar.

Send for advertising rate card, which gives all particulars.

Communications—

All business communications should be addressed to "FARMING, 20 Bay Street, Toronto, Canada."

Communications for the Editor-in-Chief should be addressed to "The Editorial Department," FARMING, 20 Bay Street, Toronto, Canada."

Communications for any particular editorial department should be sent to the address given under the heading of that department.

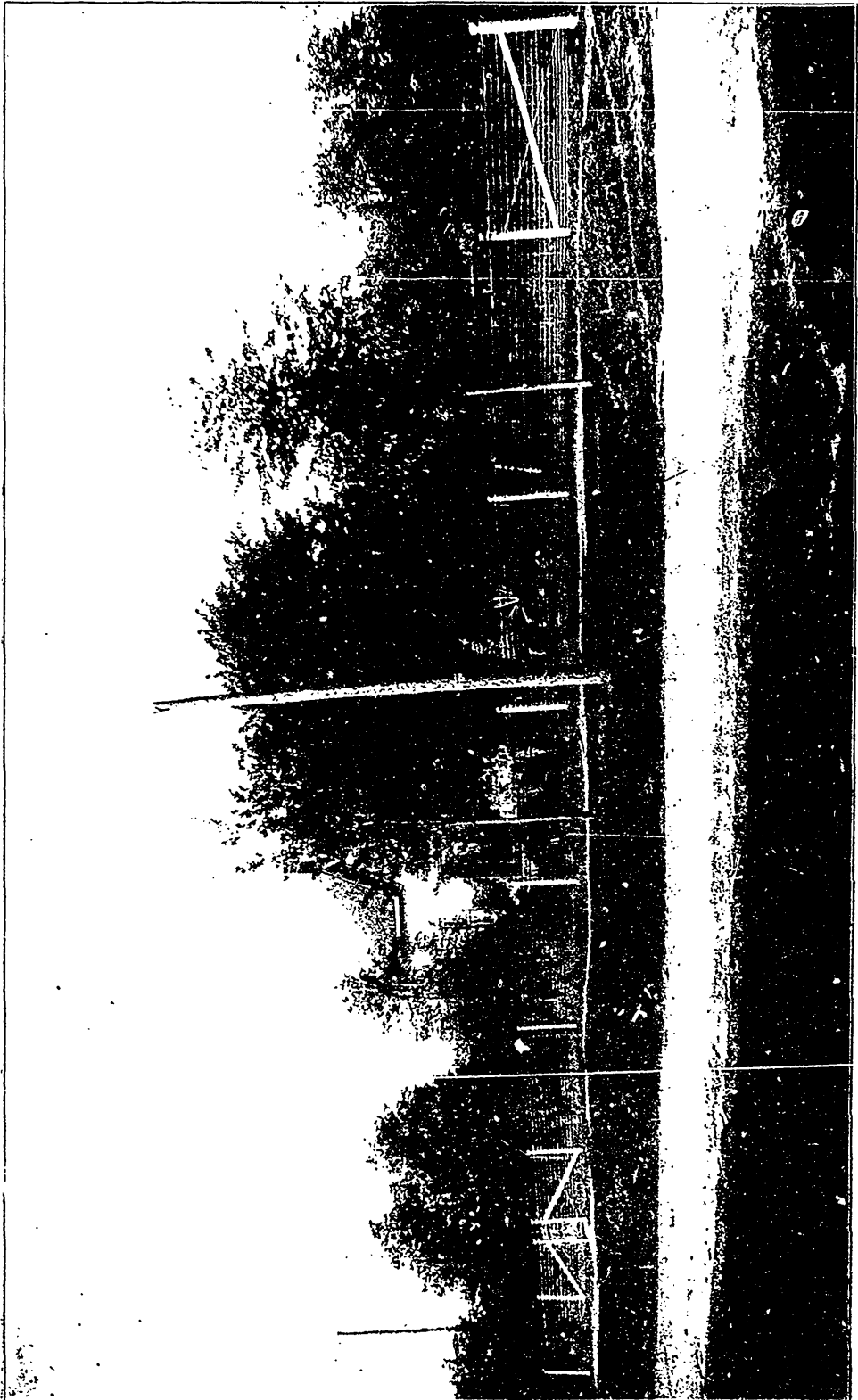
Matter of any kind for publication must reach us by the 15th of the month preceding date of publication.

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

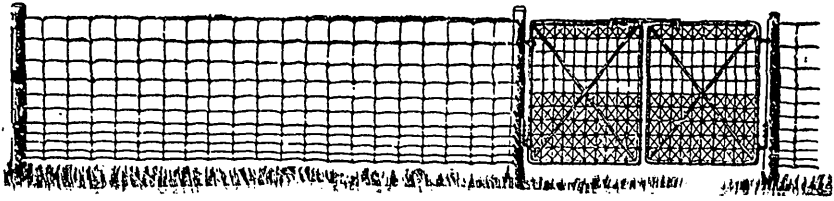
We are fully aware of the injustice and annoyance caused subscribers by the publishing of unreliable advertisements. We are also aware that good advertisers do not keep company with those of the "fake" class. Therefore, for the benefit of subscribers and advertisers, and, of course, of ourselves, we will take pains to exclude all advertisements of a doubtful nature. Any cases of fraud or misdealing on the part of advertisers that is reported to us will be promptly investigated. Subscribers will confer a favor if, when writing to an advertiser, they will state that they saw the advertisement in FARMING.

We want to ask a favor of our subscribers. Although the granting of it may mean a great deal to us, we feel that we can ask it with a very good grace, considering the fact that it will cost our subscribers but very little trouble to grant it. We want FARMING to have a much larger circulation than it has at present. We want to double its circulation before Christmas. Now, if they only *will*, our subscribers can be of great service to us in accomplishing this. If you like the magazine, and will speak of it to your neighbors, or give them a copy to read, you may be the means of getting another subscriber. You are in a much better position than we to get your neighbors to agree to take the magazine, and, supposing you induce only one to become a subscriber, and all of our present subscribers do the same, it will double our circulation.

In looking at the matter in another light, it is *not* exactly a favor that we are asking. We are producing a very good magazine with the circulation we have at present. Now, if we can double this circulation, we are in a position to publish a much *better* magazine. We intend to give our subscribers the benefit of this. We shall go on improving just as we get the means to do so. Moreover, we shall pay the usual commission for any new names sent us, so that if our subscribers take the trouble to go further than simply saying a good word, and do a little canvassing, we shall see that they do not work for nothing. We hope, then, that the friends of the magazine will do what they can to help it along.



= Without an Equal =



THE PAGE COILED SPRING WOVEN WIRE FENCE

All who have tried it pronounce it the best fence known

FARMERS, DAIRYMEN, STOCKRAISERS, AND RAILROAD
COMPANIES ALL PREFER THE PAGE

It is easy enough to claim to have the best, but it takes years of use and tests by thousands of farmers before a fence can be proved the best, as the Page has been. Those who use it say it is better than any other wire or board fence, and cheaper than any other stock-proof fence.

When wire fences were first tried, it was found that, owing to the expansion and contraction caused by heat and cold the wires would soon become slack or break, and the fence would be useless. Many attempts were made to remedy this by means of springs or ratchets at the end; but, besides needing constant attention to keep them in order, they will affect but a few rods of fence at most. Mr. Page found a better way on his farm, and the result is the Coiled Spring Fence. Each wire of the Page is made into a long-drawn-out or elongated spring, having enough spring in every foot to counteract the expansion of that foot. The fence is therefore perfectly self-regulating, and, as a result, when the end posts are solidly set, Page fence always keeps tight and never sags.

As common wire contains very little elasticity, a special spring-steel wire must be used in Page fence to give each wire the proper coil. This special wire has nearly twice the tensile strength of the iron and steel wire commonly used in fences. The coiling of the wire adds in effect to the strength, and enables the Page to stand more than double the strain that any other fence can. This has been proved by the use of the dynamometer, or strength-testing machine, as well as by the test of actual use on the farm. We also have what we call a "bunter," which vividly shows the strength and endurance of a fence.

For the benefit of those readers who have not seen the bunter at the fairs, we will briefly explain that it consists of a weighted barrel, or a bundle of fence, hung from a tripod stand that it will swing side-wise into a length of fence. It thus gives about the effect of a horse running into the fence. We allow all comers to swing this into the fence as long as they please, and it usually is kept swinging constantly. Our fence doesn't mind it, but we have never been able to persuade other fence-makers to publicly try it on their fences.

It is because of the coil in the wire that the posts can be placed so far apart for the Page, as the coil keeps the fence tight without sagging between posts that are thirty or more feet apart. We prefer long panels for our fence (25 to 33 feet), because there is then more coil and elasticity in each wire between the posts, and therefore more strength. When a horse or a runaway team runs into the fence, the coil must be stretched to its fullest extent before the strain really comes on the wire.

Among the other advantages of the Page is the shape of the mesh, oblong, with the wires closer at the bottom, where they are needed; the cross wires, which are but a foot apart, so that the main wires cannot be spread apart. The Page is carefully woven in the factory and shipped out ready to be stretched on the posts. It is sold and stretched on the posts by local dealers, who are usually farmers themselves. They pay nothing for the right to sell, and our customers nothing for the right to use it.

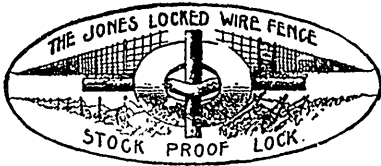
WE SELL FENCE, NOT PATENT RIGHTS.

In Essex County, where Page fence was first sold, very little other wire fence is now used. Wherever introduced it takes the lead and gains in favor year by year, while other fences come and go. After the most thorough investigation, the Page has been adopted by the majority of the well-equipped railroads of the continent.

We shall be glad to send you full particulars, with price lists and our illustrated paper, if you will let us know your address,

THE

**PAGE WIRE FENCE CO. OF ONTARIO,
WALKERVILLE, ONTARIO, CAN.**



THE words of praise from the people that examined our exhibit at the Toronto and other leading fairs, of the merits of The Locked Wire Fence, also the testimonials that we have received from prominent farmers that we have built the fence for, are very flattering indeed, and, now that the leading fairs are over, we are prepared to execute all orders for lawn, farm, and railroad fencing that may be given us. Our gates, which combine strength, lightness, and durability, should be on every farm. Prices quoted both for fencing and gates on application.

Reliable agents wanted in unoccupied territory. Correspondence solicited

THE
Locked-Wire Fence Co.

INGERSOLL, ONT.

408

HATCH CHICKENS BY STEAM With the **MODEL Excelsior Incubator.**
Simple, Perfect, Self-Regulating. Thousands in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other Hatcher. Lowest priced first-class hatcher made. **GEO. H. STAMM**, 114 to 122 S. 6th St., Quincy, Ill.

Circulars free. Send 6c. for Illus. Catalogue.

ONTARIO VETERINARY COLLEGE

Temperance St., Toronto, Can.

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

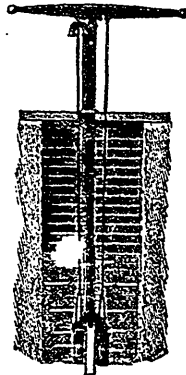
254

THE KEYSTONE DEHORNER

Guts clean on all sides—does not crush. The most humane, rapid and durable knife made. Fully warranted. Highest World's Fair Award. Descriptive Circulars Free.

A. C. BROSIUS, Cochranville, Pa.

Shipments made from Picton or Hamilton, Ontario.



Will deliver water anywhere required, from one well.

ANDERSON'S
Double-Acting
FORCE PUMPS.

No suckers—will last a lifetime—never freezes—works very easy at any depth. We will send a pump direct to any responsible person, on trial. We guarantee satisfaction or no sale. Do not buy until you hear from us. Catalogue free.

J. W. ANDERSON
AYLMER WEST,
458 Ont.

Self-Opening Gate

(WIDDIFIELD'S PATENT)

EVERY FARMER SHOULD HAVE ONE

This gate is the very best self-opening gate made, and, at the same time, it is the cheapest. Any child can open it without moving from the buggy. It opens away from the horse whichever way you go, out or in, thus avoiding any chance of frightening the animal by having a gate swung right back in his face. The attachment can be put on any ordinary gate. Write for particulars.

Township and county rights for sale. Agent wanted.

C. H. WIDDIFIELD, J. W. LEON,
Pine Orchard, Ont. Pottageville, Ont.

GEM - STEEL - WINDMILLS



Gem Steel Towers
Canadian (Steel) Air Motors
(Pumping and Geared)
Halladay Standard Windmills
Haying Tools
Iron and Wood Pumps
Saw Tables, etc.

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

ONTARIO WIND, ENGINE,
AND PUMP O.

367 Spadina Avenue

TORONTO - - ONTARIO

141

400 ACRES.

FRUIT AND ORNAMENTAL TREES

Grape Vines and Berry Plants.



Planters will find it to their interest to patronize a Canadian Nursery.

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

Agents wanted in every township.
Helderleigh Fruit Farms
and Nursery,

400 ACRES IN EXTENT.

E. D. SMITH, Prop., - - WINONA, ONT.



IRON FENCING
COMMONION RAILING
and all kinds of
IRON AND WIRE WORK

TORONTO FENCE AND
ORNAMENTAL WORKS,
37 Adelaide St. W. JOSEPH LEA, Manager.

437

Disorder

That is the state of your stomach. You know it, you feel it, you show it. The Remedy you need is Ripans Tabules. Safe, Sure, and Effective.

Ripans Tabules may be obtained through your nearest druggist. Price 50 cents a box.

302

HOLLOWAY'S

Pills and Ointment

THE PILLS

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

THE OINTMENT

Is the only reliable remedy for Bad Legs, Sores, Ulcers, and Old Wounds. FOR BRONCHITIS, SORE THROATS, COUGHS, COLDS, GOUT, RHEUMATISM, Glandular Swellings, and all Skin Diseases, it has no equal.

Manufactured only at 78 NEW OXFORD, STREET, late 533 OXFORD STREET, LONDON.

And sold by all Medicine Vendors throughout the World.

15

CHAMPION EVAPORATOR

For MAPLE, SORGHUM, CIDER, and FRUIT JELLIES. Has a corrugated pan over trebox, doubling boiling capacity; small interchangeable syrup pans (connected by siphons), easily handled for cleansing and storing; and a perfect automatic regulator. The Champion is as great an improvement over the Cook pan as the latter was over the old iron kettle hung on a fence rail.



Catalogue Free.

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



364

It is not Paradise,

But—

If you have some cash to spare and are willing to work, financial independence cannot be more surely secured than by buying a few acres of irrigated land in Salt River Valley.

This valley is in Southern Arizona, and is noted for its fine semi-tropical fruits and superior climate. Horticulturists say that greater profits can be realized here from oranges and grapes than in Florida or California. Physicians assert that the warm, dry, bracing climate excels in healing qualities Italy's balmy air. The great blizzard of 1895 did not blight the tenderest leaf in this protected spot.

To get there, take Santa Fe Route to Phoenix, A. T., via Prescott and the new line, S. F., P. & P. Ry. Address F. T. Hendry, 63 Griswold Street, Detroit, Mich., for illustrated folders. They tersely tell the story of a remarkable country. Actual results are given—no guesswork or hearsay.

It is the

Salt River Valley.

BOYS FOR FARM HELP

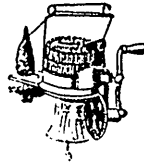
THE Managers of Dr. Barnardo's Homes desire to obtain good situations with farmers throughout the country for bright, healthy little boys from ten to twelve years of age, who will be arriving from the London Homes in several parties during the present season. There are at present nearly 5,000 in these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

MR. ALFRED B. OWEN,

Agent Dr. Barnardo's Homes,

397

214 Farley Avenue, TORONTO, Ont.



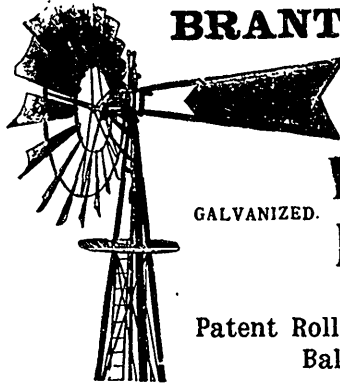
THE IMPROVED FAMILY KNITTER

Will knit 10 pairs of socks a day. Will do all knitting required in a family, home-spun or factory yarn.

Simplest Knitter on the Market

A child can operate it. We guarantee every machine to do good work. We can furnish ribbing attachments. Agents wanted. Write for particulars.

PRICE, \$3 DUNDAS KNITTING MACHINE CO. Dundas, Ont.
Mention this journal.



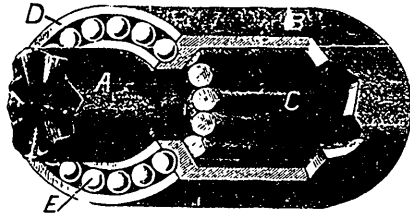
BRANTFORD

Steel

Wind Mills

GALVANIZED.

Patent Roller and Ball Bearings



GALVANIZED STEEL TOWERS AND WHEELS

The Best in America.

Ideal Spray Pumps, Iron Pumps, Water Tanks, Piping, etc.

The Ideal Solid Power Mill, with Roller and Ball Bearings, is a wonder. Send for Circular, and mention this paper.



BRANTFORD CAN.

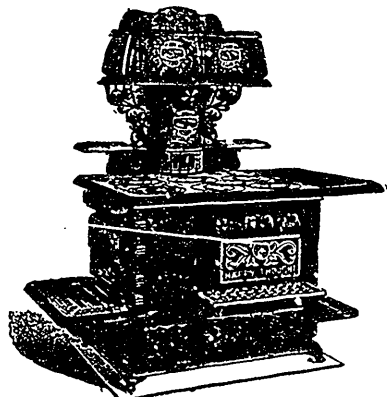
The Happy Thought Range

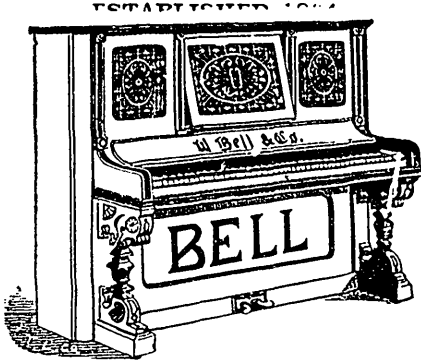
Over 50,000 in use in Canada, and every user pleased

...

It is said that the cooking apparatus is the most important article in any household. Then why not have the best? **The Happy Thought Range** combines perfection of operation with ease of management, it is always ready for work, and has more features of utility and convenience than were ever before combined. Other ranges may be sold for less money, not enough to make the Happy Thought extravagant, but sufficient to show its superiority. If you have any difficulty in getting particulars from your dealer, drop a card to the manufacturer.

WILLIAM BUCK, Brantford, Ontario.
Buck's Stove Works.





75,000 IN USE.
BELL PIANOS AND ORGANS

Recommended by leading musicians as superior in tone and touch. Elegant in finish and durable.

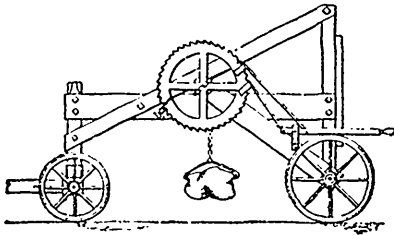
Send for catalogues and copies of testimonials to
THE BELL ORGAN & PIANO CO.
(LIMITED)
GUELPH, ONTARIO.
Branch Warerooms at Toronto, Hamilton, London, Etc.
421 Mention this paper.

STONE and STUMP EXTRACTOR

THE LEMIRE

UNIQUE OF ITS KIND

Patented 1894.



Lifts a stone of 18,000 lbs.

Can raise, carry off, and put in a fence 4 to 5 feet high, the stones extracted. By buying this strong and durable machine you can build your fence with your large stones instead of buying barbed wire for fencing. You will also clear your land for your mower and binder. In order to raise a stone, use the lever, and the hooks will hold the stone as it rises. You can let it down in the same way, or you can let it fall at once by touching a ring that is in the wheel. The axle-trees of this machine are made of wood, and we will sell it without the wheels to those who have wheels with tires 3 to 4 inches in width. Several farmers can combine and buy one.

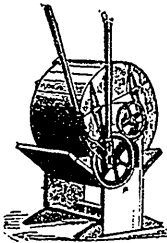
PRICE - \$120

Patent for sale. For full information address,

AZARIE LEMIRE, Wotton, Que.

THE MANITOBA WASHER

The Best Machine in the United States or Canada.



This Machine takes Less Soap Less Water Less Labor

And washes more clothes at one time than any other machine
Write for prices and terms to

Dowswell Bros. & Co.
Hamilton, Ont.

Manufacturers of Washers, Wringers, Churns, Mangles, etc.

669 FIRST-CLASS AGENTS WANTED.

9 CORDS IN 10 HOURS



Runs Easy. No backache. Weights only 40 lbs. Easily Carried. Says Down Trees.
BY ONE MAN, with the FOLDING SAWING MACHINE. It saws down trees. Folds like a pocket-knife. Saws any kind of timber on any kind of ground. One man can saw MORE timber with it than 2 men in any other way, and do it EASIER. 77,000 in use. Send for FREE illustrated catalogue showing latest IMPROVEMENTS and testimonials from thousands. First order secure agency. Address **FOLDING SAWING MACHINE CO.** 62-66 N. Clinton Street, Chicago, Ill.
We manufacture in Canada. No duty to pay.

Just a Moment

You use matches—every one just, whether for lighting lamp, stove, or cigar. Price being no more, wouldn't you buy the best?

Naturally—you would ask for

E. B. Eddy's Matches.

MISCELLANEOUS.

Windsor Salt

Is pure Salt

Nothing but Salt

Live, bright, sparkling crystals

The saltiest Salt in the world

428

Stock Notes

Cattle.

MR. ISAAC HOLLAND, Culloden, Ont., was the winner of the sweepstakes for the best Guernsey bull of any age, at the Western Fair, with My's Rosebery, and not Mr. J. A. James, Nilestown, as stated in our October issue.

MR. J. W. BARNETT, manager for Messrs. W. C. Edwards & Co., Rockland, Ont., writes: Our stock have come through the fall in good shape. We have a few calves coming, and are well pleased with them. They are nice, straight ones, and of the right color. Our young bulls are doing nicely, and are a good lot. We have lately moved part of our Shropshire flock from Elmhurst to Pine Grove, and are ready to fill orders for Shrop-hires.

MR. J. C. SNELL, Edmonton, Ont., writes: There is constant enquiry for Jerseys, and a greater number of sales than usual at this season. A good Jersey cow sent into a neighborhood is like "a little leaven that leaveneth the whole lump," and "there is hope for the future there." When a man begins to yearn for a Jersey cow he is practically in the condition of the sinner who has begun earnestly to ask, "What shall I do to be saved?" and when such a man comes to own a good Jersey cow he enters the best practical school known for learning the buttermaking business. There is no teacher so good as a good Jersey cow for those who will learn the lessons she teaches, and the man, and especially the woman, who has ever had one will not be content to milk any other.

MR. ARTHUR JOHNSTON, of Greenwood, Ont., reports his herd of Shorthorns in very nice shape, notwithstanding the very dry summer. The last of his young bulls have recently been brought in from the fields, where eleven of them have been constantly from 20th May to the middle of September. While this treatment does not tend to fatten them, Mr. Johnston thinks that it gives them stamina, strengthens their muscles, develops their digestive organs, and makes them better bulls and better feeders during the balance of their lives. He thinks them the very best lot that he has stabled since 1890, if not the very best he has ever had. They are great, sappy fellows for their ages, with splendid coats of soft, mossy hair. Every one of the seventeen was sired by his imported bull, and many of them are out of imported cows.

Sheep.

MR. S. P. GOUDEY, Yarmouth, N.S., was very successful at the Yarmouth exhibition this year, winning prizes for Jerseys and the principal awards for Shropshire, Leicester, and Southdown sheep, including the special of the American Shropshire Registry Association.

MR. SMITH EVANS, Gourrock, Ont., writes: I have sold to Mr. G. J. Campbell, Pittsfield, Ohio, my first-prize Oxford Down shearing ram and ram lamb; to Mr. A. Terrill, Wooler, Ont., two shearing ewes, two ewe lambs, and one ram lamb; to Mr. H. Wright, Guelph, Ont., one ram lamb; to Mr. J. Coulson, Hornby, one ewe lamb; to Mr. G. Grieve, Moray, Ont., one ram lamb; to Mr. W. Brien, Ridgetown, Ont., two ewe lambs; to Mr. A. Elliot, Pond Mills, two imported aged ewes.

MR. J. CAMPBELL, of Fairview Farm, Woodville, Ont., writes: "I have reason to feel satisfied with this season's results from my flock in regard to both trade and the showing. The ram trade has been very much better than usual, and the outlook for business in the line of bred ewes is bright, many foreseeing the certain revival of the sheep-breeding industry, and purposing to be in it when the boom comes. At the Toronto, Montreal, and Ottawa exhibitions my flock have had the majority of first and second prizes awarded them, which is gratifying when several of England's winning rams and ewes were in competition, and all my lot, without an exception, were homebred.

MR. J. C. SNELL, Edmonton, Ont., reports a lively demand for Cotswold rams, both to head farmers' flocks, in the east, and for crossing on the large flocks on the ranches of the west. Four carloads of Cotswold rams have left Brampton station in the last four weeks for Montana, Idaho, and Utah, and enquiries for two carloads more could not be supplied. All rams over a year old have been

sold, and over one hundred ram lambs have gone into service. Among recent sales to breeders are one ram and ten ewes to Mr. Valentine Ficht, Oriol; two ewe lambs to Mr. B. H. Frink, Napanee; T. Waters, Rockwood; James Law, Ridgetown; E. Horton, New Dublin; J. Chick, Attica, N.Y.; George Harding & Son, Waukesha, Wis.; W. W. Wilson, Muncie, Ind.; and M. L. Reed, Burton, Ohio.

MESSEURS. JOHN MILLER & SONS, Brougham, Ont., write: We have been very successful at the four largest shows we could attend in Canada, winning nine first prizes, two seconds, and a third with sheep in Toronto, including two flock prizes with Shropshires, and one with Cotswolds. We also won first in classes over and under twelve hands for ponies in harness. At Montreal we won ten firsts, two seconds, and one third with sheep, and two with ponies. We then sold the pony, "Magnet," that won first at the Toronto spring show, and first twice, as mentioned above. He goes to New York, and will be shown there. At Ottawa we won nine firsts, five seconds, and two thirds with sheep, and one with pony. We never had such good lambs as we now have. We have weighed several that have never tasted grain, and they weighed from 138 to 140 pounds each. We have sold to every person that has seen them. We have over ninety to select from. We also have some good yearling rams, and a two-year-old that is a good breeder, and one of the best sheep we have seen.

Swine.

MR. J. C. SNELL, Edmonton, Ont., reports a steady demand for good Berkshires, and numerous sales in the last month, extending over a wide field. Among recent sales are the following: To Messrs. H. Lane, Mount Mellick, P.E.I.; Ed. Morris, Glasgow, Ky.; G. Howard Davison, Millbrook, N.Y.; I. M. Evans, Glendale, Man.; I. D. Knowlton, Newboro, Ont.; Thomas Price, Oblong, Ill.; T. J. Coleman, Markdale, Ont.; S. Vogan, Huntingfield, Ont.

CAPTAIN A. W. YOUNG, Tupperville, Ont., writes: I am importing another Poland-China boar from Mr. W. M. Lambing, West Liberty, Iowa. He is sired by Best on Earth, A. (21557), O. (16421), his dam being Black U.S. Blaine 1st (64728), which was sired by Black U.S. (18345), generally acknowledged to be the sire of more high-priced Poland-China boars than any other hog in America. I paid a long price for my boar, and hope for something nice for the benefit of my customers.

C. R. DECKER, Chesterfield, Ont., reports: I have a fine herd of Berkshires, consisting of over forty head, from carefully selected stock of extra length, good

bone and hair, and good heads. I have been to five fairs with my stock, and won first on aged boar and sow at nearly every fair, and at Drumbo, where there was the largest show of swine that has been yet, I won first for boar and two sows of any age. There is more demand for good Berkshires now than there has been for some years.

MR. DENNIS HAWKINS, Woodville, Ont., writes: The show season is now over, and we can report a fine list of prizes won by our stock. We showed four Berkshires and three Yorkshires at Lindsay, Cannington, North Victoria County Fair, Oakwood, and Woodville, and won twenty-three first, three second, and three third prizes, a better showing than which few can report. The following is a list of recent sales: One Yorkshire and one Berkshire boar and a sow to Mr. John Christian, Islay, Ont.; one imported Berkshire boar to Mr. John Ward, Sutton, Ont.; one boar to Mr. Hugh McMillan, Beaverton, Ont.; one boar to Mr. Joseph Ward, Marsh Hill, Ont.; one sow to Mr. D. McCrimmon, Oakwood, Ont.; one sow to Mr. James Millicott, Cannington, Ont.; one sow to Mr. D. Ross, Woodville, Ont.; one boar to Mr. John Perry, Cannington, Ont.; and several others in the neighborhood. We also made good sales of fowl.

Poultry.

MR. A. G. GODACRE, Grand Pré, N.S., carried off a large number of prizes at the St. John exhibition for Plymouth Rocks, Black Langshans, White Wyandottes, Rose Comb Brown Leghorns, Black Minorcas, and geese and ducks, including first for the largest and best collection of Hamburgs, Red Caps, Javas, Leghorns, Spanish, Minorcas, Polands, and any other varieties. He also won first for a shearling Oxford Down ram.

MR. C. J. WRIGHT, Dixville, Que., has completed his season of showing at the fall fairs this year. He reports good shows, all things considered. The quality of the stock was better than ever before, and shows great improvement all over the country. His greatest success was at Stanstead, where he took eighteen prizes, ten firsts and eight seconds, out of a possible eighteen, and one diploma for largest and best collection of poultry owned by any one exhibitor. This he has taken two years in succession. His next record was at Ayer's Flat, where he made six entries and took four first and two second prizes out of a possible six. At Sherbrooke he succeeded in taking seven out of a possible fifteen. His last and best exhibit was at Cookshire, where he captured ten first and two second prizes and another diploma for the largest and best collection of poultry exhibited by any one exhibitor. At these fairs he sold ten pair of fowls at a fancy price. Some of the sales were made to go to the United States and some to Ontario, while the rest went to buyers in the Province of Quebec.

Special Stock Reviews.

Glenhurst Ayrshires.

If one were to look up the Ayrshire records, it would probably be found that none have been connected with breeding Ayrshires for so many years as Mr. David Benning, of Williamstown, Ont., while the fact that the bull Tom Brown and the heifer White Floss, both of which were sweepstakes winners at the World's Fair, were bred at Glenhurst is, by itself, a proof that the breeding operations there have not been wanting in success. But it is by visiting herds in different localities that one realizes how much Ayrshire interests are indebted to Mr. Benning in the past, and a short inspection of the herd will satisfy any one with judgment that the Glenhurst herd will play an important part in the future.

The handsome form of the cows in the herd, their good appearance for heavy milk yields, their substance and quality, all denote careful breeding, while the thrifty and handsome youngsters, and the uniformity of type in this year's crop of calves, show that Mr. Benning is determined to keep up his reputation as a breeder of first-class cattle.

Saladin, by Silver King (imp.), dam, Docey (imp.), is a bull of the proper type to place at the head of a high-class herd, and this year's crop of calves pays a high tribute to his worth as a sire, which one would fully expect from his breeding, his dam, Docey, having been bred by Mr. David Tweedie, Castle Crawford, and she was included in the first importation of the late Mr. Thomas Brown; while his sire, Silver King, is too well known to require comment. Previous to Saladin, Mr. Benning used Duke of Parkhill, a son of Mr. Drummond's Rob Roy. This bull was by Promotion (imp.), while Duke of Parkhill's dam is the nicely-bred cow, Maggie Sands. To attempt anything like an individual description of the cows in this very large herd would occupy more space than we can afford. A few of the females, however, are particularly striking in appearance. Of these, White Floss, descended from imported Betty, is an unmistakably deep milker, and particularly handsome. She has produced some very fine heifers. Of these, we could not help noticing a three-year-old and this year's heifer calf, both of which are particularly handsome specimens.

Kilbowie Lady, a fourteen-year-old cow, has evidently been a wonderfully good one in her time, and has produced many excellent things. She was sired by Bothwell, whose sire and dam were both imported; while her dam, Kilbowie Maid, was imported by Mr. Benning. Mr. Benning's Blanche branch of the Effie family has produced some capital milkers, which possess the type which one likes to see in an Ayrshire.

Until recently, Mr. Benning has been alone in breeding purebred cattle, but the good work is infectious, and now he has two neighbors who have purchased stock from him and of other breeders, and Williamstown may now boast of being an Ayrshire centre.

Mr. John Sandilands' Ayrshires.

One of Mr. Benning's neighbors is Mr. John Sandilands, who obtained his foundation stock from cows purchased at Glenhurst, and whose herd now comprises some sixteen head, including nine cows and four heifers, among which is Beauty of Williamstown, by Bonnie Scotland, a son of Promotion (imp.), and belonging to the imported Betty family. From the same family is Glen Bessie, by Gladstone, and both are evidently deep milkers, and so are many more, by all appearances.

Mr. Sandilands is using the yearling bull Mimico, sired by Clear Grit, and whose dam is Adelia, by Bonnie Scotland.

Ayrshires at Glengarry Stockyards.

Mr. John A. Macdonald, jr., occupies what time he has to spare from his commercial pursuits in Williamstown in farming some particularly rich land, on which he has placed a herd of Ayrshire cattle of much merit.

The bull which is now in use is Sir Donald, bred by Mr. James Cunningham, of Ormstown, P.Q., and sired by Sir James of Parkhill. Mr. Macdonald is also breeding to the Silver King bull, Saladin, mentioned in connection with Mr. Benning's herd.

Among the cows is Glen Rose, a particularly handsome cow by Bothwell, whose sire and dam were both imported. She was bred by Mr. Benning, and traces to imported Lily. Dorothy Stanley, also bred by Mr. Benning, is a large, good cow by Burke, and of the Blanche branch of the Effie family.

Mr. Macdonald also purchased a fine cow at the sale of the late Mr. Thomas Brown, which formed one of his importation, and which has given him two good heifers, a yearling and a two-year-old. The herd contains some fifteen or sixteen head of select things, of which we hope to have more to say in the near future, as the calves are very fine. A bull calf by Saladin, dam, Glen Rose, would do to show in any company, and others are equally promising.

Western Fair.

(Continued from October Number.)

CARRIAGE.

Awards.—Stallion, aged—1st, D. Carrol, Ealing; 2nd, Neil & Elliott, Lucan. Stallion, three years old—1st, R. H. Smith, Ettrick; 2nd, C. Scott, White Oak. Stallion, two years old—1st, H. McCarty, Newmarket; 2nd, A. Burrill, Holbrook; 3rd, J. R. Johnson, Springfield. Stallion, yearling—1st, J. Sinclair, Coldstream. Stallion, any age—D. Carrol. Brood mare, with foal—1st, B. Kennedy, Hderon; 2nd, J. R. Raymond, Strathroy; 3rd, T. H. Shore, Glanworth. Gelding or filly, three years old—1st, W. McClurg, Falkirk; 2nd, J. Sinclair; 3rd, D. Carrol. Gelding or filly, two years old—1st, H. G. Boag, Queensville; 2nd, T. H. Shore; 3rd, B. Kennedy. Gelding or filly, yearling—1st, T. H. Shore, 2nd, S. G. Brown, Beachville; 3rd, E. Edmonds, London. Foal of 1895—1st, T. H. Shore; 2nd, J. G. Raymond; 3rd, B. Kennedy. Pair of carriage horses, 16 hands and over—1st, A. Beck, London; 2nd, T. Kalbfleisch, Tavistock. Pair of carriage horses, 15½ hands and under—1st, J. Holderness, Toronto; 2nd, J. A. Hill, Strathroy; 3rd, W. Kena, Youngsville. Single carriage horse, 15½ hands and over—1st, L. Meredith, London; 2nd, A. Beck; 3rd, A. C. Kerr, London. Mare, any age—1st, B. Kennedy.

STANDARD-BRED.

Awards.—Stallion, aged—1st, G. J. Fitzgerald, London; 2nd, E. Hanham, St. Marys; 3rd, H. James, Mitchell.

ROADSTERS.

Awards.—Stallion, aged—1st, H. Simon, London; 2nd, G. W. Lang, St. Thomas; 3rd, R. Hueston, London. Stallion, three years old—1st, A. O'Neill, Burr. Stallion, two years old—1st, Lorne Stock Farm, West Lorne; 2nd, A. Loughhead, Forest; 3rd, G. Neeley, Dorchester. Stallion, yearling—1st, J. B. Cousins, Queensville; 2nd, G. Neeley. Stallion, any age—1st, H. Simon. Brood mare, with foal—1st, J. B. Cousins; 2d, Neil & Elliott, Lucan; 3rd, D. Stewart, Ivan. Gelding or filly, three years old—1st, E. McClurg, Ivan; 2nd, F. W. Paterson, Denfield; 3rd, A. McClarin, Evelyn. Gelding or filly, two years old—1st, M. J. Nichol, Komoka; 2nd, G. A. H. Mt. St. Marys; 3rd, W. H. Nichol, Orkney. Gelding or filly, yearling—1st, H. G. Boag, Queen'sville; 2nd, E. McClurg; 3rd, S. G. Brown, Beachville. Foal of 1895—1st, J. B. Cousins; 2nd, Neil & Elliott; 3rd, D. Stewart. Pair of roadsters—1st, G. Thompson, London; 2nd, P. Irving, Woodstock; 3rd, J. W. Praughley, Strathroy. Single roadster—1st, W. Collins, London; 2nd, H. Drenay, London; 3rd, S. J. Cole, Woodstock. Mare, any age—1st, M. J. Campbell.

THOROUGHBREDS.

Awards.—Stallion, aged—1st, G. J. Fitzgerald, London; 2nd, L. Meredith, London. Stallion, yearling—1st, W. A. Sage, Nilestown; 2nd, A. Beck, London. Stallion, any age—1st, G. J. Fitzgerald. Brood mare, with foal—1st, W. A. Sage; 2d, A. Beck. Filly, three years old—1st, A. Beck. Foal of 1895—1st, A. Beck; 2nd, W. A. Sage. Mare, any age—1st, A. Beck.

SADDLE.

Awards.—Saddle horses—1st and 2nd, A. Beck, London; 3rd, J. S. Brown, London. Hunters, heavy-weight—1st and 2nd, A. Beck; 3rd, L. Meredith. Hunters, light-weight—1st and 3rd, A. Beck; 2nd, J. S. Brown.

HACKNEYS.

Awards.—Stallion, three years old and upwards—1st and 2nd, A. G. Bowker, Woodstock. Mare, any age—1st and 2nd, J. Holderness, Toronto.

COACH.

Awards.—Stallion, any age—1st, A. B. Holbert, Woodstock; 2nd, A. & G. Rice, Currie's Crossing; 3rd, J. R. Johnson, Springfield.

CLYDESDALES.

Awards.—Stallion, aged—1st, P. D. McCallum, Forest; 2nd, J. Henderson, Wellburn; 3rd, R. Shaw-Wood, London. Stallion, three years old—1st, S. McArthur, Oro Station; 2nd, G. Duffield, Granton; 3d, S. J. Prouse, Ingersoll. Stallion, two years old—1st, J. Oliver, Dunceith. Stallion, yearling—1st, A. Scott, Vanneck. Stallion, any age—1st, S. McArthur. Brood mare, with foal—1st, A. Scott; 2nd and 3rd, S. J. Prouse. Filly, three years old—1st, J. W. Robinson, St. Marys. Filly, two years old—1st, S. J. Prouse; 2nd, J. W. Robinson. Foal of 1895—1st, S. J. Prouse; 2nd, G. Duffield; 3rd, S. O. McClurg, Ivan. Team—1st, G. Duffield. Mare, any age—1st, S. J. Prouse.

HEAVY DRAFT (CANADIAN-BRED).

Awards.—Stallion, aged—1st, J. A. Boag, Queensville; 2nd, J. Akop, Glasgow; 3rd, J. A. Mason & Sons, Norwich. Stallion, three years old—1st, J. W. Wambold, Breslau. Stallion, two years old—1st, G. Taylor, Kippen. Stallion, yearling—1st, G. Taylor. Stallion, any age—1st, J. A. Boag. Brood mare, with foal—1st, W. M. Faulds, Muncey. Filly, three years old—1st, J. A. Starr, Pine Orchard. Filly, two years old—1st, J. A. Starr. Filly, yearling—1st, H. R. & Parkin, Oxford Centre; 2nd, W. D. Linstead, Queensville; 3rd, G. Duffield. Foal of 1895—1st, W. Faulds; 2nd, J. A. Mason & Sons; 3rd, J. A. Boag. Team—1st, J. W. Robinson; 2nd, H. R. & Parkin. Gelding, three years old and upwards—1st, D. McMillan, Cobble Hill. Mare, any age—1st, J. A. Starr.

AGRICULTURAL.

Awards.—Team—1st, D. Campbell, Heather; 2nd, G. Dickie, Hyde Park. Brood mare, with foal—1st, H. R. & Parkin; 2nd, J. A. Mason & Sons. Gelding or filly, three years old—1st, D. Campbell, Komoka. Gelding or filly, two years old—1st, S. McClurg; 2nd, H. R. & Parkin. Gelding or filly, one year old—1st, W. Moore, Fernhill; 2nd, J. Henderson, Wellburn.

SHORTHORNS.

Awards.—Bull, aged—1st, E. Gaunt & Sons, St. Helens; 2nd, T. Douglas & Sons, Strathroy; 3rd, R. & S. Nicholson, Sylvan. Bull, two years old and upward—1st, H. & W. Smith, Hay; 2nd, G. Dickie, Hyde Park; 3rd, T. E. Robson, Ilberton. Bull, one year old—1st, G. Dickie; 2nd, T. Douglas & Sons; 3rd, T. Russell, Exeter. Bull calf—1st, T. Russell; 2nd, R. & S. Nicholson; 3rd, H. K. Fairhair. Cow, four years old and upwards—1st, T. Russell; 2nd, T. E. Robson. Cow, three years old—1st, T. Russell; 2nd, T. E. Robson. Heifer, two years old—1st, T. Russell; 2nd and 3rd, T. E. Robson.

Heifer, one year old—1st, R. & S. Nicholson; 2nd, T. Russell. Heifer calf—1st, R. & S. Nicholson; 2nd, H. Thompson. St. Marys; 3rd, H. K. Fairhair. Female, any age—1st, T. Russell. Herd—1st, T. Russell; 2nd, T. E. Robson

PAT CATTLE.

Awards.—Cow, aged—1st and 2nd, J. Yule, Elder Mills. Cow or heifer, under four years—1st, R. & S. Nicholson, Sylvan; 2nd, J. Yule. Ox or steer, one year and under two—1st, T. Russell, Exeter; 2nd, W. H. Nichol, Orkney; 3rd, F. Whetter, Pottersburg. Steer calf—1st, H. & W. Smith, Hay; 2nd, W. Hall, Wasington.

GRADES.

Cow, three years old and upwards—1st and 2nd, J. Yule, Elder Mills; 3rd, R. Edmonds, London West. Heifer, two years old—1st, J. Yule; 2nd, F. Whetter, Potterburg. Heifer, one year old—1st, J. Yule; 2nd, W. Craig, Odell; 3rd, I. Holland, Culloden. Heifer calf—1st, Mrs. E. Lawrence, London West. Female, any age—1st, J. Yule.

JERSEYS.

Bull, aged—1st, J. O'Brien, London West; 2nd, J. H. Smith & Son, Highfield; 3rd, W. M. Bacon, Toronto. Bull, two years old—1st, J. H. Smith & Son; 2nd, Humpidge & Laidlaw, London. Bull, one year old—1st and 2nd, W. M. Bacon; 3rd, Humpidge & Laidlaw. Bull calf—1st and 2nd, Humpidge & Laidlaw; 3rd, G. Hill, Delaware. Bull, any age—1st, J. H. Smith & Son. Aged cow—1st and 2nd, J. H. Smith & Son; 3rd, T. H. Smallman, London South. Cow, three years old—1st, J. H. Smith & Son; 2nd and 3rd, Humpidge & Laidlaw. Heifer, two years old—1st and 2nd, Humpidge & Laidlaw; 3rd, J. O'Brien. Heifer, one year old—1st and 2nd, J. H. Smith & Son; 3rd, Humpidge & Laidlaw. Heifer calf—1st, Humpidge & Laidlaw; 2nd, J. H. Smith & Son; 3rd, A. B. Smith, Arkona. Female, any age—1st, J. H. Smith & Son. Herd—1st, J. H. Smith & Son. Herd of four calves—1st, J. H. Smith & Son.

AVYRSHIRES.

Awards.—Bull, aged—1st, J. McCormack & Son, Rockton; 2nd, Kain Bros., Byron; 3rd, W. Nichol, Plattsville. Bull, two years old—1st, J. McCormack & Son. Bull, one year old—1st, Kain Bros.; 2nd, J. A. James, Nilestown; 3rd, Col. J. Peters, London. Bull calf—1st, M. Ballantyne, St. Marys; 2nd, W. Nichol, Plattsville; 3rd, J. McCormack & Son. Bull, any age—1st, J. McCormack & Son. Cow, aged—1st, J. McCormack & Son; 2nd and 3rd, Kain Bros. Cow, three years old and upwards—1st, Kain Bros.; 2nd and 3rd, J. McCormack & Son. Heifer, two years old—1st, Kain Bros.; 2nd, M. Ballantyne; 3rd, Col. J. Peters. Heifer, one year old—1st, W. Nichol; 2nd, M. Ballantyne; 3rd, J. A. James. Heifer calf—1st and 2nd, M. Ballantyne; 3rd, J. McCormack & Son. Female, any age—1st, J. McCormack & Son. Herd—1st, J. McCormack & Son. Herd of four calves—1st, M. Ballantyne.

GUERNSEYS.

Awards.—Bull, aged—1st, J. Holland, Culloden; 2nd, C. McNish, Lyn. Bull, two years old—1st, J. A. James, Nilestown; 2nd, I. Holland. Bull calf—1st, C. McNish. Bull, any age—1st, I. Holland. Cow, aged—1st, J. A. James; 2nd and 3rd, C. McNish. Cow, three years old—1st, J. A. James; 2nd and 3rd, C. McNish. Heifer, two years old—1st and 2nd, C. McNish. Heifer, one year old—1st, J. A. James; 2nd, C. McNish. Heifer calf, under one year—1st and 2nd, C. McNish. Female, any age—1st, J. A. James. Herd—1st, J. A. James.

HOLSTEINS.

Awards.—Bull, aged—1st, A. Hallman, New Dundee; 2nd, A. & G. Rice, Currie's. Bull, one year old—1st, A. Hallman; 2nd, A. & G. Rice. Bull calf—1st, A. & G. Rice; 2nd and 3rd, A. Hallman. Bull, any age—1st, A. Hallman. Cow, aged—1st and 3rd, A. & G. Rice; 2nd, A. Hallman. Cow, three years old—1st and 2nd, A. & G. Rice; 3d, A. Hallman. Heifer, two years old—1st, 2d, and 3rd, A. & G. Rice. Heifer, one year old—1st, A. Hallman; 2nd and 3rd, A. & G. Rice. Heifer calf—1st and 3rd, A. Hallman; 2nd, A. & G. Rice. Female, any age—1st, A. Hallman. Herd—1st, A. & G. Rice. Herd of four calves—1st, A. Hallman.

HEREFORDS.

Awards.—Bull, aged—1st, F. W. Stone, Guelph. Bull, two years old—1st, F. W. Stone. Bull, one year old—1st and 2nd, F. W. Stone. Bull calf—1st and 2nd, F. W. Stone. Bull, any age—2nd, F. W. Stone. Cow, aged—1st, F. W. Stone. Cow, three years old—1st and 2nd, F. W. Stone. Heifer, two years old—1st and 2nd, F. W. Stone. Heifer, one year old—1st and 3rd, F. W. Stone. Heifer calf—1st, F. W. Stone. Female, any age—1st, F. W. Stone. Herd—1st, F. W. Stone. Herd of four calves—1st, F. W. Stone.

POLLED ANGUS.

Awards.—Bull, aged—1st, W. Hall, Washington. Bull, one year old—1st, W. Hall. Bull calf—1st, R. T. Maxwell, Sarnia. Bull, any age—1st, W. Hall. Cow, aged—1st, W. Hall; 2nd, R. T. Maxwell; 3rd, W. Stewart, Sarnia. Cow, three years old—1st, W. Hall. Heifer, two years old—1st and 2nd, W. Hall. Heifer, one year old—1st, 2nd, and 3rd, W.

Hall. Heifer calf—1st, W. Hall; 2nd, R. T. Maxwell. Female, any age—1st, W. Hall. Herd—1st, W. Hall.

GALLOWAYS.

Awards.—Bull, aged—1st, A. M. & R. Shaw, Brantford. Bull, 12 years old—1st, A. M. & R. Shaw. Bull, one year old—1st and 2nd, A. M. & R. Shaw. Bull calf—1st and 2nd, A. M. & R. Shaw. Bull, any age—1st, A. M. & R. Shaw. Cow, aged—1st, 2nd, and 3rd, A. M. & R. Shaw. Heifer, two years old—1st, 2nd, and 3rd, A. M. & R. Shaw. Heifer, one year old—1st and 2nd, A. M. & R. Shaw. Heifer calf—1st, A. M. & R. Shaw. Female, any age—1st, A. M. & R. Shaw. Herd—1st, A. M. & R. Shaw.

SHROPSHIRE.

Awards.—Ram, aged—1st and 3rd, R. Gibson, Delaware; 2nd, D. G. Hamner & Son, Mt. Vernon; 4th, J. Cooper & Son, Kippen. Ram, shearing—1st, 3rd, and 4th, J. Cooper & Son. Ram lamb—1st, R. Gibson; 2nd, D. G. Hamner & Son; 3rd, W. H. Beattie; 4th, W. E. Wright, Glanworth. Ram, any age—1st, J. Cooper & Son. Two ewes, aged—1st and 4th, D. G. Hamner & Son; 2nd, W. H. Beattie; 3rd, J. Cooper & Son. Two shearing ewes—1st and 2nd, D. G. Hamner & Son; 3rd, J. Cooper & Son; 4th, W. H. Beattie. Two ewe lambs—1st, 2nd, and 3rd, D. G. Hamner & Son; 4th, R. Gibson. Ewe, any age—1st, D. G. Hamner & Son. Pen of five yearlings—1st, D. G. Hamner & Son. Pen of five lambs—1st, D. G. Hamner & Son. Pen—1st, D. G. Hamner & Son.

Premiums by the American Shropshire Registry Association: One ram, one year old or over, and four ewes of any age—1st, J. Cooper & Son; 2nd, D. G. Hamner & Son. Best flock of four lambs (one ram lamb and three ewe lambs)—1st, D. G. Hamner & Son; 2nd, J. Cooper & Son.

OXFORD DOWNS.

Awards.—Ram, aged—1st, S. Evans, Gourlock; 2nd, J. Tolton, Walkerton. Ram, shearing—1st, S. Evans; 2nd and 3rd, J. Tolton. Ram lamb—1st, S. Evans; 2nd and 3rd, J. Tolton. Ram, any age—1st, S. Evans. Two ewes, aged—1st, S. Evans; 2nd, J. Tolton. Two shearing ewes—1st and 3rd, S. Evans; 2nd, J. Tolton. Two ewe lambs—1st and 2nd, S. Evans; 3rd, J. Tolton. Ewe, any age—1st, S. Evans. Pen of five yearlings—1st, S. Evans. Pen of five lambs—1st, S. Evans.

DORSET HORNS.

Awards.—Ram, aged—1st, R. H. Harding, Thorndale. Ram, shearing—1st, R. & S. Wood, London; 2nd, R. H. Harding. Ram lamb—1st, R. & S. Wood; 2nd, J. Ramsay, London West. Two ewes, aged—1st and 2nd, R. H. Harding. Two shearing ewes—1st and 2nd, R. H. Harding. Two ewe lambs—1st, R. H. Harding. Pen—1st, R. H. Harding.

SOUTHDOWNS.

Awards.—Ram, aged—1st and 4th, T. C. Douglas, Galt; 2nd, G. Baker, Simcoe; 3rd, R. L. Burgess, Burgessville. Ram, shearing—1st and 3rd, T. C. Douglas; 2nd, A. Telfer & Sons, Paris; 4th, R. L. Burgess. Ram lamb—1st and 2nd, T. C. Douglas; 3rd, G. Baker; 4th, R. L. Burgess. Ram, any age—1st, T. C. Douglas. Two ewes, aged—1st and 3rd, T. C. Douglas; 2nd, G. Baker; 4th, A. Telfer & Sons. Two shearing ewes—1st, A. Telfer & Sons; 2nd, G. Baker; 3rd, R. L. Burgess; 4th, T. C. Douglas. Two ewe lambs—1st, T. C. Douglas; 2nd, G. Baker; 3rd, R. L. Burgess; 4th, A. Telfer & Sons. Ewe, any age—1st, T. C. Douglas. Pen of five yearlings—1st, T. C. Douglas. Pen of five lambs—1st, T. C. Douglas.

LEICESTERS.

Awards.—Ram, aged—1st, J. S. Smith, Maple Lodge; 2nd, E. Gaunt & Sons, St. Helens; 3rd, J. Laidlaw, Wilton Grove. Ram, shearing—1st, 2nd, and 4th, E. Gaunt & Sons; 3rd, J. S. Smith. Ram lamb—1st, F. Gaunt & Sons; 2nd, J. S. Smith; 3rd and 4th, J. Laidlaw. Ram, any age—1st, J. S. Smith. Two ewes, aged—1st, J. S. Smith; 2nd, E. Gaunt & Sons. Two shearing ewes—1st, J. S. Smith; 2nd, E. Gaunt & Sons. Two ewe lambs—1st, J. S. Smith; 2nd, E. Gaunt & Sons. Ewe, any age—1st, J. S. Smith. Pen of five yearlings—1st, E. Gaunt & Sons. Pen of five lambs—1st, J. S. Smith. Pen—1st, J. S. Smith.

LINCOLNS.

Awards.—Ram, aged—1st, W. Oliver, Avonbank; 2nd, Gibson & Walker, Denfield. Ram, shearing—1st, Gibson & Walker; 2nd, T. E. Robson, Ilderton. Ram lamb—1st, Gibson & Walker; 2nd, W. Oliver; 3rd and 4th, T. E. Robson. Ram, any age—1st, W. Oliver. Two ewes, aged—1st and 2nd, W. Oliver; 3rd, T. E. Robson. Two shearing ewes—1st and 3rd, W. Oliver; 2nd and 4th, T. E. Robson. Two ewe lambs—1st, 2nd, and 4th, W. Oliver; 3rd, T. E. Robson. Ewe, any age—W. Oliver. Pen of five yearlings—1st, T. E. Robson. Pen of five lambs—1st, T. E. Robson. Pen—W. Oliver.

COTSWOLDS.

Awards.—Ram, aged—1st, D. Jackson; 2nd, H. Rawlings, Ravenswood; 3rd, H. Shore, Glanworth. Ram, shearing—1st, H. Rawlings; 2nd, H. Shore; 3rd, G. Weeks, Glanworth. Ram lamb—1st, H. Rawlings; 2nd and 3rd, H. Shore. Ram, any age—1st, H. Rawlings. Two ewes, aged—

1st, H. Shore; 2nd, G. Weeks; 3rd, H. Rawlings. Two shearing ewes—1st and 3rd, H. Shore; 2nd, H. Rawlings. Two ewe lambs—1st, H. Shore; 2nd, H. Rawlings. Ewe, any age—1st, H. Shore. Pen of five yearlings—1st, H. Shore. Pen of five lambs—1st, H. Shore. Pen—H. Shore.

FAT SHEEP.

Awards.—Two fat wethers, any age—1st, W. H. Beattie, Wilton Grove; 2nd, W. E. Wright, Glanworth. Two fat ewes, any age—1st, H. G. Switzer, Woodham. Best six fat sheep for shipping purposes, not to be shown in sections 1 or 2—1st, W. E. Wright.

YORKSHIRES.

Awards.—Boar, one year and over—1st, H. J. Davis, Woodstock. Boar, six months to one year—1st, H. J. Davis; 2nd, J. Ackland, Delaware; 3rd, W. Goodger & Son, Woodstock. Boar, under six months—1st, J. Featherston; 2nd, J. Ackland; 3rd, J. Davis. Boar and three sows—1st, H. J. Davis. Sow, one year and over—1st, W. Goodger & Son; 2nd, J. Featherston; 3rd, H. J. Davis. Sow, six months to one year—1st, R. Gibson, Delaware; 2nd and 3rd, H. J. Davis. Sow, under six months—1st and 3rd, H. J. Davis; 2nd, J. Featherston. Sow and four of her offspring—1st, H. J. Davis.

CHESTER WHITES.

Awards.—Boar, one year and over—1st, D. DeCoursey, Bornholm; 2nd, R. H. Harding, Thorndale; 3rd, J. H. Clark, Calton. Boar, six months to one year—1st, R. H. Harding; 2nd, D. DeCoursey; 3rd, J. H. Clark. Boar, under six months—1st and 3rd, D. DeCoursey; 2nd, R. H. Harding. Boar and three sows—1st, D. DeCoursey. Sow, one year and over—1st, R. H. Harding; 2nd and 3rd, D. DeCoursey. Sow, six months to one year—1st and 2nd, D. DeCoursey; 3rd, J. H. Clark. Sow, under six months—1st and 2nd, D. DeCoursey; 3rd, R. H. Harding. Sow and four of her offspring—1st, D. DeCoursey.

POLAND-CHINAS.

Awards.—Boar, one year and over—1st, W. & H. Jones, Mt. Elgin. Boar, six months to one year—1st and 2nd, F. Row, Avon. Boar, under six months—1st and 2nd, F. Row, Avon; 3rd, W. & H. Jones. Boar and three sows—1st, W. & H. Jones. Sow, one year and over—1st and 2nd, W. & H. Jones. Sow, six months to one year—1st and 2nd, W. & H. Jones. Sow, under six months—1st and 2nd, W. & H. Jones; 3rd, F. Row. Sow and four of her offspring—1st, W. & H. Jones.

BERKSHIRES.

Awards.—Boar, one year and over—1st and 3rd, H. J. Davis, Woodstock; 2nd, T. A. Cox, Brantford. Boar, six months to one year—1st, H. J. Davis; 2nd, J. Ackland, Delaware; 3rd, J. Shipley, Komoka. Boar, under six months—1st, H. J. Davis; 2nd, T. A. Cox; 3rd, D. DeCoursey, Bornholm. Boar and three sows—1st, T. A. Cox. Sow, one year and over—1st, H. J. Davis; 2nd, T. A. Cox; 3rd, D. A. Graham, Parkhill. Sow, six months to one year—1st and 2nd, H. J. Davis; 3rd, J. Ackland. Sow, under six months—1st, H. J. Davis; 2nd, D. A. Graham; 3rd, T. A. Cox. Sow and four of her offspring—1st, T. A. Cox.

TAMWORTHS.

Awards.—Boar, one year and over—1st, W. T. Elliott, Hamilton; 2nd, F. Row, Avon; 3rd, J. C. Nichol, Hubble. Boar, six months to one year—1st and 2nd, J. C. Nichol; 3rd, W. T. Elliott. Boar, under six months—1st and 3rd, J. C. Nichol; 2nd, W. T. Elliott. Boar and three sows—1st, W. T. Elliott. Sow, one year and over—1st, F. Row, Avon; 2nd, W. T. Elliott; 3rd, J. C. Nichol. Sow, six months to one year—1st, J. C. Nichol; 2nd, F. Row. Sow, under six months—1st, W. T. Elliott; 2nd and 3rd, J. C. Nichol. Sow and four of her offspring—1st, W. T. Elliott.

DUROC-JERSEYS.

Awards.—Boar, one year and over—1st, 2nd and 3rd, Tape Bros., Ridgetown. Boar, six months to one year—1st, 2nd and 3rd, Tape Bros. Boar, under six months—1st, 2nd and 3rd, Tape Bros. Boar and three sows—Tape Bros. Sow, one year and over—1st, 2nd and 3rd, Tape Bros. Sow, six months to one year—1st, 2nd and 3rd, Tape Bros. Sow, under six months—1st, 2nd and 3rd, Tape Bros. Sow and four of her offspring—Tape Bros.

SUFFOLKS.

Awards.—Boar, one year and over—1st, A. Frank & Son, The Grange; 2nd and 3rd, J. Featherston, Streetsville. Boar, six months to one year—1st and 2nd, J. Featherston. Boar, under six months—1st and 2nd, A. Frank & Son; 3rd, J. Featherston. Boar and three sows—1st, J. Featherston. Sow, one year and over—1st, J. Featherston; 2nd and 3rd, A. Frank & Son. Sow, six months to one year—1st, A. Frank & Son; 2nd and 3rd, J. Featherston. Sow, under six months—1st, J. Featherston; 2nd and 3rd, A. Frank & Son. Sow and four of her offspring—1st, A. Frank & Son.

ESSEX.

Awards.—Boar and two sows—1st, 2nd and 3rd, J. Featherston, Streetsville.

Montreal Exhibition.

Horses.

The exhibit of horses at the Quebec Provincial Exhibition held at Montreal during the third week of September was very good in some departments and very slim in others. There were a few very good Clydes, and some better Percherons than are usually seen at a Canada show. Hackneys were but few, but these were of good quality and style, and took well with the spectators. In hunters, saddle horses, roadsters, and carriage horses, there were a few choice animals, and many more below par. Montreal ought to make a splendid display of saddle horses. There are enough first-class horses in the stables of the wealthier citizens to make a splendid show, but these were conspicuous only by their absence.

Dawes & Co., Lachine, were almost the only exhibitors of Thoroughbred horses, and they had a few fairly good animals. In the aged class, Redfellow, by Longfellow, was placed first, but was beaten for the sweepstakes by the two-year-old, Red Monk.

In the filly classes they had some neat young things by Sir Modred, and others by Salvatore. A yearling filly by the former with very long quarters won the sweepstakes for best female, any age. The roadster class was fairly well filled, and many good animals were shown. Some of the neatest and best of these were by Thoroughbred sires out of dams with a good dash of trotting blood. For roadster stallions, J. J. Anderson, Dominionville, Ont., had the winner in the sweepstakes. J. D. Buzzell, Montreal, had the winning pair of roadsters, and also the sweepstakes for best mare, any age.

In the carriage class, there were a few of the best, bred from Thoroughbred sires and trotting dams, as was the case in the roadsters, and those of good size and appearance were selected for the carriage class. J. J. Anderson had again the winning stallion, a fine bay with dark legs and a fine, blood-like look, a very taking horse in style and finish. In this class, Osborne & Hardy got first for pair and first for single carriage horse, T. D. Buzzell getting first on team between 15 and 15½ hands. R. M. Wilson, Delhi, had some very good young animals in this class. The French coach stallions shown were very superior animals. These, if well patronized in Quebec, should raise the standard of the coach horses, and add a good deal to the wealth of the province. The judges bracketed Robert Ness, Howick, and the Haras National, Outremont, as equal for

first and second prizes. There were no animals shown in the French coach class except the imported aged stallions.

Canadians were out well, but not as good as expected. In olden times in Western Canada the French-Canadian had a great reputation for strength, endurance, and handiness in the woods. The specimens that were shown here were not up to the style expected by those old-time stories. They were too light for the work, and lacked the round, thick barrel seen in the old days, and the stout, sinewy legs. Some of them were good horses, but did not fill the expectations. The class, as a whole, was an improvement on last year.

There were a few good ponies. R. T. McGibbon, Montreal, got most of the prizes, having a very good exhibit. John Miller & Son, Frougham, got first on a nice stallion between 12 and 14 hands, which was sold to go to New York at a good figure. Robert Ness had also a few very choice animals, and won several prizes. There was but a small class of standard-bred trotters, R. St. Germain, Westmount, getting first in aged class, with the Trappist Fathers, Oka, a good second. J. J. Roy, Back River, and D. & J. Grady, Allan's Corners, also had winners in this class, the former with a two-year-old stallion and a yearling filly, and the latter with a mare and foal. There was only one Suffolk Punch shown, owned by H. S. Baker, River Beau-dette, a very good specimen of that sort of English breed. Percherons were good in the aged classes, the Haras National taking all the prizes. There were only three young animals shown in this class.

H. N. Crossley, Toronto, took nearly all the prizes for Shires, Dawes & Co., Lachine, getting second on a filly and first for a span of draught Shires. There were some very good Clydes shown. In fact, this class, and that of draught horses, which were largely Clydes crosses, were the best filled classes of the horse show. There was a large contingent forward from Ontario. Graham Bros., of Claremont, and Jas. I. Davidson & Son, Balsam, had both good strings and won several prizes; but the Quebec breeders held their own, and Robert Ness, Howick, McGerrigle Bros., Ormstown, and David McFarlane, Kelso, were all prize-winners for Quebec. The aged stallion class was a very good one. R. Ness won with Lawrence Again (7909), by Prince Lawrence, by Prince of Wales. This horse won a place at the Royal Show at Windsor, England, as a yearling, and at Edinburgh as a two-year-old. He is full of character, goes nicely, has very good legs and feet, and is altogether a very good type of a Clyde. Mr

Ness also won for best stallion of any age. D. McFarlane had the winning three-year-old, and James I. Davidson & Son the best Canadian-bred Clyde stallion in Tofty. Graham Bros. captured first for team and sweepstakes for best mare on the ground. The younger classes were fairly well filled, but were not able to bring out anything good enough to beat the older animals for the sweepstakes.

Sheep.

There was a very good show of sheep, which included many of the best flocks before described at Toronto show. In Cotswolds, John Miller & Son, Brougham, had a select lot of imported and homebred sheep. They won firsts. C. Robinson, Odelltown, Que., took second place, and won first for the best pen bred and owned in the Province of Quebec. A. Roch, St. Norbert, Que., had a winner in his shearling ram. D. Turenne, St. Paul l'Hermitte, P.Q., and Arsene Denis, St. Norbert, also got prizes. In Leicesters, J. Kelly, Shakespeare, got the lion's share of the awards, but he was beaten in shearling ewes by John Miller & Son, Brougham. For pen of Quebec-bred Leicesters J. Pringle, Huntingdon, Que., was first; D. Baxter, North Georgetown, Que., second; and J. Cowan, Allan's Corners, Que., third. Both Mr. Pringle and Mr. Baxter won two third prizes in the regular classes, the former on aged shearling rams, and the latter for ram lamb and pair of ewes, Mr. Cowan winning second place for his pair of ewes. Lincolns were shown by Gibson & Walker, Denfield, Ont.; C. Ouimet, St. Francois de Salles, Que.; and A. Denis, St. Norbert, Que. Gibson & Walker got most of the awards.

The Ontario flocks took all the awards in the regular classes for Shropshires. John Miller & Son, Brougham, and John Campbell, Woodville, pretty well divided the class, with the pen prize to the former; R. Davies, Todmorden, coming in for one second and three third prizes.

In Oxfords, P. Arkell, Teeswater, was the only exhibitor. Southdowns had for their champions J. Jackson & Sons, Abingdon, Ont., and R. Shaw & Sons, Glanford Station. The former won most of the firsts, with R. Shaw & Sons a close second. In Merinos R. Shaw & Sons were first, and W. M. & J. C. Smith, Fairfield Plains, second. None of any of these three breeds were on exhibition from Quebec Province. In Dorset Horns J. A. McGillivray, Uxbridge, got first and second on aged rams, first on ram lambs, and second on shearling rams, and Hillhurst Farm, Que., took the rest of the prizes in this class with some very good specimens of this useful breed.

The exhibit of sheep for Quebec was a

good one. It is true that they were seldom able to beat the Ontario exhibitors, who have for a lifetime been fitting up sheep for show purposes, but they are coming up in the style and quality of their exhibit. Looking back, even a few years, the improvement is marked. The French-Canadian exhibitors are to be commended for the good work they are doing in the sheep department.

Swine.

The show of swine at Montreal was a grand one. It was one that had never before been equalled in some of the classes in any Canadian show. The best had gone from Toronto, owned by such well-known breeders as Joseph Featherston, M.P., Streetsville, Ont.; R. Chadwick, Burnhamthorpe, Ont.; W. H. & C. H. McNish, Lyn, Ont.; H. George & Son, Crampton; and W. M. & J. C. Smith, Fairfield Plains. These had very hard work to hold their own, and, indeed, in many classes were beaten by their Quebec competitors, animals that came first in Toronto having to be content with a third place at Montreal. The exhibit of Improved Yorkshires was especially good, large in numbers, and excellent in quality.

Cattle.

AYRSHIRES.—The exhibit of cattle was the leading feature at the Montreal show. In this they stood out pre-eminent, and the Ayrshires were the biggest half of the cattle show. Two hundred and ninety-seven head on the ground made an exhibit of dairy stock which had not before been equalled on this continent. The directors deserve a great deal of credit for the stock brought out, and the affable and energetic chairman of the cattle department, Mr. T. A. Trenholme, and his superintendent, Mr. George Euchanan, worked hard, and are to be complimented on the way this department was managed. A new departure was made this year in judging the herds first. Fourteen herds of Ayrshires, one bull and five females in each, seventy head in all, faced the judges in the prize ring, a sight the equal of which had never before been seen. The Ayrshires are evidently the first favorites in Quebec, and a grand breed of dairy cattle they are. They are steadily working their way into favor in the dairy district of the West, as well as in Quebec and the eastern provinces. With the fourteen herds of new animals before them, the judges had no easy task, and it took about three hours of very hard work scoring every animal to complete the task. R. Reford, St. Anne de Bellevue, won the coveted first place, with Duncan McLachlan, Petite Côte, a close second; Jolin Newman, Lachine, third; R. G. Steacy, Lyn, Ont., fourth; James Drummond, Petite Côte,

fifth; Robertson & Ness, Howick, sixth. That was all that could be done the first day, as the work was heavy. It was no easy task to go over the whole lot. In fact, the class judging took several days. There was a popular winner among the cows in the veteran Nellie Osborne, the sweepstakes gold medal cow at Chicago. Nellie Osborne was imported by the late Thomas Brown, has been a great prize-winner, and has also proved an excellent breeder. Her son, Silver King, owned by D. McLachlan, got first in his class and the sweepstakes for best bull of any age, and every first-prize bull that competed with him in the ring for the sweepstakes was very closely related, being either son, grandson, or half-brother, the whole lot being descendants of the prize cow, Nellie Osborne. Nellie is a white cow with a very few light red spots, is very deep in the rib, wide, and well sprung, narrow on the top of the shoulder, wide behind, and long in the quarter, a typical dairy animal. She is now nine years old, and is owned by D. Drummond, Petite Côte. Her son, Silver King, the sweepstakes bull, resembles her a good deal, both in color and style. He is the sire of very many of the young prize-winners, and has certainly made a record in the prize ring with his produce. He is owned by D. McLachlan, who not only won a good many Ayrshire prizes, but also swept the grade dairy class, winning enough prizes to secure the gold medal for the greatest number of stock prizes at this show. His cow, Maggie Mitchell of Barcheskie, won third place in her class. R. Reford got second with White Floss, from Dunlop Stewarton, near Kilmarnock, Ayrshire, Scotland. R. G. Steacy won first for the best three-year-old cow with his particularly fine cow, May Queen, and also first and second for the best three-year-old cow in calf, not in milk. The judges, however, only placed his imported bull, the sweepstakes winner at Toronto, third in his class. He is of a famous milking strain, and shows it. The prizes for the Ayrshires were given down to sixth place, but in future, with so many exhibitors, it will be wise to give even more prizes in each section. The Montreal directors are evidently determined to make this the greatest Ayrshire show on the continent. Where there were so many good ones, and the competition so keen, it would be hard to detail the various winners. A remarkable feature of the prize list was the number of animals winning from the celebrated herd of the late Thomas Brown, so many years a well-known exhibitor at Montreal. Of herds not before specified that of James Johnston, of

Como, thirty miles from Montreal, should be mentioned. This herd won several prizes, first for heifer calf, second for bull calf, third for the eild cow, Nellie of Barcheskie, the sweepstakes cow last year, and third for yearling bull, bred by Mark J. Stewart, M. P., Southwick, Scotland. Messrs. Dawes & Co., Lachine, got several prizes; amongst others, fourth for a cow bred by Mr. Wallace, Auchinbrain, Ayrshire, and fifth for bull by Craigs of Kyle. Mr. Stewart, Menie Station, Ont., got several prizes, including first for bull and four of his get. David McFarlane, Huntingdon, got a place for a two-year-old heifer. Thomas Drysdale, Allan's Corners, had a good herd, all Canadian-bred. There were many others who sent in good specimens, fit to beseen anywhere, and good enough to win in some shows, but which could not get a place among such a grand lot as faced the judges at Montreal. It has been suggested that the Montreal directors should inaugurate an "Ayrshire Derby," and the matter will, no doubt, receive due attention. There are now enough breeders and enough first-class stock to make such a step a decided success.

SHORTHORNS.—In Shortorns, W. C. Edwards & Co., of Rockland, came out a good first with his very fine herd. J. & P. Crerar, Shakespeare, and Messrs. Simmons & Quirie, Ivan, with several other western exhibitors, were also prize-winners. Herefords were hardly up to those of two years ago, when the whitesides made a very good turnout. H. D. Smith, of Compton, Que., won most of the first prizes, with D. W. Wilson, Moe's River, a far-away second. L. A. Genereux, Montreal, had a few head present. Devons were confined to the well-known herd of W. J. Rudd, and his son, Ralph Rudd, of Eden Mills, Ont. Polled Angus had two exhibitors, James Bowman, Guelph, and Wm. Stewart & Son, Willow Grove, Ont. The former had his stock out in good shape, but those of the latter, having been away in Manitoba, showed the effect of the long journey. Galloways were represented by the herds of D. McTear, Guelph; John Sibbald, Annan; and W. K. Harkness, Leith, Ont. Mr. Sibbald has a fine cow in the Chicago champion, Countess of Glencain III. She won in her class and in the sweepstakes for best female. Mr. McCrae won in the other sections. In Jerseys and Alderneys, Mrs. E. M. Jones, Brockville; H. A. Ekers, Montreal; and Dawes & Co., Lachine, got the prizes much in the order named. The Trappist Fathers, of Oka, showed a few, as did also E. P. Hall, Rock Island, Que., and C. C. Coleman, Way's Mills.

GUERNSEYS.—Guernseys were represented by J. N. Greenshields, Danville, Que.; W. H. & C. H. McNish, Lyn, Ont.; Sydney Fisher, Knawton, Que., and a few others.

Fat and export cattle were not a large exhibit. James Oke & Son, Alvinston, Ont., and W. A. Tozer, Quebec, with James Rennie, Wick, were exhibitors, the first and last named dividing the honors. There was a good exhibit of Canadian cattle, a dark, hardy, good breed. The exhibit of this breed, descendants of the old stock of Normandy and Brittany brought out in the early days of the French colony, were very interesting. They have many dairy points, and look like a good breed of useful cattle.

Altogether the cattle were the great feature of the exhibition.

Poultry.

The poultry display was a very good one, some 1,600 birds being cooped. The arrangements made, however, were, without exception, the worst we have ever seen. The building is a nice one, but altogether too small for the purpose for which it was used. The coops were very nice, but were too low; many of the birds were placed on the floor, and it would be a very enthusiastic fancier, indeed, who would go down on his hands and knees to inspect the fowls placed there. Then, too, the birds were scattered all around the building. There was no systematic arrangement of the different varieties; some were placed here, some there, and the balance elsewhere. A large number of the birds were outside in what is known as the "annex." There is a roof over their heads, but the front is quite open. The fault appears to have been with the association, and not with the superintendent. It appears that Mr. Ulley was handed his book some days before the time appointed for receiving the poultry, and had the building nicely laid out, but the exhibition people took entries after the book was handed to the superintendent, and even after the birds had reached the grounds. The result was that Mr. Ulley had some 400 birds to place of which he knew nothing until the opening day of the poultry display. It is to be hoped that this will not occur again.

The strong classes were Light Brahmas, Barred Plymouth Rocks, Black Minorcas, White Minorcas, Games, and turkeys, geese, and ducks. The principal exhibitors were Messrs. Kent & Okrieve, Kingston; C. J. Daniels, Toronto; W. H. Reid, Kingston; W. M. Osborne, Brockville; A. Fortier, Montreal; A. W. Garrett, Brockville; William Main, Milton; and F. W. Molson, Montreal. The latter had a very fine exhibit of Black Minorcas.

The superintendent had eight assistants, and did all in his power to make visitors welcome.

We regret that space will not permit of our going into an extended report of the different varieties and the publication of the prize list. We desire, however, to thank Mr. Ulley for the courtesies extended during our visit.

Dairy Show at Gananoque.

With butter and cheese becoming leading articles in Canadian exports, what is more fitting than a dairy show? It was therefore with the intention of instituting a new departure along the line of agricultural exhibitions that the Agriculture and Arts Association, in the last year of its existence, has founded a show that deserves the earnest patronage of all who are interested in dairy work.

It cannot be denied that Gananoque was an unfortunate selection for the initial meeting, for had Belleville, Brockville, or Peterboro been chosen a much greater success might have been assured. Moreover, owing to the fact that Gananoque show came right on the heels of the great fall exhibitions, a large attendance of spectators could hardly be expected.

As intimated by its name, the exhibition was a dairy show pure and simple. Dairy cattle, dairy appliances, and dairy products alone were given a place, and the liberal prize list brought out a capital display in each of these departments. Cheese factory fittings, creamery appliances, together with utensils suitable for farm dairies, had been forwarded by D. Derbyshire, Brockville; C. D. Chown & Son, Kingston; and Wm. Stafford & Son, Lancaster, and formed a most interesting display of modern labor-saving machinery.

One hundred and seventy-five entries had been made in the four recognized dairy breeds of cattle that are usually found in the prize lists of our leading exhibitions, while the competing herds were chiefly such as had been successfully shown at Toronto, Montreal, London, and Ottawa, although a few fresh animals had been forwarded, competing for the first time in this season's campaign.

The grand sweepstakes for cows in milk, together with the sectional prizes for cows and three-year-old heifers, were awarded according to the rule which governs British shows of dairy cattle, which made the judging interesting from the fact that the product was all that was taken into consideration, and it was judged from the following scale: One point for each pound of milk; 20 points for each pound of butter-fat; 4 points for each

pound of other solids ; 1 point for each ten days in milk ; 10 points deducted from the total score for each per cent. of fat below three per cent. A sweepstakes prize was also offered for best cow or heifer by conformation, in the Ayrshire and Jersey 1886

JERSEYS.—Mrs. E. M. Jones, Brockville, was the chief exhibitor in this class, and fairly outdid her former efforts in the magnificent display she made with the justly famous herd which she had forwarded. Most of the sections were fully represented by animals from the home of Massena, and although, as Mrs. Jones remarked, her cows had felt the strain of the former four weeks' campaign, which could not fail to tell upon milk yields, yet one could scarcely detect any falling away from outward appearances. The aged bulls, Lilimur's Rioter and Canada's Sir George, were placed in the order named by Mr. J. C. Snell, who hung the ribbons for the class, and not only were the bulls in the other sections admired, but a long line of beautiful cows and heifers, with the sweepstakes cow, Gipsy of Spruce Grove, in the lead, formed a very attractive part of the exhibit of live stock.

AYRSHIRES.—John H. Douglas, Warkworth, made the awards here, when two noted herds from Montreal Island, and a like number, equally famous, from the eastern portion of Ontario, with a few single individuals, competed for the offerings made for this popular dairy sort. D. McLachlan, Petite Côte, brought out a string of good ones, at the head of which his noted bull, Silver King, carried the first red, while this bull's yearling son, named Silver Prince, carried a like honor. Maggie Mitchell (imp.) carried her class prize, giving a maximum number of milk points, and Lady Heather was placed in the lead of the three-year-old cows, and Flow Gently, a daughter of Silver King, came first in heifer calves. D. McLachlan's contingent carried five reds. William Stewart & Son, Menie, had forwarded their full herd, which had already been successful at the previous shows, headed by White Prince, which carried second place, while their two-year-old bull, Douglas of Loudoun, also carried off the blue ribbon.

In cows the Menie herd had a strong third in Jean Armour. She had developed a capital vessel since the Ottawa show. Their Ottawa sweepstakes three-year-old here carried off a blue, and Scotch Lassie Jean, their beautiful two-year-old Toronto winner, and the yearling, Annie Laurie 2nd, came away with a red ribbon apiece.

D. Drummond, Petite Côte, had a strong first in the splendid bull calf, Matchless, a

son of Mr. Reford's Glencairn, and his famous cow Nellie Osborne (imp.), doubtless the best bull calf out this season. D. Drummond also got a second prize on his yearling bull, while Nellie Osborne won second in her class by milk points, and sweepstakes by conformation.

Jos. Yuill & Son, Carleton Place, had a large exhibit, and won the best of it with their two-year-old bull, Leonard of Meadowside. They were placed third with a bull calf, and won some other premiums on heifers.

HOLSTEINS.—These came under the inspection of Mr. Cook, Aultsville, and were numerically the strongest of the breeds, while no less than five herds competed.

G. W. Clemons, St. George, forwarded seventeen head, at the head of which came his Toronto sweepstakes two-year-old bull, Netherland Consul, which here carried off the red ribbon. The St. George herd also scored a second and third on bull calves, first on two-year-old heifers, second on yearlings, and first and second on heifer calves, happily finishing a most successful show campaign.

A. & G. Rice, Currie's Crossing, brought out a capital display, winning first on the bull calf, Sir Paul De Kol. Last year's Toronto sweepstakes cow, Eunice Clay, carried a second to Carmen Sylvia, while their Lady Pietertje was second in three-year-olds, and their two-year-old heifer, Daisy Jewel 2nd, was third.

C. Gilroy, Glen Buell, won first in the cow section, and sweepstakes over all breeds competing by milk and butter points, with his phenomenal cow, Carmen Sylvia, and also won second on his aged bull Inka, Kathleen's son, and third on heifer calf.

Wm. McClure, Norval, had a fresh exhibit, and won a number of premiums. His aged bull, Siepkje's Mink Mercedes, bred by Smith Bros., Churchville, was much admired. He also had a good cow in Aaggie Ida 5th, which was third, which in yearling heifers he won first and third.

A. Hoover, jr., Emery, carried off a first on his aged bull, Emery Prince, and won a like honor with his yearling, Barton Witzyde, and yet another on heifers.

GUERNSEYS.—These have been a strong class at every show this season, and those at Gananoque quite upheld their end of the exhibition. Isaac Holland, Culloden, carried out two reds with May's Rosebery and Dandy of Oxford in the first two sections for bulls, while the premiums for females fell to W. H. & C. H. McNish, Lyn, who had forwarded the handsome cows and heifers that have won so many honors at all the shows of this season.

Results prove conclusively that by the use of fertilizers rich in potash the crops of

Wheat and Rye

and all winter crops are largely increased and the soil is positively enriched.

We will cheerfully mail our pamphlets on Potash, its Use and Abuse on the Farm, free of cost. They will cost you nothing to read, and will save you dollars.

GERMAN KALI WORKS, 93 Nassau Street, New York.

Queenston

USE

Cement . . . FOR BUILDING

CONCRETE OR OTHER WALLS, CISTERNS, STABLE FLOORS, HOG TROUGHS, ETC.

Write for prices and particulars. When parties use our goods, when necessary, we will send a skilled man, at our own cost, to give instructions how to build. Farmers can thus build their walls and save half the cost.

ISAAC USHER & SON, - 459 - Thorold, Ont.

THE LATEST AND BEST AND THE ONLY DOUBLE ROOT CUTTER MANUFACTURED.

ALL the World loves a Winner; consequently

Tolton's No. 1 Double Root Cutter

Is the favorite among all Pulpers, having won all the first prizes last year; also captivated the hearts of all the stockmen who have used or seen it. It is a money winner to all concerned and a saver of time and labor to the operator, and one which sells at sight after a careful inspection, as it will either pulp coarse or fine, or slice by simply turning over the centre grate and turning crank the reverse way; and is considered in either capacity superior to any single machines.

"In short, our Pulpers have won the day, and orders for same are fast coming our way."

POINTS OF MERIT.

1st.—To change from pulping to slicing is but the work of a moment, which can be done at the one feeding, with no loss of time and no trouble.

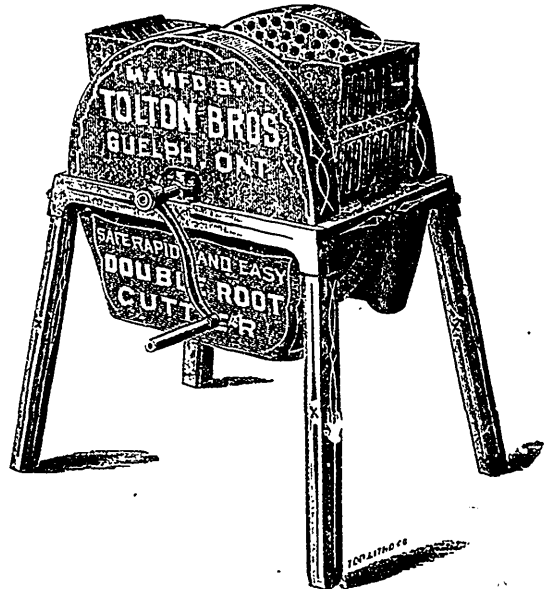
2nd.—There being two separate wheels, one for pulping and the other for slicing, each one is specially adapted for the work it has to do, with the best of knives placed in their respective wheels in a manner to obtain the very best results possible (three for slicing and six for pulping).

3rd.—The united force of both wheels is always used in doing the work in either capacity. This accounts for it being a steady, easy-running, and rapid root cutter.

4th.—The Hopper being between the wheels, and having large lower pockets, prevents choking, and with the knife-wheels both internally shielded makes it perfectly safe and prevents the roots from acting as a brake on the wheels, and also from jostling them about, so common in all other combined machines.

5th.—Hence the Latest and Best, and what has been long looked for, a safe, rapid, and easy Double Root Cutter.

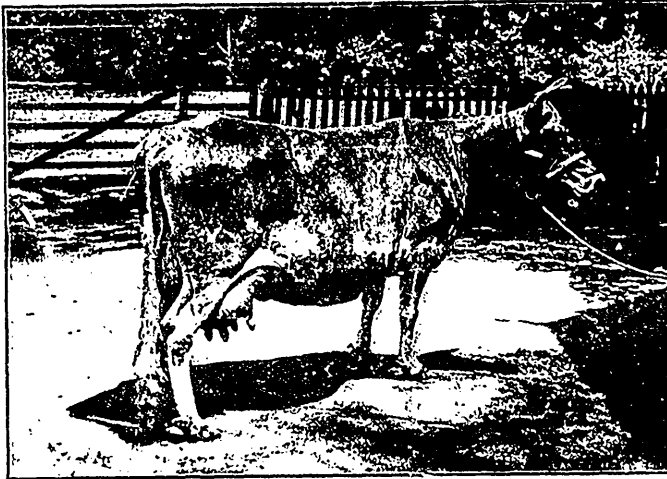
Soliciting your orders for same, we are, yours truly,



Patented September 6, 1894.

TOLTON BROS., GUELPH, ONT.

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



Jersey Cow, Massena

The property of Mrs. E. M. JONES, Brockville, Ont. Can.

8,000 lbs. Milk, which made 654 lbs. Splendid Butter, all within her sixteenth year.

My herd has won thirty medals—gold, silver, and bronze; over 400 cash prizes, besides diplomas, etc. Solid Silver Cup, value \$340, given at the Kellogg sale in New York for highest price on animals sold there; also Silver Tea Set at London, Ont. for three best Dairy Cows of any kind.

Grandsons and granddaughters of this great cow for sale; also from Canada's Sir George, whose dam made 26½ lbs. butter a week, and gave 57 lbs. milk a day; also from my Signal bull, whose dam made 20 lbs 6 oz. butter a week on second calf. Chicago tests have proved the Jersey to be the farmer's best paying cow.

MRS. E. M. JONES,
331 Brockville, Ont., Can

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 7,000 acres in extent. Visitors will be welcomed at all times. Correspondence invited.

J. N. GREENSHIELDS, Proprietor.

T. D. McCALLUM, Manager

185

DANVILLE, - - QUEBEC.

MICA ROOFING

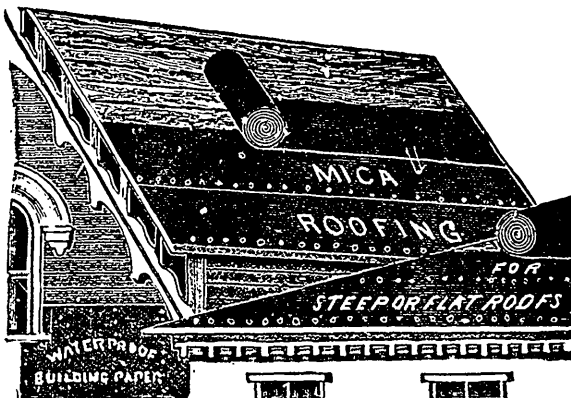
USE

**Mica
Roofing**

On all your build-
ings.

It is cheaper than
shingles.

Waterproof and
Fireproof.



USE

**Mica
Paint**

To Repair Leaky
Roofs.

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

RAPIDLY TAKING THE PLACE OF SHINGLES.

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

HAMILTON MICA ROOFING COMPANY,

Office—101 Rebecca Street, HAMILTON, ONT.