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FARMING
JANUARY 1896

D ID 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 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,
128 Adelaide Street East, - Toronto
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AMERICAN AND CANADIAN HORSES

EXPORT TRADE TO SCOTLAND.

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

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

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

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.

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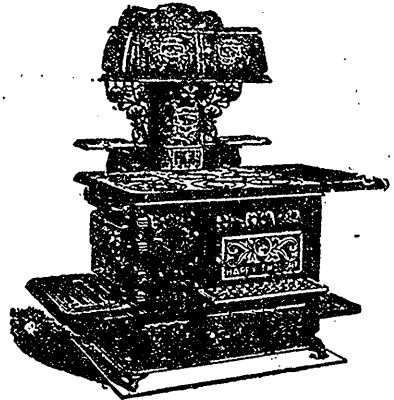
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Over-50,000 in use in Canada,
and every user pleased

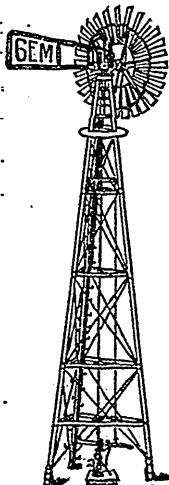
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It is said that the cooking apparatus is the most important article in any household. Then why not have the best? **The Happy Thought Range** combines perfection of operation with ease of management, it is always ready for work, and has more features 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,
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Gem Steel Towers
Canadian (Steel) Air Motors
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mills
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We manufacture a full line of both Pumping and Geared Windmills and the greatest variety of Pumps of any firm in Canada. Our prices are made to suit the times. Send for full descriptive catalogue, or make known your wants and we will supply them.

**ONTARIO WIND, ENGINE,
AND PUMP CO.**

367 Spadina Avenue

TORONTO - - ONTARIO

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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,
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Glandular Swellings, and all Skin Diseases, it has
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Manufactured only at 78 NEW OXFORD, STREET, late 533
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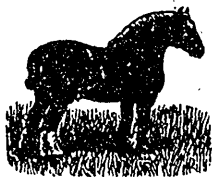
And sold by all Medicine Vendors throughout the World.

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HORSES AND SHORTHORNS.

THORNCLIFFE STOCK FARM.

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

HOWICK, Que.

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CLYDESDALE STALLIONS

DIRECTLY IMPORTED FROM BEST SCOTCH STUDS

SURE GETTERS

Guaranteed Sound Reasonable Prices

Geo. G. Stewart, Howick, Que.



SHORTHORNS.

For Sale Eight particularly good Shorthorn Bulls from 8 to 16 months old. They are large smooth sappy fellows in fair condition. Got by pure Cruickshank bull Perfection = 9100 =. Terms and prices to suit the times.

DAVID MILNE.

Ethel, Ont.

SCOTCH SHORTHORN CATTLE AND BERKSHIRE PIGS

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

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



246

"THE BRIARS"

SUTTON WEST, ONT.

100 Head of Registered Shorthorns Including bulls of various ages.

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

F. C. SIBBALD.

J. CARSON, Agent, Yorkton, Assa.



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SHORTHORNS

Of both sexes for sale at prices to suit the times. Herd founded in 1855, by the late Mr. Douglas. 12 young Bulls. Also stock bull Baron Evenlode = 16705 =. Write for particulars. Address

JAMES DOUGLAS.

CALEDONIA, ONT.

SHORTHORNS.

SHORTHORNS, SOUTH DOWNS, 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.

H. B. JEFFS,

Bond Head, Ont.

300

H. I. ELLIOTT

Breeder of Scotch Shorthorns and Southdown Sheep Imported King James at the head of herd.

335

Riverview Farm, Danville, Que.

SHORTHORNS



LINTON LUSTRE = 18425 =

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 = (51237), with Barmpton M. = 18240 =, sired by Barmpton Hero = 324 =, as reserve. Among the females are representatives of the Strathallans, Minas, Golden Drops, Mysies, Elviras — all pure Scotch breeding, except the Elviras, which are Scotch crosses.

Farm 7 miles from Ilderton Station, G.T.R. Stock of all kinds for sale. Apply to

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

O. M. SIMMONS, Ivan, Ont., or

JAMES QUIRIE, Delaware, Ont.

449

SHORTHORN BULL CALVES

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

JOHN DAVIDSON,

ASHBURN, ONTARIO

332

SHORTHORNS.

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.

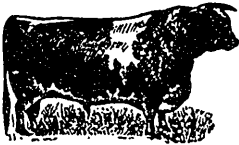


LAURENTIAN STOCK and DAIRY FARM,
North Nation Mills, Que.

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 Lisgar Pogle of St. Anne's 25704; A. J. C. C. Berkshire Pigs. Young stock of all the above breeds for sale. Post Office, Telegraph Office, and Railway Station, North Nation Mills, P. Q., on the C.P.R.

A. E. SCHEYER, Manager.

- CARGILL HERD of SHORTHORNS -



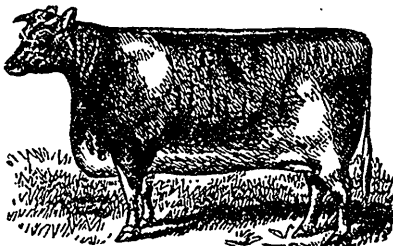
This herd has now at its head the imported Nonpareil bull, **Royal Member**, and the Lancaster bull, **Rautin' Robin**, by Roan Robin. The cows consist of importations from the herds of **Duthie, Marr, Cromble, Campbell, Main**, and others, numbering eighteen. All are of choicest Scotch breeding, and 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.

- 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.

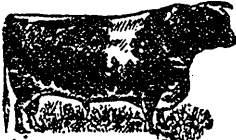
CLAREMONT STATION, C.P.R., or

PICKERING STATION, G.T.R.

486

Greenwood Telegraph and P.O.

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,

227

Markham, Ont.

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

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.

SHORTHORNS



MATCHLESS OF ELMHURST 617=7134=

GOOD YOUNG BULLS and HEIFERS FOR SALE

Prices reasonable. First-class colors and pedigrees. Farm one m. south of Clinton Junction 489

W. J. BIGGINS

Elmhurst Farm

CLINTON, ONTARIO

BULLS FOR SALE.



I have for sale two good young Shorthorn Bulls. Color, red. One 24 and the other 8 months old. Registered in D.H.B. Principally Booth blood. Price reasonable.

OXFORD DOWN SHEEP always for sale, of all ages, and both sexes, of best type. All registered.

The oldest established flock in Canada.

HENRY ARKELL, Arkell, Ont.

Telegraph—Guelph.

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Railway—Arkell.

JERSEYS.

FOR SALE . .

A grand Jersey Bull Calf dropped January 16th, 1895. Sire, Massena's Son (17608), whose dam made 9 lbs. 3 oz. of butter, and gave 9099 pounds of milk in 1 year and 15 days. Dam, Croton's Twinkle 3rd (91092). Official test 5.8 per cent. utter fat. A bull of grand constitution, sure and active, docile, and easily handled.

WM. W. EVERITT,
Dunedin Farm. Box 552, CHATHAM, ONT.

CATTLE CLUB JERSEYS

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

HUMPIDGE & LAIDLAW, London, Ont.

THE MANOR FIELD FARM OF JERSEYS

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

WILLIAM BACON, Prop.,
548 Orillia, Ont.

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.

E. H. BULL & SON, Props.,
544 Brampton, Ont.

JERSEY COWS AND HEIFERS.

The highest testing strains.
Rich breeding and good colors.

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

HEREFORDS.

\$1.000

WON IN PRIZES AT FALL FAIRS.

Ingleside Herefords

SPECIAL OFFERING OF PRIME YOUNG BULLS
... EXCELLING IN FEEDING QUALITIES.

ALSO

YORKSHIRE AND TAMWORTH

Fall Litters at Bargains.

Satisfaction
Guaranteed ..

H. D. SMITH, Ingleside Farm,
Compton, Que.

GUERNSEYS.

GUERNSEYS

THE GRANDEST OF ALL DAIRY BREEDS.

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

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

W. H. & C. H. McNish

Elm Grove Farm, 511 - LYN, ONT.

AYRSHIRES.

A RARE CHANCE TO SECURE

A Stock Bull

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

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

Write for particulars and prices.

JOHN H. DOUGLAS,
WARKWORTH, ONTARIO.

DOMINION PRIZE HERD PUREBRED

AYRSHIRE CATTLE

RECORD FOR 1898

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.

292 JAMES DRUMMOND & SON,
Petite Cote, Que.

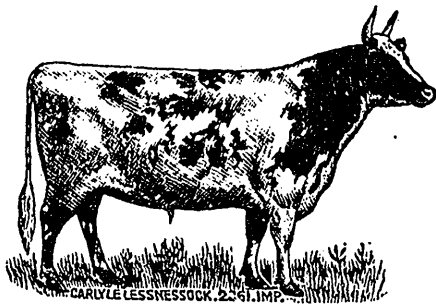
Menie Stock Yard



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

Wm. Stewart Jr.
Menie, Ont.
Hoard's Station,
G.T.R. 574

AYRSHIRES.



MAPLE GROVE AYRSHIRE STOCK FARM

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

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

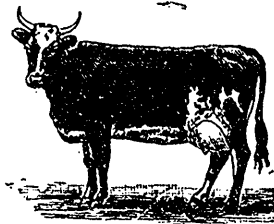
Registered rough-coated Scotch Collies from imported stock.

JOHN NEWMAN & SONS

LACHINE, QUE.

Breeders of High-Class Ayrshires

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



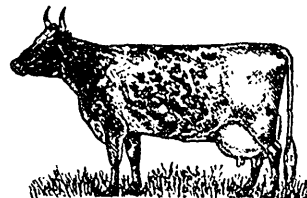
ALEX. HUME & CO.

Burnbrae P.O., Ontario

FOR SALE CHEAP



Bulls fit for service, cows and heifers in calf, and heifer calves, all prize winners. Heavy milking dairy cows and heifers of various crosses. Special bargains in boars fit for service and young pigs. A young Clydesdale mare, a prize winner got by Macneilage.



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.

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

AYRSHIRE BULLS from Imported Cows

FOR SALE

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

THOS. BALLANTYNE & SON,

Neldpath Farm, Stratford, Ont.

GLENGARRY STOCK YARD.

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

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

Choice Ayrshires.

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

Please address D. McLACHLAN,
Petite Cote, 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, Ont.
Hoard's Station, G.T.R.

AYRSHIRES

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

A. MCCALLUM & SON,

Spruce Hill Dairy Farm. 566 DANVILLE, QUE.

JAMES COTTINGHAM, Riverside Farm,
Ormatown, 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



AYRSHIRES

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

John Sandilands, Williamstown, Ont.

FOR SALE

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

DANIEL DRUMMOND

Petite Cote, Que.

187

AYRSHIRES.

Isaleigh Grange Stock Farm

OUR STOCK OF PUREBRED

**AYRSHIRE AND GUERNSEY CATTLE,
SHROPSHIRE SHEEP, AND
IMPROVED YORKSHIRE SWINE**

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

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.

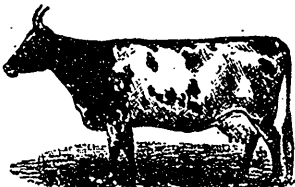
CORNWALL, G.T.R.

Grant's Corners, Ontario.

AYRSHIRE CATTLE.

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

Also Leicester Sheep and Berkshire Pigs.



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

HOLSTEINS.

FOR PRICES ON
HOLSTEINS

WRITE TO

F. A. FOLGER,

393

RIDEAU STOCK FARM

BOX 577

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

A. & G. RICE,

490

Brookbank Stock Farm,

Currie's Crossing, Ontario, Canada

MAPLE HILL

Holstein-Friesians.

Am offering the finest lot of heifers to be found in Canada. At the recent Industrial my herd won first in every section for heifers, and sweepstakes for both male and female. These heifers will be bred to Sir Pieterje 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.

A. C. HALLMAN,

Waterloo Co.

413

New Dundee, O. C.

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 calve 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.

HOLSTEINS.


**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 over all breeds in milk tests at Toronto and Gananoque, was bred by me. Pieterjie, Jewel, Sir Henry of Maplewood, and Mercedes strains. Catharine 5th's, Sir Aggie Clothide at the head of the herd. Tamworths from imported stock.

Brockville, on
G.T.R. and C.P.R.

THOS DAVIDSON,
Spring Valley, 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

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.

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. Also choice Oxford Down rams.

J. W. LEE, 430 Simcoe, Ont.

SHEEP.

LINCOLNS.

The Largest Flock in Canada!

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

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

550


SHROPSHIRE

Our flock, the oldest Shropshire flock in Canada, was founded in 1887. Importations made from time to time, selected in person from best English flocks. This season's lambs, along with a number of shearling rams and ewes of this year's importation, for sale. Orders can now be taken for pick.

JAMES COOPER & SON,
Kippen, Ont.

492

SHEEP.

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.) Hildersc.

226

A. TERRILL, Wooler, Ont.

OXFORDS.

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

JOHN COUSINS & SONS,
Harriston, Ont.

290


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


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.

483

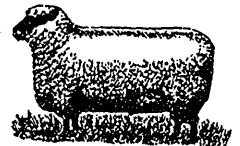
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OXFORD DOWNS

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


FAIRVIEW SHROPSHIRE.

I have a number of Good Young Ewes bred to my stock rams, which are of superior breeding, and in good field condition, for sale. Wishing to reduce my flock, I will book orders for them at low figures this and next months. If you want good value, write at once.

J. CAMPBELL,
Woodville, Ont., Canada.

LINDEN OXFORDS

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

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

SHEEP.

Oxford Downs.

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

TURN & JULL - Burford - Mt. Vernon



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The Cottage, Springfield-on-the-Credit, Ont. Breeder and Importer of

DORSET HORN SHEEP

And dealer in

Saddle and Carriage HORSES.

533 Stations: Springfield, Ont., C.P.R. and Port Credit, Ont., G.T.R.

41 FIRSTPRIZES 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

SWINE.

For the Finest Strains

of **LONG**

ENGLISH BERKSHIRE PIGS

BOW PARK

Apply

Bow Park Co. (Ltd.)

BRANTFORD Canada.

TAMWORTHS



A few extra prize-winning boars Sows of different ages, bred to my best boars. Grand August and September pigs of both sexes from prize sows.

JOHN C. NICHOL - Hubrey, Ontario.



BERKSHIRE, Chester White, Jersey Red & Poland Chinas Pigs. Jersey, Guernsey & Holstein Cattle. Thoroughbred Sheep, Fancy Poultry, Hunting and Home Dogs. Catalogue.

B. W. SMITH, Cochransville, Chester Co., Pa.

LARGE ENGLISH BERKSHIRES

Of the choicest strains. Some fine April pigs. A grand lot of fall pigs. All ready to ship.

Stock Guaranteed.

Write for prices to

J. H. SEIFFERT,

Port Elgin Stn. NORTH BRUCE, Ont.



SWINE.

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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. 202



JOHN PIKE & SON. Locust Hill, Ont., C.P.R. Markham, Ont., 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. 346

STREETSVILLE, P.O. and Telegraph, 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. Brantford 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 Meyer, 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.



SWINE.

IMPROVED LARGE YORKSHIRES

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



J. M. HURLEY & SON. Belleville, Ont.
Box 442. Kingston Road Stock Farm. 322

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

Importer and Breeder of

Ohio Improved Chester White Swine

The largest and oldest established registered herd in Canada. I make this breed a speciality and furnish a good pig at a fair price. Write for prices. 293

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, Ontario

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. BRETHOUR,
Burford, Ont.

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. 195

KEEP YOUR EYE ON THIS SPACE

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. Shearing 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.

247

C. T. GARBUTT, Claremont, Ont.

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 - Snellgrove, Ont.

CHOICE PIGS

Of June, August, and October farrow for sale at hard-time prices. Nothing but first-class pigs shipped on order. Satisfaction guaranteed.

Registered Pedigree^r Furnished



R. B. McMULLEN, Goldsmith Ont.

TAMWORTHS FOR SALE

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

All stock guaranteed.

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

G. BENNETT & PARDO,

CHARING CROSS, ONT.

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

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

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

**PLEASANT VIEW HERD**

of REGISTERED
TAMWORTHS



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

412

E. B. KOLB, Berlin, Ont.

NITHSIDE FARM HERD of**BERKSHIRES**

Choice young Boars and Sows 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, Cock-erels. Satisfaction guaranteed.

E. E. MARTIN,

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

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.

SWINE.

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 sexes, and all ages. Pairs and trlos 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

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.

Some of the Best

York-shires 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.

J. G. CLARK,
OTTAWA, ONT.

289

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

Chester Whites

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

JOS. CAIRNS, Camlachie, Ont.

75

MOUNT PLEASANT STOCK FARM

LARGE ENGLISH BERKSHIRES. Herd took 21 first, 10 second, and 14 third prizes in 1895. Choice boars and sows of all ages for sale. Registered pedigrees. Satisfaction guaranteed; write for prices.

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LARGE ENGLISH BERKSHIRES.

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

GEO. THOMSON,
Bright, Ont.



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

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



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

B. SNARY & SONS
Croton, Ontario.



LARGE ENGLISH BERKSHIRES

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

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

Wm. McALLISTER, Varna, Ont.



LARGE ENGLISH BERKSHIRES

Choice stock, both sexes, from the famous boars Major Graham and Star. Prize winners. Stock from six weeks to one year old. Sows to farrow. Satisfaction guaranteed. Prices right. Call and see stock, or write to **C. R. DECKER**, 2 1/2 miles from Bright Station, G.T.R. Please mention FARMING.



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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

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

PRIZE-WINNING HERD OF OHIO IMPROVED CHESTER WHITES

Ten choice sows, bred to our first-prize boars. Thirty choice pigs from imported sire and prize-winning dams. Write for catalogue and price list. Satisfaction guaranteed.

WM. B. LER & SON,
DEREHAM CENTRE, 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. 504

SWINE.

MAPLE LEAF STOCK FARM . . .

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

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

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



THE SWEEPSTAKES
HERD OF

TAMWORTHS

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

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

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FOR SALE.

4 Choice 4
HEREFORD BULLS.

Three yearlings (13 to 18 months). One three-year-old. The above are EXTRA good specimens, and of unsurpassed breeding, and are for sale at reasonable prices. Also

3 Yearling Sussex Heifers

Sire and Dams imported.

Stables on Waterloo Avenue, at the end of the Electric Railway. Five minutes from G.T.R. and C.P.R.

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JERSEYS
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CHEAP.

2 highly bred Bulls fit for service. Pedigreed stock.

J. D. STEWART.
RUSSELLDALE, ONT.

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.**

Attention Special offer o
REGISTERED JERSEYS

for the next month. Car load of young cows in calf, and heifers; good calves and well bred. Also car load of choice Jersey grades. No room. Will sell cheap. Come and see or write. Address,

E. P. BALL
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A very fine six-year-old Jersey Bull, Thaley's St. Lambert 23715, bred by C. H. Crossen, and got by the great stock bull, Rene of St. Lambert 20343, dam, Thaley (imp.) 14299. This bull is solid dark fawn, black points, is a grand sire, as his stock will show, and will be sold at a bargain.

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FOR SALE . . .

- 4 Silver Spangled Hamburg Cockerels
- 3 Black Hamburg Cockerels
- 2 White-faced Black Spanish Cockerels
- 3 Red Cap Cockerels

Can supply a few Red Cap Pullets.
The above stock are prize winners and from prize stock, in four different shows this fall.

Will exchange for good Red Cap cockerel or Buff Cochins, 1 S.G. Dorking Cockerel wanted. Am booking orders for eggs from 12 different kinds of fowl. Write for prices and state what you want.
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For the next thirty days will sell a choice lot of turkeys at greatly reduced prices. A fine Ayrshire Bull Calf 10 months old for sale at a low price.

For a description of birds and price write
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ALL VARIETIES.

A. J. GEORGE, 52 Clarence St., LONDON, Ont.
Stock for sale. All birds as represented or satisfaction given.

Buff Cochins, pair fowls \$3.50, trio chicks \$5. Partridge cockerel and two hens, trio \$4.50. Brown Leghorns, pairs \$2 trios \$2.50, breeding pens \$3.50.

FREEMAN'S
POULTRY
. FOODS

Cost less than 3 cents a month per hen.

Fowls fed upon these foods, in connection with boiled potatoes or whole grain, or a little Indian meal or bran, made into a mash, have been known to begin to lay within a week after its use. It should be fed daily, one quart mixed with six or eight quarts of common meal or other food, in a mash. It should never be fed dry or alone.

When Granulated Bone or Oyster Shell is used, it should be kept in a box tacked against the side of coop; fowls will not take more than they require.

Orders shipped by express C.O.D. if not accompanied by cash.

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Bronze Turkeys

I have some grand young gobblers and hens. You can depend upon them, and the prices are right. Also Jersey cattle and Yorkshire pigs.

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SHOEMAKER'S POULTRY ALMANAC FOR 1896.

It's a beauty, larger and better than ever, nearly 100 pages 8x10 on best book paper. Fully illustrated with finest engravings of special design. A veritable Encyclopedia of Chicken information. Sent postpaid for only 15 cents. Address,
C. C. SHOEMAKER, Box 66, Freeport, Ill., U. S. A.
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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 the 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. Write for Catalogue and prices. ⁵⁴⁵

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, and Pekin Ducks, of the HIGHEST quality, at the LOWEST figure, write

J. L. CORCORAN,

TORONTO, ONT.

N.B.—Postcards not noticed. ⁵⁰⁸

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

WRITE FOR PRICES.

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FOR SALE

A choice lot of purebred Light Brahmas, Silver-Laced Wyandottes, and B. P. Rock fowls, prize-winners at the late St. John exhibition. Write for prices; satisfaction guaranteed.

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Colored Dorkings

Cock, 2nd; Hen, 3rd; Cockerel, 2nd and 3rd; Pullet, 1st and 2nd at Toronto Industrial Exhibition, 1895. My stock also won 1st Cockerel; 1st Hen; 2nd Pullet at Madison Square Gardens, New York, 1895. Young and old stock for sale at all times. Egg announcement later. No Dorkings are superior to mine. Prices reasonable.

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EARLY BIRDS ? ?

WE HAVE THEM

SEVEN DOLLARS a pair is all we ask for our early hatched BRONZE TURKEYS. Won Diploma at Toronto Industrial, 1895, for best pair of Turkeys, any breed.

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The "Toronto"

INCUBATOR AND

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

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

T. A. WILLITTS

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Mammoth Bronze Turkeys

Silver Grey Dorkings

Black Minorcas Brown Leghorns

Barred Plymouth Rocks

Particularly choice birds from the same matings as those that won the highest honors at the leading shows of 1895. Pairs and trios furnished not akin.

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

**ARE YOUR
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If not, send for booklet and testimonials of Ovamead, the great egg producer, also 6 months egg record. Free.
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POULTRY.

THE **MONARCH** INCUBATOR



The best, most practical, and most successful machine in existence. No night-work or added eggs connected with its use. Send a 2-cent for illustrated circular.

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BRONZE TURKEYS, PEKIN DUCKS.

SEVERAL pairs Bronze Turkeys and Pekin Ducks (see illustration in Poultry Department) for sale cheap; winners at Toronto and eight other fairs this season.

BERKSHIRE SWINE.

I have also a few young Berkshire Boars (eligible for registration) at \$5 each; one Boar eight months old (registered), \$15—Snell's stock.

W. J. HAYCRAFT, Aqincourt, Ont.

BLACK MINORGAS

All imported stock from such well-known English strains as the following: Pitts, Mogridge and Garlick, Butterfield, and Abbott. Winners wherever shown. Montreal exhibition, 1895, four 1sts, four 2nds, three 3rds. A few first-class cockerels and pullets for sale. Egg announcement later.

F. W. MOLSON,

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BRONZE TURKEYS. FOR SALE.

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

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Incubators & Brooders
Best in the world, hot water, pipe system. Will hatch chicks when others fail. Catalogue Free. Shoemaker Incubator Co., Freeport, Ill. U. S. A.

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. STAHL,** 114 to 122 S. 6th St., Quincy, Ill.

Circulars free. Send 6c. for illus. Catalogue.

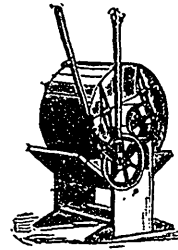
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THE **MANITOBA WASHER**

The Best Machine in the United States or Canada.



This Machine takes Less Soap Less Water Less Labor

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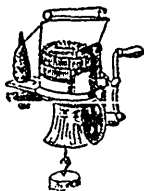
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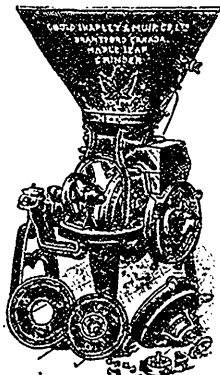
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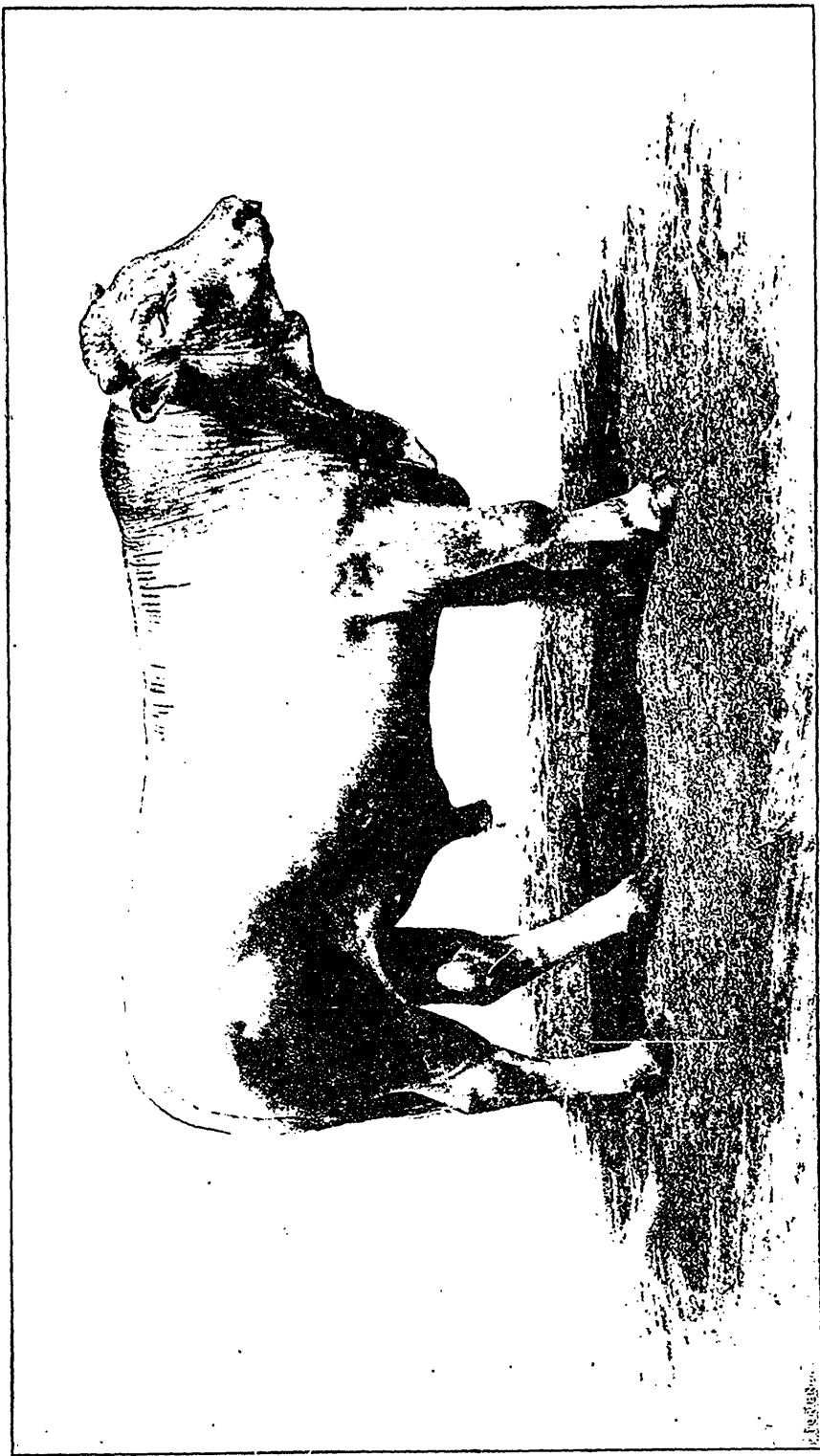
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See p. 145, Nov. number. 1

FARMING

Vol. XIII.

JANUARY, 1896.

No. 5.

New Year's Greetings.

That our readers, one and all, may have a bright and prosperous season during the year that we have just entered upon is our most sincere and earnest wish. Agriculture has been under a dark cloud for some time, so we may hope that we may shortly see a decided change for the better. The prosperity of this country is indissolubly bound up in that of its agriculturists, and, therefore, the advent of better times will be hailed with great satisfaction from the Atlantic to the Pacific. There are not wanting signs that better times are at hand, even though these signs are temporarily dimmed by the senseless scare of war between Great Britain and the United States that has been agitating men's minds for the last few days. That such an event should happen is to be deprecated. Both countries would lose immensely in many ways, and neither would reap any material advantage. It is not probable, however, that these two great nations will go to war. Fifty years ago much less would have brought on a conflict, but soberer and more peaceful thoughts now hold sway in men's minds, with the result that arbitration oftentimes settles questions which were previously decided on the field of battle. We have very little doubt but that a satisfactory understanding will be arrived at in the present case, and that, should war break out, it will not be between the two great nations mentioned. The interests at stake on both sides are too great.

A Review of the Past Year.

The year that has just drawn to a close has, in some respects, been an improvement on its predecessor in its bearings on agriculture. While the keen frosts during May and the subsequent drought played havoc with pastures and hay fields in many parts and severely curtailed the fruit crops, yet, taking everything into consideration, crops turned out fairly well, oats and corn especially being "bumper" crops. While hay was short, yet those who took the precaution to plant corn or millet (and these were more numerous than in previous years) find themselves with a

fair amount of fodder on hand to carry their stock through the winter. The lessons taught last year will be certain to cause more farmers to grow green crops this year for feeding to their stock during the dry weather, which can generally be expected during the late summer or early fall, and also to sow corn as an auxiliary food for winter's use. Of course, where corn can be successfully grown, the building of a silo, and its more general use as a large portion of the ration fed, would be very desirable.

The principal deficiency this winter is in straw, and this want is very generally felt. In many places straw is worth nearly as much as good hay, and, in consequence, is being sparingly used for bedding, any substitute for it that can be obtained being anxiously sought for.

Coming to live stock, we find that the demand for horses has improved considerably, and that there is a scarcity of really good heavy draft, carriage and saddle horses. For such there is always more or less demand, and breeders would do well to cultivate the markets for these—more carefully than they have hitherto done. Common horses are still at a discount, and it is a subject of marvel that so many farmers go to the trouble of raising inferior colts which they can hardly give away. The introduction of various forms of locomotion, independent of the horse as the motive power, renders it more than ever incumbent on the breeder of horses to watch the market closely and raise only such animals as he knows will be in demand. At present, the call is for heavy horses suitable for lorry work in cities, and for carriage and saddle horses. All three classes are likely to be in demand, for some time at least, and breeders will be safe in catering for that demand.

Beef cattle have proved rather disappointing during the past year. The prices obtained in Great Britain fix the prices here, and the competition that has to be met there with beef from Australia, the Argentine Republic, and other countries seems to get keener each year. Argentina is bent on improving her cattle, which are at present rather rough, and large numbers of pure-bred Shorthorns are being imported every year for that purpose. We may thus expect even more serious competition from there. Australia

has tried her hand at the live cattle trade with England, but with discouraging results so far, as the expenses are so high. It is probable that she will have to be content with dressed meat shipments. It is, moreover, quite possible that Great Britain may exclude all stock from landing alive on her shores, in which case all shipments of cattle will have to be sent in the dressed beef shape from this continent as well as from others. The Canadian Government, in view of such an order, have already decided on inaugurating a dressed meat trade. The meat is to be sent over in a "chilled" state, thus ensuring its arrival in the best possible condition.

The feature of the sheep trade is the large increase of shipments from this continent to Great Britain. From Canada alone there has been an enormous increase, and there was every appearance of a further increase during the present year before the British Government placed the embargo on live sheep. There is a more hopeful feeling among sheepmen, and large numbers of rams of all breeds, but notably of the long wools, have gone to western buyers. Many breeders report that they have sold all their rams and could have sold more.

Swine are lower in price than they were, and there does not seem to be any immediate prospects of a rise. There is money in them, however, even at present prices, and we would advise no one to be discouraged; because prices may again improve before long, as they have done heretofore, unexpectedly, under similar conditions.

Dairy products did not prove as paying as usual during 1895. Cheese ruled low all through the season, although there was an advance at the close. Butter did better than cheese, bringing fairly satisfactory prices. The close of the season finds most of the old stocks sold, so that this year's markets will start comparatively free, and farmers may hope for a fairly good return for the money invested in dairy cattle. It must be remembered, however, that other countries are increasing their exports of dairy produce, so that any extension of dairying should be proceeded with cautiously.

American and Canadian Sheep Scheduled.

We have more than once lately cautioned exporters and inspectors of live stock on this side of the water as to the necessity of taking the most stringent provisions to ensure the shipping to Great Britain of no sheep except those absolutely free from scab, in view of the danger incurred of

getting shipments of live sheep from this continent scheduled at British ports. What we feared has happened. The British veterinary surgeons report that another shipment of scabby sheep has arrived, and now, in deference to the wishes of the home breeders, the British Board of Agriculture has issued an order directing that, after January 1st, 1896, all sheep arriving must be slaughtered at the port of entry. This will put an end to the rapidly increasing business of shipping store sheep to Great Britain that flourished during the past season.

This scheduling of the live sheep trade from this continent has, of course, been received with great dissatisfaction here, the general opinion being that it is less the fear of the disease than the wish to protect British breeders from competition that is at the bottom of the whole matter. It is at least certain that the news of the scheduling has been received with great satisfaction by that section of British farmers engaged in breeding. Feeders, however, will regret the enforcement of the order, as many of them have made money by buying and feeding Canadian and American sheep. They will now have to depend on home supplies.

Government Aid to the Dressed Meat Trade.

Ever since the British Government first put the embargo on Canadian cattle, we have constantly urged on those interested in the trade the advisability of shipping cattle over in the dressed beef form rather than on foot. We have repeatedly pointed out the many advantages to be derived from thus carrying on this export trade. It is certainly the most humane way of so doing, while the slaughtering on this side of the water would result in the starting of several industries that would be profitable.

The recent embargo laid on Canadian and American sheep by the British Board of Agriculture seems to have stirred up the Canadian Government to try its hand at giving the dressed meat trade a start. At a meeting of breeders at Guelph, Prof. Robertson, Dominion Dairy Commissioner, outlined a plan which he had recommended to the Canadian Government for adoption, and to which he had received their assent. Provision is to be made for the purchase of about 500 head of cattle every week during the shipping season at the port of Montreal, the cattle to be slaughtered at that place, and sent over to Great Britain "chilled" in cold storage chambers, and cold storage chambers are to be provided on the other side at convenient depots where the meat

will be retailed. The administration of the whole matter is to be taken up by the Canadian Government, and Prof. Robertson estimates that the whole business can be managed without any loss or charge, and would, indeed, show a profit.

Prof. Robertson considers that "the government control of this business would win for it a status and name in great Britain at once which no private individual or joint stock company could ever secure. The prestige of powerful government administration, the reputation of the government in having successfully assisted in putting Canadian cheese and Canadian butter on the British markets in the best way, would vanquish the active hostility of retail butchers, without any keen commercial struggle involving loss. The government would be in a position to select the pick of the cattle at Montreal, and it would effectually prevent any such sentiment being foisted upon the consumers in Great Britain towards the dressed beef trade from Canada, as would make them think of it as a 'cheap John' affair, for the disposal only of the beef from the refuse cattle of the country, which were not fat enough or large enough to be shipped alive.

"It need not be managed by the government for longer than one year, for, doubtless, a joint stock company or other commercial concern could be formed to carry it on thereafter."

The threatened exclusion of all live stock from even landing in Great Britain makes this new departure of the Canadian Government the more timely, as, should such an order be issued, the trade in Canadian cattle would be utterly put an end to, until such time as slaughter and packing houses could be established, which would take time. If by starting a dressed meat trade the government can induce a private company to take the matter up, they will be entitled to the thanks of the farming community, more especially since a dressed meat trade can be continued all the year round, while the shipments of live cattle are practically confined to the period between May and the middle of November.

The shipping of the beef in a chilled state will ensure its landing on the other side in first-class order, thus placing it in a far more saleable condition than the "frozen" beef sent from Australia, which is not greatly in demand on account of its unsightly appearance when thawed out, and, even after being cooked, this appearance is evident. This is a most important point, as, in Great Britain, good looks and quality count for everything in the buyer's and consumer's eyes, and prices for things range accordingly. If, then, the suggested arrangements are carried out, a great development in feeding cattle may be expected in the near future in Canada.

Canadian Live Stock Export Trade.

The figures for the export trade in live stock from Montreal during the past season show a gratifying increase over those of last year, although the figures for cattle are still far below that of 1890. During 1895 there left Montreal 96,546 head of cattle and 215,508 sheep, while the horse trade has increased about 800 per cent. over that in 1894, totalling some 12,000 head.

These figures are most encouraging, and, in view of the inauguration of a dressed meat export trade by the Dominion Government this year, there should be an even better demand for fat cattle and sheep during the coming season. Feeders would do well to prepare for the improved demand.

Bad Roads.

The condition of the country roads in many parts of this continent during the months of November and December in the early part of winter, and March and April in the spring, can be only described as most deplorable. During some seasons their condition is oftentimes so bad that even those farmers who look with contempt and indifference on all schemes of road improvements, from the modest one of a better carrying out of the present system of road work to the elaborate and expensive plans suggested by more thorough road reformers, feel bound to admit that something ought to be done to improve the roads.

The apathy shown by so large a part of the farming community, when road improvement is proposed, is largely due to three causes. First, there is that great conservatism among farmers which finds expression in the statement that what was good enough for their fathers is good enough for them. In the second place, they fear that road improvement is going to be an expensive proceeding, from which they will derive no proportionate return; and, thirdly, they say, with some show of reason, that road improvement is being urged mainly in the interests of bicyclists and townspeople who possess horses and carriages.

The first reason is the weakest one of all, but it is one which is very often urged, nevertheless. It is, however, we believe, very often given as a reason by some in order to avoid stating that they object to the cost of road improvement. This is, after all, the main objection farmers have to all the schemes propounded. If it could only be demonstrated to their satisfaction that improved roads would be a lasting benefit to them much of this opposition would disappear.

That the improvement of our country roads would be of great benefit to farmers there is no doubt, when the question is thoroughly studied. When we estimate the loss of time on the roads when hauling loads under present conditions, the enormous wear and tear to horses, wagons, and harness in so doing, the terms of enforced idleness when horses and men might be profitably employed were the roads passable, and the losses of markets, when produce is selling high, through inability to reach those markets, few will deny that the annual losses to the farmers are very large.

The United States Department of Agriculture has an office of road enquiry which has completed an investigation relating to the use of the common roads of the country. Returns have been received from about 1,200 counties, showing the average length of haul from farms to markets or shipping points to be twelve miles; the average weight of load for two horses, 2,062 pounds; the average cost per ton per mile, 25 cents, or \$3 for the entire haul. Estimating the farm products at 219,824,227 tons in weight, and making estimates on other articles carried over the public roads, it is calculated that the aggregate expense of this transportation in the United States is \$946,416,665 per annum. Reports have been asked from the United States consuls abroad of the expense of hauling where the roads are good, so as to render possible a calculation which will show how much of this vast outlay is due to bad roads. The estimate is ventured, however, upon information in the office that two-thirds of the cost might be saved by an improvement in the roads. This is certainly an enormous saving, and, even if it was not great, still it would be quite sufficient to justify labor and expenditure on the roads to put them into a more serviceable condition.

Death of Mr. William Whitelaw.

There passed away on the morning of December 24th, at his farm in Paisley Block, Guelph Township, Mr. Wm. Whitelaw, one of the early settlers of that township. The deceased was born in Merton, Scotland, January 7th, 1815, and came to Canada in 1833. Mr. Whitelaw was well known as a successful breeder of Leicester sheep and Shorthorn cattle, and his name frequently appeared in the prize lists of the Industrial and other shows. He was deputy-reeve of Guelph Township in 1855, and reeve from 1856 to 1862, while during the last three years of his office he also held the office of warden of the county, and, while such, entertained the Prince of Wales during his visit to Guelph. The deceased

had been county auditor at various times, and held that position at the time of his death. He leaves four sons and five daughters to mourn his loss.

Notes from Great Britain.

(By Our Own Correspondent.)

NORWICH FAT STOCK SHOW.

At this show there was an excellent entry of bullocks, whilst as regards sheep the entries were not large. The quality of all the stock was, however, well up to the average. The Red Polled cattle were out in strong numbers. Steers under two years were headed by Mr. C. H. Berner's entry, which weighed, at twenty-three months old, 1,519 lbs., J. J. Colman being second, and H. R. H. Duke of York third. In the older class for steers between two and three years, H. R. H. Duke of York was an easy first and J. J. Colman second. In the cow class J. J. Colman took first with a heifer which, at two years and eight months, weighed 1,344 lbs., the same breeder being second. Shorthorns were few in numbers. In the class for steers under three years old there was one entry, W. E. Learner's, weighing 1,812 lbs. at thirty months and two weeks, having gained 477 lbs. for twelve months' feeding. This steer was awarded first prize.

Shorthorn cows having had a live calf, or heifers under four years, were worthily headed by Her Majesty the Queen's grand heifer, Frederica, who, at thirty-four months, weighed 1,680 lbs. Second prize fell to a heifer bred by the late Marquis of Exeter.

The class for any purebred, Shorthorns and Red Polls excepted, under three years, was but a poor one as to numbers, but the quality of the three entries was very good. First and second went to John Wortley for Herefords. These two beasts were last year first and second at Birmingham and first and third at Islington, but the premier place is now taken by the second prize bullock, who handles well. In the class for any breed not exceeding two years old Mr. Schroeter led with a grand Aberdeen-Angus, next to which came the Windsor exhibit, a beautiful steer, by Volunteer.

The champion beast of the show was found in Mr. Colman's crossbred steer, a Shorthorn-Aberdeen-Angus, which, besides winning first in his class, takes, in addition to the above, the cup for best ox. This steer was first last year in his class at Islington.

In a limited competition for Southdown wethers the winners were J. J. Colman, Sir H. de Trafford, and H. R. H. Prince of Wales. For

ewes, H. R. H. Prince of Wales. For lambs, J. J. Colman and C. R. W. Adeane. Lord Ellesmere showed Suffolks, and took the championship for sheep. For crossbred lambs, T. Rush took first and second with grand pens of the Southdown-Hampshire cross, the best cross one can use for quality and early maturity.

BIRMINGHAM FAT STOCK SHOW.

This exhibition, which is now in its forty-seventh year, was again a success, the entries numbering 337, against 237 last year, all sections contributing to the increase. The whole show was a good one, but the Hereford steers, Shorthorn heifers, crossbred heifers, and Shropshire sheep classes were, I think, better than ever before.

Herefords.—Out of forty-five entries only one was absent. For steers under three years Mr. John Wortley repeated his Norwich victory, taking first and second prizes and the breed cup for the best Hereford, Mr. J. H. Arkwright's Gay Lad making a good third. Steers not exceeding two years were headed by a very handsome steer owned by Mr. J. Price. The reserve number for the breed cup went to this animal. Her Majesty the Queen won second with a capital steer.

The cow class was not a particularly large one, but it was good, Mr. H. W. Taylor's Tweenie taking premier position, whilst Mr. W. Judge's graud old cow came in second.

The heifer class, with eight entries, was headed by Mr. W. H. Cook's Hyoscyamus, that took second at the Royal Show this year.

Shorthorns.—Steers not exceeding three years were topped by Lord Rosebery's exhibit, which last year, at this show, in the yearling class, was highly commended and reserve. Her Majesty the Queen took second place with a son of Fairfax, whilst Mr. J. G. Smith took the third premium. Shorthorn steers under two years were a small class, first and second premiums both falling to the share of Lord Rothschild. Mr. P. L. Mills was third.

The cow class was poorly filled, but three entries being present. Mr. Sanders Spencer took first prize with a very useful cow.

The heifer class was a very good one. There were, it is true, but seven entries present, but these were all nearly good enough to be first-prize winners. Her Majesty the Queen was represented in this class by that grand, level, typical heifer, Frederica, to whom easily went the first prize in this class, and who afterwards worthily received at the hands of the judges the following additional honors: The president's cup for best animal bred by exhibitor; the Elkington challenge cup, to the exhibitor of the best animal;

the Thorley challenge cup, to the breeder of the best animal; Webb & Sons' challenge cup, for best animal bred by exhibitor; and the breed cup, for the best Shorthorn.

Devons.—Steers under three years of age were a small class, but good. They were headed by Mr. John Wortley's steer, who also got reserve for the breed cup. Sir H. de Trafford came second with a very good steer which last year headed the younger class here, whilst Mr. William Kidner was third. Steers under two years had only one entry, Her Majesty the Queen's, which, however, was a very good one and received first prize. Heifers, again, had only one entry, but that was certainly one of the best specimens of the breed that has been exhibited for some time. The judges awarded her first prize in class and cup for the best Devon.

Aberdeen-Angus.—These cattle were, perhaps, not quite as well forward as in some recent years. Mr. Clement Stephenson has, this year, not been exhibiting, and the exhibits from this herd have been such excellent specimens that one could not help missing them from this section.

Steers over two and under three years old were a moderate class, Mr. W. B. Greenfield being winner with a useful steer, Lord Rosebery getting second premium.

Steers under two years old were not a very strong lot. Mr. C. J. Bruce headed the class with a deep-fleshed, good-ribbed bullock. Mr. W. B. Greenfield came second and Mr. Fletcher third.

The cows or heifer class was headed by Miss Fluffy, bred and owned by Mr. J. D. Fletcher, a very excellent heifer, and one that was quite close up in the running for the champion prizes. In addition to her class prize, she was the winner of the cup for the best Scot, and was reserve for best animal bred by exhibitor, and also for Webb & Sons' challenge cup. Mr. C. Bruce came second with a seven-year-old cow, and Mr. Martin Morrison third with a fine heifer.

Galloways.—Only two representatives were present, and the judges awarded first prize to Mr. John Thornton's steer.

West Highland cattle numbered eleven, four males and seven females, and the competition was very close in both classes, all entries being excellent specimens of their breed.

Owing to there being no classes for steers over three years, the number of Welsh cattle was less than usual, but, nevertheless, the breed made a very good exhibition. In the class for steers over two and under three years Col. Henry Platt was first-prize winner, whilst in the younger class the Hon. F. G. Wynn took first.

Crossbreds.—This was, indeed, a truly grand section, seldom, if ever, equalled, especially as regards the two-year-old class of heifers. The particular cross that came out with success and prominence was the cross between the Shorthorn and Aberdeen-Angus.

In the class for steers over two and under three years old the ten entries were all of great merit, and worthily headed by Mr. A. B. Matthews' Shorthorn-Galloway steer, a very grand steer of great quality. Lord Rosebery was a very close second with a Shorthorn-Aberdeen-Angus cross. He was also third with a second exhibit bred on the same lines.

Steers under two years of age produced the large entry of seventeen, many of which showed prominence for future success. Here Mr. J. D. Fletcher won with a very useful steer by a Shorthorn bull out of a crossbred polled cow.

Baron Rothschild took second place, whilst Mr. W. S. Ferguson won third and fourth honors.

The fourteen entries in the heifer section formed one of the best classes in the show, and one which I think I have never seen beaten. The first four animals were a beautiful lot, and were all crosses of a Shorthorn on the Aberdeen-Angus. To Mr. C. J. Bruce belongs the honor of winning premier position in this truly grand class, with an animal that also won the cup for the best crossbred and the reserve for the best beast in the show.

Lord Rosebery's second prize heifer was also a very grand one, and sister on the sire's side to the first prize winner, both of which were bred by Mr. John Ross, and sired by Ringleader. Mr. W. E. Learner was third with the same heifer that won the special prize at Norwich show this year.

There was a very useful show of Dexters or Kerries, many of the principal breeders, including H.R.H. the Prince of Wales, being represented.

SHEEP.

Shropshires were well shown, and all the entries were of considerable merit. For wethers Mr. J. Bowen-Jones took the premier place with a very beautiful pen of true type and character, to which pen the challenge cup for best pen of sheep in the show, presented by Messrs. Cooper, as well as that for the best pen of Shropshire sheep, were also awarded. Mr. P. L. Mills took second and third prizes with very useful pens. This same exhibitor also secured first and third prizes in the wether lamb class with a couple of very excellent pens of considerable merit. Mr. E. Nock secured the second premium.

Southdowns were a small class. Wethers were headed by a pen of excellent quality from Mr. E.

Mathews' flock, H. R. II. the Prince of Wales taking second prize, and Sir F. A. Montefiore third. For lambs Sir F. A. Montefiore was a clear first with a pen that clearly shows that Southdowns can, if forced, make as much weight as any in a given time. Mr. C. W. R. Adeane took second and third places.

Oxford Down sheep were shown by Mr. J. T. Green, Baron F. de Rothschild, and others. Lord Rothschild had a couple of pens of excellent lambs of this well-known breed. Crossbreds were shown by Mr. T. Rush and others.

New York Live Stock Show.

The first annual show of the Live Stock Society of America was held in New York the last week of November. Thanks to the energetic management of President Davison and his assistants the show itself was a great success, although the financial receipts did not meet expenses.

The show of horses was limited to hunters and jumpers, but in the other departments, especially in breeding cattle and sheep, there was a large turnout, most of the animals shown being the pick of the prize winners at the various fall fairs.

There was a good display of Jerseys, the two noted herds of Miller & Sibley and T. S. Cooper being present, besides animals shown by four other exhibitors. Major H. E. Alvord, chief of the division of Dairying, United States Department of Agriculture, made the awards. First and second prizes for old and young herds were won by T. S. Cooper and Miller & Sibley respectively, the latter taking first place for special herd. Miller & Sibley won the championship on bulls, and T. S. Cooper on cows with Major Appel Pogis and Wardalia 2nd, respectively. Mr. Cooper won four sweepstakes, and Messrs. Miller & Sibley three.

Guernseys were present in large numbers and made an excellent exhibit all through. The herd prize fell to H. McK. Twombly, Madison, N.J., Levi P. Morton's herd coming second, while the first named also won first for young herd, and the special herd cup. Mr. Twombly's Sheet Anchor won the championship for bulls, and his cow Rutila's Daughter that for cows.

There were only two exhibitors of Holsteins, A. A. Cortelyou, Neshanic, N.J., and J. A. Graham, Passaic Co., N.J. The first named won the principal prizes.

Ayrshires were shown by J. O. Magie & Sons, Union Co., N.J.; S. M. Wells, Hartford Co., Conn.; and W. Lindsay & Son, Union Co., N.J., the first named carrying of nearly all the leading

awards. There were a number of Normandy cattle shown by C. W. Chapin, New York, and a few Dutch Belted cattle by O. D. Munn, N.J.

J. G. Robbins & Son, Horace, Ind., and Kent & Watson, Chautauqua Co., N.Y., competed for honors in the Shorthorn class, P. Gibson, Delaware, being judge. The Indiana herd won all the first prizes that they competed for.

The four exhibitors of Herefords that assembled to compete for honors were: Thomas Clark, Beecher, Ill.; G. S. Redhead, Des Moines, Ia.; and G. O. Holcomb and James McMahan, both of Pennsylvania. The former had the best of it in most of the sections, followed closely by Mr. Redhead.

Aberdeen-Angus were a fine class. Goodwin & Judy, West Lebanon, Ind., led the class, winning all the sweepstakes, their bull calf, Black-cap King, being pronounced the champion bull. Bradfute & Son, Cedarville, O., won several prizes, as did S. R. Pierce, Illinois.

In the grand sweepstakes herd competition first place went to Messrs. Robbins' Shorthorns, second to Mr. Clark's Herefords, third to Messrs. Goodwin & Judy's Aberdeen-Angus, and fourth to Messrs. Bradfute & Son's doddies.

The show of sheep was excellent, Shropshires being especially good. From Canada came John Campbell, Woodville; Richard Gibson, Delaware; W. H. Beattie, Wilton Grove; and D. G. Hanmer & Son, Mount Vernon, to do battle with Dr. Davison, of Altamont, and W. Bayard, Cutting, Long Island. Dr. Davison won three out of six first prizes in the class, all the three sweepstakes silver cups, and some seconds, but he was closely pressed by John Campbell, who beat him for yearling rams and aged ewes. Mr. Campbell was also second for the flock prize and second for aged rams and yearling ewes, taking besides a number of other prizes. R. Gibson had a particularly good ram lamb which won first. D. G. Hanmer & Son were to the front for get of rams, and won one second and two thirds. W. H. Beattie took second place for ram lambs.

George McKerrow, Sussex, Wis., took most of the principal prize for Southdowns, followed by John Jackson & Son, Abingdon, and F. W. Barrett, New York.

George McKerrow was also to the fore in Oxford Downs, his strongest opponent being W. A. Shafer, Middletown, O.

There was a splendid array of Cotswolds. George Harding & Son, Waukesha, Wis.; Robert Miller, Brougham, Ont.; T. Hardy Shore, Glanworth, Ont.; and William Thompson, Uxbridge, Ont., were the four exhibitors. Harding & Son had most success in this class, winning the

flock prizes as well as all the championships. R. Miller stood next in order of merit, Messrs. Thompson & Shore also being successful competitors.

Rutherford Stuyvesant, Tranquillity Farms, N.J., proved too strong for his competitors in the Dorset Horned class, winning every first prize. R. H. Harding, Thorndale, Ont., won most of the other prizes. The other exhibitors were Metcalf Bros., East Elma, N.Y., and G. E. Aldrich, Long Island. A few Hampshires were shown, but the class did not call for remark.

In the pig classes there was a fair turnout. Metcalf Bros., East Elma, were prominent exhibitors of Berkshires, winning for herds, as well as the champion prize for sows, the latter with their sow, Elphicks' Matchless, recently imported from Mr. E. Buss, Horsmonden, Kent, England.

In the fat stock department of the show breeding heifers were allowed to compete against steers, the grand championship for cattle going to Messrs. Robbins' two-year-old Shorthorn heifer, Tidy Girl, which was also the champion two-year-old over all breeds.

The show of fat sheep was very good. With very few exceptions the prize money went to Canadian exhibitors, John Rutherford & Son, Roseville, Ont., winning the lion's share. W. E. Wright, Glanworth; John Campbell, Woodville; J. Jackson & Son, Abingdon; R. Gibson, Delaware; and W. H. Beattie, Wilton Grove, were all prize winners. The latter had the champion wether of the show. A novel feature was a sheep shearing contest. The following were winners: D. Taylor, Millbrook, N.Y.; J. G. Hanmer, Mount Vernon; and N. Gibson, Delaware.

Agriculture and Arts Association.

At the banquet given by the Guelph Fat Stock Club during the show in December, Mr. Sissons, president of the Agriculture and Arts Association, delivered his annual address. As was befitting at the close of the career of this association, whose work now passes under the control of the Ontario Department of Agriculture, Mr. Sissons gave a very able review of the record of the association from its start to the present time—a space of fifty years.

After referring to his predecessors in office, Mr. Sissons said:

"The first agricultural society in Canada seems to have been founded about 1832 in what was then known as the Home District, chiefly owing to the efforts of Mr. E. W. Thomson. As similar societies became gradually formed in other districts the same enterprising agriculturist

seems to have conceived the idea of a central or provincial society to connect the local ones and hold an annual provincial fair. After a good deal of difficulty the idea was finally carried out in 1846, when the "Agricultural Association of Upper Canada" was formed, with Mr. Thomson as its first president.

"In those days the agricultural societies were to a large extent co-operative and social organizations. We hear, for instance, of the purchase by these early bodies of quantities of new seeds for distribution among their members, of the importation of breeding animals for their common use, and even of the purchase of stumping machines for the same purpose. There were also meetings held during the winter for the discussion of subjects of interest to farmers. And, of course, one of the primary objects was the holding of an annual agricultural fair. These extended functions the agricultural societies gradually dropped, partly, it would seem, as they came under the control and regulation of the government, and they have passed into the hands of such societies as we have mentioned.

"The work of this association might be divided, with more or less distinctness, into four periods. The first lasts from 1846 to 1851, the second from 1851 to 1867, the third from 1867 to about 1881, and the fourth from 1881 down to the present.

"During the first of these periods the association was organized and got into good working order. A good deal of difficulty was experienced in getting the annual exhibition on a sound footing until an annual grant from the government of the united province got over this difficulty.

"In 1851 a Provincial Board of Agriculture was constituted. The members were eight in number, outside *ex officio* members, and were to be elected by the district societies in the province. The manner of their election made changes in the membership very difficult, but ensured that those chosen should possess the confidence of the province as a whole. Accordingly, we find few changes in the membership until 1869, when a different method of election was adopted. Early in this period an amalgamation was effected with the Board of Arts for exhibition purposes, and thus a more representative character was given to the fairs.

"The duties which the board fulfilled during these years were very extended, the chief ones being the administration of the county societies and the holding of an annual provincial exhibition. But many other functions also were performed, some temporary and some permanent. We shall only instance the encouragement given

to the importation of valuable breeding stock, the establishment of a professorship of agriculture in the University of Toronto—which George Buckland, the then secretary of the board, was chosen to fill—and the maintenance for a time in connection with it of an Experimental Farm, and the establishment of a Veterinary School at Toronto. Of great value also were the agricultural essays and reports which the board collected and published in its 'Transactions.'

"After 1867 the Ontario government took over the management of the county agricultural societies, which had occupied much of the time and attention of the board, as well as several general functions previously administered by it. In the management of the provincial fair, however, which had now grown to great proportions, the board found, with fewer meetings, ample work for its increased membership of twelve and afterwards of thirteen. The registration of stock had already been commenced, and during this period some four volumes of the Canadian Shorthorn Herd-book were issued by the board.

"Though the exhibitions after 1880 were still in every sense successful, it soon began to be felt that the great local fairs now covered the field, and it was considered that the advantages, great though they were, which the provincial possessed in comparison with these were still not sufficient to justify the expense of its continuance. The chief directions in which the work of the board has been of value since about 1880 have been in the encouragement of careful and scientific farming by the granting of prizes to farms so conducted, and the promotion of stock-raising and breeding interests by the establishment of Fat Stock, Dairy, and Horse shows, and the bestowal of an increased amount of attention on the registration of stock and the issue of herd and stud books. Of the idea of giving prizes for farms Mr. Drury was the originator; with the development of registration and the establishment of stock shows Mr. Wade is chiefly to be credited.

"This is the semi-centennial of the old time-honored institution that has done much good in its brief time, and it now passes out of existence with a record unequalled by any kindred society. It has aimed to cater to the wants of the farmers and stock-raisers of the province pure and simple, and it now dies by Act of Parliament, and time will prove, not unhonored and unsung, but will live in the recollection of the agriculturist as the only purely farmers' exhibition in the provinces. Although subsidized from \$3,000, \$4,600 to \$10,000 per year in the last half century, it leaves a property purchased, since built on by the Agriculture and Arts Association, worth

\$100,000, or, in other words, brings to the Province of Ontario in return for their yearly grants for the last fifty years a clean income of \$4,000 per annum in perpetuity, which will soon recoup to the province every dollar advanced by them, besides the advancement of agriculture in all its branches during the half century. It has been worth untold thousands to the farmers of this vast province."

Ontario Fruit-Growers' Association.

The above association held its annual meeting in Woodstock, December 11th to 13th. President Pettit occupied the chair. The secretary's report showed a large increase of membership.

"The Blossoming Period of Fruit Trees" was the subject of an able paper by Mr. John Craig, horticulturist of the Central Experimental Farm, Ottawa. The barrenness of orchards, he believed, was often due to the infertility of the blossom with its own blossom, because many orchards of one variety, though sprayed and cultivated in the best manner, were yet unfruitful. Cross-breeding was necessary to the strongest offspring in animal life, and the same held in plant life.

"Pear Growing for Profit" was introduced by E. C. Beaman, of Newcastle. He recommended planting pears about 25 feet apart. His principal varieties were Duchess, Bartlett, and Wilmot.

Mr. R. L. Huggart, of Whitby, stated that he used ashes as a fertilizer in his pear orchard, and suffers little or none from blight. The Kieffer pear was the most productive variety, and some of his trees needed props to hold them up. It was next to the Bartlett for profit.

Hon. John Dryden, Minister of Agriculture, in addressing the meeting, expressed his heartiest sympathy with their work, and announced his intention to do all he could to assist it.

Mr. D. W. Karn, Woodstock, read a paper on "Private Conservatories," in which he advised heating by hot water pipes, and gave suggestions for ventilation, shading, and lighting.

Dr. Mills, president of the Agricultural College, Guelph, followed with a short address, explaining what was being done in teaching horticulture at the college.

Prof. Saunders, director of the Dominion Government's experimental farm, spoke on the progress of horticultural work at the farms under his charge.

Mr. J. C. Harris, Ingersoll, read a paper on "Spraying and Cultivation of Orchards," in

which he testified to the excellent results obtained by proper spraying and cultivation.

Mr. A. H. Pettit gave an account of his summer's work in conducting spraying experiments, in thirty different points in Ontario under the Department of Agriculture. The results were sufficient to establish the necessity of spraying to produce the best fruit.

Mr. L. Woolverton, secretary, read a paper on "Grading and Packing Apples for the English Markets," in which he urged a reform of the present system.

Prof. John Craig followed with a short address on our export trade in apples and other fruits. In the course of his address he stated, in a reference to the exporting of fruit by cold storage, that the Dominion Government had decided to test the possibility of the carrying out of this work to a successful issue this year. The outline of the scheme had not yet been decided on, but eight or ten trial shipments would be made in carrying the perishable fruits of this country to Britain. The experiments would begin about the middle of August, and be continued while it was apparent that it was of value to the fruit-growers. It might very well, he thought, be carried on in conjunction with the cold storage of dead meat.

The president's address referred to the frosts and drouths of the past year. As some compensation for these evils there had been an entire absence of fungous diseases, and the markets had been fairly well supplied with a much better quality of fruits than in former years. Fruit-growing was, he said, becoming one of our great industries. Developing of markets was, he said, one of the most important questions, and it was much to be regretted that the trial shipment of over ten tons of our choicest fruit to Great Britain was a failure.

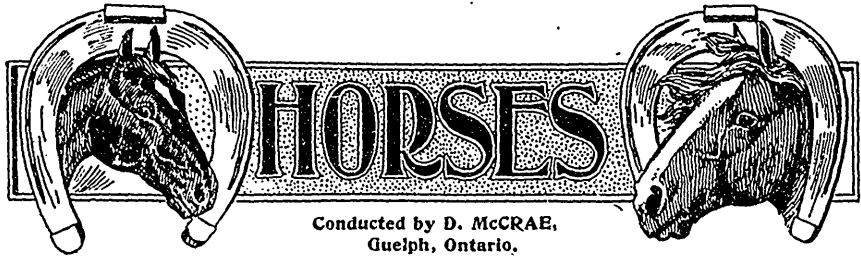
Mr. H. H. Groff, of Simcoe, read a very valuable paper on the "Gladiolus and its Improvement."

"Public Parks and Gardens" was treated by Mr. G. R. Pattullo, of Woodstock.

Mr. J. S. Scarff, of Woodstock, read a paper on "Cultivation of House Plants," and Mr. F. Mitchell, of Innerkip, followed with an essay on some good plants for the amateur.

The following delegates were re-elected as members of the Board of Control of Experiment Stations: W. E. Wellington, A. M. Smith, and A. H. Pettit. These gentlemen, together with Principal Mills and Prof. Hutt, of the Guelph College, form the board.

The election of officers resulted as follows: President, M. Pettit; vice-president, W. E. Wellington. Directors—Division No. 1. W. S. Turner; 2, R. B. Whyte; 3, Geo. Nicol; 4, Wellington Bolter; 5, Thos. Bell; 6, R. A. Huggart; 7, W. M. Orr; 8, A. M. Smith; 9, J. S. Scarff; 10, J. Stewart; 11, T. H. Race; 12, A. McNeill; 13, C. C. Caston. Auditors, A. H. Pettit and Geo. Fisher.



TWO buyers from the city of Mexico have been at Chicago buying coachers and drivers for the Mexican market.

THERE were few good trotters shown at the New York Horse Show, the reason given being the poor judging of that class last year.

THE dealers of Boston report the market there better at the present time than it has been for two years past. There is a scarcity of really good horses.

SPECIAL BLEND, owned by E. L. K. Miller, of St. John, N.B., has a race record of 2.18 $\frac{1}{4}$, and has been a winner of several races in New Brunswick this year.

MR. HENRY C. WATSON, of Brandon, Vt., recently bought the stallion Oscar William, 2.12 $\frac{3}{4}$, for \$8,000. He has also bought half a dozen highly bred mares at from \$700 to \$1,200 each.

AT a recent public sale of Shire horses in England, 26 mares averaged \$215, the highest price being \$525 for the mare Bounce. The geldings averaged \$240 each. Six yearlings averaged \$150.

THE Canadian mare Lady Watson recently won two races at Sangus, Mass., her time being from 2.16 $\frac{3}{4}$ to 2.20. She had to race for three days without a break to do it, which shows that she is of the right sort.

THE *Scottish Farmer* reports the sale of the Clydesdale stallion Duke of York (9737) for exportation to Canada. This horse was bred by J. Allan, Clevance, Troon, and was got by Skelmorlie (4027).

A HORSE that had been pulling a plow on one farm for fully thirty years died near Fort Deposit, Ala., a few weeks ago. The horse was thirty-three years old, and had been owned by one man and used on his farm constantly since 1862.

THE London, England, market is very bare of first-class heavy draught geldings. The scarcity is caused by an increased demand from large firms in the city. The very good ones are bought

quickly as soon as they are seen. The buyers are not in want of middling ones. They must be good, very good, to suit them, and then they will give a very good price.

MR. ROBERT GRAHAM, Claremont, Ont., recently bought in Chicago a fine pair of carriage horses for export to Europe. They are a trotting bred pair, one being by a son of George Wilkes and the other by Sudgert. They stand sixteen hands, one inch. The price was \$1,000.

FOR the first time since trotting records were kept, three four-year-olds have entered the 2.10 list. These are:

Beuzetta.....	2.06 $\frac{3}{4}$
Onoqua.....	2:08 $\frac{1}{4}$
B.B.P.....	2.09 $\frac{3}{4}$

THE last week of November there was a good demand for first-class draft teams. One buyer said he was ready to pay \$450 for well matched teams of heavy draft geldings. None were forward. The demand is increasing, and the prices are advancing for really good animals.

CHICAGO horse market has been very lively lately at improved prices. All classes of good horses have sold easily at an advance—1,100 to 1,400 lb. chunks brought \$55 to \$105; 900 to 1,100 ones \$30 to \$55; and ordinary drivers \$60 and upwards.

AT the New York Horse Show a number of dealers exhibited. In former years the competition was largely between gentlemen exhibitors. This has changed, and now there is danger ahead for the show if it has only competition between dealers, and the prize horses are put up at auction as soon as the show is over.

THE October horse fair at "Ruglen" was well attended. It is one of the old Clydesdale fairs. There were a lot of horses out, and some were very good animals. Geldings sold up to \$475, which price was got by D. Riddell, Blackball, who had 100 animals on the ground. He sold a good many at \$300 to \$350. Mr. Crawford sold one for \$400. Trade was only fairly active.

THERE is an agitation going on to have the 3 in 5 plan, now in vogue in trotting matches, changed to 2 in 3. Where two good ones race hard for two heats they are out of it afterwards, and a slower horse often comes in and wins when they are tired out. The change is needed in the best interests of the horses and their owners.

THE three great pacers, Joe Patchen, John R. Gentry, and Robert J., have had this season 13 closely contested races. Of these Joe Patchen won six, and Robert J. and Gentry three each, and the 13th went to an outsider, Frank Agam. Gentry made the fastest mile, Joe Patchen won most races, and Robert J. won three of the five races in which the three took part.

THERE was a recent sale of Canadian horses at Arldige's sale stables. One hundred and ten were offered, and all were sold except eight trotters retained to be settled down and driven before being offered at private sale. The horses were a fair lot. \$135 was the lowest price, and a good many went over \$200. For the trotters \$700, \$750, and \$900 were bid, but they were withdrawn.

THE London *Live Stock Journal* of November 15 says: "Most of the foal money has now been collected by the leading owners of draft stallions, and the season has proved generally more remunerative than was expected. Even though the export market has declined, the sensible farmer still finds it best to use a good sire at the cost of a little more service fee. As with Thoroughbreds, the motto still seems to be 'breed the best.'"

STALLIONS should be well cared for in winter. Too many horsemen do not give the attention to the stallion in the winter that he needs. Careful feeding and regular exercise are needed to keep him in good health. By excessive feeding with fat-producing foods, while at the same time there is a lack of light, air, and exercise, a horse may be easily rendered almost worthless as a good stock-getter. On the other hand, by careless feeding with bulky, trashy feed, such an insufficient diet may be given as will reduce his general vigor and greatly diminish his reproductive powers.

It is a disputed point whether or not there is such an animal as a wild horse in the world now; those that get that name are the descendants of horses escaped from man. The mustangs of Mexico and the South, the droves of horses on the South American pampas, are all descendants

of horses brought from Europe. The first horse in South America was landed at Buenos Ayres in 1537. Less than fifty years after they had spread as far south as Patagonia. In Australia escaped horses that had become wild are found to be a nuisance to the settlers, and at one time in New South Wales seven thousand were destroyed at government expense.

SHIRES have sometimes a lock of hair hanging from the knee. This is a very old mark of the breed which comes into prominence now and then. It is a throwing back to a distinguishing feature of the old breed of Shires, and while it seems to be bred out in some lines it still seems to reappear now and then in several families of the breed. A white blaze on the face and white socks, or even stockings, is another old feature which is still quite common, and is really a mark of the breed.

THE home of the "Shire" horse is England, and the counties most celebrated as his breeding ground are Derby, Nottingham, Stafford, Lincoln, Leicester, Northampton, Buckingham, Huntingdon, Oxford, and Cambridge. A society called the "English Cart Horse Society" was formed in 1878. The first volume of the stud book was issued in 1880, and the name "Cart Horse" was kept till 1885, when it was changed to "Shire Horse," by which name the breed had been known for about half a century. The sixth volume came out under the title "The Shire Horse Stud Book," a name which it has since retained.

THE State Veterinarian of Wisconsin reports that a strange disease which showed itself during last fall in Michigan, Minnesota, and Wisconsin, where thousands of horses are said to have died from its effects, was caused by the animals eating the blossoms of the golden rod. The symptoms of this disease resemble those of consumption in a man. It is incurable. The horses which eat the tempting plant go into decline; their blood is destroyed; the tissues lose their strength and waste away. In from three weeks to three months after the disease attacks the animal it is dead. Hitherto there has been no remedy discovered, and the only suggestion made is that means be taken to destroy all the plants found. As the golden rod is one of the commonest wild flowers in those states, it will be seen that persistent co-operation will be required if it is to be destroyed entirely. It would seem that the shortness of pasture is responsible for the horses turning their attention to golden rod.

Training the Colt.

On the average farm the winter is the best time to train the colt for his work. There is more leisure then, and time can be taken to do the work carefully. If the colt has been properly handled from his early days, the "breaking" will be an easy matter as a rule. It is a matter that, though it is simple, requires to be properly done, as the value of the animal for his life work depends, to a very great extent, on how he is handled for the first few months after he is put into harness.

Most colts take kindly to work, draft colts especially so. You must caress them to show them that what you want done is not hard to do, and that other horses are doing it. The easier and quieter the work is gone about the better. It is usual to select a steady old mare to teach the youngster, and it is quite wonderful how well such a one will take up the teaching "role." It is well to have the harness fitted in the stable, and the colt accustomed to it before being taken out and hitched up. The harnessing and hitching should be done quickly and quietly, so that the colt may not become worried by it, and he will usually start off all right. If the time be that of deep snow, and the team are put to the front bob of a sleigh, there is little or no danger, however restless the youngster may be, and a snow-drift quickly cools the wildest in a very natural way. The less turning during the first drives the better. It is enough to teach him to go forward well. After driving has begun, he should have it regularly till he gets over his fear and his awkwardness. He ought to have no load for several days, and then very light work for some time. He should not have a heavy load till he has been fairly taught to pull. Given careful handling, and steady, light work, and he will learn rapidly, and, by the time the spring work is on, is ready to take his share of the lighter work of the farm.

Export of Clydes.

Mr. Andrew Montgomery, the well-known horseman of Nether Hall, Castle Douglas, Scotland, paid a visit to America this fall, and, while out west, bought from Col. Holloway, of Alexis, Illinois, two Clydesdale colts and a filly for export to Scotland. The animals are now at Nether Hall, and are almost the first to be taken from this continent for breeding purposes to the home of some of the best Clydes in Britain. The colts are full brothers—Prince Sturdy, a three-year-old, and Prince Shapely, a two-year-old. They

are by the old horse, Cedric (1087), by Prince of Wales (673), and bred by Professor McCall. Cedric is a horse with splendid feet and legs, but lacking in size of body. He has been a first-class breeding horse, and has done well for Col. Holloway, who bought him not so much for his appearance as for his quality, and for the power of transmitting this, as shown in his progeny. The dam of the colts, Her Ain Sell (3412), was bred by Col. Holloway out of Lubas (777), bred by Mr. Neilson, Kilmalcolm, Scotland. This mare was by the celebrated sire, Samson (741), and in other respects also has an excellent pedigree. Her Ain Sell was by Simple Jamie (3184), by Lord Lyon (489), and was a full brother of Alice Lee, a mare that won the Clydesdale cup at the Royal Show at York in 1883. It will thus be seen that the colts are very fashionably bred, and will, no doubt, cross well with Macgregor mares in Scotland. The filly is a three-year-old, Fickle Fortune's Princess, and was a second-prize winner at Chicago World's Fair as a yearling. She is also by Cedric. Her dam, Fickle Fortune, is by Knight of Lothian (4489), out of Barlas Doll (377), by Victor (892). It is hoped that the venture will be a profitable one for Mr. Montgomery, and that the Americans may do well in the home of their ancestors.

Draft Mares.

The prospects for draft horses are looking up, and the wise farmer will during this winter overhaul his breeding mares and have a good dam ready for service in the spring. Those who have only inferior or unsound mares should dispose of them as best they can. This is no easy matter now, but it is the best plan. There never was a time when poor, inferior animals should be kept as breeding mares. With prices as low as at present there is no excuse for doing so now. Get good young mares for breeding, and get them now.

Those who have good brood mares need not hesitate to breed them. There is not the least doubt that the poor prices in the past have stopped the breeding of horses. There is not now in the country anything like a good supply of young draft colts in the hands of farmers. The average life of heavy team horses is very short. There are not now nearly enough young ones to take the place of those going down in harness. The scarcity is already beginning to be felt, and will be here in startling evidence long before the colts now being bred will be ready to take their places in the heavy work of our large cities. Breed to the best stallion of your breed available. Do not

cross breeds unless you have very good reasons for doing so. It is true that crossbred animals grow to good size, but they are not suitable for anything but workers. The fillies are not fit to be kept for breeding again. Get the best and breed to the best, and the market will warrant the care and outlay when you have the animal ready to sell.

Wintering Foals.

The young foal should be carefully handled while very young. It should be accustomed to the pressure of the hand on all parts of its body and limbs. If this is begun quite early, and very carefully and tenderly done, the young animal will take to it kindly, and allow its ears to be rubbed, head handled, and feet picked up without any fear. This is an essential part of the early education of the foal. It is pleasing and instructive thus to train a young foal and watch its development under its master's fostering care. When a month or so old the foal will learn to eat chopped oats and nibble at its food. When about four months old, a light, strong halter should be put on the foal, and after it becomes accustomed to this a rein may be buckled on and the foal taught to lead. This should be done gradually and carefully, the foal being coaxed to follow rather than be made to do it after a fight. At the same time, during the training, it must on no account be allowed to get away; but must be so handled that, without being frightened or whipped, it be made to feel that resistance is useless. A good plan is to lead it at first by the side of the mare. The foal should be weaned at the age of six months. By this time it will have learned to eat oats, either crushed or whole, and be accustomed to share in all the food the mare has received. Weaning time is always a critical one for the foal. It should have plenty of good food, and a variety of it. When taken from its mother have it put with a companion. It is cruel, at weaning time, to keep a foal by itself, away from all its kind. A well ventilated loose box is the best place for the foal. If it has been handled and accustomed to lead, it may be safely tied up; but to halter a young colt, and at once tie it up alone in a stall, is dangerous. Foals winter better loose and two together, with plenty of room to move about, than when tied in a stall. Exercise is most necessary for the growing animal, and on no account should this be neglected. They should be out more or less every day, no matter what the weather may be. If the weather be very wet, they should not be left out long; but on dry, cold days a good run will do them

good. Some have an idea that it makes a colt a hardy horse to expose it to all weathers when young. The contrary is the case. Exposure to cold autumn rains and to winter frost weakens the constitution and makes a delicate horse. Generous treatment with careful nursing gives a stamina that will make a colt grow big and strong. Three pounds of good oats morning and evening will be enough of grain at first. This may be increased as the colt grows. A good-sized carrot or a Swede turnip, cut into small pieces, till it gets to relish them, is good. Afterwards he may be fed whole ones. Turnips are coming more into favor for horse food; many prefer them to carrots. A change is desirable. Good timothy hay or good oat straw as a change may be given. Boiled wheat once or twice a week, alternating with a warm bran mash for supper, is good winter feed for colts. Boiled linseed once a week is desirable; a cupful of the boiled mass in bran is the usual feed. Some use boiled turnips mixed warm with cut hay or chaff for supper now and then. Salt should not be forgotten, and the drinking water should be fresh and good. Running water is the best, and soft water is better than hard. If skim-milk be plentiful, a little warmed with a spoonful of sugar will be relished by the young colt, and agrees with it. Remember the exercise. Even the first winter the foal may be hitched up alongside an older horse and given a little exercise. It may thus early be broken in to harness and the road without having any weight to draw. Remember that young things need light and plenty of fresh air for health and growth. Keep a watch on the foal's feet. If neglected, the hoof may grow out of shape and be permanently injured. No foot, no horse; and the hoof is one part we are prone to neglect. Thus looked after with generous food for the first winter the foal will have had a good start. No after care will make up for neglect the first year. Generous feeding and careful treatment are most necessary to get the best results from the young animal.

Horse Markets.

The Chicago horse market has had a wonderfully good year. For a time, which commenced with the close of the great railroad strike and continued up till the past midsummer holidays, when trade is always slack, the market has been steady and firm, with now and then advances in price and times of decided brightness. Good, sound horses of all classes, from five to seven years old, thoroughly broken, have sold well, and there have always been more buyers than sellers of this

class. Common scrubs and poor stuff have been a drug on the market. Foreigners have become during the past year a prominent feature in the market, and their buying has advanced prices generally from \$20 to \$25 per head. One year ago there were not more than five men who occasionally bought for foreign account. During the past spring and early summer there were at least forty buyers who were handling horses for foreign purchasers. This foreign trade is, therefore, a growing one, and is likely to increase largely in the near future. The countries taking the largest number of horses were Great Britain, Ireland, France, Belgium, Germany, Mexico, and Cuba. On German account at one time there was sent a shipment of 500 draft horses as a trial order. These were heavy, chunky horses, from 1,450 to 1,600 lbs. England and Scotland take the best and heaviest draft horses, and also extra good chunks active and smart, weighing from 1,200 to 1,400 lbs. France takes a lighter general purpose horse. Cuba takes small cheap drivers with good speed. Mexico takes matched teams of medium-sized drivers, Ireland drivers of good size. The prospects for the future of the horse trade are decidedly bright, and the prospect for getting good horses to fill the orders is very moderate. The right kind are in fair supply at present, but all accounts agree that for the future there are few foals in sight. As it looks now farmers will very soon regret that they ever stopped breeding horses of a good type. Gentlemen's drivers, coachers, chunks, and heavy draft animals are what are in most demand. Farmers who are wise enough to grasp the situation may feel safe in breeding their best mares. Good prices and a good demand will be here before they are ready with the stock to take advantage of the coming boom.

For FARMING.

Simple Remedies.

It is a fact that the veterinary surgeon gives his live stock, in the course of the year, less medicine than the average farmer, and still, in spite of this, his animals are generally found in a good, healthy condition. To any person taking the trouble to think, the reason is apparent. Animal ailments are caused, in nine cases out of ten, by some mismanagement either in the feeding or working, and the ordinary veterinary surgeon knows sufficient about animal hygiene to keep his animals in a natural, thriving condition by judicious feeding and exercise. Accidents and ailments will occur, however, at times, even in the best regulated stables; and as, even in these

times of low prices of live stock, a "horse in the barn is worth two in the bush," it behooves every wide-awake farmer to understand the action of such simple remedies as are to be found in every farmhouse. We see, only too often, the veterinary surgeon called to witness the death spasm of some valuable animal, when, in many cases, a little knowledge, sensibly applied, of simple remedies might have saved the animal's life.

Some of the best remedies are so common that their value is not fully appreciated. Water, nature's universal solvent and diluent, is one of these. Taken inwardly at a natural temperature it is nutrient, diluent, evacuant, and detergent; given in a warm state it acts as an emetic, a purgative, and a perspiration agent. Outwardly applied in a warm state it is an emollient, relieving tenderness and pain, and, at a high temperature, is quite an active blistering agent.

Not a single drug in the long list of the veterinary materia medica can lay claim to such a variety of curative actions; yet how many farmers would sooner walk a mile to the druggist and plank down their hard-earned dollar for some poisonous compound, because they saw it advertised in some newspaper or trashy horse-book, than use the simple remedy right at hand!

Animals should be allowed all the water they care to take; for, in moderate quantities, it aids the digestion, and unless they are very hot, fatigued, and hungry, there is no danger of their injuring themselves by having this liberty. Many arguments have taken place as to the right time to water horses, and the question is one still to be settled. We would suggest, if the animal is in health, watering it whenever it is thirsty. By this, of course, we don't mean depriving the animal of drink until he is feverish with thirst, for in such a case even a man might injure himself by excessive drinking when he got the chance, and in the case of the lower animals the unnaturally heavy draught might cause a serious injury, hurrying the imperfectly digested food into the large intestines, where it might set up colic or inflammation, or injuriously dilute the gastric fluid, thus retarding digestion.

In fever, water frequently given at the natural temperature is quite safe, and a great deal more palatable than when given in a tepid state. In cases of diarrhoea, however, great care must be used in giving animals water, or troublesome and dangerous purging may result. In such cases, thin starch gruel should be given in place of the water. In constipation, a clyster of water, at a temperature of about 100°, proves often very serviceable, and can be profitably conjoined with soap or salt.

One of the most common and, at the same time, most fatal diseases is inflammation of the bowels. Here is another case where simple remedies can be of the greatest use at the outset of the trouble, and before the veterinary surgeon arrives. Heavy rugs around the animal's abdomen, kept soaked with nearly scalding water, often prove of great use as a counter-irritant, and in careful hands there is no danger of blemishing. In inflammation caused by obstruction or intussusception of the bowels, copious warm injections should be made, and where an anodyne effect is called for a tobacco decoction can be advantageously employed.

Truro, N.S.

H. WAGSTAFF O'KEY.

(To be continued.)

Daniel Lambert.

W. H. C. : What was the horse Daniel Lambert?

ANS.—The trotter Daniel Lambert was of the well known Morgan breed. His sire was Ethan Allen 2.15, he by Black Hawk, by Sherman Morgan, by Justin Morgan. His dam was by Abdallah, son of Mambrino. He was foaled in 1858, and died in 1889.

Enlarged Pastern.

H. A. H., London : I have a roadster colt that has one of its hind pasterns enlarged. It is sore to the touch. I have blistered it. Is this the best method of treatment?

ANS.—If it is caused by a recent injury, blistering is not good. Hot water applications would be better. Consult a veterinary surgeon.

Food for Colt.

G. P., Yeovil, Ont. : What is the best food for a young roadster colt (newly weaned) to develop its bone and muscles, and health, every way?

ANS.—Oats and hay are the best staple foods we have for horses. See article on this subject in this issue. Variety is needed. Give roots now and then; carrots or turnips are good. Give a little boiled wheat for evening feed twice a week, and bran in warm mash as often. Skim-milk warmed and slightly sweetened is relished by some. In addition, regular exercise and careful daily grooming help a great deal the best development of the colt.

Watering Horses.

L. S. J., Toronto. : Should a horse be watered before or after eating?

ANS.—Opinions vary. Some say to water before eating dilutes the juices of the stomach; others, and the great majority of horsemen, water before feeding, claiming that when it is left till after, the horse's stomach being small, a part of the undigested food is carried into the bowels. When water is always before a horse, he usually sips now and then when feeding.

Straw for Feed.

J. McD., Galt. : Is straw good food for horses?

ANS.—Good timothy hay is the best coarse food, but straw will answer if more grain be fed with it. Oat straw cut on the green side is the best. One hundred pounds of good hay is about equal in feeding value to 160 lbs. of the best oat straw, 170 lbs. of potatoes, 500 lbs. of white turnips, 320 lbs. of Swedes, or 340 lbs. of mangels.

Rye for Horses.

G. A. C., Manitoba. : Can rye be safely fed to horses?

ANS.—I have had no experience in feeding rye to horses. Perhaps some of our readers can answer the question. Would recommend it tried in small quantities, and boiled before being fed.

Flax Straw.

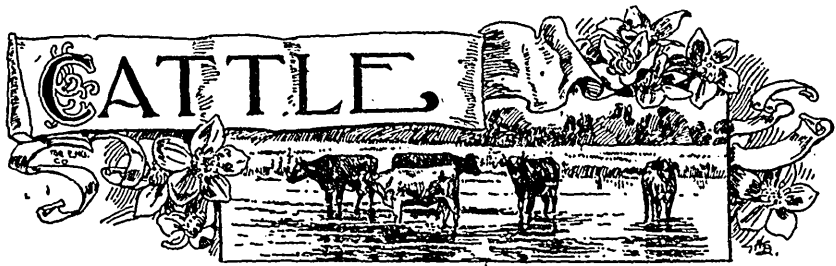
A. G., Berlin. : Is flax straw good for horses?

ANS.—Flax straw has been fed to horses in the Northwest in small quantities, and with good results. I remember seeing a report of this, in which the writer said that he had fed it to all his horses, and had given them one feed of hay per day and the usual allowance of oats, and they had done well.

Breeding of Danegelt.

G. A. H., Weston. : What is the breeding of Danegelt, the Hackney stallion?

ANS.—Danegelt (174) was bred by Mr. F. Rickell, of Warter, Yorkshire, England. He was by Denmark (177): His grandsires were Sir Charles (768), and St. Giles (687). He was purchased in 1892 by Sir Walter Gilbey, of Elsenham Hall, for 5,000 guineas.



Conducted by "STOCKMAN."

AT the meeting of fair managers in Chicago last November a recommendation was passed that exhibitors be required to furnish an affidavit, at the time of making their entries of cows, setting forth the date of birth of the last calf, and, unless this falls within eighteen months preceding the show, that the cow shall not be eligible for showing. Hitherto this detailed information has only been required in cases where protests have been lodged.

AT the annual meeting of the American Shorthorn Breeders' Association, held in November, it was decided to establish a special registry for dairy Shorthorns, admission to which shall be on the basis of actual performance only. It was also decided that the strict rules surrounding pedigree registration in the Shorthorn Herd Book proper should not be applied to the Dairy Register. This is a wise proceeding on the part of the association, and it will be certain to benefit Shorthorns largely by developing their milking qualities, which have been so neglected in America.

THE executors of the late Mr. T. C. Booth, Warlabay, England, have sold to Messrs. Gibson Bros., for exportation to Buenos Ayres, the four-year-old Shorthorn bull, Sir Lucius Studley (64882), the price paid being the sensational one of £700. This bull is a son of old King Stephen, which was also the sire of Prince Stephen, for which Mr. Deane Willis obtained a similar price a few years ago. The dam of Sir Lucius was Lady Roxana Studley. He was hired by Lord Polwarth for a season, and left some exceptionally choice stock behind him there.

MR. CH. CHRISTENSON, Malmo, Sweden, visited Ayrshire last November and purchased eleven two-year-old Ayrshire heifers and four bulls for his herd. Three heifers were purchased from Mr. John Hutchison, Newarkhill; two one-year-old bulls from Mr. Hugh Walker, Dyke, Straiton, and the rest from Mr. Henry M'Fadyean, Ashfield, Maybole. They include the well-known aged bull, Height of Splendor, bred by Sir Mark J. Stewart, and used for three years in the Ashfield herd. This bull was first and cham-

pion as the best Ayrshire at Maybole show last year, and second at Castle Douglas this year. The remaining bull is a yearling son of Height of Splendor.

THE big, fat, heavy steer is being left severely alone. He will soon be a thing of the past. What is wanted now is a steer of good quality, full of juicy, rich meat, moderately fat, and quite young, from twenty-two to twenty-eight months old. Last summer, in Chicago, young heifers, fat from the range, sold for as much money as did heavy, fat, rough steers. The English butchers prefer the lighter animals, and pay a bigger price for them, and these lighter animals pay the shipper better, even when the ocean freights are still at so much per head.

CATTLE were early brought under man's control, but it does not appear that they were so thoroughly domesticated as at present. On some of the oldest monuments in Egypt the cow is represented as being milked with her legs tied by a rope, as if this were the regular milking habit. Nowadays a very small number of cows require to be so treated. It is well known that cattle will, if left to themselves, speedily lapse into a semi-wild state. This has taken place both in South America and Australia, where there are now many wild herds.

PROFESSOR BANG, of the Copenhagen Veterinary College, Denmark, has been looking after the expenditure of a grant of \$14,000 made by the Danish Government "in order to assist the owners of cattle who desire to employ tuberculin in suppressing tuberculosis in cattle." From the reports to hand it is clear that the work is still in the experimental stage. Prof. Bang states that in his experience tuberculin has failed as a diagnostic agent in 9.2 per cent. of the cases. On the whole it is evident that, until every fact as to what tuberculin can do and what it can not do has been ascertained, cattle breeders are justified in being chary in using it. Whether the disease is very much aggravated by the use of tuberculin is another matter about which there is much difference of opinion.

MANY of our domestic animals, cattle included, dislike the smell of fur garments. I have often noticed this, especially when a stranger wearing a fur coat would come into the stable. With very nervous cows the effects may be disastrous, as some have been known to cast their calves after such an event. Pigs act much in the same way. I have seen a sow with young pigs rush at a stranger with a fur coat on who had innocently stepped into her pen, and, even when the door was shut, she kept charging furiously against it until he left the stable. She was at other times a remarkably quiet sow with whom one could do anything one liked. This dislike of animals must be ascribed to hereditary instinct, which can be traced back to ages ago, when the ancestors of our domestic animals ran wild and looked with terror on every fur-bearing animal they met, for, in all probability, it was a dangerous enemy.

GIVE the bull plenty of exercise. It will be very beneficial to his health and will keep him active and serviceable, while his procreative powers will be greatly benefited thereby. There should be on every farm where a bull is kept a small paddock or yard, s'rongly fenced, where he can take exercise when the weather is not too cold or stormy. Where a tread power is used in connection with a milk separator, the bull will prove a valuable animal to work the former. Even a young animal can do this work well. Years ago bulls were largely used in Great Britain in carts for hauling out manure, or for drawing in turnips or green feed to the stables. This they could do satisfactorily. The expense of keeping an extra horse was thus obviated. Even now we hear of instances where bulls are thus employed, and a few persons have tried them on this continent with satisfaction. Bulls of the beef breeds are best for this work, as they are quieter as a rule than those of dairy breeds, and have more size and strength.

WEAKNESS OF CONSTITUTION. — Professor Law says that the following conformation among cattle indicates weakness of constitution and a susceptibility to tuberculosis: Head narrow between the horns; sunken eyes; depth of cavity (temporal) back of the eyes; thin, narrow ewe neck; chest small, lacking in both breadth and depth; hollow flank and tendency to pot belly; a general lack of muscle, so that the limbs seem loosely attached to the body; in breeds that show a variety of colors, animals of the lighter shades of brown and yellow. If, however, such animals are of high value for the dairy, and can be kept free from infection, they need not be rejected, even if they have the above characteristics. It

may be remarked here that the finest conformations of Shorthorns, Devons, Holstein-Friesians, black or red polled, or of any breed, furnish no protection in the presence of the germ!

Feeding Roots.

Some interesting experiments have been made in Britain in fattening steers. The lot were divided and fed swede turnips and straw for the basis and then linseed cake. Decorticated cotton cake, chopped oats, and ground Indian corn were tried. Those fed on turnips alone got 150 lbs. daily and all the oat straw they cared to eat. Each of the other lots got 50 lbs. of turnips daily and 5 lbs. of the cake or meal. Those fed on 50 lbs. of swedes and 5 lbs. of linseed meal made the best gains. The turnip-fed ones came next, and were close up and in excellent condition. Those which had received cotton cake came next, but far below the average, while those getting the 5 lbs. of Indian corn and 5 lbs. of oats came last. We have had in this country very few experiments along this line, and it would be interesting if our experimental stations would do some testing along the line of cheap feeding for beef. A comparison of feeding certain steers on turnips and straw and others on ensilage would be valuable to our farmers and should be of much benefit by showing which is the best and cheapest. In Scotland there are a great many cattle fattened on turnips and straw without any grain.

Lumpy Jaw.

Actinomyces bovis, or lumpy jaw, of cattle, is a parasitic disease, caused by the growth in the tissue of a fungus called actinomyces. It appears as a lump or tumor, usually in the region of the head or neck, and may grow to a large size. This tumor generally discharges a yellowish pus, which contains portions of a fungus known as actinomyces. It is not transmissible from one animal to another by means of the actinomyces as they are found in the pus. It can be transmitted to other cattle by inoculating them with a piece of tissue from the tumor which contains the organism in a growing state. The actinomyces which cause this disease are probably a degenerate form of some fungus which grows naturally upon feed stuff or grain. When the spores of the original fungus are taken into the animal economy, they may gain entrance to the tissue, vegetate, and produce the disease known as *Actinomyces bovis*, or lumpy jaw. There is no danger of persons contracting

this disease from eating the flesh of affected animals, providing the visibly diseased portion is removed.

The usual treatment consists in removing the tumor, either with a knife or by the use of caustics. Iodide of potash given internally is one of the best remedies for effecting a cure.

The Ayrshire Bull, Dominion Chief.

The illustration on page 275 represents Dominion Chief 1214, the stock bull of Mr. John A. Douglas, Warkworth, Ont. Dominion Chief was sired by Royal Chief (imp.), and is a grand stock bull, his calves coming of the right dairy type, beautifully marked, large, and with plenty of bone. As will be seen by the illustration, Dominion Chief is of the type of Ayrshire so popular nowadays, and his breeding is of the best.

Feeding Live Stock.

Our knowledge of the best methods of feeding live stock is as yet incomplete, and, therefore, anything tending to throw light on them is to be welcomed. How to get the greatest gain out of the minimum of necessary food fed is an all-absorbing question in these days of low prices and close competition. The following information supplied by Mr. Wm. Rennie, the farm superintendent at Guelph College, on the method of feeding followed out there last winter is, therefore, instructive, inasmuch as it shows that feeding beef cattle is still profitable:

On the 6th of Nov., 1894, 16 steers rising three years old were purchased in the Guelph market at 3½ cents per pound, the average weight per animal being 1,157 lbs. They were fed largely on rape until Christmas, receiving in addition, night and morning, a mixture of cut hay, chaff, pulped roots, and ensilage, about 25 lbs. per day; also 2 lbs. of crushed barley and oats, with 1 lb. of bran per day; the cost of feed per day for each animal being about 7 cents, including the rape. During January, February, and March, they received no hay. The food fed to them was a mixture of chaff, ensilage and pulped roots, 50 lbs. per day, fed in three meals, at 5 a. m., 12 noon, and 6 p. m., the cost of each animal being 6 cents per day, including 4 lbs. grain and bran. With these rations from Nov. 6th till the end of March, 144 days, they gained an average of 265 lbs. per animal, or 1.84 lb. per day. Allowing 40 lbs. each for shrinkage, the net gain was 1.56 lb. each per day for 144 days.

For April the average gain was 50½ lbs. per animal, or say 1½ lbs. per day. Cut hay and clover were added to the second mixture mentioned above.

During May the increase was only 26 lbs. per animal, say ¾ lb. per day, while the food was 4 lbs. peameal and 2 lbs. bran, with cut hay, chaff, ensilage, and pulped roots mixed together, 50 lbs. per day to each animal; the cost of this food being about 10 cents each animal per day.

From the 1st of June the food was cut clover, and ensilage mixed, 45 lbs. each per day, with ground grain (barley, rye, wheat, and bran, 7 lbs.), the cost being 12 cents for each animal per day. The average gain in weight for each animal was 1 lb. per day.

In these estimates, clover hay is valued at \$7 per ton, chaff nothing, ensilage \$2, and roots \$2.50 per ton, mixed grain 1 cent per lb., and bran \$12 per ton.

The milch cows were fed the same as the steers in winter, except that they received an addition of 20 lbs. of mangels per day when giving milk.

It will be observed that the greatest gain for the food consumed was in the first five months, while the steers were fed on the coarse, bulky, and easily digested food.

The last three months they were fed at a loss, while they were being fed on the stronger and more concentrated food.

The steers were sold to Messrs. J. A. Leaman & Co. of Halifax, Nova Scotia, at 5½ cents per lb. live weight, and shipped to them on July 26th.

Results.

November 6th, sixteen steers averaged 1,157 lbs., total 18,512 lbs. at 3½ cents.....	\$647.92
July 26th, sixteen steers averaged 1,555½ lbs., total 24,890 lbs. at 5½ cents....	\$1368.95
Gross grain.....	\$721.03

Food consumed.

November 6th to the end of December, 55 days, at 7 cents per animal.....	3.85
January, February, and March, 89 days at 8 cents per day per animal.....	7.12
April and May, 61 days at 10 cents per day per animal.....	6.10
June 1st to July 25th, 55 days at 12 cents per day.....	6.60
Total cost of food for each animal.....	\$23.67
Total cost of food for 16 animals..	\$378.72
Total gain for 16 animals.....	721.03
Cost of food	378.72

Net gain for 16 steers.....	\$342.31
Net gain for each animal.....	\$21.39

The manure is taken as equal to the cost of the labor for feeding, etc.



The Ayrshire Bull, Dominion Chief,
The property of Mr. John A. Douglas, Warkworth, Ont.

Had the stock been sold in May, as is the custom, there would have been a much larger profit, as will be seen from the above figures. They were kept until July so that the large number of farmers who visited the college during June and July might see the result of this method of feeding.

For FARMING.

Scotch Shorthorns.

The fame of the Scotch Shorthorn was largely due to the energy, skill, and enterprise of Amos and Anthony Cruickshank. They took a lease of the farm of Sittyton, about twelve miles north-west of Aberdeen, in 1837. It contained about 260 acres of only moderate land, which was at that time in poor condition. Here Amos Cruickshank spent a long lifetime with his favorite cattle. About 1855 Anthony moved to the fine farm of Mains of Udny, about six miles from Sittyton, and, with the adjoining farms, the brothers at one time farmed about 1,000 acres of land. The first year the brothers had the farm Amos made a journey into England and brought home with him a Shorthorn heifer bought in the county of Durham. Another trip was made next year, and the herd was increased to a dozen animals. He bought good, purebred animals, but he had to have quality or he would not buy. He did not keep to any line of blood; in fact, the craze that long after this developed for special lines had hardly been thought about then. In 1847, the herd numbered fifty cows and heifers. If an Aberdeenshire herd of good stock was being sold, Amos was on hand to pick up any that suited him. From Ury, Pitfour Mains, Eden, etc., good animals were got. Sales in both England and Ireland were also attended, and, when found, suitable animals were bought. Good animals for small or moderate prices were bought, and the most careful selection was made for deeply-fleshed, quick-fattening, animals. For the first few years homebred bulls were tried, but afterwards, for about thirty years, nearly all the bulls used were got from England. Good blocky, beefy ones were wanted, and, while no particular blood seems to have been looked for, Booths largely predominated in the list of bulls used. Now and then a heifer was bought by Amos while on these southern trips, and these were sometimes of Bates' blood. He was never carried away by pedigree to pay the big prices so common amongst breeders when the line breeding craze was at its height. For the last twenty years the bulls used were largely homebred, and of such a quality that they could not be equalled elsewhere. At one

time the herd numbered 300 head, and in one year eighty-four bull calves were raised. The last catalogue was issued in 1888, and in 1889 the final dispersion took place. The last of the herd were sold to go to South America, but the best were re-bought and kept in Scotland. The Scotch Shorthorns are the leading Shorthorns in America to-day. M. D.

For FARMING.

Are Shorthorns less Popular than They Were?

The above question was forced on my mind after an attendance not only at our large fairs, but also at several of the smaller ones. Now, I am not writing this in any spirit of enmity to the breed. Far from it. I was a breeder of them for many years, and only retired in consequence of ill-health. They are still my favorite cattle, and, though I may seem to the advocates of special purpose cattle an old fogey, yet, all the same, I consider them the best general purpose breed in the world. But to return to my subject. The display of Shorthorns at the fall fairs was certainly, in my opinion, not up to those of past years. There were many good cattle present, such as the grand animals shown by Mr. Edwards and others, but there were too few of these. What a contrast to some of the classes for dairy cattle, as the Ayrshires, for instance. Here the entries have been increasing at such a rate as to justify the management in increasing the number of prizes.

It seems to me that Shorthorn breeders are not doing enough to bring the merits of their cattle before the public. When we consider the enormous benefit that Shorthorn blood has done towards the improvement of the cattle of the country, and that fully seventy-five per cent. or more of the beef cattle marketed and exported from our shores to Great Britain have Shorthorn blood in their veins, it would surely seem worth while for the breeders of the red, white, and roan to make an effort to retain the supremacy that they have hitherto enjoyed. I commend this question to their attention at their next annual meeting.

I am well aware of the difficulties through which Shorthorn breeders, in common with breeders of other beef breeds, have lately been passing. The greater profits that have been made out of dairy products of late years have caused many a farmer to go into dairying, in place of raising and feeding beef cattle, with the result that a lessened demand and lower prices for beef sires have ensued. The low prices for beef,

too, have further contributed to depress prices for breeding stock. All these causes have worked injury to Shorthorns; it remains to be seen whether the injury is an irreparable one. For my own part, I do not think that it is, and I believe that if Shorthorn breeders put their heads together they can make their favorites as popular as ever they were. The present time, when prices for dairy products are down, would seem a good time to commence operations.

AN OLD-TIME SHORTHORN BREEDER.

Failure to Breed.

J. F. S., Ida, Ont.: I have three cows that I cannot get in calf. I have been taking them to the bull every three weeks since last June, and have tried four different bulls to no effect. They are all promising young cows, and I do not want to turn them off for beef. Please advise me what to do.

ANS.—You do not say whether the cows have ever bred or not, but we presume that they have. The failure to breed may be due to the animals being overfat, to injuries to the womb during calving, or to the fact that the whole of the afterbirth did not come away after calving, the portions left causing irritation and “whites.” If there is any discharge get the nearest veterinary surgeon to give you a solution of carbolic acid to inject into the womb. If the failure to conceive is due to fatness, the neck of the womb will have to be opened. Get a veterinary surgeon to do this. Sometimes the administering of a good dose of Epsom salts about a week before the animals come in season proves effective. If the neck of the womb has to be opened it should be done while the animals are in season, and the animals served shortly after the operation.

Mangels : When to Feed Them.

Enquirer, Peel Co.:—I have, for the first time, grown a crop of mangels for feeding my stock, and would like to have some information about them. Are they good for horses and sheep? Do they impart any flavor to the milk of cows? Will pigs do well on them? Is it best to feed them now, or keep them till toward the end of winter? I believe that in England they keep them thus.

ANS.—Mangels can be fed to horses, but they should not be fed very heavily. Carrots or turnips, however, are a better horse food. It is claimed by some breeders that they are not a good food for sheep, but we have fed them to them in small

quantities with no bad results. Sheep, however, prefer turnips to them. As regards milch cows, many dairymen use mangels for feeding to them, because there is no flavor imparted to the milk through their use, as there is when turnips are fed at milking time. Pigs are very fond of mangels, and will do well on them. They prefer them raw to raw turnips.

In our practice we always feed mangels early in the winter. After they are unloaded in the cellar, we pick out all the broken and bruised ones that we can find and feed them first, as these are liable to rot quickly. When these are finished, we continue using the others. We are aware that it is customary in England to keep mangels till later in the winter, as farmers claim that their feeding qualities and flavor are improved by so doing. If that practice were followed in this country, however, in our close root cellars, we should probably lose a good many mangels through rotting.

Cotton Cake.

Subscriber: Please give me through FARMING some information about cotton cake.

ANS.—There are two kinds of cotton cake, the decorticated and the undecorticated. The former is more generally utilized than the latter. It is very rich in flesh formers as well as in phosphates or bone formers. For growing stock and milch cows it is, therefore, a food peculiarly well adapted, but for young calves or very young stock of any kind it is not advisable to use it on account of its indigestibility. The standard analysis shows that it contains 45.25 per cent. albuminoids, 16.05 of oil, and 8.05 of mineral matter. It may be fed in quantities up to five pounds, but we always prefer it fed along with more laxative food, such as bran or oil cake. Undecorticated cotton cake is merely the cotton seed left unstripped of its husks, differing in this essential from the variety first mentioned. It requires very careful handling, as it is also very apt to produce inflammatory action, which may result in the animal's death. It is not so rich in flesh-forming materials, while it contains two and a half times as much woody fibre as the decorticated variety. For this reason it is seldom preferred to the last-named kind. Its virtues must not be overlooked, however. Feeders very often give it preference on account of its astringent qualities, which render it very useful to obviate a scouring tendency among cattle or sheep grazing on young and luxuriant pasture.



Conducted by "JASON."

THE Nebraska *Farmer* claims that Nebraska is feeding more sheep than ever before, and that mutton-bred sheep are on a regular boom in that state.

ABOUT a million pounds of wool were shipped from Manitoba last year, which shows that the prairie farmers are growing other things besides wheat.

A CHOICE selection of Shropshire shearing ewes in lamb and one ram were shipped on November 16th by Messrs. Alfred Mansell & Co., Shrewsbury, England, to Mr. G. E. Pierse, President of the Council of Agriculture, Tasmania, and Messrs. T. M. and T. H. Mason, also of Tasmania. The ram was specially selected at Mr. Mansell's recent sale, and is a very well bred one. The ewes were selected from some of the best flocks in the kingdom, and were of a high order of merit.

EVERY farmer should have a few sheep, say one to every five acres of cultivated land. They eat a large amount of food that would otherwise be wasted, and are good scavengers, ridding the fence corners and sides of the field of weeds and grass. In winter they do not need an elaborate house, in fact they are better without a warm, close place, and may be fed pea-straw, which, on many farms, goes to waste. The cleanings of the horse mangers, seeds, etc., they will eat up clean, and repay well a little better care in the shape of a grain ration. Then they have always enough wool to pay their board bill—dead or alive.

SHEEP should not be too warmly housed in winter. They need, perhaps, more than any other of our domestic animals, plenty of fresh air, and all winter through they need all the exercise they can get. This is specially true of the breeding ewes. In the northern part of this country, with our long winters, when deep snow is the rule for weeks together, it is an art to get the ewes properly exercised. Dry cold will not injure sheep, and they should be exercised in all weathers except on cold rainy days. Plenty of exercise means strong healthy lambs, if the feeding has been carefully done.

Make Ready for the Early Lambs.

If lambs are to come early, make ready for them. And when so doing, remember that they will be dropped quite early in the season, and in the coldest of the weather. The lambing pen should be warm, to make it quite safe to have lambs come at such a time. The structure need not be costly. Poles covered with straw, with some ventilation running up to the roof, should suffice. But of course some better place should be had, if possible, because of the light that is wanted. Tar or building paper will go a long way toward making the structure warm, and with but little cost. In any case the lambing pen should be warm, and it should be ready, and the date at which the ewes should come in should also be known, that they may be housed in time to save the lambs. If this is not known, the danger is imminent that they may be left out of the lambing pen until it is too late. If the time is not certainly known when they are likely to produce lambs, the udders should be carefully watched, and when these indicate that the lambing time is near, the ewes with such udders should be put into the lambing pen. The man who simply trusts to luck when his ewes lamb in cold sheds in winter weather leans on a broken reed.

Give the Flock Some Grain.

Give the flock some grain. It is always wise so to do when the price of grain is not abnormally high, but it is doubly wise when grain is low. At the present season grain is low and fodder is dear, therefore feed grain. Of all the kinds of grain that we grow, none is better than oats for sheep, and, owing to their properties, they may be fed freely without danger of injury following. Oats are a splendid grain food for sheep. Some bran or oil cake will be a still further improvement to the ration, for the reason that these foods assist in keeping the bowels more open. But if some roots can be fed it will not be necessary to feed the oil cake or the bran, as the roots act similarly. Of course it would be possible to feed sheep so much grain that they would become un-

necessarily fat; but the danger lies entirely in the opposite direction. While other kinds of grain may be fed, yet no other kind is so safe a food as oats. Barley may be mixed with the oats, but not in very large quantities, for breeding sheep, and the same is true of peas. But after the lambing season barley and peas may be more freely used, for then the condition of the ewes will be reduced unless they are well sustained by lots of food and of a good quality.

Give the Boys Some Lambs.

Give the boys some lambs next spring which they can call their own. It will encourage them to learn to care for them, and it will encourage them in habits of industry. Therefore, do not grudge them the ownership of one or more lambs. Allow them not only to look upon the lambs as their own, but to realize that they are theirs. When shearing time comes let the boys have the price of the wool. When they reproduce their kind, let the proceeds belong to the boys. Such an investment with the boys will pay a hundred-fold. The great want of to-day on the farm is the want of a superior knowledge of feeding and caring for the animals of the farm. The boys will learn to feed their lambs for the sake of seeing them grow. We want ten good stockmen in the land for every one we have now. Give the boys encouragement of the character that has been mentioned above, and we shall have more stockmen. A person who has learned to love stock-keeping in his youth will always love it. He will be lonely when he has no animals to feed.

Sheep on the Ranges.

Sheep raised on the ranges will, no doubt, influence the market owing to the immense numbers in which they are grown. But they cannot compete in quality with mutton that is grown on the farm. Sheep on the range must take what nature gives them. They can go just so far and no farther, grow so much and no more, and consequently they get just so far advanced in quality and no farther. There may be a few instances which form exceptions, but they are not many. On the farm artificial foods may be furnished to the full extent of the desires of the grower. He can introduce any infusion of blood that may seem good to him for purposes of improvement. It is not so on the range, where only sheep possessed of a certain degree of hardihood can be raised. The ranchman must needs market his sheep at a certain season of the year, for at other

seasons they are not in condition to take to the market, while the farmer can grow his to suit the wants of any market. There is always room for the best product at the top of the market, and it will command the very best price. It is the common stuff that must needs come to grief when markets are glutted. Grow sheep, farmers, but grow good ones.

Mutton for the Table.

It may be that some persons can be found who are not fond of mutton, but if so, their tastes are certainly very strange indeed. Mutton well grown and well fattened is certainly a delicious food, and yet it is not found on the table of many a farmer from the beginning to the end of the year. That it should be so is one of the unaccountable, unexplainable things connected with farm life. The farmer has to raise his own meat in some form. Why should he not raise it in the form of mutton? No kind of meat can be more cheaply raised, and no kind of meat is more wholesome. A small flock of sheep in the summer season lives very largely on waste products on the farm, such as weeds, grass growing in the lanes and fence corners, on the fallow fields, and amid the stubbles, and in the course of a year they put myriads of weeds, and, consequently, of weed seeds out of existence. The larder of the farmer should not be without half a dozen sheep in it during the year, and even though a much larger number should be found there during the course of the season, it should not be looked upon as an extravagance.

Maintaining Size in Sheep.

A purebred flock of sheep should be so managed that there will be no diminution in size where the conditions are normal. But oftentimes under the management on average farms they lose size to some extent. There is a tendency to a decrease in both size and weight, so that the lambs do not attain the desired weights when ready to be put upon the market. In such instances there is a remedy. It consists in the introduction of an outcross from a larger breed. Take the Shropshire, for instance. Shropshire grades, under some conditions, deteriorate in size. When they do, introduce, for instance, an outcross of the Cotswold. Such an outcross will impart size. It will give a vigorous, sturdy sheep. At least that is the character of the sheep the outcome of such a cross, so far as they have come under our notice. The first cross thus made should impart enough size to meet the wishes of any lover of the dark-faced

breeds. When the object has been thus attained, go back again to the Shropshires for sires. Do not mar the work by endless promiscuous crossing. Such an outcross infuses vigor in addition to the increased size which it gives, and vigor is all-important in animals that are to be kept on the farm. The necessity for such an outcross may not be felt in many localities. The vegetation may be of a character such as will sustain sufficient growth, and, where it is, there is no need for an out cross.

Youthful Shepherds.

The work of the shepherd is, indeed, an honorable work. Those who have followed it have stood well in the intellectual and moral scale. Some of earth's truest, and bravest, and best were at one time shepherds. There seems to be something about the business that is ennobling and inspiring. When a hero was wanted to meet the giant of Philistia, he was found in the ranks of the shepherd guild. And when the divinest proclamation was made that men ever heard, it was to men who were keeping watch over their flocks by night. The work of tending sheep is an excellent one for boys. It draws out their sympathy toward animated things, for if there is anything that should lead us to take a deeper interest in the lower orders of creation arising from our intercourse with them, we shall surely find it in the gentleness and defencelessness of the lamb. Let a boy cultivate a love for working among domestic animals in his earlier years, and he will never be likely to abuse or maltreat them. A boy who has made a close companion of a dog in early life is not likely to maltreat dogs, and he is certainly less liable to maltreat other animals. The habits of youth cling to us. If we are to become more and more a people who will grow live stock, we must accustom our children to work among them. And there is no kind of stock which they can tend so well at an early age as sheep. The best shepherds and cattlemen in the world come from Britain, and they are the best because they have learned the business in their youth. Among Americans there are not many shepherds relatively. American boys want more exciting work, and they find it, but they don't know how much they lose by shunning the work of the shepherd.

The Chilmark Flock of Hampshire Downs.

On the next page and on page 283 we give a couple of illustrations of some Hampshire Down

sheep the property of Mr. James Flower, Chilmark, Salisbury, Wiltshire, England. The first illustration is one of eight ram lambs, winners of the Challenge Cup at Salisbury in 1895, the coveted prize of Hampshire Down breeders. These rams are a grand lot, and were, when photographed, only six and a half months old. The second group are three shearling ewes, champions in 1894 and never beaten.

This flock, which was registered in the first volume of the Hampshire Down Flock Book, has been in the present owner's and his late father's possession for upwards of fifty years. During that whole time it has, of course, through having been practically under the same management, been, we may say, continuously bred upon the same lines, the greatest care having been always taken in selection on both sides, and the result has been a great flock likeness and the greatest propensity of the sires to impress their very valuable characteristics on all flocks wherever they are used. There are about 1,000 ewes generally kept for breeding, and there are, of course, the ewe tegs, which number from 350 to 400; thus, so far as females are concerned, purchasers can always rely upon finding there an excellent selection. Of shearling rams, but very few are ever kept; perhaps 15 or 20 in all, for Hampshire Down breeders now invariably use ram lambs on the majority of their flocks.

The prize record of this flock for the past year, 1895, will show what a flock it is, for no flock unless it was a first-class one could show a record of nine first prizes and three champions, besides other prizes, at only five shows, and these won in the largest and strongest competition in the world. These prizes were won at the Royal, Royal Counties, Bath and West of England, and other shows.

FOR FARMING.

Do Not Sell the Sheep.

During the past season one's attention could not but be particularly attracted by the numerous flocks of sheep passing along the highways. It is a common occurrence to see large flocks of lambs driven to market in the autumn, but last season the droves were more numerous and larger than we have seen for some years. And what is even more striking is the fact that a large proportion of the droves consisted of ewes, apparently in their prime, of good size, and showing the strength and vigor so desirable in good breeding sheep.

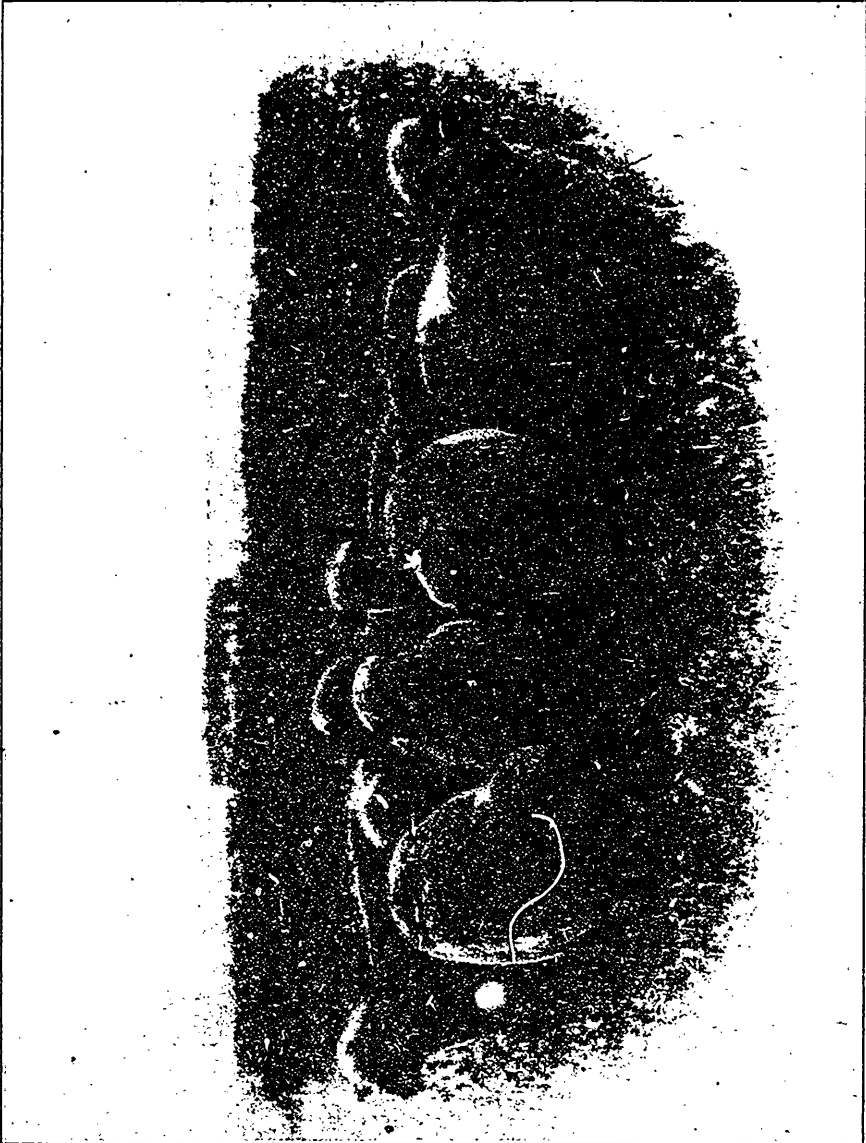
These unusual droves of sheep could not but excite the curiosity of the careful observer. Consequently, the writer has been making enquiries occasionally of the drovers as to where they got

so many sheep, what they were going to do with them, and why the breeders parted with their breeding ewes. We were told repeatedly that many farmers have become discouraged with sheep raising because of low prices, and are selling their entire flocks for almost any offer, no matter how small, which they may receive from the butchers. The butchers cull their droves, the best sheep are shipped, and the poorer ones disposed of on the local market.

Now, though it has many times already been said

and written that better times and prices are coming, is it not so, even though financial changes often take place slowly? The time is sure to come when farmers will regret the sale and wholesale slaughter of good breeding stocks. Though it may be an act of wisdom to lessen the numbers of a flock, it cannot be otherwise than imprudent to do away with it entirely.

A certain number of sheep are necessary on every farm, no matter at what prices mutton is selling. On every place, no matter how thor-



Hampshire Down Ram Lambs,
The property of Mr. Jas. Flower, Chilmark, Wiltshire, England.

oughly cultivated or how completely reclaimed the land may be, still there is every year a quantity of food growing in fields and in by-places on which sheep may subsist and even thrive well. Without the use of sheep this food will remain unconsumed and practically wasted. And then, again, we must remember that mutton produced in this way costs very little, and though the farmer may not be lining his pockets with gold, still he has a reasonable margin of profit. It is this continual rushing in and out of things which is injuring the agriculture of to-day.

Woodburn, Ont.

SUBSCRIBER.

Shropshire Sheep.

H.B.M., Antigonish: "Are there two varieties of Shropshire sheep?"

ANS.—There is only one variety of the Shropshire breed, and these show a very close uniformity to a single type. The families developed by different breeders vary somewhat in their type, but these conditions are not so marked as to give the families the names of varieties. This is true of all breeds of sheep, or of other stock, for that matter, that have bred for any length of time.

Rupture of Stomach.

J.H.J., Ontario: "We lost a valuable ewe recently, which was with the flock at 8 o'clock in the morning, and at that time seemed to be all right, but at 12 o'clock I noticed her on her back, badly bloated, and in great pain. She was breathing heavily and short most of the time, and kept nibbling at the ground. I gave her one teaspoonful of soda and a little milk. The bloat went down in about a minute, and she died in less than ten minutes. Can you give me any light as to what ailed her, and what I should have given her? Was it right or wrong to give her soda? They were feeding on rye for four weeks, but there was no frost on it that morning."

ANS.—I cannot say what effect the soda would have, as I have never given it to sheep. I am inclined to believe, however, that the fact that the bloat was removed in such a short time, and that the ewe died so quickly, indicates that death occurred from rupture of the stomach. In cases of bloat the medicine we rely on altogether is spirits of ammonia, giving about one teaspoonful in water at frequent intervals of an hour or so, depending on the severity of the case. This usually brings about relief, except in very severe instances when

it does not act quickly enough. In such cases we use a trocar and cauala. By inserting this instrument into the highest point of the swelling immediate relief may be given, and then a dose of ammonia afterwards prevents its recurrence.

Merino Sheep.

A.J.U., Martintown, Ont.: (1) Are Merino sheep good for mutton? (2) What is the yield of wool per head as to ewes or wethers or rams? (3) What is the wool worth per pound? (4) and is there a market for it? (5) Will they do well in Ontario?

ANS.—(1) Merino sheep have of late been bred with mutton in view. This has led to the production of two or three different varieties which aim to make a combination of wool and mutton. While they show more development towards a mutton form, and certainly the highest development in the production of fine wool, yet it is hardly fair to say that they are mutton sheep. Comparing them with any of the breeds that are known to be distinctly mutton breeds, they will not produce as much mutton, nor will it be as profitable to the butcher. The Merino sheep certainly have valuable qualities, which adapt them especially for fine wool growing. I refer particularly to their ability to pick up a living on scanty pasturage and rough land, but when it comes to feeding them as we do sheep that are bred distinctly for mutton, they would be outclassed. They will make fair gains, but, owing to the form of the sheep, the mutton is not produced in the most valuable parts of the carcass. The very qualities that give the Merino a special field to itself operate against the producing of much mutton of a high quality.

(2) The yield per head of wool from a flock of breeding ewes will vary greatly, according to the type and the aim of the breeder. Some flocks where wrinkles and the grease in the wool have been cultivated yield very heavy fleeces, while others without wrinkles and without grease shear a longer stapled wool, but a lighter fleece. A Merino flock that has been bred with care for wool will average about fifteen pounds of unwashed wool. Rams and wethers will yield much more than this.

(3 and 4) Unwashed Merino wool is now selling in our market for about twelve cents per pound. The very finest grade of unwashed Merino wool will, perhaps, bring fourteen cents per pound at the outside, and it decreases from that to seven cents per pound. In the wool

market of to-day, fine wool does not bring the price that it did a few years ago. The demand all over the land is for the medium combing wool; that is, wool that is two or three inches long, medium in fineness, and sound in fibre. This brings about four cents per pound more than the finest wool that may be heavy with grease. The reason for this difference in the price of the different grades of wool is due to the fact that the clothes which are mostly worn to-day are made from medium combing wools. The effect of this demand on the breeding of Merino sheep the world over, in Australia, New Zealand, America,

stock has been used for breeding mutton grades to supply the demands for this grade of wool. In Buenos Ayres, in the ten years preceding 1894, over thirty millions of sheep were changed from Merinos to Lincoln grades, by using Lincoln rams on Merino ewes, to supply this change in the wool market. The same kind of breeding has been carried on both in this country and in others where wool is marketed in large quantities. These facts indicate very clearly the class of wool which the markets of the world are at present demanding.

(5) There are certain regions in Ontario where



Shearling Hampshire Down Ewes.

The property of Mr. Jas. Flower, Chilmark, Wiltshire, England.

South America, and all the wool producing countries, has been to encourage the crossing of mutton rams on Merino ewes, which results in the greater production of this kind of wool, and at the same time adds to the value of the mutton. In the Argentine Republic, until the year 1880, the sheep were almost entirely Merinos; then the industry of freezing mutton started, and this demand for medium combing wool followed shortly afterwards. The whole of this Merino

the Merino sheep would be thoroughly at home. There are a few flocks there now that are doing well. They certainly are the most vigorous, the best hustlers, and the most economical sheep that we have for utilizing rough pasture lands. Fine wool can be cheaply grown on very rough land, and, for that special purpose, the Merino sheep is especially adapted, and there may be places in Ontario, too rough for any of the mutton sheep, where the Merino would thrive.

SWINE

Conducted by "BRISTLES."

Do not forget that feeding warmth into pigs is a costly process. Cheap as all kinds of feed are this winter, tar paper and rough lumber are cheaper, and a warm, well-ventilated pen means healthy pigs.

BOAR pigs that are doing service need careful attention and good feeding. Do not feed any great quantity of corn; try a few peas, ground oats, and a handful of oil meal, and give them exercise as much as possible.

A BAD-TEMPERED boar pig is an ugly customer, and should never be allowed to retain his tusks. They can easily be taken off with an ordinary bone saw. This also enables a breeder to keep two or three boars together.

KLEVER'S MODEL 2ND, the first prize Poland-China boar at the Illinois State Fair, recently changed hands at \$200, and yet many of our breeders think \$50 a prohibitive price for a stock boar. Cheap pigs do not pay in the long run.

THE *Breeder's Gazette* says that the demand for 350 to 400 lb. fat back hogs, while always moderately good, is not what it was in days gone by. Philadelphia used to want them, and really fancy shippers would pay a good price for them. It is different now, however, as shippers to Philadelphia are taking the prime 225 to 240 lb. butchers' pigs instead of the big ones, and, like nearly all other dealers, claim that they are far more profitable to the retailer of meats.

A DESPATCH from Kokomo, Ind., dated November 25th, says: "During the last two months thousands of hogs have died in this and adjoining counties, presumably from cholera. This week a farmer examined the stomachs of several of the dead ones. In all of those examined he found the stomach packed with undigested pumpkin seeds. The seeds were as hard as stone, and, failing to digest, had irritated the walls of the stomach, causing inflammation and congestion. Pumpkins are now being seeded before feeding, and the 'cholera' scourge is abating."

Notes on Guelph Show.

The Guelph fat stock exhibition has again come and gone, and, as usual, the classes for swine were among the best filled; but although the numbers were equal to those of preceding years, the quality of the exhibits, with some exceptions, struck us as being hardly up to what we would have expected. In the purebred classes the sweepstakes for the best barrow, any age or breed, went to J. G. Snell & Bro., for an excellent specimen of a Berkshire of the improved type, while in the similar class for sows W. & H. Jones easily scored with the finest specimen of a Poland-China we have ever seen, a lengthy, deep-sided sow, of grand quality all through. While we are not prepared to say that this sow is bred according to the standard laid down by the American Poland-China Association, as given in our November issue, there is not a doubt in our minds but that she is a type of Poland-China that will take very much better with, and prove far more serviceable to, the swine breeders of this country than any of the specimens that have been shown in former years.

In the classes for grades and crosses, the sweepstakes this year fell to the Yorkshires, Mr. Robt. Agnew, Acton, Ont., winning the silver medal with a wonderfully good barrow, one of the best crossbred Yorkshires we have ever seen. We were told his breeding showed three-fourths Yorkshire and one-fourth Berkshire blood, and he certainly was a credit to this cross, which has produced so many good feeding pigs.

We were surprised at not seeing any crossbred Tamworth and Berkshires shown, taking into consideration the fact that the sweepstakes for the best pair of packers' hogs went to pigs of this cross last year, and also that such very favorable opinions of this cross have been expressed by our largest packers for the export trade. We expected to have seen a number of specimens shown this year.

On the whole it is to be regretted that the grade and crossbred classes were not better filled, as we have no hesitation in saying that, in our opinion, a cross between two pure breeds will be almost invariably found more profitable to

feed than a purebred, and it is by comparing the different crosses shown at a fat stock show that a feeder can best make up his mind as to what line of crossing it will pay him best to follow. We should like to see crosses between Yorkshires and Tamworths on one side, and Berkshires, Chesters, and Poland Chinas on the other, and also between the two first-named breeds shown at the fat stock show of 1896.

In conclusion, we may say that the show of 1895 has only served to convince us more than ever of the truth of Mr. J. C. Snell's remark last year in his report of that year's show, that the various pure breeds of swine were being daily bred nearer and nearer to the type the market of the day calls for, viz., a hog that shows plenty of lean meat of fine quality, as opposed to the coarse, heavy hog that was in favor a few years ago.

Feeding Pigs Without Milk.

In a recent letter Mr. J. M. Hurley, the well-known Yorkshire breeder, of Belleville, Ont., writes us on the subject as follows:

"Owing to the different system of agriculture pursued in our section of the county from that usually adopted further west, we have to adopt a somewhat different system of feeding. We grow very little corn and very few roots in our neighborhood, and send all our milk to the cheese factory, so that we have nothing in the way of milk except whey for our pigs.

"For young pigs after they are weaned we find nothing better than soaked peas and bran. In warm weather the soaking seems to prevent founder, and the liquid produced makes an excellent drink. If this feed is given in cold weather it should be steamed or boiled and fed warm, although, as a general thing, I do not think cooking pays for the trouble. In cold weather we usually feed barley and rye ground fine and shorts in equal parts, fed dry in a trough, and give the pigs water to drink in a separate trough. We have also fed ground wheat to young pigs with satisfactory results.

"We always give our pigs a supply of salt and ashes, and also some rotten wood and earth, and we find that sprinkling a few wood ashes on their backs keeps their skin nice and clean."

[NOTE.—Mr. Hurley is a successful breeder and feeder. We shall be glad to hear now from some others on this and kindred topics. It is only by exchanging views on these subjects that we can learn, and while many of our readers may not be able to visit other herds as much as they would like, they can always exchange their ideas, and so help to broaden their views. The columns

of FARMING are open to all. Never mind if you are not used to *writing for the papers*. Send along your ideas, and, if necessary, we will put them in shape for the printers. We would like to have a few discussions on matters relating to our department.—ED.]

Bacon Pigs.

In a recent number of our esteemed contemporary, the *Breeder's Gazette*, Mr. L. N. Bonham, in reply to an enquiry on the subject of breakfast bacon, made the following remarks: "There are bacon pigs and lard pigs. The fad now is for lean bacon. This can be cut from *lean, unthrifty, or mast-fed pigs*." (The italics are ours.) Now, with all due deference to Mr. Bonham, a number of whose articles we have read with great interest, we beg to question the correctness of this statement. That there are bacon and lard pigs we are quite willing to admit, but that unthrifty pigs are to be looked upon as suitable for making breakfast bacon from is a great mistake. An unthrifty pig will no more make good bacon than an unthrifty steer will make good beef. The word *lean*, as taken here with the context, also conveys to us the idea that it is used in the sense of a *thin* pig; if so, this is also an error, for a *thin* pig is in no way suitable for making bacon from. What is needed is a *well-fed* pig, but, at the same time, one which, instead of cutting up full of thick fat, will show plenty of lean meat of good quality. Lean meat in a thin or unthrifty pig is, in our experience, hard and tough, instead of tender and juicy.

To obtain the quality of meat necessary to produce good breakfast bacon the first thing to do is to get a pig of the proper stamp, the next to feed him the proper food.

Now, as to the stamp of pig required. A bacon pig should be of a long and deep type, rather than a thick, square type. The long, deep sides are needed to furnish the celebrated Cumberland and Wiltshire cuts; and, besides that, a long-bodied pig always shows a larger proportion of lean to fat in his carcass than a short, thick one. The back should be level and well filled in, but not too wide, as thick, fat backs are at a discount in the bacon market.

To produce the best quality of bacon the food should be varied, and the animal should be allowed a certain amount of exercise.

Care must be taken to feed a ration containing a considerable proportion of albuminoids or flesh formers. Corn alone, or in large quantities, can never produce meat suitable for making choice breakfast bacon, as it contains far too large a pro-

portion of carbohydrates (fat and heat producers). Still, we do not object to a certain amount of corn when fed in conjunction with other foods. Potatoes we have also fed with satisfactory results, and a great many potatoes are fed to pigs in Ireland to produce the well-known Irish hams and bacon. But potatoes also contain a very large amount of starchy matter, and therefore must be fed in conjunction with foods that are largely albuminoid in their composition, such as young clover, either pastured or cut and fed green in summer; peas, either ground or soaked, or fed dry; linseed meal, which must be fed sparingly; and skim-milk. This last, when available, is a grand help in turning out bacon of extra choice quality, as is also buttermilk.

Barley meal we have also fed with capital results, and this is the staple feed in England for fattening pigs. English feeders generally feed it dry to their pigs, giving water to drink in a separate trough.

In conclusion, a bacon pig should not be fed to too heavy a weight. From 160 lbs. to 220 lbs., live weight, is quite heavy enough, and after that weight is reached every succeeding pound will be costing more in proportion.

The Boar Pig.

There is an old saying that "the bull is half of the herd," and this is equally applicable to the boar, and, therefore, the selection of a boar pig, although, as a general thing, not involving the expenditure of as much money as the purchase of a bull, is a matter that should receive fully as much attention and consideration on the part of the swine breeder who desires to make a mark in his business. We may say here that although, undoubtedly, the breeders of purebred swine do, as a general thing, pay a great deal of attention to securing the animal that will meet the requirements of their herds, far too little attention is paid to this matter by the average farmer who keeps one or two sows for the purpose of breeding pigs for feeding purposes. In many cases a sow is bred to the nearest boar in order to save the trouble of taking her a little further from home, or because the boar belongs to a relative, or, most common of all reasons, because his service fee is the lowest of any in the neighborhood, and, as times are hard, every half dollar saved counts, even if the result of this "economy" is a litter of pigs that will cost their owner 10 to 20 per cent. more to feed than those from a boar of better breeding would.

Even where it is usual to use none but well-

bred males we have noticed that very few farmers seem to take the trouble to examine the conformation of their sows, and then endeavor to mate them with boars of a type that should "nick" in well with them to produce pigs of a perfect type. Perhaps the question may be asked, What is a perfect type of pig? Our answer would be that that entirely depends on the purpose for which he is needed, or, in other words, on the market for which he is intended; we do not propose here to give our idea of a perfect pig. Opinions on that point may differ without affecting the object we have in view now, viz., to impress on our readers that it is just as important for the farmer who breeds for the feeding pen to study the laws of breeding as it is for the breeder of pedigreed stock.

Every farmer who breeds and feeds pigs is anxious to produce animals that will furnish the greatest quantity of pork at a given age at the least cost per pound, and that will produce a quality of pork that will fetch the highest price in the market. He intends to sell it, and, in our opinion, he can no more do this without a careful study of the animals he has to work with, and without taking the greatest pains to match them properly, than a breeder can produce a sweepstakes winner in his herd without taking similar pains in mating the parents.

There is no question but that there has been an enormous improvement in the class of pigs to be found throughout the country; still there is, and always will be, room for improvement; and while, no doubt, a great deal can be done by the breeders of purebred herds by careful work in the way of fixing the types of their respective herds more and more firmly, and so sending out for the use of the general farmer boars that can be depended on to reproduce their own characteristics, yet the good work done in this way will not produce anything like the effect it might unless backed up by systematic endeavors on the part of those who are breeding and feeding for the market to so mate their sows as to produce as nearly as possible the type of hog the market calls for. No one will deny that the magnificent success scored by Canadian cheese in England is due very largely to the united efforts of the cheese manufacturers of the different sections to produce an article of uniform quality, and what has been done with cheese can be done with other agricultural products. We have an excellent example of this in the success of the Danish farmers and pork packers in catering to the English market. They made a careful study of the requirements of that market first, and then by carefully studying the best methods of breeding and feeding their hogs, so as to produce

the class of bacon most in demand, they finally succeeded in pushing their way into the foremost ranks of those who cater to the best English trade.

American Breeds.

THE DUROC-JERSEY.

What the exact origin of the Duroc-Jersey, or Jersey Red, breed was never seems to have been fully settled. Some writers, among them Prof. Jas. Long in his valuable work, "The Book of the Pig," claim that they are directly descended from the Tamworth, but this is met with the objection that there is no record whatever of any Tamworths having been imported into the United States at a sufficiently early date to make this idea tenable. Again, others claim that they are descended from some early importations of Berkshires, it being known that some specimens of this breed in early days were of a sandy or reddish color; but to our mind the most probable theory advanced is that of Mr. S. M. Shepherd, of Charleston, Ill., who declares that they are direct descendants of the old African or Guinea hogs which were known to have been brought to this continent during the continuance of the slave trade, prior to 1820. There is, we believe, mention made of these pigs as having been brought to America as early as 1804, and in 1820 we find them quoted in several papers as having been used successfully by the farmers and settlers of the Eastern and Southern States, to cross on the native pigs and also to cross with imported English hogs.

However, be their origin what it may, there is no doubt but that the Jersey Red hogs of to-day are a vast improvement on what they were a few years ago. In the hands of skilful and enthusiastic breeders they have been pushed to the front, and to-day hold a recognized place among American breeds.

The swine breeders' convention held at Indianapolis in 1872 speaks of the Jersey Reds of that time as "being long in the body, standing high and rangy on their legs, with coarse bone and heavy tail, and coarse hair with bristles on the back," adding also that they are valued on account of their size, constitution and power of growth.

However this may have suited the breed then, we do not think it is a fair description of the breed as found to-day; we therefore give the characteristics and scale of points adopted by the American Duroc-Jersey Association about ten years ago:

A Duroc-Jersey should be moderately long, deep bodied, not round, but broad on the back, holding the width well out to the hips and the hams. The head should be small in proportion to the body,

face slightly dishcd, nose rather short, ears medium in size, pendant, and falling towards the eyes, they must not be erect. The neck should be short, deep, and thick. The legs short, wide apart, and well set under the body. Bone of medium fineness, arm large, and flanks well let down. The hams should be broad and full, well down to the hock. Tail large at the base and tapering to its extremity. There should be a good coat of hair of medium fineness, usually straight, but in some cases wavy, with few, if any, bristles at the top of the neck and shoulders. The color should be red, varying from dark, glossy cherry, to light or yellowish red. An occasional fleck of black (usually on the belly and legs) is admissible, but cherry red without black is preferred. In disposition, mild and gentle. Pigs at nine months of age should dress 250 to 300 pounds, and, when fully matured, 400 to 700 pounds.

SCALE OF POINTS FOR JUDGING.

1. *Color.* Cherry red without other mixture.. 5
2. *Head.* Nose fine and short, face slightly dishcd, and wide between the eyes..... 10
3. *Ears.* Medium size, not erect nor too drooping 5
4. *Cheeks.* Large, full and well rounded.... 5
5. *Neck.* Short, evenly deep from pole to shoulders..... 5
6. *Shoulders.* Broad, smooth, nearly level on top... .. 5
7. *Chest.* Deep, filled level behind shoulders. 10
8. *Back.* Broad, straight, or slightly arching, carrying even width to hips... 10
9. *Sides.* Deep, medium length, level between shoulders and hips.... 10
10. *Belly.* Straight, underline not paunchy... 5
11. *Hams.* Large, full, well rounded, extending well to hock joints... 10
12. *Legs.* Medium bone, short, straight, well up on toes..... 5
13. *Tail.* Set medium high, nicely tapering from base..... 5
14. *Hair.* Fine, soft, straight, moderately thick..... 5
15. *Action.* Vigorous, animated and sprightly. 5

100

Diseases of Swine.

HOG CHOLERA.

We have frequently been told that this scourge of the porcine race, which has caused such wide-spread loss to the breeder on this continent, is due, in many instances, to feeding too heavily on new corn, to keeping hogs in filthy pens, to allowing them to drink stagnant-water, and so forth.

Now, while we do not wish in any way to give our readers the impression that it is not of vital importance that all hog pens should be kept in the best possible sanitary condition, and while we wish to place ourselves on record as being most strongly opposed to feeding wholly on new corn, or old corn either for that matter, we wish to point out the fact that it is utterly impossible for hog cholera to be produced by any of these causes alone. That they will aggravate the trouble very much there is no doubt, but hog cholera is a disease caused by *germs*, or *bacteria*, and, therefore, cannot appear without a *germ* to produce it. It must, therefore, be accepted as a fact that the only method by which this disease can be spread is by *infection*. The *germs*, or *bacteria*, under favorable circumstances, multiply in the stomach, intestines, blood, and tissues of the hog, and will live several months. Any part of the animal, or its excrements, therefore, may contain these bacteria, which may easily be carried to great distances and there be the means of infecting healthy animals. For example, a visitor going into a yard or pen where diseased animals are may carry away the means of infection on his boots or clothing, or small quantities of dung dropped from a car in which diseased animals have been transported may prove a very fruitful source of infection. The only possible means, therefore, in our opinion, of preventing the spread of this disease is by a rigid system of quarantine. All farms where the disease appears should be at once quarantined, and where several cases exist in a neighborhood a cordon should be drawn round the district and no hogs allowed to be moved under any circumstances, either in or out.

Scotland has one of the strictest systems of quarantine we know of as regards contagious diseases of animals, and as a result she is to-day free of swine fever than any other part of the British Isles.

The following description of the symptoms and treatment of hog cholera is given by Dr. Salmon, of the United States Bureau of Animal Industries, who has made a very careful research into the nature, causes, and other particulars of the disease :

" There are first seen the signs of fever, shivering, unwillingness to move, more or less loss of appetite, elevation of temperature, which may reach 106 to 107 degrees F. The animals appear stupid and dull, and have a tendency to hide in the litter or bedding and remain covered by it. The bowels may be normal or constipated at the beginning of the attack, but later there is generally a liquid and fetid diarrhoea, abundant, exhausting, and persisting to the end. The eyes

are at first congested and watery, but soon the secretion thickens, becomes yellowish, accumulates in the corners and glues the lids together. Breathing is more rapid than usual, and may be oppressed and labored in the later stages. There is a cough, which, however, is not very frequent, and is generally heard when the animals are driven from their bed. It may be a single dry cough, or it may be paroxysmal. The skin is often congested and red over the abdomen, inner surface of the limbs and under surface of the neck, also on the ears. The color varies from a pinkish red to dark red or purple. An eruption is sometimes seen which leaves crusts or scabs of various sizes on the skin.

" There is a rapid loss of flesh, the animal grows weak, stands with arched back and the abdomen drawn up, and walks totteringly and uncertain, the weakness and exhaustion increasing until death results. In swine plague the lungs are extensively inflamed, and in that condition the breathing is more oppressed and labored and the cough more frequent and painful.

" The most efficacious formula which has been tried is the following :

	Pounds.
Wood charcoal.....	1
Sulphur.....	1
Sodium chloride.....	2
Sodium bicarbonate.....	2
Sodium hyposulphite.....	2
Sodium sulphate.....	1
Antimony sulphide.....	1

" These ingredients should be completely pulverized and thoroughly mixed.

" The dose of this mixture is a large tablespoonful for each 200 lbs. weight of hogs to be treated, and it should be given only once a day. When hogs are affected with these diseases they should not be fed on corn alone, but they should have at least once a day soft feed, made by mixing bran and middlings and cornmeal, or ground oats and corn, or crushed wheat with hot water, and then stirring into this the proper quantity of medicine. Hogs are fond of this mixture. It increases their appetite, and when they once taste of food with which it has been mixed they will eat it, though nothing else would tempt them.

" Animals that are very sick and will not come to the feed should be drenched with the medicine shaken up with water. Great care should be exercised in drenching hogs, or they will be suffocated. Do not turn the hog on its back to drench it, but pull the cheek away from the teeth so as to form a pouch, into which the medicine may be slowly poured. It will flow from the cheek into the mouth, and, when the hog finds out what it is, it will stop squealing and swallow."

Feeding Pigs.

The following extract is from a bulletin on stock feeding at the Ontario Agricultural College:

This important subject has not received the consideration it should have had from many of our farmers. To feed stock successfully requires intelligence and good judgment in adapting the food to the kind of animals, and to the different stages of development.

A diet for young animals containing an excess of rich concentrated food tends too much to the production of fat, renders an animal liable to disease, and is likely to check or stunt it in its growth. Animals should be fed according to the object desired. For breeding purposes, it is important that both male and female be fed on food that will produce bone, muscle, and flesh, instead of fat.

The principles of feeding pigs are similar to those applied to other live stock, viz., animals kept for breeding purposes should be fed on food that will form bone, muscle, and flesh, instead of fat. The brood sows at the college farm are fed twice a day on boiled roots, either turnips, mangels, sugar beets, or potatoes, mixed with bran and middlings. The young pigs are fed the same kind of food three times a day. As we have no milk for our young pigs, for three or four weeks after weaning we mix flaxseed in their food as a substitute for milk, about a half a pound per day for each litter of eight or ten pigs. The cost of the food at the age of four or five months is two and a half cents per day for each animal, and the increase in weight is over one pound per day. After five months until sold we substitute pea meal for middlings.

The following will show the results from four lots of crossbred pigs that were sold to Messrs. J. A. Leaman & Co., and shipped with the steers on July 26th :

	Lbs.
Feb. 13, 7 animals from Tamworth sire and Berkshire dam, average weight at 4 months	117
March 13—5 months.....	154
April 13—6 months.....	204
May 13—7 months.....	255
June 13—8 months.....	301
Feb. 25—5 animals from Tamworth sire and Chester White dam, average weight at 4 months.....	96
March 25—5 months.....	131
April 25—6 months.....	167

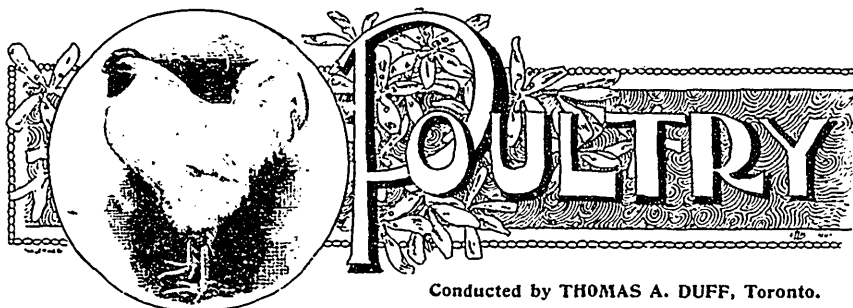
	Lbs.
May 25—7 months.....	226
June 25—8 months.....	267
Feb. 28—8 animals from Yorkshire, sire and Poland-China dam, average weight at 4 months.....	102
March 28—5 months.....	137
April 28—6 months.....	186
May 28—7 months.....	226
June 28—8 months.....	256
April 27—4 animals from Berkshire sire and Yorkshire dam, average weight at 4 months.....	99
May 27—5 months.....	138
June 27—6 months.....	177

There was little difference in the quantity of food consumed by the different crosses; and the food was limited to what they ate within half an hour of feeding. The Chester White dam suffered from fever for about a week after farrowing, so that her pigs were badly stunted at the start, from which they did not recover until between four and five months old. The pigs were inspected by two of the most prominent pork packers in this province, and the Tamworth crosses were pronounced the most suitable for their purpose.

In order to have roots to boil for the pigs during the year, we grow about two acres of sugar beets. They will keep until the first of August, when the new crop of mangels is ready to feed. For a time we boil both tops and roots. By this system of feeding, the best quality of pork can be produced for 2 cents per pound live weight.—*William Rennie, Farm Superintendent.*

[We should like to see these experiments carried still further, so as to include trials of the value of clover for feeding hogs, both as pasture, and when cut and fed either green or as hay, or in the form of ensilage; the comparative value of barley meal and pea meal for fattening hogs, etc.]

We would also suggest that in another experiment, where the different breeds are involved, it would be interesting if one breed was taken as a basis and the various crosses from other breeds on it tested against each other; e.g., take the crosses from boars of different breeds bred to Berkshire sows, and test them against each other. We are not making these suggestions in a captious spirit, but rather because we look upon experiments carried out under the superintendence of a thoroughly practical man like Mr. Rennie as of the greatest value to the farmers of the country, and we should like, therefore, to see them extended in their scope as far as possible.—ED.]



Conducted by THOMAS A. DUFF, Toronto.

[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.]

Fresh Laid Eggs

Fresh laid eggs are in demand at the present time. Unfortunately, however not many of us have our hens laying. Now is the time that the pullets hatched in April, May, and June should prove profitable. Provided that they have been well cared for, nearly all of them should be laying. About the only class of eggs obtainable at present are "limed." These seem to be of a very fair quality this season—to my mind, better than what are commonly called "packed" eggs. They are, of course, quite unfit for boiling. In case your fowls are not laying, it would not be amiss to give them daily a quantity of green bone, boiled liver, or lights. This would bring them on. Certainly, their quarters must be clean and comfortably warm. Last month, absolutely "fresh laid" eggs sold as high as forty-five cents per dozen. Forty cents was quite a common figure. I sold a quantity at forty-five cents, and some at forty. There was a strong demand, and the supply was very limited; in fact, only a few dozens could be secured. All eggs laid by my fowls are stamped with the date on which they are laid. Those which I sold were so marked, and the dates guaranteed by me. One grocer to whom I sold the eggs told me that people would come in and ask what the dates meant. He told them, and they seemed to consider the idea a very good one. To prove that it was, customers would come in and enquire whether he had "any more of those eggs like Mrs. So-and-so bought—the ones with the dates stamped upon them." One lady remarked that she had one of them for tea at a friend's house, and never had eaten such a nice egg. I

do not refer to this from any personal motive, but simply to show what *you* can do as well as any one else. Now, if I can get forty and forty-five cents per dozen for "fresh laid" eggs, why cannot others? Pray remember, however, that by "fresh laid" I do not mean eggs a month or six weeks old; but those which have been laid within ten days. I think it would pay people who have hens to mark their eggs in the manner indicated, and let such mark be their guarantee. Be perfectly honest about it, and your goods will be in demand. Remember that when eggs are so marked your reputation is at stake. Those who first come forward and have the pluck and business energy to do this will find themselves looked up to by the community, their goods sought after by the purchasing public, and themselves many dollars ahead at the end of the year. Try it.

Poultry Lecturers at Farmers' Institute Meetings in Ontario.

Last month I had something to say on the above subject. It appears, however, that the list of the meetings and speakers sent out was only for such meetings as the regular delegations should visit, and since that list was issued a large number of supplementary meetings have been arranged for. At these meetings the poultry interests will be looked after. I have not yet received a list of them, but, from memory, I think five gentlemen have been selected to handle the subject. In my remarks last month, I said that the superintendent of farmers' institutes had written to the secretary of the Ontario Poultry Association for the names of three gentlemen to address meetings, but it appears no mention of the number desired was made. The directors, however, named three. One of these was unable to act, but the other two have been appointed to the supplementary list. I am very glad, indeed, that the subject has not been forgotten, and I trust that another year still better representation will be given. Perhaps it can be ar-

ranged then to have some speakers on the list known as the "regular delegation." I trust that those who are appointed will do their utmost to enlighten their hearers on this important branch of agriculture.

Poultry Illustrations.

This month we have pleasure in presenting to our readers three engravings of Barred Plymouth Rocks and one of a white Minorca.

Two of these engravings represent birds owned and bred by Bradley Bros., Lee, Mass. New York Champion's 4th weighed 9½ lbs. as a cockerel and was sired by the cock that was first at New York, 1894. Four of his seven immediate male ancestors were first prize winners at New York.

Grandson's Brother is a full brother to their first prize cockerel at New York, 1894. His sire and sire's brother were first and second prize cocks at the same show.

The other illustration of a Barred Plymouth Rock is of Mr. Duff's bird. He was sired by New York Champion's Son, illustrated in the November issue of FARMING, and headed the first prize breeding pen at the Industrial Exhibition in 1894, and this year was shown when in moult, yet he won 2nd. He is a splendid bird.

We also publish a cut of Mr. Duff's white Minorca cockerel, 1st at Toronto Industrial, 1895. This variety of fowl is rapidly coming to the front. They are grand layers, and, as they come to maturity rapidly, are very good table birds.

Guelph Poultry Show.

When the promoters of the Fat Stock Exhibition, held at Guelph last month, offered inducements to the Poultry Association to co-operate with them and hold their show in the same building, they knew what they were doing. Never in the history of the Fat Stock Exhibition, so I am

told, has the attendance been so large. The reason of this is ascribed by many to the double attraction. The poultry occupied part of the same building, and from morning till night this portion was crowded with spectators. Undoubtedly it was the very best local poultry show ever held in Canada. The entries numbered somewhere in the neighborhood of 1,100; and the quality, generally speaking, was of the best. In fact, the entry was so large that the directors were quite at a loss to know how to get the birds all scored, and a number had to go without score cards. Mr. L. G. Jarvis, the well-known judge, was advertised to adjudicate upon the merits of the

birds, but the number of entries was so large that it was impossible for any one man to do the work. The directors, therefore, telegraphed to Mr. Wm. Barber, the well-known Game breeder, of Toronto, to come and judge the Games, which he did. He, with Mr. H. B. Donovan, of Toronto, judged the pigeons. Mr. Donovan assisted in the classes in which he was not exhibiting. Mr. Jarvis took the balance of the poultry classes, but was unable to score all the entries. The varieties which he was unable to score were judged by comparison. While this year there is an excuse for the Guelph Association, I have no doubt that another season they will provide at



Barred Plymouth Rock Cockerel.

least two judges for poultry. It is utterly impossible for any man to score one thousand birds or more in two days. In my opinion, many of the specimens were scored too high. There is no doubt whatever that the best birds won, but, as I have said, the birds were scored higher than they would have been had time to thoroughly examine them been at the disposal of the judge.

The Game classes were well filled. Barred Plymouth Rocks were fair. White Plymouth Rocks were excellent. In fact, I have seldom seen better. The first prize cockerel and pullet, owned by J. A. Pierson, Weston, Ont., were grand specimens. The latter was the highest

scoring bird in the show—97½ points. Silver and White Wyandottes were also good. Black Minorcas were only fair. A beautiful cockerel was disqualified for having a wing cut to prevent his flying. Leghorns formed medium classes.

The idea of holding the exhibition at the same time as the Fat Stock Show was a good one, and I think we may depend upon having it at the same period annually.

Mr. John Colson acted as secretary, and discharged his duties to the satisfaction of all concerned. He was, indeed, a busy man.

A Correction.

I regret exceedingly a mistake made in the notes regarding the White Wyandotte cockerel owned and bred by Mr. Charles Massie, Port Hope, Ont., and illustrated in last month's issue of FARMING. Under the engraving were the words, "First, Port Hope, 1894." It should have been 1895. The score, instead of being 95½, was 96½. I am sorry the error occurred, but trust this will set matters right. The cockerel was one of the very finest out last winter.

STRAY FEATHERS

NEVER set a hen very late in the season. The chicks never do well when hatched late, and are the first of your flock to catch cold, which results often in the whole of your flock getting the roup.

How many persons really know how much it costs to produce a dozen of eggs? We tried it one year, and kept a strict account with a flock of Leghorns. We found that it cost us slightly over four cents a dozen.—*Prairie Farmer.*

ALL commission merchants agree that it is the medium-sized turkeys that sell the most readily and are the most profitable. The birds should dress eight, ten, or twelve pounds, according to the proportion of toms and hens. They should look plump and clean.

SHARP grit, meat scraps, and green food must be included in the diet of all poultry confined to runs. Without these articles hens cannot make eggs. Feed all scraps to fowls while they are strictly fresh; nothing will more quickly cause disease than decomposing food.

A WELL-BRED fowl will lay more eggs and grow to marketable size sooner. Therefore, there is more profit from it, and it is the fowl for you to

have. Grade up your stock with good males, at least, and have a better lot of chickens in the next generation.

A GENTLEMAN who has thoroughly tested every legitimate line of farming in British Columbia, said to our correspondent recently, "There is money in chickens in this province. The sale of fresh eggs pays me better for the money invested than anything I ever tried, and I have tried everything."—*Winnipeg Commercial.*

QUININE is one of the best remedies I know of for cold in fowls. If you detect any of your flock in the act of sneezing, or with a slight discharge from the head, give a one grain quinine pill night and morning. If this is continued for about three days, you will find that no further doctoring is necessary.

GRIT of some kind should always be before the fowls, or the process of digestion is interfered with. The bits of hard stone and pieces of crockery swallowed by the hens act as teeth to grind the food before it enters the stomach. It does not matter much what kind of grit is given, so long as it is broken small enough for them, and is of sufficient hardness to grind the grain feed

I EXPECT, in the near future, to see a poultry plant started in the immediate vicinity of Toronto. A gentleman from Tennessee, who was very successful there, has recently removed to Toronto, his intention being, I understand, to start a broiler farm. In conversation with me, he stated that he had brought all his household effects, and eight incubators and brooders with him, and was then looking for some suitable location.

AMONG some peculiar professions is that of an ingenious Yorkshireman, who is stated to have already made a tidy little fortune, and who now carries on a trade in rotten eggs. He drives round in a cart to the upper-class provision dealers, and buys up all their rotten eggs, which cost him next to nothing. These he sells at a large profit to lower grade shopkeepers, who judiciously add them to their stock of fresh-laid eggs.—*Fowls.*

IF you write to the man you bought eggs from that there were ten eggs that "didn't hatch, that were rotten," it is further evidence that you are not posted. "Rotten" eggs are direct evidence that they were fertile when set, and that from some cause incubation had been interfered with and caused the embryo to die. Eggs that are infertile remain perfectly clear, even if they remain under the hen the whole twenty-one days of her sitting.—*Fancier's Review.*

Do not be frightened at a price of two or three dollars for a purebred male. The value added to a flock of hens by the introduction of a purebred male is nearly always a hundred per cent. The mongrel is thus crowded out, and the flock becomes uniform. The new blood gives vigor, and a larger proportion of the chicks will be raised to render service next year, and they will then produce more eggs and meat proportionately than the present flock. There is nothing in which a farmer can more profitably invest a few dollars than in purebred males.

LEAVING out the matter of profit and of selling eggs, there is much pleasure in keeping a small flock of fowls for family use. A few hens can be kept at less cost, proportionately, than can a large number, owing to the fact that the scraps from the table are valuable. No labor of consequence is necessary, and when an account for the year is kept the small flocks will be found to have given quite a profit in the conversion of the waste material into eggs. There is no way to procure eggs as fresh and nice as those procured by your own hens. If they are of a choice breed, the pleasure will be the greater, as well from pride in endeavoring to excel as from the management.



Barred Plymouth Rock Cockerel.

SOME amusing evidence was given before the Welsh Land Commission by a gentleman seventy-four years old, residing on the estate of Colonel West, of Ruthin Castle. Witness created some laughter by stating that the spread of education would increase the difficulty of obtaining farm servants, "because it was much easier to carry a quill behind the ear than a spade in the hand." Lord Kenyon asked if he remembered when he paid part of his tithe in eggs. Witness: "Oh, yes; when I was a child. The parish clerk or servant used to come round and count the hens, and we had to give an egg for every hen and two for every cock."

Winter Egg Essentials.

I had been feeding two pounds a day of ground dried meat to thirty-five hens, and they were laying finely. To see if this had any effect on egg production, I stopped feeding it, and hung up fresh beef for them. Within three days they had about stopped laying, and I got only one or two eggs a day—and often none—for two weeks. I then resumed feeding the dry meat, and the number of eggs increased at once. This meat cost two or three cents per pound, and is much cheaper than fresh meat, as it has been cooked and is perfectly dry. It should be mixed

with soft feed, and given for breakfast. Ground dried fish is also excellent and cheap. Farmers' wives have the greatest opportunity for making poultry pay. There are the table scraps, the liquid in which meat and vegetables are cooked; and all the parings and vegetables too small for the table may be boiled and used to mix in the soft feed. This makes a variety, and also lessens the feed bill. Turnips and beets that have begun to grow in the cellar make a dainty relish. The birds first eat the tops, and then keep working until not a fragment remains.

It seems to me hens must be happy, or they will not lay many eggs. They really enjoy the dust bath more than any-

thing else. A box four feet square and six inches high, and half filled with dust, is suited to this purpose, as so many of them can get in at once. Place it in the front of a sunny window.—*Bessie Brown.*

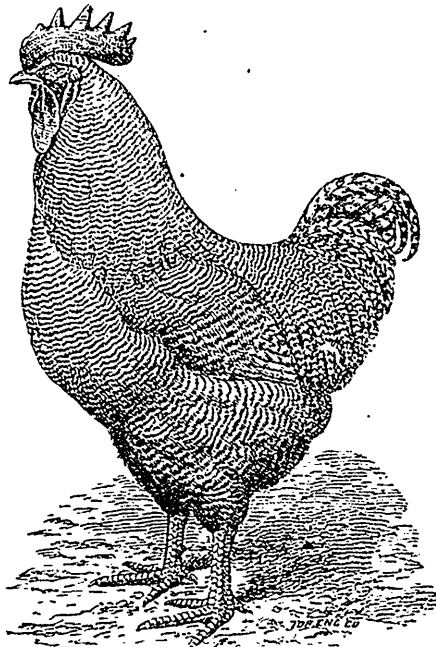
A Poultry House for the Farmer.

The editor is exceedingly sorry that he is unable to give the promised account of his new poultry house this month. He had everything ready for the printer, with the exception of the engravings. The artist engaged to prepare these was unable to get them finished in time for this issue, so

FARMING had to go to press without them. This is as much a disappointment to us as it can be to any one else. There is no use in publishing the article on the subject without the illustrations, and, as these were not ready, nothing could be done. However, they will be ready for the February issue.

Use Thoroughbreds.

Most farmers and farmers' wives, as the case may be, when about to set a hen inquire of the eggs only as to their freshness. They all know it is useless to set rotten eggs, but they don't care whether the hens that laid them are good layers or good for anything else—"an egg is an egg," you know. And thus it is that mongrels are propagated from year to year with only such improvement as comes from occasionally swapping "roosters" with a neighbor. If a little care were had in selecting eggs from the best hens, and mating them with a new male of some established breed every year or two, permitting no mongrel to perpetuate his race, a gradual but great improvement would be made in a few years, not only in the appearance of the birds, but in their table qualities and laying capacities. We try to improve other stock; why not fowls as well?—*Texas Farm and Ranch.*



Barred Plymouth Rock Cock,
Prize winner, Toronto Exhibition, 1885. Owned by Mr.
Thos. A. Duff, Toronto.

Cholera the Bugbear.

A writer in the *Ohio Farmer* "hits the nail on the head" in the following well-written description of the average cases of "cholera" afloat:

"Cholera is the bugbear of the farmyard. Under this heading almost every farmer can tell a 'tale of woe.' In his estimation it is the most mysterious, the most irresistible, and the most unaccountable disease of all the long list which curses man directly or indirectly, this one being indirect, but a curse nevertheless. If in the

spring, when weakened by a winter's campaigning with lice in the hen house, the weary hens 'shuffle off this mortal coil'—it is cholera. If in the early fall, when, during moulting season, insufficient food is provided, and the hens have neither sufficient vitality to grow new feathers nor even to stay inside the old ones, they give up the unequal struggle—it is cholera. If later in the year, when exposed to sudden and severe storms, they take cold and pass from that to roup—it is cholera. And if in the middle of such a dry, scorching summer as the present has been, the panting hens can find no water save the scanty supply of questionable quality afforded by the hog-wallow, and inoculated with who knows how many competitive breeds of microbes and bacteria, they succumb to circumstances beyond their control—again it is cholera."

This cholera question is developing a greater mystery each year. In almost every case the trouble can be traced to something else, like indigestion, lice, lack of blood, atrophy of the liver, enteritis, etc. And too much corn is the cause of many of these complaints.

Never forget this in poultry culture: The pullet that commences to lay earliest in life is the one to lay the largest number of eggs through life, as cattle that have the milk-producing organs active early make the best cows. Select the fast-growing, early-maturing specimens

that present in full the type and size found in the breed, and use only these as breeders, and the egg-producing merits will be increased. We have reported the wonderful product in single specimens, which can be made true of a flock. But it is care and attention to the flock that finds and secures these merits in the progeny. Neglect and haphazard breeding never pays.—*I. K. Felch, in Rural Northwest.*

Minorca-Leghorn Cross.

J. D. Arnprior: Would you advise crossing the White Minorca on the White Leghorn?

ANS.—I could hardly recommend you to do this. You would not gain much; perhaps a little size. White Minorcas lay larger eggs than the Leghorns, but it would be better to have them pure.

Poultry Farm.

J. L., Quebec: I wish to get information on the following questions, as I intend to start a small poultry farm in the spring:

(a) What is the best breed of fowl for this section of country (1) for eggs only; (2) for eating; (3) for general purposes, viz., combining both qualities?

(b) The building I am about to erect will be 40 feet long and 13 feet wide, 10 feet high, tapering down to six feet. How many birds can I profitably keep in that space?

(c) At what temperature should the house be kept during the winter months?

(d) Where can I obtain these fowls?

(e) While I am aware that experience alone will teach me, yet I should be glad if you could give me the name of a practical poultry book.

ANS. (a) (1) To my mind, the best breed of fowl for eggs only, in any country, is the Minorcas, either white or black. I think the White Minorcas lay a few more eggs than the Blacks, but the eggs are not quite so large. Eggs from matured Black Minorca hens will often run six

to the pound. Leghorns are splendid layers, but the eggs are rather small. Furthermore, a Minorca is not to be despised as a table bird. (2) Plymouth Rocks or Wyandottes of the pure breeds, or an Indian game crossed with a Rock or Wyandottes. (3) Plymouth Rocks or Wyandottes, or a cross of a Black Minorca on the Black Langshan or Barred Plymouth Rock. The Minorca cross is excellent, both for laying and table, but I am in favor of purebreds.

(b) Were I going in for eggs alone, I would divide my 40x13 poultry house into four divisions of 10x13 each, putting not more than twenty-five birds into each pen. This would give one hundred birds to the house. Of course, large outside

runs should be provided. In my opinion, you would get better results from keeping this number of hens in the house than any larger number.

(c) I am not an advocate of artificial heat, yet I prefer to have it rather than get my birds' combs frozen. I would advise the building of a house warm enough to prevent the fowls freezing. A house constructed with this end in view would, in the first instance, cost a little more than one in which artificial heat would have to be used, but it would soon pay for the extra expense. If you can prevent the inside temperature from becoming lower than twenty-five degrees, fowls' combs will not freeze and good results should be obtained. Of course, if you can keep the temperature at thirty-five, so much the better.

(d) You must consult our advertising columns. I cannot undertake to recommend any particular person.

(e) "Felch's Poultry Culture," or "Success with Poultry," by Grant M. Curtis, Quincy, Ill., are excellent helps.



White Minorca Cockerel.

1st, Toronto Exhibition, 1895. Owned and bred by Mr. Thos. A. Duff, Toronto.

Express Rates.

It will be pleasant news to our readers to hear that the Express companies in Canada and the United States have reduced the rates upon fancy poultry. The change took effect

December 1st. Fowl shipped in coops, other than canvas, are to be carried at single merchandise rates; if sent in canvas coops, the charge will be the same as heretofore—double merchandise rates. I have been shipping my birds in coops made as follows: Top and bottom solid, three-eighths lumber; I then tack canvas on the inside around the sides, and place slats, about three inches apart, on the outside. This prevents any heavy article from tearing the canvas, and is satisfactory to the companies. The coop is fairly light and comfortable. The reduction in express rates is quite a help to the fancy poultry business, and customers can now buy without the fear of having to pay exorbitant rates on their purchases.



Conducted by "AGRICOLA."

The Mice-Proof Granary.

"Agricola" very well remembers a farmer who secured the services of a builder to erect for him a new barn. It was specially mentioned that the granary should be mouse-proof, and yet the first thing that found its way into it after it had been erected was a mouse. Mouse-proof granaries are not as numerous as they ought to be, more especially when they are made within the barns. But it is not difficult to make a mouse-proof granary. If it is lined inside with any kind of metal, mice can never more gnaw their way into that granary, nor can rats. Before they could do so they would be toothless with old age. There is, of course, some expense about such a granary, but think of the corresponding benefit. Zinc sheeting inside will practically last for an age. A granary filled with rat holes and infested with rats and mice is a poor affair. A farmer is not well employed when he is working to support these little rodents.

The Farmers' Institutes.

These have come to stay. And they ought to stay, for they have been the medium of diffusing a great amount of valuable information. It is doubtless true that many farmers do not go to them even now. Probably those who have gone are yet very much in the minority. They have done good, notwithstanding, even to those who despise such aids. They have helped farming in various ways, and all the farming community has been benefited in consequence. To illustrate: One man goes regularly to the farmers' institutes and gets good from going. He puts the new ideas he has received into practice, and they succeed. His neighbor or who does not go to the institutes looks on, and, although he may despise the new-fangled notions at the first, he comes in time to see their value and adopts them. But he would learn more quickly if he could be persuaded to go to the institutes himself. How shall he be so persuaded? Why, you, reader, should persuade him. The readers of FARMING all go

to the institutes. It is those who don't read this paper who stay away. Go to your neighbor, then, several days before the institute, and tell him about it. Tell him you would like him to go and that you will call for him. In many instances you will succeed. The kindness done to that man will be appreciated in time, if not at the first. Some day he will thank you for your pains.

The Experimental Students' Union.

The union of the students and graduates of the Ontario Agricultural College is doing good work. The idea of co-operative experiments is a good one. With cereals it answers admirably, but not so well with live stock, in any of the lines thereof, owing to the much greater labor involved, relatively, in experiments with live stock. The meeting recently held was full of encouragement to the promoters of the movement. The interest in the work done is growing. Of course, the results reached can only attain to a certain level, that is to say, the experiments can only show which grains and other products of the soil for the time being are best adapted to the needs of the whole country, or to some particular sections of it. The best varieties will change. It has been so in the past. It will be so in the future. But to show the best varieties for the time being is an important achievement. Go on, young men. You are doing a good work. Do not weary in it. The country appreciates your efforts.

Farmers are Sure of a Living.

The times are hard, as everybody knows. Prices of many things are low, and the crop in some parts was not the best last year. Farmers, as well as others, feel the pinch; but it should be remembered that they do not feel it more than others, nor even as much. The farmer who is deeply involved may be in a bad plight, but not so the man who does not owe much. He is sure of a living, and a good living at that. If he is thoughtful and looks ahead he can raise his meat

and bread, his butter and vegetables, and, indeed, anything he may want. And he may have these things of the best quality. But, notwithstanding, it is oftentimes different. The farmer does not live well. He uses pork as meat much of the year. The few sheep that should be raised for slaughtering are not raised, and there is no nice young steer to kill at Christmas to provide fresh meat for a part of the winter. There are but few vegetables in the garden, and the small fruits are wanting. The table is lacking in that variety which is associated with healthfulness; hence the family do not possess that robustness of development which might be theirs.

The crowded cities will always have a stratum of starving citizens supported by the corporation in the winter season, and some of these may be willing workers; but yet they cannot get employment. It is not so with the farmer. His bread and water are sure, however much he may, in other ways, feel the pinch of hard times. Who wouldn't like to be a farmer when the fight for life with townsmen becomes a prolonged struggle? And who wouldn't like to be a farmer when the sun of prosperity is shining down upon all the land? For even then the farmer gets the lion's share of accumulating profits.

The Boy Who Read Farm Books in Winter Evenings.

This boy's chances were not good. His parents were not rich. He could only go to the village school in the winter. He had to leave school in the early spring and toil upon the farm all summer. But he came across some good farm books when yet a boy, and he got into the habit of reading them during the winter evenings. He became interested, and began to study them thoughtfully. His father took one good farm paper, and he read it with great care. He could hear the shouts of the other boys down on the mill-pond, as they skated on the bright, moonlit evenings of winter; but he only joined them now and then. He had found some old mines of knowledge, and he was anxious to get possession of their treasures. He came to many cross-roads in his reading, at which he did not know which way to go, for many things were obscure. But he read on, and when he got a new idea he put it in practice.

That young man never had the advantages of a higher education, and yet he is a professor in one of the colleges of this continent. He has been a teacher of professors in a certain line. He has written several farm books, and, if spared, may

possibly write several more. Don't feel discouraged, boys, even though you have a hard road to hoe. The future may be better than you dream of now. But remember, boys, preferment does not come by accident. That professor was placed where he is because he had information worth giving away, and you have just been told how he got this information.

Hay Scarce and Dear.

How is that, farmers? You answer that the frost was pitiless in the growing season, and the heavens refused to let any raindrops fall. True, all true. But did you plant any corn? The frost would not have hurt the corn at that time, nor was the weather dry enough to prevent it from growing had you planted it properly, and yet you did not plant any, and now you are short of feed. Why didn't you plant some? Come, now, answer, please. "Agricola" has great faith in corn as a fodder crop. If the ground is properly prepared, if good seed is used, if the planting is timely, and if the cultivation is proper, corn may be looked upon as a sure crop for fodder uses during any season, whatsoever may be its character. And corn may be planted for fodder, as everybody knows, well on into June; so that when it was certain that the hay crop would be short, the farmers should have rushed in a lot of corn. No crop brings so much food per acre for the labor, and now that a harvester has been invented for cutting it and binding it in sheaves when planted in rows, corn should be grown for feeding uses in immense quantities. In addition to the food which it produces when properly cared for, it cleans the land. Look into this corn question, farmers. There is money in it. A good crop of corn with hay away up in price is a fine thing, and when hay is plentiful and cheap it can be kept over when one has plenty of corn.

Plentiful Supplies of Manure.

The farmer who has not plentiful supplies of manure should certainly keep an eye to manurial production. His farm should be kept in good heart, if at all possible; if he is going to raise good crops. The lack may be made up in various ways. He may, for instance, grow green crops and plow them in, a system not very popular where land is scarce and dear, but under some conditions it is eminently wise to practise it. Or he may buy commercial fertilizers, a plan that will probably seem costly in these times of depressed prices. A third plan is to fatten live stock, even though a part of the manure has to

be purchased. This, probably, is one of the cheapest methods of obtaining manure in a part of the country where food supplies can be readily grown, and where live stock of a suitable kind can be bought for feeding at reasonable rates.

It may even be a good plan to purchase foods and feed them to live stock, with the object in view, mainly, of furnishing manure. Even though no money should be made from the feeding, where none is thus directly lost, the venture should be a good one to the man who is in want of manure. Too much attention cannot be given to the maintenance of the fertility of our farms.

Preparing Articles for Exhibition.

The exhibitions are over for a time. Some failed to get prizes who expected them, and who are still chafing, it may be, over such failure. They blame the judges, and it may be justly, but "Agricola" is of the opinion that such blame is just as likely to be unjust. Many persons who exhibit are not expert in preparing their exhibits. They fail, it may be, in the art of selection. Take, for instance, a bushel of potatoes prepared for exhibition. Some are very large, but some may be much less. Some are true to type in shape, and others are not. Some are rough where the bulk of them are smooth. Now, "Agricola" is of the opinion that it would be much better in every way to have the potatoes as nearly even as possible in size, as nearly true as possible in type, and without any roughness. He would sacrifice something in size to attain these three qualities. Farming, is not "Agricola" right? Now, the principle of selection just laid down is certainly applicable to all manner of exhibits of the vegetable order. Persons who put things on exhibition after the manner supposed in the illustration do not know how to prepare an exhibit, and consequently they do not know how to judge one. And if they do not know how to judge, they have no right to blame the judge. Stop grumbling, then, if you failed to get a prize last year, and so mend your ways that when you exhibit you will get one this year.

Why Leave the Farm?

Why should young people leave the farm for other lines of life? This question can not be quickly answered, as for every reason that can be advanced in favor of their leaving the farm ten reasons can be advanced as to why they should remain. Some of these reasons will now be submitted.

Farming is a most healthful occupation. The farmer spends much of his time in the open air and under the canopy of heaven. The atmosphere which he breathes is the purest. It is true that sometimes he is exposed to cold and storms, but these are not so irksome if he is properly prepared as regards clothing as he may be to meet them. And the exposure thus necessitated enables him the better to endure. It makes him but the stronger. It may be that farmers do not live longer than persons in some other lines of life; but if so, that is not the fault of the calling, but rather of the way in which the calling is used. Farmers are not as careful about their diet as people in some other lines of life, and this no doubt accounts in part for the shortened average in longevity with those who live upon the farm. With due care and discrimination on the part of those engaged in it, farming is, without any doubt, one of the most healthful occupations under the sun.

Farming is a most interesting pursuit. It is one of the grandest callings in this respect that man can engage in. There is a diversity in labor that relieves. There is a field for experimentation that is never-ending. There are problems for study and thought that are without any limit. The farmer who has the requisite ambition has a field for discovery which he never can fully explore. And when animal life is considered, the problems which face him become even more intricate and complex, so that no matter how long he may live he labors in a field which can furnish him with the most delightful study that can engage the attention of man. It is not so with those in many lines of life. Their pursuits are simply mechanical. Their work is of the tread-mill order. The same footprints are marked every day. The same weary rounds are trodden. The work is of the machine order, and cannot fail to become exceedingly monotonous and irksome, because of its unvarying sameness.

Farming is one of the most independent of occupations. The farmer is the most independent man in the world. He can go where he wants during a large portion of the year with less hazard than the men of other callings. This liberty is one of the greatest privileges ever bestowed on man. He naturally longs for the freedom which independence or liberty to do as he pleases gives him, and nowhere else can he enjoy this freedom more than on the farm. The business man is the slave of his customers; the farmer is the slave of no one. So far as concerns the manner in which his time shall be spent, he is absolutely free to determine. Of course this does not imply that he has any license to neglect his business, but it does imply that he can modify it to

suit his convenience. Generally speaking, he can do to-morrow, without any serious inconvenience, what he may not have been able to do to-day.

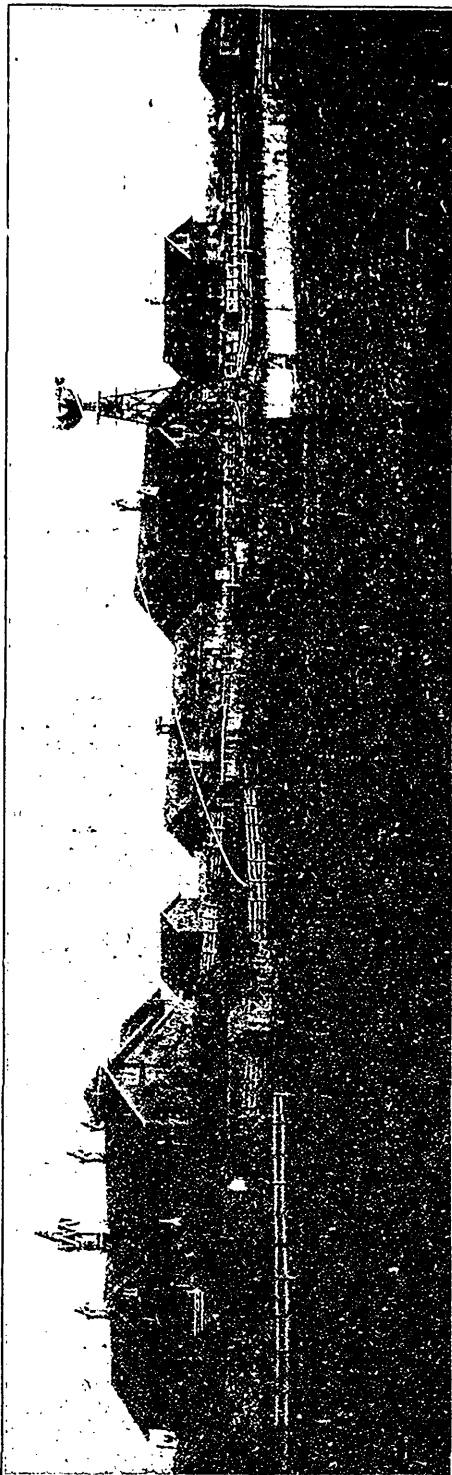
And farming is more remunerative than any other calling under heaven. The farmer who is at all provident and simple in his mode of life is sure of a good living for himself and his family. Over and above this, he is able to provide something for a rainy day. This is not true of the men of other callings; that is to say, it is not true of the rank and file of them. In business some make fortunes, but the many go the wall at some period of their business career. There is no calling in the world which is pursued by the many where the increment of earning is so great if the living of the farmer is considered, and, of course, it ought to be.

Young people on the farm, therefore, should not be anxious to leave it. They should rather, on the other hand, be anxious to equip themselves for doing it more effectively. The earnings of farmers would be much higher if their knowledge was greater, and when we say this we mean no disrespect to the intelligence of the average farmer. The farmer compares well with others so far as intelligence is concerned, but, owing to the nature of his calling, there is greater room in it for the profitable exercise of a higher intelligence than is found in many of the other pursuits of life. Because of this, if we were asked at the present time what is the great lack of farmers, we would unhesitatingly answer a lack of knowledge with reference to the principles which govern the results which are the outcome of their labors.

Young men, don't be in haste to get away from the farm. It is not all gold that glitters; things are not always what they seem. Within the gilded covering of many pursuits in life there hangs a skeleton. We do not see it until we pass the outer wall which is betimes so dazzlingly attractive. Young maidens, the farm is not a bad place for the average woman. The matron of a home in the country is assuredly the equal of a matron of a home in a garret of the city, and that is oftentimes the ultimate resting-place of those who are so eager to get away from the country. The country is a grand place in which to start life, as has been shown over and over again in the lives of successful business men. Why, then, should it not be equally suitable for the best exertion of manhood in its prime?

The Lake Elysian Stock Farm.

Account for it as we may, there is no denying the fact that Canadians, like Scotchmen and



Outbuildings at the Lake Elysian Stock Farm, Janesville, Minnesota.

Anglo-Saxons generally, usually give a good account of themselves when away from home. There are many of them scattered here and there throughout Minnesota, and they have, in nearly all instances, been found in the way of well doing. They are looked upon as being a very desirable class of citizens, hence we find our explanation of the many men, Canadian born, who hold office in this country. There is no line of life in which Canada is shown more brightly over here than in the line of agriculture. Not a few of the best tilled, and best managed, farms in this state are owned by men who commenced life in Ontario.

Prominent among the number of Ontario people who have distinguished themselves in the line of agriculture in Minnesota is Alexander Gunn. He came to this country some seventeen or eighteen years ago, with his two hands and a goodly supply of that energy and determination that is worth more to men than gold, and he is to-day one of the most comfortably situated, and, at the same time, one of the most advanced, farmers in the state. He is now the owner of the Lake Elysian Stock Farm, which consists of 880 acres of as good land, perhaps, as the sun ever shone on. His farm is one of the best equipped in outbuildings in all Minnesota. He has a large and goodly herd of Shorthorn cattle. His sheep run at times into the hundreds, for he is a feeder of sheep, and his swine are at all seasons numbered by the score. And when he visits his bank, he meets that welcome which is extended to depositors who are known to be as sound financially as the bank itself.

The accompanying sketches represent the steading of Mr. Gunn. The farm at one time comprised some 2,300 acres. It was known as the "De Graff Farm." Mr. Gunn was for many years its manager. When the estate was wound up, he became its purchaser, and sold off the surplus over what he wished to retain. Every acre of this land is worth at least \$40 to-day, and land in the vicinity is rising in price all the while.

Mr. Gunn has brought his Ontario predilection for live stock keeping with him. His stock is of the best in all that garden region, southeastern Minnesota, and he is one of the leading lights in all that section in the line of live stock production. He is at present looking toward the extension of his operations in sheep husbandry. It is his purpose to grow summer pastures for his sheep after the method adopted so successfully at our experiment station last summer.

Mr. Gunn is rendering yeoman service to our state in live stock production. Some animals are now being purchased from him for the Animal

Industry Department of our station. The value of such a man in a state that is almost wholly given up to grain-growing is probably over-estimated. Such men are the leaven which is to transform Minnesota from a grain-growing to a stock-producing state.

THOS. SHAW.

University Experimental Farm,
St. Anthony Park, Minn.

Roots or Corn.

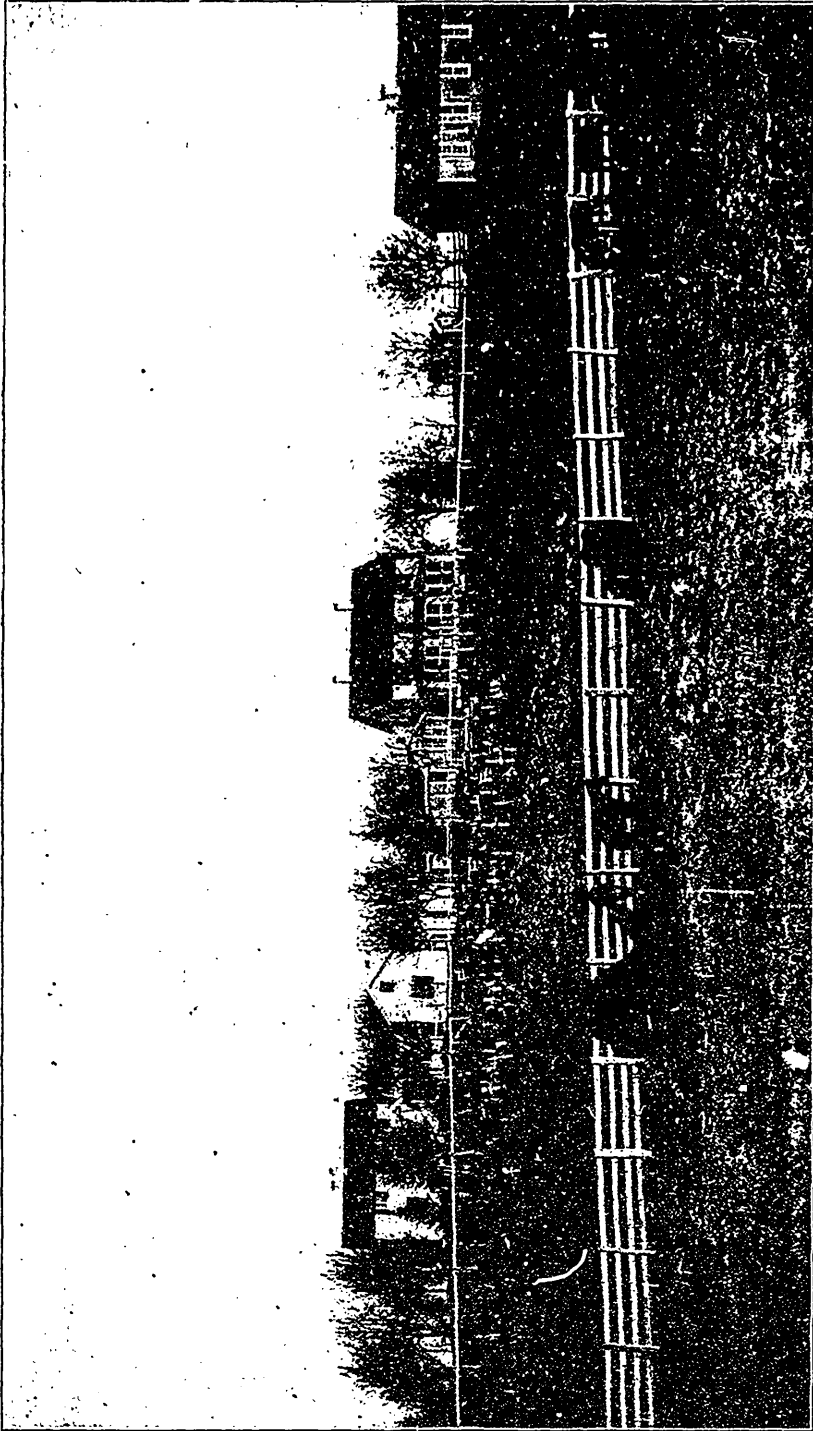
Which shall we grow, roots or corn? This question has never yet been satisfactorily answered, that is to say, it has never been answered in a way that will suit every one, and probably it never will be so answered. Strong and valid reasons may be given as to why roots should be grown, and reasons equally strong may be advanced as to why corn should be grown.

In answering this question, conditions should be carefully considered. The conditions are such as relate to climate, soil, and the extent of the work that is being done, also the precise object sought.

Climate alone may furnish a sufficient answer. If a climate is cool beyond a certain degree, it may mean that corn cannot be raised profitably in a certain locality, while roots may grow there very well, as they are more at home than corn in a land of low temperature.

The climate of Manitoba is certainly more favorable to the growth of roots, hence roots should have the preference in the rotation of the farmers of the prairie. But it does not follow that corn should not be grown there. And the same is true of the northern sections of Ontario. Sections further south are probably more favorable to the growth of corn, but it does not follow that roots should not be grown there. In each instance that should be given the preference which grows best, and it should be the most largely grown.

Soils should be carefully considered. A clay is not well adapted to the growth of roots, nor is it really adapted to the growth of corn. And yet a crop of corn can be grown fairly well on clay, but it will not grow as quickly as on a lighter soil. But few soils are so stiff that they will not grow a fairly good crop of corn if rightly managed, and yet many soils are so stiff that the attempt to grow turnips on them should not be made. A black loam will grow corn better than turnips, and a sandy loam that may be light in texture will grow carrots better than either. Adaptation, therefore, should receive due consideration. On the whole it would seem that



The Residence of Mr. A. Gunn, of the Lake Elysian Stock Farm, Janesville, Minnesota.

corn has greater power to gather food than roots, and it is therefore adapted to a wider range of soils.

The scale on which the crop is raised should have its influence. Corn can be raised more cheaply when it is raised in a large way and put into a silo. The same is measurably true of roots, but roots can be stored in small quantities nearly as conveniently as in larger lots, while the same is not true of corn when it is put into the silo. If it is a choice between roots and corn when the crop is to be handled in a wholesale way, the preference should perhaps be given to corn. But it should not be so decided unless the corn is to be put into the silo, for under conditions existing in the northeastern part of this continent corn cannot be very well handled in a large way, unless it is put into a silo. The snows there are too deep, and the autumn and winter storms too severe.

Then the object sought should be considered. If we want a large flow of milk we can get it from corn or mangels without taint, but not so easily from turnips. Of course turnips will be quite as good in producing a milk flow, but there will be more or less of taint when the turnips are freely fed, unless great precautions are taken in the feeding of the same. But when animals are being crowded in fattening, roots are certainly a safer food than corn, and when animals are being crowded for the show they are a better food than corn. They are especially excellent in pushing on young calves. The grower then should be influenced to some extent by the object sought in feeding, as to whether he will grow corn or roots, and as to whether he will grow both, and, if so, to which he will give the more attention.

A safe way is to grow both. Several reasons may be given in support of this view. First, it is safer to have a variety, because of variation in seasons. One may yield well when the other does not yield so well. Second, the labor in planting and harvesting does not come just at the same time; hence a moderate crop of each can be grown and handled more easily than a large crop of either. Third, the variatic in soils on the same farm may justify planting one crop on one kind of soil, and the other crop on a different soil, and, fourth, it may be more advantageous to have both crops to feed than to have only one. The better plan, therefore, for many farmers at least, is to grow both roots and corn, giving preference to the one or the other according to conditions.

The question as to which can be the most cheaply grown would probably be decided in favor of corn. But that is not the only question,

nor is it the most important question. The vital matter is which costs the least to produce it in proportion to the outcome from it. This question has never been satisfactorily answered, and probably it never will be.

Securing a Stand of Grass.

The grass crop of this country, from Lake Huron to the Atlantic, is the most important crop by far. And from Lake Huron to the Pacific, it will become increasingly important as the years go on. It would be difficult to conceive of any kind of farming in the area first named, without the frequent introduction of a grass crop. In the western region cropping can be pursued with more success without growing grass, owing to the greater richness of the soil, but, in time, the absolute necessity of growing some kinds of grass or substitutes for the same will be felt.

It is more important that a good "catch" of grass shall be secured than that a good grain crop shall be reaped, because a stand of grass continues for two years, and in some instances for a much longer period. And the influence of the grass crop upon the succeeding crops is generally much more beneficial than is the influence of grain crops upon the same. In fact, the influence of grain crops upon crops which come after them is likely to be harmful rather than helpful, except as regards peas. Every reasonable means, therefore, should be resorted to which is likely to secure a good stand of grass. And here it may be stated that, in some instances, on certain soils, and in certain climates, there will be failure in securing a catch, but the number of these may be greatly reduced by using judgment and skill in sowing the grass seeds.

We should aim to sow them early. There is much moisture early in the season, and generally but little moisture late. But if there is not a good prospect of getting more or less of a covering for the seeds when sown thus early, it would be better to wait and sow them later.

We should try to sow them so that they shall be covered more or less to enable the young plants the better to withstand drought. On winter rye and winter wheat this may be done sometimes, by scattering the seed when the ground is in a honeycombed condition. We sometimes find it thus just after the snow has disappeared, and when the frost is going out. This condition is caused by the alternate freezing and thawing of the ground when it contains much moisture. It is found in the most perfect form on clay and muck soils; in a less degree in loams, and least of all in sandy soils. In fact, it is not very often

that the plan succeeds on light soils. When seed is thus sown it has the advantage of an early start, and also of the moisture which the early season usually brings. When we do not find the conditions of soil named, that is the honey-combed condition, it would be better not to sow the seed thus early.

On spring grains the seed may with advantage be allowed to fall before the drill. On heavy clays, however, such sowing would probably bury the seed too deeply. On such soils it could fall behind the drill tubes and be covered with the roller. If a shower of rain were to fall before the intended rolling of the land, it would not be necessary to roll it. On prairie soils the seed should be buried deeply, to the depth of even two or three inches.

On winter rye and winter wheat, when the ground is not honeycombed, it should be sown as soon as the ground can be harrowed. And when the seed has been scattered it should be most thoroughly covered with the harrow. The harrow should be light. It should take a broad sweep, should have numerous teeth, and the teeth should have a backward slant when the harrow is in use. But on heavy soils the harrow may require to be heavy. There will be important advantages to the grain from such harrowing as well as to the seed, but we must not stay to mention these now. Care should be taken not to harrow the ground until it has become dry, or it will become impacted. It may occur sometimes that the ground will be wet until late in the season, but, even so, the chances will be better for the seed than if it had been sown early, and on a hardened surface and without any covering.

We should try to sow our seeds along with grains which do not furnish too dense a shade. Rye, wheat and barley are less dense than oats; hence they are more suitable as nurse crops for grass seeds than oats. Peas are not suitable, as they lie down on the soil after the blossoming period, and sometimes even earlier, and flax is usually sown too late to make a good nurse crop for grasses. Wheat, rye and barley are also cut before the ground has reached the driest condition. The sunshine then let in upon the young grasses is not as likely to kill them as if this were to take place at a later period, and the plants are all the stronger from having grown in crops where the shade is not so dense.

It may be necessary sometimes to sow grass seeds without any nurse crop. They may thus be given an early start. They have the advantages of sunlight from the first. They get the benefit of all the nutriment in the land, except what

is taken out of it by weeds. The disadvantages are, first, that virtually no crop is obtained that season; second, that weeds are likely to flourish; and, third, that killing them involves considerable labor when the season is very wet. But they may be kept in check by running the mower over them, it may be, two or three times during the season.

Two Root Crops in Succession,

L. Barber, Newcastle: Is it a good plan to seed down lands just after a root crop has been grown, or would it be better to grow two crops of roots in succession on the same land, since the growing of the first crop tends to clean the land, and therefore to lessen the labor of growing the second crop?

ANS.—No, it would not be a good plan. A grain crop sown with grass seeds should invariably follow a root crop. The root crop prepares the land for producing a good and a clean crop of grain, and one or more good crops of grass which come after the grain. These benefits could only be reaped to half the extent where two crops of roots were grown in succession, as compared with growing the same crops on different areas. And the two root crops in succession would be exhaustive to the land.

Books for a Young Farmer.

G. P., Yeovil.—What studies would you advise a young man, with a public school education, who wishes to be a successful farmer and breeder, to take up?

ANS.—(1) He should know something of soils and the chemistry of the farm. "The Soil of the Farm," by Scott and Morton, and "Farm Chemistry," by Warrington, will prove helpful in furnishing such knowledge.

(2) He should know about the way in which crops grow and how to grow them; "The First Principles of Agriculture," now used in the Canadian schools, will help him here. And he should get help also from "Grasses, Forage and Fodder Crops, and Root Crops."

(3) He should know how to keep his farm clean. "Weeds, and Modes of Eradicating Them," furnishes information on this phase of farming.

(4) He should understand the principles of breeding and feeding live stock. He can get help from such works as "The First Principles of Agriculture"; "Feeding Animals," by Stewart; "Cattle Feeding," by Armsby; and "Stock Breeding," by Miles.



Conducted by "DAIRYMAN."

IN raising dairy stock particular attention should be given to the sire. His record should be thoroughly known before his services are sought for. Like begets like, and this tendency is just as strong in the male as in the female.

SOMETIMES a cow may be overfed, but in the larger number of cases the cows on the average farm are not fed liberally enough. This will explain why it is that many cows that should be good milkers are unprofitable. If a cow will not be profitable on good feeding she will not be profitable when poorly fed.

THE best dairy cow does not belong to any one particular breed. There are several breeds that are known as dairy breeds, and from any one of these a good dairy cow may be selected. Searchers for dairy cows should not overlook the fact that very often there is as wide a difference between the cows of any one breed as between the cows of different breeds. More attention should be paid to the individual cow in the breed than to the breed as a class.

OF the total amount of butter exported from Denmark in 1893-94, 122,525,033 pounds went to England alone. The excess exportation of butter amounted to 91,000,000 pounds in 1894, against 79,000,000 pounds the preceding year. The average price in 1894 was 22.9 cents per pound, against 24.4 in 1893, a reduction of ten per cent., which proves that there has been, not only in this country but in other countries, a reduction in the price of butter as well as of other agricultural products.

THERE is one fact that cannot be too strongly impressed on the average farmer who keeps a few cows and makes a little butter to sell all the time, and that is that so long as he continues to make only an average quality of butter, he must come in competition with all the lower grades that are acting on the market, but as soon as he makes a grade or quality above these his competitors become less, and the better the quality the less the competition, and the less the competition the higher the price.

White Specks in Butter.

The usual cause of white specks in butter is keeping the cream too long before churning, so that the milk which is skimmed off with the cream thickens, and in churning is separated into white specks. In summer, unless one is careful about keeping the cream cold, the milk in it will change in two or three days. The specks seem to come more frequently, however, in cold than in warm weather. In this case it may be from some particles of the cream drying up hard. Then, too, the milk yield is much less in winter with most farmers than in summer, and the cream is kept two or three times as long before churning, which gives it a chance to dry around the sides and edges of the cream pail. The thing to do is to churn often, before the white specks have time to form. But, even then, it is not always possible to prevent their forming. With a barrel or box churn the churn should be stopped just as the butter has gathered in grains the size of wheat kernels. By drawing off the buttermilk and washing several times, most of the specks may be washed out. They come out just before the butter grains. There is no danger of washing out the butter flavor. You may wash out the flavor of buttermilk, but you cannot take out the real flavor of the butter. If you think so, just feed the cows a few onions and then try to wash the onion flavor out of the milk.

A Dairyman's Education.

In connection with the co-operative dairy system there are two important factors concerned—the individual who supplies the milk, or, as he is usually called, the patron, and the individual who makes that milk into butter or cheese. The education required by these parties, to a large extent, is the same. Each one, however, has his special duties to perform and to that extent he requires a special education or training. We will discuss the education or training of the maker first.

At the outset it may be worth while to state that it will not make the cheese or butter-maker

less skillful in his work if he is educated along many lines not directly connected with his own line of work. In fact, we believe that a maker ought to do much better work, other things being equal, if he has a good smattering of that kind of education that may be said to have for him only an intrinsic value. But to come to the practical side of the question. It goes without saying that a cheese-maker should be thoroughly skilled in the science of cheese-making and a butter-maker in the science of butter-making before their practical education can be said to be complete. But as to how much further he should go in the sciences that bear somewhat upon his work there will, no doubt, be a difference of opinion. Of course, the essential or practical must come first, but while acquiring it, he will become a better workman and have a more comprehensive knowledge of his business if he widens out a little and finds out something about the sciences which treat of milk and the conditions which affect it.

If the maker knows enough of the chemistry of milk to understand its different constituents and the portions of them retained in converting milk into butter or cheese, and the portions that go out in the whey or skim milk, he will be the better able to handle that milk, and to go through the process of converting it into butter or cheese with more skill and intelligence. If he has enough knowledge of the character of these milk constituents to understand how susceptible they are to decay, and how easily they are affected by outside conditions, he will be the better able to preserve the milk in a normal state and to produce a better product. If he knows something of the science of bacteriology he will understand that every cesspool, every place where filth and dirt are allowed to accumulate, every neglected drain and unclean factory utensil, and every filthy, bad-flavored whey or skim-milk tank, is a breeding ground for myriad forms of germ life that will produce bad flavors in milk and its products. He will also understand that milk and its products are very suitable mediums for the growth of these minute creatures, and will learn something about the methods used to promote the growth of the germ life desirable to have in the milk, and to counteract the growth of the germ life that will cause injury to the milk. Besides, it will be beneficial to the maker to have a somewhat intimate knowledge of this science, which is so intimately connected with dairying, in order that he may instruct his patrons in the best methods of caring for and handling the milk, so as to preserve it in the best condition for cheese or butter-making.

If the maker has a more or less practical knowl-

edge of the breeding, feeding and caring for dairy cows, he will be in a position to give information that will be helpful to his patrons, and by so doing he will be improving the quality of dairy farming in his district, which will help his own business, inasmuch as it will tend to produce more milk and a better quality of milk.

Then, again, every maker should have a good English education (reading, writing and arithmetic), so that he may be able to assimilate and digest properly what he reads, to keep with accuracy all accounts connected with the management of a cheese-factory or creamery, and to place such accounts on paper in a neat and tidy manner. We regret to say that the large number, in fact, it is quite safe to say the majority, of our makers who are managers of factories are very much lacking in this respect. Too many of them have gone into the dairy business with only a mere smattering of an English education, and though they have had four or five months to idle around during the winter, have not taken advantage of it to make themselves more proficient in these branches. For these there cannot be any very reasonable excuse, as the public schools are open to everyone who is willing to take advantage of them. To show what can be done by application, we recall one particular instance of a young cheese-maker who started out to get a better education. Previously to learning to make cheese he was sufficiently advanced to be admitted to a collegiate institute. After becoming manager of a factory he began by attending one of the best collegiate institutes, where after two winters' work he matriculated into Toronto University, from which after a few years he graduated, taking the degree of B.A., with honors in the department of natural sciences. All this took six years to accomplish. During this time he managed successfully a cheese-factory in the summer months. In fact, it was only by the strictest economy and carefulness that he was able to earn enough money during the cheese-making season to pay his way through college during the winter. It meant six or seven years of hard work to that young man. But he has the satisfaction of knowing that he accomplished something definite, and that he has been amply rewarded by the knowledge obtained. He holds to-day a responsible and important position in connection with the dairy industry.

We would not advise every maker to aim so high, but we would urge upon such makers as are lacking in this respect to make good use of their spare moments. The age and the times demand it. The cheese and the butter-maker holds an important position in connection with the dairy

business. If he is able to give the patrons information that will be helpful to them, because he has a wider knowledge of dairying than that which pertains to the mechanical part of cheese or butter-making, he will easily gain their esteem and good will, and they will be very loth to have him leave that locality. If, on the other hand, the maker does not fit himself, and does not take any interest in his patrons, and is not able to give them any help, he may rest assured that they will not take any interest in him, and will not have the least compunction about cutting him down in the price of making, or even getting a cheaper man to take his place.

It may be asked when and where can all this training be secured? The *when* is easily answered. No one has as much leisure during the winter for self-improvement as the cheese-maker. He has the whole winter to himself, if he has the mind to take advantage of it. The *where* is also as easily replied to. Special training in practical cheese and butter making, and practical information regarding some of the subjects mentioned above, which bear upon the science of dairying, are given at the various dairy schools. It is a matter of some regret, however, that there is not time for more of these allied branches of study in connection with the dairy courses at the dairy schools. If the time were extended so that a wider training could be given, these schools would accomplish more. However, the training at such institutions is excellent, as far as it goes, and no cheese or butter-maker should consider his education completed till the dairy school course has been taken, thoroughly assimilated, and put into practice. The maker will have to pay his board during the winter, in any case, and he can just as well pay it in a place where educational advantages can be had. The cost outside of board is merely nominal. Then there are the public and high schools and collegiate institutes, which afford exceptional educational advantages. If none of these can be taken advantage of, then get books and train yourself. Some of the brightest men of the century have educated themselves in this way. As we have already overrun the space allotted to this subject, we will reserve what we have to say regarding the patrons' education for another issue.

The Season's Trade in Cheese and Butter.

The *Montreal Gazette*, in a recent issue, gives an interesting summary of the season's trade in cheese and butter from Canada. The prices for cheese have been lower than they have been for ten years. It is estimated that the producer has

received on an average one and a half cents less per pound for his cheese than in 1894, or a difference of over \$2,000,000.00. In 1894 exporters were satisfied to handle cheese for three-sixteenths of a cent per pound; last year they had a margin of about one cent to work on. No one should begrudge them this wide margin, as the previous season some of them suffered heavy losses. In fact, it is estimated that holders of that year's cheese in Liverpool, London, and other British markets dropped as much as \$3 per box when put upon the market last season.

The *Gazette* estimates that the quantity of cheese exported last year will equal that of the previous year. There were many new factories in operation last season, and had the low prices and the dry season not interfered the exports would have been considerably in excess of the previous season's. The quantity made is given in boxes for the last three years as follows:

	1895.	1894.	1893.
Quantity.....	1,710,715 lbs.	1,712,715 lbs.	1,682,946 lbs.
Cost price.....	8¼c.	9¼c.	9¼c.
Country value.....	\$9,751,200.00	\$11,839,200.00	\$11,338,900.00

The ruling prices in the country are given as ranging from 6c. to 7¼c. in May to 8¼c. to 9¼c. in November for 1895, and from 9¼c. to 10¼c. in May to 9¾c. to 10¾c. in November for 1894. The cable for the same time is given as ranging from 40s. to 40s. 6d. in May to 45s. to 46s. 6d. in November for 1895, and from 52s. 6d. in May to 48s. 6d. to 51s. in November for 1894.

The exports of Canadian butter have been more than double those of 1894. The prices for the season have ruled about one and a half cents lower, though the improvement in the fall increased the average very much. The stocks this fall are pretty well cleaned up. Jobbers seem to be depending upon the winter creameries to supply their trade. The following table shows the quantity shipped, and the prices realized for it:

	1895.	1894.	1893.
Quantity.....	69,664 lbs.	32,065 lbs.	76,944 lbs.
Cost price.....	18¾c.	20½c.	19¼c.
Country value....	\$654,800.00	\$328,600.00	\$749,000.00

The cheese and butter markets still continue dull. In the former there seems to be a standstill, which may remain till after the holidays, when an upward movement is looked for. More is being done in butter on the local markets, as orders from the other side are such that it will pay exporters better to unload here.

Source of the Butter Flavor.

By PROF. H. W. CONN.

We may ask whence comes this butter flavor? It would be natural, perhaps, to suppose that it is

due to butter fat as such, but that appears to be a mistake, as chemical changes are necessary in some of the constituents of the butter in order to develop the butter aroma. Unaltered fat of milk has little taste, and the flavor of the butter is not due to this, its chief constituent. It is a general belief, furthermore, that the butter aroma is due to the presence of acid in the cream after ripening, and most butter-makers believe that the object of ripening is to make it acid. This, again, is a mistake, or, at least, only a half truth. Lactic acid does not furnish the delicate flavor which we find in butter. It is probably true that its sour taste is a part, but only a small part, of the butter flavor. In some experiments a high quality, almost typical butter flavor, was obtained without a trace of acid, either in the ripened cream or in the resulting butter. Cream may be ripened, and ripened completely, without its becoming acid in the slightest degree. It is probably true that in the best quality of cream ripening acid should be produced, but its production is not the chief factor in butter flavor.

The butter aroma which appears in the butter is the result of the ripening process. Sweet cream butter does not have this delicate flavor, and while there is a demand in our markets, perhaps a growing demand, for sweet cream butter, it never develops the delicate flavor known as butter aroma. During ripening certain changes take place in the cream, some of which we understand, while others are at present beyond the reach of chemical knowledge. The composition of cream is essentially the same as that of milk except in the higher proportion of fat. It is made up chiefly of butter fat in the form of globules, of casein in a partial suspension in the liquid, of milk sugar solution, and of a small amount of albumen probably partly in solution and partly in the form of an extremely delicate network of fibres which we call fibrin. Cream always contains a large number of bacteria, yeasts, and moulds, which are the active agents in ripening. The sources of these micro-organisms are varied. They are not present in the milk when secreted by the cow, but find their way into it in a variety of ways. Some come from the air; some from the hairs of the cow; some from the dust of the barn; some from the hands of the milker; some from the milk vessels; and others from sources of contamination. The chances of contamination are sufficient to stock the milk with an abundance of these organisms under all circumstances. By the time the cream has reached the creamery it contains organisms varying widely with temperature and other conditions, and it is to these that the subsequent ripening is due.

The ripening of cream is carried on at a moderately warm temperature, 68° or 70° F. being usual for this purpose. At this temperature bacteria are stimulated into active growth, and during the twenty-four hours or more of ripening they multiply with extreme rapidity, and at the end of the ripening period the number of organisms in the original cream varies with the time of year. In the winter the cold weather keeps the bacteria from growing rapidly, and the cream supplied to the creameries at this season contains a smaller number of bacteria than in the summer. Most creameries find it necessary in winter to inoculate their cream artificially with bacteria to produce proper ripening, by the addition of what is known as a "starter." This consists of a little ripened cream or buttermilk and is added to the fresh cream to hasten ripening.

During the period of ripening, the organisms are growing and producing profound changes in the cream. Bacteria are primarily destructive agents. During their growth they are pulling to pieces some of the chemical compounds of the cream and reducing them to a condition of greater simplicity, giving rise in this way to a great number of so-called decomposition products. Chemistry has not yet explained all of these changes. A few of them we partially understand. We know that some of the organisms act upon milk sugar, converting it into lactic acid, with the production of carbonic acid gas as a by-product. We know, also, that sometimes butyric acid is produced, and that sometimes ferments, similar to rennet and trypsin, make their appearance in ripening cream. Alcohol is also a common product, so much so that the butter flavor has sometimes been attributed to this product alone. We know, moreover, that the products of decomposition of albumen are numerous, but we have at present practically no chemical knowledge of the methods of the albumen decomposition, or of the chemical nature of the products. These products of decomposition readily make themselves known to us through the senses of taste and smell. If the decomposition is allowed to continue long enough the products are extremely unpleasant to these two senses. An over-ripened cream gives us a strong suggestion of putrefaction and decay, and the resulting butter is poor. The earlier products of decomposition, however, do not show these unpleasant flavors, but, on the contrary, are delicate and delightful, both to taste and smell. Indeed, these decomposition products give the desirable flavor to butter. It is the purpose of the butter-maker to stop the ripening at just the right period, after the proper decomposition products have made their appearance, and

before they have broken to pieces enough to reach the condition of putrefaction and decay. The cream is, therefore, churned at an early stage in the ripening, and the products of decomposition give the aroma that the butter-maker is searching after. These products of decomposition are probably largely due to the decomposition of the albumen. The milk sugar plays probably no part except in the production of the acid taste in the butter, but whether the decomposition of the casein enters into the composition of the butter flavor is not as yet known. If the flavor is due to the albumen decomposition, it will follow that cream should be differently treated in accordance with the amount of this product that it contains. Cream separated by the centrifugal contains less of the albuminoid material, and hence requires a different treatment in ripening from gravity cream.

Dairying in British Columbia.

By J. A. RUDDICK, of the Dominion Dairy Commissioner's Staff.

The province of British Columbia is the only part of the Dominion of Canada wherein there is not sufficient cheese and butter made to supply the local demands.

About two and a half million dollars' worth of food which farmers could supply is imported into that province annually, and the two items of butter and cheese make up a large share of this amount.

In British Columbia there is a larger proportion of the population which is able and willing to pay high prices for goods of finest quality than in any other part of Canada.

The country is well adapted for successful dairying, both as regards the production of milk and the manufacture of butter and cheese.

Choice creamery butter in 1 lb. prints, the product of a local creamery, sold readily in Victoria and Vancouver last summer for 35 cents per lb. There was not enough of it to supply one half the demand.

There are many individual farmers who are very successful in a private way.

With these facts before us one can easily imagine that there will be a considerable increase in the production of butter and cheese during the next few years.

At the present time there are only two cheese factories (one a large private one), both in the Chilliwack district. At the time of my visit (Sept. 1st) the factories were both turning out first-class cheese. A creamery was in course of erection in the town of Chilliwack.

The first and only creamery in operation last summer was the one situated on the "Delta" near the town of Ladner (formerly Ladner's Landing). It was the product of this creamery which sold for 35 cents per lb., while the tub creamery, sent in from outside, was selling from 20 to 25 cents per lb. The butter from the Delta creamery was of fine quality, and put up neatly in pound prints, and, most important of all, it was sent to customers fresh every day or two.

If any eastern shippers have the idea that the British Columbia market is not a critical one, let me assure them that they never made a greater mistake. I mention this because I know this opinion was held by some not long ago. It is true that they have taken a lot of poor butter in past years, but it was because they could not get any better.

All last summer the supply of really choice butter was not equal to the demand; yet, speaking generally, the market was in a glutted condition all the time, filled up with medium or poor grade goods.

Agitations are on foot to start creameries at Sumas and Langley, on the mainland, and at Duncan's on Vancouver Island.

Comox, about 150 miles north of Victoria, is a flourishing dairy district, having a good market at the Union mines near by. It is very likely that a creamery will be started at this point before long.

I was informed that there is considerable dairying carried on north of Ashcroft on the Cariboo trail, some of the ranches having as many as 60 to 100 cows.

Many farmers are handicapped by not having the right kind of dairy cattle. Although there are many splendid herds, too many of them have a good deal of "cayouse," or native blood, in them, and, on the whole, they are not very profitable milkers.

The climate is favorable, being mild, and over a great deal of the country the rainfall is sufficient to ensure abundant pasture and winter feed.

Dairying in Britain in 1895.

EIGHT MILLIONS STERLING OF INCOME LOST.

The year 1895 has proved itself to be a year of disaster for the dairy farmers of the United Kingdom, both seasons and markets having been against them. A special inquiry into the subject just made by a writer in the *Daily Chronicle* shows that all the crops upon which the dairy farmer relies for his cattle feed have proved more

or less poor and deficient; the yields of milk, cheese, and butter have been at least some ten per cent. less in quantity than usual; the heat in September has caused premature and over-ripening in the cheese rooms; while prices of all dairy produce show a great decrease as compared with previous years. There is also a smaller stock of hay in the country than has ever before been the case, the roots for winter feeding will be short, and this follows a year that has been—except for about two months in the summer—more than usually difficult and expensive. What a decrease of ten per cent. in the yield means can be easily seen. The best estimate, and the latest, shows that in 1894 our dairy production, exclusive of the milk used for calf-rearing, was 583,000,000 gals. of milk sold for human consumption; 6,964,400 cwt. of cheese made, and 1,736,600 cwt. of butter. Compared with this the yields in 1895 would be:

DAIRY YIELDS IN 1894 AND 1895.

	1894.	1895.
Milk sold.....	583,000,000 gals.	524,000,000 gals.
Cheese made.....	6,964,400 cwt.	6,268,000 cwt.
Butter made.....	1,736,600 cwt.	1,563,000 cwt.

With this decrease in the quantity made there has also been a decrease in values, which may be fairly put at 10s. per cwt. for cheese and 10 per cent. for butter, the milk sold being still put at the 6d. per gallon, at which its value was estimated in 1894. This would give us the following as the values of the yields in 1894 and 1895:

VALUE OF DAIRY YIELDS IN 1894 AND 1895.

	1894.	1895.	Decrease.
Milk sold.....	£14,575,000	£13,117,000	£1,458,000
Cheese.....	17,366,000	12,536,000	4,830,000
Butter.....	8,693,000	7,933,000	1,650,000
Total.....	£40,624,000	£32,686,000	£7,938,000

These figures show the serious loss which diminished yields and lower prices have occasioned this year to our dairy farmers. In estimating them I have endeavored to keep well within the mark, and have allowed for milk-selling at the same price as in 1894, and have understated the decrease in the values of both butter and cheese. For the latter, the lowest loss put by any of my correspondents is 12s. per cwt., while some have put it as high as 17s. When the increased expenditure of the year is considered, and also the value of the decreased hay stocks, and the loss from the small root crop, the total decrease in the financial position of our dairy farmers cannot be put at much, if any, less than some twelve or thirteen millions, and of this eight millions is a clear loss.—*British Dairy World*.

Spayed Cows.

Those who make a practice of slaughtering all calves dropped and depend on new purchases, to restock the dairy herd would do well to consider the advisability of spaying their cows, thus making them continuous milkers for several years, without delay for calving and the necessary tax of parturition and developing the fetus. This method is quite common in England and has some decided advantages. Prof. Robt. Wallace writes that spayed cows will milk constantly for years and give on the aggregate a larger yield than cows which calve annually in the usual way. The milk resembles that of farrow cows, being richer than that of cows which have been some months pregnant, but the great gain is in the conservation of the food and energy necessary to produce a calf.—*Farm and Dairy*.

Wet Milking.

We never could fathom the inwardness of the practice of wet milking. No milker that we ever met could give a satisfactory reason for adopting the habit. Every milking we ever examined in which they participated had a decidedly cowy odor that was not present when the herd was dry milked. The habit of the wet milker in placing his fingers in the milk, or squirting the fluid on them direct from the cow, is an all-sufficient cause for the odor. Such milk is unclean, and no treatment that can be applied to it can sensibly alter its character. A person afflicted with the wet milking habit, for it is a grievous affliction, should be scrupulously neat concerning the things he handles at milking time. A thorough washing of the hands should be a cardinal requirement with him previous to beginning the operation of milking, and a vessel containing clean water to moisten the fingers should be among the chief requisites of the proceedings. Better still, abandon the nasty method by learning the cleanly dry way of milking. The latter has the advantage of leaving the teats uninjured by chaps in cold weather, as well as relieving the milker of the suspicion that he is in some degree responsible for the offensive odor in the fluid.

The matter of chapped teats in winter is one that is a trouble to cow and milker. Where the latter is of the wet sort the clap trouble is constantly augmented, for the reason that the cause for it is reinforced at every milking until the cow becomes fractious at such times and gives an inferior yield in quantity and quality. Wet milking has always been in our thought as filthy milking and barbarous withal. Cows dry milked can be

stripped easier and better than by the other method of milking. In a dark stable during the winter the accidents possible to milk, when the cow is handled by a wet milker, are too suggestive to require description. The best that good care and feed can accomplish can be overcome by the foulness that is inseparable from wet milking. —*American Dairyman.*

Holstein-Friesian Tests.

The Holstein-Friesian Association of America, at its annual meeting in March, 1894, passed a resolution authorizing the payment of \$1,000 in prizes for authenticated weekly butter records made under the supervision of the Superintendent of Advanced Registry, or some inspector designated by him, or under the direction of an officer

ing about the same as those of food fed at the World's Fair dairy tests.

Six breeding establishments were represented, and twenty-five of the thirty-five animals tested are accounted for in the following list, the ten two-year-old heifers being omitted in order to make a more direct comparison with the twenty-five mature Jersey cows that were tested at Chicago and were the winners in that test. For further comparison with the Chicago tests the butter is credited at the same price, forty cents per pound; but in another column is shown the net profit at twenty-five cents per pound, in order to show the profits that can be made from Holstein cows at everyday prices.

The butter of the Holsteins was calculated by the rule established at Chicago of eighty per cent. fat. Eighty pounds of skim-milk, in the Hol-

Name of Animal.	Age.	Pounds and oz. of milk produced in one week.	Av. per ct. fat.	Total w'k's at. bs.	Am't butter 80 pr. ct. fat. lbs.	Value of butter at 40c. per lb.	Value of skim milk at 20c. 100 lbs.	Value of butter and skim milk.	Cost of all food consumed w'k's test.	Net profit above food cost, butter at 40c. per lb.	Net profit above food cost, butter at 25c. per lb.
Mutual Friend 3d.....	3	409 3	4.27	17.472	21.940	\$ 8.74	\$.654	\$ 9.394	\$ 2.85	\$6.544	\$3.284
DeKol 2d.....	10	586 12	3.96	21.261	26.876	10.63	.858	11.488	2.69	8.800	4.812
Mutual Friend 2d.....	7	585 2	3.52	20.608	25.760	10.30	.936	11.236	3.32	7.316	3.456
Rosa Bonheur 5th.....	5	682	2.97	20.270	25.337	10.13	1.091	11.221	2.68	8.541	4.745
Canary's Mercedes.....	6	409 8	4.39	20.129	25.161	10.06	.654	10.714	2.80	7.914	4.144
Houwte D.....	6	626 2	3.00	18.790	23.437	9.39	1.000	10.390	1.46	8.930	5.411
Netherl'd Pietertje Prince's	3	361	4.02	14.496	18.120	7.25	.578	7.828	.99	6.833	4.118
Bell Sarcastic.....	4	548 8	3.02	16.590	20.737	8.29	.877	9.167	1.46	7.707	4.601
Inka 4th's Pietertje Rose,	4	509 6	3.44	17.622	21.902	8.76	.814	9.574	2.24	7.334	4.049
Pietertje Hengerveld.....	4	492 2	3.56	17.482	21.852	8.74	.787	9.527	2.24	7.287	4.010
Nannetta'd's Pledge.....	4	381	4.84	17.470	21.837	8.73	.578	9.308	2.24	7.063	3.797
Netherland Hengerveld.....	0	405	3.48	16.187	20.233	8.09	.744	8.834	2.24	6.594	3.562
Helena Burke.....	4	412 8	3.41	14.348	17.935	7.17	.659	7.829	.99	6.839	4.162
Jessie Beets.....	6	412 10	3.74	15.445	19.306	7.72	.659	8.379	.99	7.389	4.405
Weitske's Pappoose.....	4	353 6	3.53	12.485	15.606	6.24	.564	6.804	2.24	4.564	2.225
Netherland Sada.....	7	387 2	3.02	14.012	17.615	7.01	.619	7.629	2.24	5.389	2.757
Neth. M. A. Constance.....	4	439 9	3.16	13.824	17.280	6.91	.702	7.612	1.63	5.922	3.332
Aaggie B.....	5	412 12	3.25	13.400	16.750	6.70	.659	7.359	.99	6.369	3.856
Aulinda 2d.....	5	301 4	3.57	13.312	16.640	6.66	.578	7.238	2.84	4.398	1.698
Zur 2d.....	7	398 14	3.32	12.900	16.250	6.50	.621	7.121	2.24	4.881	2.448
Woodland Queen.....	7	343 4	3.59	12.320	15.400	6.16	.549	6.709	2.24	4.469	2.159
Bibiana's Pet.....	7	385 2	3.13	12.137	15.171	6.07	.616	6.686	2.24	4.446	2.169
Johanna 5th.....	7	592 8	2.98	17.653	22.072	8.83	.947	9.777	1.92	7.857	4.545
Schoone.....	11	452 11	3.34	15.120	18.900	7.56	.723	8.283	1.24	7.043	4.208
Countess Clothilde.....	4	316 5	3.84	12.134	15.167	6.07	.506	6.576	1.63	4.886	2.607
Totals.....		11,242 10			496.884	\$198.71	\$17.973	\$216.683	\$51.36	\$165.325	\$90.814

of some experiment station; such prizes to be offered for animals of various ages. Thirty-five cows and heifers entered for this competition, ten being two-year-old heifers, ten three and four years old, and the remainder from five to eleven years old.

Being desirous of ascertaining the amount, kind, and cost of food consumed by each animal in this test over three years old, to see how profitably and economically Holsteins could produce milk and butter, Mr. W. J. Gillett, Rosendale, Wis., drew up the accompanying table. In making it up, the cost of production was figured on the basis of its actual food cost when purchased, or at its market value if raised on the farm owned by the proprietor, the prices, on the whole, average

stein test, are credited to every one hundred pounds of whole milk, and the skim-milk figured at twenty cents per one hundred pounds; and the fact that the tests were personally and directly supervised by representatives of different experiment stations or state institutions of the state from which the cows were entered establishes the absolute accuracy of these tests by the highest authority.

In the Chicago test the cows were credited four and one-half cents per pound for every pound increase in live weight, which factor is not taken into account in the Holstein test.

In reference to this table, Mr. Gillett writes:

"The total seven days' milk of the twenty-five Holstein cows was 11,242.63 pounds, an average

of 64.24 pounds per day. The average milk per Jersey cow per day for the first week of the ninety days' test at Chicago was 36.6, which is exceeded by the Holsteins by 29.64 pounds per cow per day.

"The total week's butter of the twenty-five Holsteins is 496.83 pounds, an average of 19.87 pounds per week, or 2.83 pounds per cow per day. The average amount of butter produced by the Jerseys in the ninety days' test was 170.96 pounds, or 1.89 pounds per cow per day, which is exceeded by the Holsteins by .93 pounds per cow per day.

"The food cost of one pound of butter for the Holsteins was 10.33 cents, and that of the Jerseys 13.75 cents per pound, from which it will be seen that the Holsteins produced a pound of butter by over three cents cheaper per pound than did the Jerseys.

"The highest net profit per day of any cow in the ninety days' test was that of Brown Bessie, of eighty-one cents. The average net profit per day of the entire twenty-five Holsteins was ninety-four cents per cow, and, coming down to a practical and reasonable basis of twenty-five cents per pound, we find the average net earning of the entire number of Holsteins to be fifty-one cents per day, which is conclusive evidence that the Holstein cow can yield a handsome profit, and is not an expensive cow for the dairyman of this country to keep.

"The highest week's yield in butter during the ninety days' test was that of Brown Bessie, of 20.163 pounds, which is exceeded by twelve of the twenty-five Holstein cows, and of these one cow was three years old and four were only four years old.

"The best day's production of butter of any cow in the ninety days' test was that of Brown Bessie, of 3.48 pounds. The best twenty-four hours' yield of any Holstein was that of De Kol 2nd, of 4.308 pounds.

"During the World's Fair test, only eight times was a yield made of upward of three pounds of butter in a day, and in the Holstein tests ten of the twenty-five cows averaged over three pounds per day for the entire week."

the first attempt, and that the prizes were not as large as could be desired.

Eleven cows competed, made up of one Short-horn, Holsteins, Ayrshires, and Grades. The following table gives the amount of milk, fat, and solids not fat produced by each cow in the twenty-four hours' test, taken in catalogue order :

Name of cow.	Breed.	Owner.	Pounds of milk.	Pounds of butter fat.	Pounds of solids not fat.	Total points scored by each cow.
Lady Bright.....	Shorthorn.....	Herbert Wright, Guelph.....	45.31	1.16	4.14	102.07
Calamity Jane.....	Holstein.....	A. & G. Rice, Curries.....	59.18	2.99	6.46	153.06
Aaggie Lady of Lorraine.....	Holstein.....	Wm. McClure, Norval.....	47.19	1.65	4.33	116.11
Eunice Clay.....	Holstein.....	A. & G. Rice, Curries.....	40.68	1.33	3.22	108.26
Aaggie Ida 5th.....	Holstein.....	Wm. McClure, Norval.....	35.53	1.24	3.11	99.97
Ada.....	Ayrshire.....	W. M. & J. C. Smith, Fairfield Plains.....	56.31	1.79	4.09	129.07
Jean Armour.....	Ayrshire.....	Wm. Stewart, jr. & Son, Menie.....	31.16	1.17	2.76	87.62
Gurta.....	Ayrshire.....	W. M. & J. C. Smith, Fairfield Plains.....	31.13	1.21	2.95	87.53
Rose.....	Grade.....	James Bowman, Guelph.....	46.5	1.	4.26	113.82
Nancy.....	Grade.....	Hugh McDougall, Guelph.....	24	1.10	2.26	81.04
Blue Bell.....	Grade.....	D. Kelcher, Guelph.....	21.07	1.01	1.96	68.61

The Dairy Test at Guelph.

At the Provincial Fat Stock and Dairy Show held at Guelph on December 10th, 11th, and 12th, the test of dairy cows excited considerable interest among those present. The number of dairy cows competing was not as large as the promoters of the test would have liked, but was very encouraging, considering the fact that this was

Improving the Herd.

Professor I. P. Roberts, of Cornell University, New York, gives the following advice relative to improving the dairy herd: "Sell the poor cows and begin breeding and filling up the vacancy with better ones. Choose the best and breed them to a sire from a butter-making family. Breed a dairy cow according to the law of dairy breed-

ing. The man who runs a steamboat does it by the law of steamboating, not of railroading; if he did not he would get stuck in the mud. When you have secured a good cow, get her to eat all she can. The more you coax her to eat the better, as profit comes alone from foods. Don't starve the calf; you cannot afford to let it stop growing a minute; neither teach it to make fat; if you do, when she is four years old and you will ask her for milk, she will say: 'No, sir; you taught me to give you tallow, not milk, made me fat and large in front and fitted me out with a beefy form, and now I am a fine type of that sort of animal. No, sir; don't ask me for milk—I have not got it to give you, but I can give you tallow, if that will do.' Do not discard the heifer when she is two years old and has her first calf, if she does not come up to your expectations; try her another year; then if she refuses, turn her over to the bologna sausage mill. It is a long journey from the scrub to the paying herd, but it can be reached sooner or later if we will."

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Cream Ripening.

"Cream ripening is the most important step in butter-making. With perfect milk, to develop the latent fine aroma; with imperfect milk, to overcome and hide the faults, alas! but too common in the milk delivered at our creameries.

It was my privilege to receive the first sample of commercial "lactic ferment" sent to this country. It was liquid, and an ounce bottle came packed in a large tin can, with ice packed in a box insulated with peat.

I made ten pounds of butter from cream taken from a cream vat in a creamery. I pasteurized the cream, and the result was a mild-flavored, clean, good-keeping butter, which on the open market would have sold two cents under "extra," but which a month later was fully as good as some of the same "extra," and six weeks later a little better.

The liquid form and the lack of keeping quality in the lactic ferment soon drove the manufacturers to prepare them in dry form, and I have tried some three months old which was perfect.

It will be noticed that I use the term "lactic ferment," and not "*pure culture*," as it was demonstrated that a good, practical result could not be obtained with one species of bacteria—at least, not as yet.

Certain scientific bacteriologists have condemned these commercial "ferments" because they were not "pure cultures," yet it seems to me that if a reliable firm supplies us, year in and year out, with a ferment which develops a good "starter," it matters little to us whether it is a pure culture or not, from a bacteriological standpoint.

I have, to date, only tried two Danish and one American (Conn's No. 4), and found them all good. The latter seems to lack a little in the keeping quality of the two others.

There is one practical experience which I gained by working under even more difficult conditions than found in the "average" creamery, which I must mention for the benefit of the readers of *Hoard's Dairyman*.

When making my first starter, in a room newly whitewashed, I had good success with Chr. Hansen's lactic ferment, each development being perfect, increasing slightly in acidity. But in preparing it the second time, while the first development was apparently perfect, the second development showed some foreign fermentation going on. Nevertheless, by skimming off a layer about three inches deep, I succeeded in getting a perfect starter in the third development.

Exactly the same experience was gained while developing a starter from Conn's 41, and when I submitted the two "starters" to be judged by experts, they all agreed with Mr. H. B. Gurler and myself that they were equally good. Indeed, so little difference was found that when asked which he would choose, Mr. Gurler said: "Why, I wouldn't turn a hand to make a choice."

It is very important to condemn the top of the starter at least an inch, and, in some cases, five or six inches.

The very best starter is, however, made from perfect milk secured in a perfectly clean manner from a healthy, well-fed, new milking cow. Set the milk in ice-water for twelve hours or skim by a separator, and keep the skim milk at 85 degrees long enough to lopper. On no account disturb the coagulum until ready to use, then skim off the top, stir it up carefully, and strain it through a hair sieve into the cream. But if you cannot secure a steady supply of milk as described, buy a reliable commercial lactic ferment, renewing it whenever needed.—*J. H. Monrad, in Hoard's Dairyman.*



Conducted by E. J. McINTYRE, St. Catharines, Ontario.

ANOTHER year has passed into history with all its events and changes. What progress has been made even in this short space of time! Improvements in the mechanical arts, advancement of science, extension of truth!

Electricity has been applied more and more minutely to industrial operations. We are apparently at the outset of a gradual but complete revolution, in which this motive agent is to supplant a host of others. Methods of locomotion are becoming more and more effective. The development of the bicycle is one of the wonders of this age. Devices of all kinds are being invented and applied in order that the things which we consider necessary may be made more accessible to us, that is to say, more cheap and more abundant.

Surely it is well that these powers and inventions should have full and free scope. Surely it is desirable that all kinds of food and fruit, clothing, fuel, light, utensils, machinery, should be as abundant and good and cheap as it is possible for them to be, so that the blessings of the world may be freely and copiously enjoyed.

Winter Pruning.

A good deal of the pruning necessary in an orchard may be done in the winter, especially in the warmer parts of the country. In the colder regions, I think, it would be better to prune after the leaves fall or wait until the winter is all but over. Wood is a very poor conductor of heat through the bark and across the grain, but along the grain it is a much better conductor. Consequently, if a tree has a number of exposed marks of the pruner's saw, it cannot stand so great a degree of cold as it otherwise might. There are several objects in view in pruning a tree. The main one is to have such twigs and branches removed as prevent the light and air from freely penetrating throughout the foliage; another is to remove fruit buds so that the energies of the tree may be concentrated upon those that are left, and as a result the fruit will be larger and of better quality. Large branches should not be removed except under exceptional circumstances, as when,

for example, they may interfere with the proper cultivation of the orchard. When a branch is removed from near the trunk the cut of the saw should slant in such a manner that no water at all can remain in it. The scar will very likely crack, and decay of the tree will set in, as a consequence of careless pruning. In any case, it is better to put a coat of paint on each cut made by the saw near the trunk. Pruning, in particular, is a part of the fruit-grower's work that should not be entrusted to careless hands. It is unwise economy to employ pruners at so much a tree, rather than by the day. Each tree is a study in itself. One may not need pruning further than the removal of the suckers, another may require several hours' careful work of hand and eye. The removal of suckers and of weak and crowded branches constitutes almost the whole purpose of pruning.

Grape vines may also be pruned during the winter months. Plants set out last spring may be cut down to three eyes. Others may have their new wood cut back to five or eight buds, and in the case of old vines the gradual and steady removal of all old wood should be aimed at. Tender varieties and young plants should be covered if danger from severe cold is anticipated.

Ice for Summer Use.

Winter has set in earlier than usual. Work in the orchard is for the most part suspended. Plowing and draining are no longer practicable, now that the frost has interrupted the cultivator's operations. While a good deal can yet be done in clearing the soil and pruning the trees, and while nothing should be left undone in the orchard that can be done before spring, there is one winter care that I should like to recommend to farmers and fruit growers, and that is—to lay in a good supply of ice for summer use. A farmer who does this once will not neglect to do it again, at all events if he has a wife and daughters who have influence over him. Ice in summer serves so many useful purposes. It is needed in the dairy, in the pantry, in the storeroom, in the water pitcher. It is of invaluable service in pre-

paring dainty dishes; and sometimes it is indispensable in a sick room. In many households it is an article of prime necessity; a supply of ice in summer is of similar importance to a supply of coal in winter.

It will be necessary to construct a convenient building to store the ice in. But this building may be very plain and inexpensive. Part of it had better be underground, and the portion above ground should be protected as much as possible from the heat of the sun. The work of storing the ice begins by sawing it into convenient blocks, then it is hauled to the ice-house and there imbedded in layers of saw-dust or leaves. Be careful to have the ice taken from a river or basin or water-slip that is free from all sewage or drainage contamination, for many disease germs are not destroyed by being frozen; and do not be afraid to lay in a good supply. Every year our store of ice for summer use has been enlarged, and yet I cannot remember a summer when, toward the close, we did not have to borrow from the good-natured butcher.

Preventing the Decay of Fruit.

The object of all devices to prevent decay is to render it impossible for low forms of life to obtain a lodgment, or to make the circumstances as unfavorable as possible for them to germinate and multiply. Think of the various ways in which fruit and articles of food are preserved. They are enclosed in air-tight vessels after being exposed for a considerable time to such a degree of heat as destroys all germ life, and they may thus be preserved indefinitely. Canned or tinned meat and fish, beef from Chicago, salmon from the Fraser river, lobsters from New Brunswick, even Australian mutton, are bidding defiance now to time as well as to space in feeding the hungry with pure and palatable food. Similarly, meat can be preserved a long time by being salted, or sugarcured, or smoked, or frozen. Some years ago a frozen mammoth was discovered in the ice in Siberia, and the flesh, many thousand years after the huge animal's death, was fresh enough for the dogs to feed on.

But in the case of fruits, the devices that can be resorted to are rather limited. Fruit cannot, for obvious reasons, be smoked, or salted, or frozen. It may be preserved for a limited time in sugar, but the only effective methods are either to dry it thoroughly, or to put it into an air-tight glass vessel, with all the germs of life destroyed.

The drying or evaporating of fruit is now becoming an important industry. Fruit growers have been urged before in these columns to devote more

attention to it, and I take advantage of this occasion to show again its importance. Fruit is eaten, and is in demand, all the year round, but the time of ripe fruit is short. The market is glutted for a few weeks, and when the fruit grower sells most of his perishable fruit, prices are often down below the margin of profit. By drying the fruit, however, the producer may sell at his leisure throughout the year, at good prices. He is not at the mercy of the commission agent and the retail dealer. He is independent of the market, and, in addition to these advantages, he can very largely increase his output. The evaporator question is well worth looking into. It will pay to invest in a dryer. A good serviceable one may be obtained for \$25 or \$30.

The decay of fruit is due to the growth of some fungus which attacks and finally absorbs all the tissues. But each fungus has a life history guided by necessities just as definite as those of the fruit upon which it feeds. Some grow in living tissue, others can not. Some low forms of life cannot propagate themselves except at a certain definite temperature. Pasteur showed by many experiments that birds owe their immunity from certain germ diseases to their higher temperature. A few degrees of heat are sufficient to arrest the development of the disease. Some germs, on the other hand, are so obdurate that many hours' boiling fails to kill them.

Warmth and moisture are necessary conditions to the free development of the germs of decay in fruit. It is evident, then, that in order to preserve fruit as long as possible without resorting to any of the devices mentioned already, it should be placed where these conditions are absent. If fruit is kept in a place where the temperature remains constantly a few degrees above freezing, and where the air is kept dry, it can be preserved much beyond its usual season. Two other precautions are necessary. The air must not be too dry, or the fruit will shrivel, and it must be changed occasionally in order that the fruit may always have a pure and fresh medium surrounding it. To fulfil these requirements it would be necessary to construct a cold storage building. But without going to much expense, a great deal can be done in making cellars better adapted for keeping fruit. Apples can be kept until they meet the next generation of their kind by proper attention to these simple conditions of cold air, fresh air, dry air, and no fluctuations of temperature. Winter pears can also be preserved through the first quarter of the new year. They cannot, however, be packed as closely as the apples. It is better to put them in baskets or on trays. Grapes are much more perishable than either of

these, but some varieties, such as the Vergennes, may be kept till the winter is well over. The air must not be too dry or they will drop off the stem and shrivel up. The cut of the stem, also, should be waxed, so as to exclude all air.

None but sound samples of fruit should be selected for keeping through the winter. Any bruise, or cut, or worm hole will give entrance to the destructive fungus germ, and one rotten apple, or pear, or grape will contaminate others. The skin is the natural protection of all forms of life against germ diseases.

To secure an equable temperature in a fruit store-room the exposure should be towards the north or east. In the fall and spring, also, it is desirable to have the ventilators open at night and closed during the day. In the winter the outer air should not directly enter the fruit room, or a sudden cold wave may bring disastrous results. If the air could enter through another part of the cellar, or through a long, underground channel, there would be no danger, and an air flue should communicate from the storeroom to some warmer compartment, in order that a circulation of air should be constantly maintained.

It may be remarked here that some kinds of fruit can stand a much lower temperature than others. Apples enclosed in barrels can bear as low as twelve degrees of frost. Apples, indeed, in respect of keeping, as well as in respect of many other qualities, show themselves superior to other kinds of fruit. They are in many places preserved in pits through the winter. It can be seen that this simple method has some of the conditions necessary for the preservation of fruit in a more satisfactory form than the methods necessary in a storeroom or cellar. The temperature is more equable, the danger from disturbing causes minimized. The main difficulty will be found in securing proper ventilation throughout the contents of the pit.

Such are the main devices in use whereby fresh fruit is distributed all over the year. That a much better and more general use of them might be made is admitted by all.

The San Jose Scale.

The San José scale insect is one of the most destructive pests that ever destroyed the hopes of the fruit-grower. It obtains its name from having been first noticed at San José in California, and the Pacific coast is probably its original home. It was spread through some of the Atlantic states by a New Jersey nursery firm which had obtained some stock from California, and it has recently been found in Virginia, Delaware,

New Jersey, and even New York. Everywhere it occasions the greatest alarm, and experiment stations of many of the states have issued bulletins warning fruit growers of its destructive character, and showing illustrations of the insect and of fruit affected by it. The scale may very likely find its way into other fruit districts, and the greatest watchfulness should be used in respect of it. It is sincerely to be hoped that it cannot thrive far north, its native home being in the south, for it is, from all accounts, an insidious and much-to-be dreaded enemy. The scales are so small that they cannot be seen without a *magnifying glass*, and appear like a grey powder or scurf on branches or fruit that they infest. They are not seen, as a rule, until the tree is past saving, and most of our large and small fruits are liable to be attacked. Like other scale insects, this one has very limited powers of locomotion, but its distribution is aided by the agency of wind, water, and of active animals, such as ants, to which the scale clings.

The remedy found to be most effective is to cut back the tree as severely as advisable and to burn all the cuttings, for the scales occur first in the terminal shoots; then early in winter to apply a strong resin wash, and three or four times in summer a weaker solution of the same mixture.

With us in the northern parts of this continent, the San José scale is not as yet a live question, and we have reason to hope that our severer winters will not allow it to become one. But we cannot be sure. The insect develops in such vast numbers and with such vitality that we may find ourselves in a few years concentrating our efforts in a fight with it. Eternal vigilance is the price of safety.

The Cherry.

No orchard is complete without a good assortment of trees of this delicious fruit. The tree is more tender in its early stages than most others; its infant mortality, as it were, is higher. But that is owing mainly to the fact that it requires a drier soil than the others. In a wet soil it may grow vigorously for a while, but presently, even when covered with foliage, it will wither away. In a dry and mellow soil, a sandy or gravelly loam, it is as hardy a tree as the orchard contains. It clings to life in old age with wonderful persistency. The trunk may be all but decayed; branch after branch may fall or be blown off; yet what is left will come out in the spring a mass of white blossoms. However, it is, compared with the apple at least, short-lived. Thirty or forty years measure its span of life.

Cherries divide themselves into two classes which differ from one another in their habits of growth and in the properties of their fruit. One class comprises the Heart and the Bigarreau, the varieties of which grow to a large size and bear large sweet fruit, with flesh having a tendency to be firm, and in some cases even crisp. The other class includes the Dukes and Morellos, smaller trees, with bright-colored fruit more or less sour. The Heart and Bigarreau varieties blend into one another, the extreme of the former being soft-fleshed, that of the latter firm. There is no natural division either between the Dukes and the Morellos. There is usually a suture, and sometimes a welt dividing the skin in these latter kinds.

The cherry tree is valuable not only on account of its luscious fruit, but also on account of its ornamental and useful properties. The wood of the American wild red cherry is in great demand in the manufacture of musical instruments and of elegant furniture. It takes a very brilliant polish. The larger varieties also grow with such a profusion of foliage and blossom, and in so symmetrical a form, that they are held in high esteem as ornamental trees for avenues and parks.

The cherry tree requires little or no pruning after the general growth and distribution of the main branches are directed. Indeed it is considered undesirable by many to prune it at all, for the tree exudes a gum which tends ultimately to promote decay in the wood.

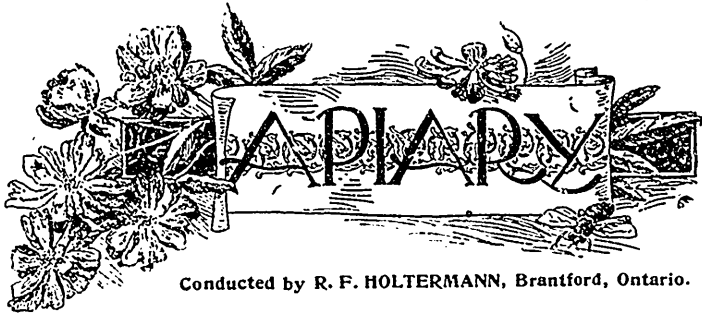
The fruit of the cherry ripens earlier than that of the plum or peach, and the different varieties and different stages of ripeness on each tree all give the fruit-grower ample time to market the fruit. Cherries should be always picked with their stems attached, otherwise they very soon lose their brightness and flavor. Cherry preserves are much esteemed, on account of their flavor and their bright appearance; and some of the choicest cordials and liqueurs of France and Italy obtain their essential properties from the juice of the wild cherry.

Many things, accordingly, recommend the cherry tree to the favor of all who wish to plant or keep an orchard. It is not a frail or delicate tree, and once started in well drained, light, or subsoil plowed ground, the ordinary care of an orchard will suffice. The smaller varieties may be planted from seventeen to twenty feet apart; the larger ones require twenty-five feet. Different varieties suit different localities and no unqualified recommendation can be given here, but among the kinds that are general favorites are the Early Richmond, Black Tartarian, Governor Wood, Montmorency and Windsor.

The black knot, the curculio, and the rot are the three enemies that the cherry has to contend with, and it is a fact that forces itself upon every fruit-grower that the cherry cannot contend with these successfully alone. The fruit will very likely be appropriated by the insect and the rot, and the tree will most assuredly succumb to the black fungus, unless the fruit-grower prevents. Now is the time to cut out every trace of black knot from the cherry trees. The winter spores will soon be scattered if the excrescences are not burned. The proper methods for preventing the ravages of the curculio and the rot will be indicated when the season for applying them arrives. Only let the fruit-grower remember that the vast development of the fruit industry has so multiplied the natural enemies of the cultivated cherry that the tree without artificial protection is now helpless before them.

The Dahlia.

The dahlia in its place is a beautiful flower, and it is not difficult to grow. It does not comprise very many species, and all of them, it is claimed, are natives of the mountains of Mexico, whose range is several thousand feet above the sea. The first dahlias imported into Europe, according to Charles E. Parnell, were sent there by Baron Humboldt, in 1789. The cultivation in that continent was at first for the tubers, as it was thought that dahlias were good for food. There are now ten or twelve species on that continent, and a good many varieties of some of the species. The dwarf varieties do not grow higher than eighteen inches, and they form a compact bush. The other sorts grow from three to five feet high, and they form a more slender and open bush. The flowers in some instances are single, and in others they are double. Ordinarily varieties now grown are double. The bloom embraces a great variety of shades, and it would seem as though these are ever on the increase. Some are pure white, some deep, and even a dark crimson, some are a bright yellow, and some have variegations in the blossoms. The intermediate shades of color vary greatly; some are even mottled and spotted. Dahlias are profuse bloomers when they are rightly managed. They are a great adornment to a garden, and in bouquets of a certain class they have their place. The dahlia is so easily grown that anyone may have them who owns a little piece of land on which to grow them, and a frost proof cellar in which to keep them in winter.



Conducted by R. F. HOLTERMANN, Brantford, Ontario.

DOCTOR C. C. MILLER says that a bee space is better than a quilt over the sections. The sections are kept cleaner in this way.

THERE is a great deal of buckwheat honey in the country and very little clover and linden. This should be a good year for educating the public to the use of the darker grades of honey.

Who is going to attend the annual meeting of the Ontario Bee-keepers' Association? It will be held at Brantford, Jan. 15th, 16th, and 17th. Wm. Couse, secretary, Streetville, will give full particulars.

BEE-KEEPERS are looking with hopefulness to the booming of crimson clover; they hope that it may prove to be all that has been predicted for it. So far, alsike clover has shown itself to be the best of the cultivated honey plants.

A GREAT many Farmers' Institute meetings will be held during the present month. Bee-keeping is one of the subjects for discussion. Nothing can be lost, and much gained, by putting bee-keeping on a proper footing before the farming community. Let its advantages and disadvantages be properly and plainly set forth. Such a course will keep those who intend to take no care of bees out of the business, whilst the person who will make a study of bee-keeping and devote enough time to them to succeed will not sell the product for a song and injure the market.

GLEANINGS in *Bee Culture* says: Ontario bee-keepers are to be congratulated on the strong and able allies they have in Hon. John Dryden, Minister of Agriculture, and Dr. Jas. Mills, President Ontario Agricultural College. Their able addresses at Toronto showed their deep interest in our chosen pursuit, and pledged co-operation as they have given it in the past. With such friends in high station it becomes an easier matter to obtain government grants to help to make an organization of beekeepers valuable.

SOME beekeepers claim that sweet clover, which blossoms in most localities in the fall of the year, when no other bee-pasture is available, is a great advantage. Others would sooner be without it, claiming that the bees gather sufficient honey to stimulate them to brood rearing and activity, in this way losing vitality and consuming reserve stores; while, if they gathered nothing, they would settle down to a quiet life, almost as in the winter time, consuming but few stores and losing but little in vitality.

DURING the past unfavorable honey season northwestern Ontario has come to the front as a honey-producing part of the province. A farmer invested in a colony of bees, and secured just about 100 lbs. of comb honey; another secured from one colony four swarms and about 60 lbs. of comb honey, and others in proportion. What they knew was gleaned from a lecturer at farmers' institutes, correspondence with him afterwards, and a good text-book upon the subject. When northern Ontario can do this with clover and basswood blossoms frozen, and a season generally unfavorable throughout the province, what may the new settler not do with bees while he is clearing the land to put in a crop?

In Winter Quarters.

Those who are careful beekeepers, unless some misfortune has taken place, have their bees in winter quarters, under the best conditions known to them. Whether in the cellar, bee-house, or on winter stands, bees require, as far as the hive is concerned, little or no attention. There are, however, a few precautions to be observed with properly prepared hives in cellar and outdoor wintering. With outdoor wintering the snow should be kept from *packing* against the entrance. If the snow is not drifting, and falls so as to cover the entrance, there is not likely to be any trouble; but if the snow packs, either by drifting or partially thawing and then freezing, there is danger. The best plan I know of, in districts where the snow is likely to be of any depth, is to

take a board, or several boards, and put them slanting against the clamp or outer case, so that one side of the board rests on the ground, two or three feet from the clamp, and the other side rests against the clamp, a foot or more above the entrance. The ends should run far enough to be level with the sides of the outer case or clamp. This largely prevents severe currents of air and winds blowing directly into the entrance, and when the snow falls it always leaves an abundant air space under the snow. The bees, too, in severe weather, are kept in a more even temperature, and are more likely to keep the entrance free from dead bees. Of course, should there be a very heavy thaw, I would take the precaution of opening slightly the ends of the air chamber beneath the board. Should there be bright, warm weather to give the bees a cleansing flight, I would turn back the boards from the entrance, and, if there is snow, scatter straw all about to cover it in the vicinity of the hive. The object of the straw is to prevent the bees, when they first leave the hive laden with excrement, alighting on the cold snow. In this way many bees are often lost. Any operation about the hive should be done with the greatest care. Avoid disturbing the bees, and particularly by knocking against the cases. Should the bees get a fly it does not matter much; but if they do not, such jarring would be very injurious. I said it would not matter much, because even if they do get a fly, it may make some difference. Colonies can frequently be found which manifest no desire to fly, although their neighbors take frequent flights. This failure to fly is sometimes so pronounced that the colonies are put down amongst those which have perished: yet in the spring they prove to be amongst the very strongest, and appear to have wintered perfectly. The reason is that they were not restless enough, and had not excrement enough to require or desire the cleansing flight.

With colonies in the cellar or bee-house, matters are a little different. With a small bent wire, an entrance may require an occasional cleansing, but other matters have to be observed. The temperature has to be right and pure air has to be provided. Far too many beekeepers are under the impression that if they keep the temperature of a winter repository between 40° and 45° they are all right; but this is a great mistake. It is quite as important—perhaps more important—that the air should be pure. I believe that it is generally supposed that the effects from breathing an impure and vitiated atmosphere are largely the same as catching cold. Many cellars are so constructed that, in order to keep the temperature

right, the bees must warm the atmosphere considerably, and fresh air must be excluded, thus retaining the impure air in the cellar to the injury of the bees. For this reason I object to bee-houses, and prefer a cellar well under ground. The cellar under ground gets, to a certain extent, the benefit of the warmth from the ground, which forces its way through the cellar walls and into the cellar. It stands to reason that, surrounded by such a substance (the soil), the temperature will be more even. Bee-houses have, perhaps, a foot or so of sawdust, and outside of that the atmosphere is changing constantly, having, of course, a gradual influence, through the sawdust, on the atmosphere in the house. In a cellar under ground the conditions are much more favorable. This requires no explanation. When we add to this an underground pipe, so constructed that the atmosphere does not take up moisture in its passage, we get a source of pure air, the temperature of which is much equalized by its passage under ground. When we come to colonies, either outside or inside, which have not been properly prepared, however, we have an additional and difficult task to perform. If queenless, they are practically worthless, and the sooner they are destroyed the better. If too much room has been left in the hive for the number of bees, the room cannot be decreased; but, in the cellar or outside, the bees can be made more comfortable by quietly adding, next the quilt, some old flannel or such packing. This cannot well be done if many swarms are kept, but the above position is more likely to be that of the beekeeper with only one or two hives. I greatly favor packing of the above kind for a hive in any condition. If bad stores, such as some kinds of honey dew, have been left in the hive, nothing can be done to change these; we must simply run our chance. I have no great faith in the treatment, but the following treatment, recommended for colonies with insufficient stores, might be tried: Make a cake of granulated sugar flat, so it will lie flat on the hive, and place this quietly and quietly, when well-warmed, on the top bars of the frames, pulling the quilt and packing above. Do not smoke the bees, and observe every precaution to keep the bees from being disturbed. There is a candy made for the above purpose which probably answers the purpose still better; but the cake of sugar answers fairly well.

We have had several poor honey seasons, and some beekeepers feel discouraged; but that is no reason for leaving the business. Do not leave it just when you have got through the poor years. Good ones are more likely to follow.

RECENT INVESTIGATIONS

Conducted by "ENQUIRER."

Mastitis (Garget).

Kansas Station Bulletin No. 49 deals with the causes, symptoms, and treatment of mastitis. The following are given as causes: Injuries to the gland, retention of milk, and the presence of *bacillus tuberculosis* and other germs.

In ordinary cases of mastitis the treatment recommended is the removal of the milk, careful dieting, rubbing the gland, and the local application of hot water, followed by a lotion of camphor and lard.

Effect of Seed Exchange Upon the Culture of Wheat.

H. L. Bolley, Dakota Station, has investigated the advisability of exchanging seed wheat. His conclusions are as follows:

- (1) Varieties of wheat do not degenerate because of continuous growth upon the same soil.
- (2) Different samples of seed of the same variety, which were grown upon different soils under like climatic conditions, will produce a like crop when seeded under sameness of conditions.
- (3) The theory that proper wheat culture demands a frequent change of soil is fallacious.
- (4) It is not demonstrated that any advantage is gained by the use of seed previously grown under different climatic conditions from those under which it is to be used.
- (5) Failure often results from injudicious seed exchange.
- (6) Smut and weeds are often introduced by change of seed.
- (7) Seed exchange, as practised, precludes any proper methods of crop improvement by careful culture and seed selection.
- (8) Only perfectly formed, plump, hard grain should be seeded, but each farmer should grow his own seed, attempting to bring it to the highest grade of perfection and purity of variety by proper methods of selection and culture without seed exchange.

Infectiousness of Milk.

The Journal of the Royal Microscopical Society for October contains an interesting summary of experiments made by Mr. C. N. Ernst to ascertain whether the milk of tuberculous cows

contained tubercle bacilli. Only tuberculous cows free from affection of the udder were employed.

Series I.—Samples of milk and cream were tested for two years. Of 121 samples from 36 cows, 19 contained tubercle bacilli (12 different cows). Twenty out of the 36 were killed, and careful examination showed that they were free from udder disease.

Series II.—(a) Inoculation of 88 guinea pigs with milk from 15 different cows: 12 guinea-pigs became tuberculous. (b) Of 90 rabbits, only six became affected.

Series III.—Feeding experiments. Milk given to young rabbits, pigs, and calves. The animals were killed after six months, and 2 out of 48 rabbits, 5 out of 12 pigs, and 8 out of 21 calves, were found to be affected.

During the experiments, 19 calves were born of tuberculous cows. These were all slaughtered within six days of birth, but none gave any evidence of tubercle. These results, therefore, exclude direct inheritance.

Silos and Silage.

Farmers' Bulletin No. 32, issued by the United States Department of Agriculture, and prepared by Prof. C. S. Plumb, of the Indiana Experiment Station, gives many valuable hints regarding silos, including construction, cost, filling, silage crops, feeding ensilage, etc. Among the author's conclusions occur the following:

"Though not extensively used for the purpose, silage forms a valuable addition to the rations of sheep, and serves as a good and cheap substitute for roots. Its use as food for swine has not been successful.

"It is not desirable or advisable to depend on silage alone for rough food. It should be fed only in a limited way along with hay and grain. For matured cattle, twenty-five to thirty-five pounds per day is a reasonable allowance. Horses should have less, and sheep only two or three pounds each.

"Of the green fodders suited to silage, Indian corn, all things considered, is best and cheapest.

"The proper time to harvest any green crop for silage is at maturity, before the leaves turn brown, and when the water content of the plant begins to diminish.

"Generally speaking, three tons of silage are equal in feeding value to one ton of hay. On

this basis, a much larger amount of digestible food can be secured from an acre of silage corn than from an acre of hay. The food equivalent of four tons of hay per acre can easily be produced on an acre of land planted to corn.

"A carelessly constructed silo is an extravagance. A well made one is an economy. Temporary structures are not advisable."

Danish Experiments in Pig Feeding.

Following is an extended list of pig feeding experiments conducted by the Danish State Agricultural Experiment Station :

TURNIPS V. WHEY.

Two experiments with thirty pigs were made to study the relative value of turnips and whey. Lot A was fed wh-v. and lot B was fed half the amount of whey and a like amount of turnips. Both lots received equal amounts of barley in addition. The gains made by the different lots indicate that, under the conditions given, the whey had a higher feeding value, pound for pound, than the turnips.

BARLEY V. INDIAN CORN.

Five series of experiments with 115 pigs were made.

Lot A received barley throughout.

Lot B received corn, substituted by barley when the pigs weighed 120 lbs.

Lot C received corn, substituted by barley at 140 lbs.

Lot D received corn, substituted by barley at 160 lbs.

Lot E received corn throughout.

The lots fed corn throughout the experiments made somewhat heavier gains than the barley fed lots, but the corn had a tendency to produce a poor quality of pork. Dividing the pigs into four classes, according to quality, 92 per cent of those fed on barley alone were placed in the first two classes, while only 62 per cent of those fed corn throughout came within these classes, and 14 per cent. came within class four (poor carcasses sold at a discount). The softness of the pork increased with the amount fed. Thus taking one as perfection, the softness of the pork from the different lots was as follows: Lot A, 1.4; B, 1.6; C, 2.0; D, 2.3; E, 2.7.

FOOD REQUIRED PER POUND OF GRAIN.

In these experiments the relative value of dairy by-products, grains, roots, etc., was also studied. One pound of barley was equivalent to 6 lbs. of centrifugal skim-milk, or 12 lbs. of whey from skim-milk cheese.

The following table shows the amount of "calculated grain," according to the value given above, required for the production of one pound of growth at different periods :

At 75 to 115 lbs.	4.37
At 115 to 155 lbs.	4.67
At 155 to 195 lbs.	4.99
At 195 to 235 lbs.	5.43
At 235 to 275 lbs.	6.24

These figures show a marked increase in the amount of food required to produce one pound of gain, as the age of the animal advanced.

FOOD REQUIRED PER POUND OF INCREASE IN SUMMER AND IN WINTER.

In these experiments, the average results of 100 winter and 99 summer experiments are given, each of which included from 25 to 30 animals, so that for each season (summer and winter) the averages represent at least 2,500 pigs. The results show that the animals ate but slightly more in winter than in summer, but it required .44 lb. more grain feed for one pound gain in winter than in summer. It is estimated that at current American prices for feeding stuffs it would cost not quite half a cent more in winter than in summer to produce a pound of pork.

LIGHT VS. HEAVY FEEDING.

Incidentally, the effect of light and heavy feeding on the rate of growth of pigs was observed in a large number of experiments. In a general way, there is no marked difference between the amount of food required per pound of gain on light and heavy feeding.

In two series of experiments with 60 animals, made specially to study the effect of light, medium, and heavy feeding, the results indicate a tendency towards a lower utilization of the food on the heavier feeding. The data obtained at slaughtering showed no appreciable difference between the lots in the shrinkage, thickness of fat, or softness of pork.

BARROWS VS. SOWS FOR FATTENING.

The data obtained in the fattening of 1,216 pigs have been arranged according to sex. The results show that there was practically no difference in the average data obtained for the two sexes. When the carcasses were graded, 44 per cent. of the barrows and 56 per cent. of the sows fell in the first class, and 77 per cent. of the barrows and 85 per cent. of the sows in the first two classes.

Adapted from article by

F. W. WOLL, E.S.R., Vol. 7, No. 3.



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.

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BUSINESS MANAGER,	S. S. BOND.

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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. FARM-
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is received and all arrears are paid up.

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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.

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Remittances should be made by post office money order,
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Silver should never be sent through the mail. It is almost
sure to wear a hole through the envelope and be lost, or
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Returning a paper is not a notice to discontinue. A sub-
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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
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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.

Communications—

All business communications should be addressed to
"FARMING, 20 Bay Street, Toronto, Canada."

Communications for the Editor-in-Chief should be ad-
dressed 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 before 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 these of the "fake" class. Therefore, for the pro-
tection of our subscribers, we will take pains to exclude
all advertisements of a doubtful nature. Any cases of fraud
or misdealing on the part of advertisers that are 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."

Resolutions.

The year 1895 has gone. What have we done
with it? Some of us have not accomplished very
much. Some have done a great deal of work, and
have little to show for it. But however it may stand
with us, the year has gone, and we cannot recall it.
Whether we have accomplished much or little, we
shall never have the time to live over again. All we
can do now is to resolve that during 1896 we will do
better. Let us look back over 1895 and see what
we have done. Let us see where we might have
made better use of our time, what mistakes we have
made, where we could have done more for the hap-
piness and development of ourselves and of our fel-
lows, and then let us make use of that experience in
shaping our course for the year that is before us.

In making resolutions for the year 1896 we should
keep in mind three things. First, we should be
careful that our resolutions are of an elevating char-
acter, that they are of such a nature as will build up
character. Let us aim high. Second, be certain
that we are in a position to carry them out; and,
third, keep them constantly in mind, so that we may
carry them out.

Now let us begin and get to work at once. Plenty
of people are good enough at making resolutions, but
that is as far as they go.

We have made our resolutions, and we think they
are of a worthy character, and now we are deter-
mined to carry them out. For some time we have
worked hard to produce a magazine that will help to
make agriculture more profitable. Our subscribers
know what success has attended our efforts in this
work. We have been hearing from them all along,
and now we are satisfied that our work has been
successful. We have unmistakable proof that FARM-
ING is the kind of magazine that is required, and
now we shall go right on and carry out our whole
plan. Now, as FARMING is a good magazine, it
might in time fall into the hands of most of the farm-
ers in the country, but we do not want to wait for
the subscribers to come to us. We know that it is
the best magazine of its kind in the country, and we
want to place it in the hands of every farmer right
away. We know that many farmers are deep down
in a rut, and don't believe in "book farming," and
if we waited for these people to send in their sub-
scriptions of their own accord, we would wait a long
time. We want to see if we cannot get them out of
this rut, and make them more progressive and pros-
perous farmers.

Now you see how your work and ours for the

year 1896 lies very much along the same lines. You are interested in the advancement of agriculture, in improving its methods, in making it more profitable. So are we. You have resolved, no doubt, to be more successful this year. You want to make more money at it, or you want to become famous in breeding stock, or in some line of farming. We have resolved that FARMING will be a help to you in accomplishing this. You recognize the fact, of course, that whatever tends to uplift agriculture, as a whole, tends to make it more profitable and satisfactory in your own case. Therefore, if you consider that FARMING would be a help in this direction, why not give it your full support? Why not talk of it to your neighbors, and get them to subscribe? Why not make it well known in your locality?

Now, friends, let us get down to practice. We have resolved to place FARMING in the hands of every farmer in the country, and you are in a position to help us. Let us discuss the best methods of doing it. First, however, let us assure you that, outside of anything you may gain in the way of improving agriculture by circulating FARMING, we are ready to pay you handsomely for any work you may do for us. We have money to spend, and we have subscribers to get, and if you can get the subscribers for us the money is yours. This is the most favorable time of the year for securing subscribers, and we want all the agents we can get. We want every one of our subscribers to be an agent. Now is the time when folks are choosing their periodicals for the year. They are making changes—discontinuing some and renewing some, and we want our agents to be on the spot at the time to represent the good qualities of FARMING.

If you have some time to spare, we can give you work that will yield you a good profit. If you have time to secure only an occasional subscriber, we can give you such a commission as will pay you well for the time you spend. If you are out of work and can give your whole time to the canvassing, we can put you in the way of making a good living.

If you induce a couple of your neighbors to subscribe, we will give you your own subscription for one year for nothing. This is equal to a commission of 50 per cent. Now, don't you think you could induce at least two of your neighbors to subscribe? It is very likely that some of you spend considerable time in talking politics. That is all right if you can afford it. There is no money in it, however, and you might easily use the same energy in securing new subscribers to FARMING, and make some money by it.

Some folks write in that they would like very much to send us a few subscribers, but say: "I guess I am not much of an agent. I haven't got the gift of gab." Now, friends, don't let this be a hindrance to you. The majority of you are good enough talkers, but it really should not take much talking to persuade a man that he can farm better if he reads a good agricultural paper. As we have said before, there are

some farmers that you cannot expect to subscribe at first sight. They do not believe in "book farming." With these about, the only way to do is to induce them to try the magazine for a few months. Then there is a chance of their becoming interested and wanting to continue.

In starting out to canvass your neighborhood, your best plan will be to tackle the most likely men first. Sit down and write out the names of all those whom you think will be most likely to subscribe. Send us this list, and we will send to each one a sample copy. This will give them time to look the magazine over before you call. Don't feel disappointed if you don't succeed in getting a man to subscribe the first time you call on him. Don't bother him too much. Just give a copy of the magazine with him, and make another call. You may tell him that if he subscribes, and, after reading the magazine for awhile, is not satisfied with his bargain, he can have his dollar back. We believe the magazine is worth more than \$1.00 to any farmer. Why, one of our subscribers wrote the other day that "the poultry department alone was worth twice the amount of the subscription price." You need have no hesitation in recommending FARMING to your best friend. After he has taken it for a while he will feel grateful to you for it.

Here are some samples of what we receive from subscribers every day:

"Enclosed please find \$1.00 for FARMING for 1896. Grand paper. Neat in form. Good matter. In every respect an up-to-date publication."

T. B., Brantford.

"Please find enclosed \$1.00 to renew my subscription to FARMING. I think you have made a great improvement in the paper."

W.S.S., Elora.

"I received a copy of FARMING from your agent, Mr. J. S. Leighton, at the Shelbourne Fair, and I think it is the best paper on farming I have ever seen. It contains the most information in the least space, published in a very plain and common sense style, such as farmers like. Just the thing I have been looking for."

G.L., Jr., Elba.

"I have been reading the first number of FARMING with much pleasure and profit. Such a journal deserves the hearty support of our entire farming population."

HERBERT W. MUMFORD,
Professor of Animal Husbandry, Michigan Agricultural College.

"It gives me pleasure to speak of the good features of FARMING and its promise for improved agriculture. Its subdivision into the various headings will be for the better, especially with regular editors for each department. A generous rivalry will be begotten that will but be beneficial to the various farm interests. The difficulty on this side of the line has been too great a disposition to enter to the advertiser. The reader has been encouraged to pay his money out for instructive information which too often peters into 'ads' for stuff that would never sell on its own merits."

S. M. EMERY,
Director Experimental Farm, Bozeman, Montana.

"I beg to tender my congratulations on the gratifying improvement made in your journal. Although I considered THE CANADIAN LIVE STOCK AND FARM JOURNAL an excellent paper, second to none in the Dominion, I think it was not to be compared with FARMING, either in appearance, reading matter, or number of valuable articles contained."

ANGUS MACKAY,
Superintendent Experimental Farm, Indian Head, N.W.T.

"It is certainly good matter arranged in a convenient and attractive style. I have no doubt that, now your numbers are issued in this convenient shape, many of your subscribers will preserve them much better than in the old form. They will thus have a valuable source of reference when wishing to turn up articles they have read, but have forgotten exactly where they got the information."

JAMES FLETCHER,
Entomologist and Botanist, Central Experimental Farm,
Ottawa, Ont.

"In my opinion the change from THE LIVE STOCK AND FARM JOURNAL to the present form is advisable. The form of FARMING is neat, and the division of matter into departments, each having a special editor, a very great improvement. Per mit me to offer this suggestion, that you keep it a monthly publication."

A. E. SHUTTLEWORTH,
Professor of Chemistry, Ontario Agricultural College,
Guelph, Ont.

The names attached to the following testimonial are the members of the Kent County Council.

"We, the undersigned, having subscribed for FARMING, a magazine published by The Bryant Press, Toronto, hereby heartily recommend it to all our fellow-farmers. It is a well edited, neatly gotten-up magazine, and its reading will tend to make farming more popular among the young, and generally more profitable. It is a cheap way to get the experience of so many practical men who are its editors. Only \$1.00 a year. Subscribe for it. Chatham, December 4th, 1895.

(Signed)

DAVID CAUGHALL (Reeve), Guilds.
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ARTHUR STRUOS.
HENRY SALES, Merlin.
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But it is not necessary to go any further. Nearly every subscriber has something in this strain to say. Now, friends, don't delay, but send to us at once for samples and particulars as to commission, etc. If you have only time to put in an occasional good word, it will pay you to take the trouble. If you have not much time to canvass yourself, perhaps you can send us the name of some one in your neighborhood whom we can get to act as agent.

YOUR OWN SUBSCRIPTION

FOR ONE YEAR

— FREE —

If you will send us two new yearly subscriptions to FARMING, and \$2 in payment.

THERE are a few farmers who are still crying "hard times." To these we would like to say that good times will never return until they give up their antiquated methods of farming and adapt themselves to the changed condition of affairs. It is perfectly proper to cut down expenses when receipts are small, but the cutting must be done judiciously. Care should be taken to cut off only such items of expense as produce the least revenue. It requires careful study these days to make money at farming, and a good agricultural magazine is the farmer's best friend. Surely you do not think you are saving money when you refuse to spend one dollar for a magazine from which you may obtain information which will enable you to make one hundred.

**The
Newspaper
People**

Are well pleased with FARMING.
Here is what some of them

Say

The December number of "Farming" is to hand, and is as usual replete with everything of interest to the up-to-date farmer. It is safe to say there is no better farmer's publication issued in America. Any farmer will save ten times the subscription by a careful perusal of its pages during the coming winter evenings.

Farming for December, the splendid agricultural journal published in Toronto, Canada, lies on our table. It is fresh as a daisy. Farming is published in magazine form; its table of contents is unexcelled by any agricultural journal on the continent, and its rare excellence in all its departments accounts for its rapid growth in public favor. It is the great Canadian farm journal, and the larger its circulation in the states the better, as all will concede who examine its finely illustrated and beautifully printed pages. Only \$1.00 per year. Call at this office and look over sample copy.

We have been favored with a copy of the December number of Farming, an illustrated monthly magazine, devoted to farming in all its branches, published on the first of each month, by the Bryant Press, Toronto, at the remarkable low rate of one dollar per annum, in advance. It is replete with articles of interest to farmers, arranged under the following heads: General, horses, cattle, sheep, swine, poultry, the farm, the dairy, Horticulture and the apiary. "Farming" is by all odds the best farmer's periodical that has come under our notice. We would strongly advise farmers in this district to subscribe for and carefully study its contents, as by so doing they will find it helpful in many ways and that it will do much to raise the standard of farming in this district.

A Great Many People

Spend a Great Deal of Time Talking and Reading Politics

and it is perfectly right that every man should know how his country is governed. In fact, it is the duty of every man to take an active interest in public affairs. Every man should feel that this is his country, and that if he would have its people prosperous and happy he must recognize the fact that those who hold public offices are his representatives, and that the advancement and prosperity of the country are really controlled by himself and his fellow-countrymen.

But it is not necessary to spend all one's time in getting a knowledge of public affairs, and very often the man who spends the greater part of his time in this way is not considered a very good farmer.

Now there is no doubt that, during the long winter, you have a good deal of spare time on your hands. When the ground is frozen up solid and the snow is piled high around your doorstep, rather than settle down to discuss politics would it not be more profitable to read up and become well posted on some of the different branches of agriculture?

Possibly you are thinking of doing some tile draining. Then you should get a good book on that subject and digest it from cover to cover.

Then when the spring comes and the ground is ready for work, you have your plans ready, and can proceed without any delay.

You may be going to start growing strawberries for the market.

You may want to know how to take care of your ensilage next year, or you have seen that there is money in dairying when carried on properly. Well, there have been good books written on all these subjects and on all other subjects pertaining to farming, and you may as well have the benefit of the experience and study of the writers when it costs so little.

Now, we have gone to work and made up a list of those books that we think you will be most likely to need, and have put them down here at the lowest prices. These books are thoroughly reliable, and the best published on their respective subjects.

Here is the list and the prices, and we will either sell any of them to you at the prices named, or we will send you one book for every new subscriber to FARMING you send us.

Surely you have at least one neighbor who ought to take FARMING. Well, send his name and his dollar, and we will send postpaid your choice of the following books. Pick out your man, and don't take a refusal. If he hesitates, tell him that he can have his dollar back at any time if he is not satisfied with the magazine. Don't delay. Get your subscriber, and get the book before the winter has gone. (See list of books next page.)

The New Onion Culture.

By T. Greiner. This new work is written by one of our most successful agriculturists, and is full of new, original, and highly valuable matter of material interest to every one who raises onions in the family garden, or by the acre for market. By the process here described a crop of 2,000 bushels per acre can be as easily raised as 500 or 600 bushels in the old way. Price, paper, 12mo., 50c.

The New Potato Culture.

By Elbert S. Carman. As developed by the Trench system, by the judicial use of chemical fertilizers, and by the experiments with potatoes carried on during fifteen years. Price, paper, 40c.; cloth, 75c.

The First Principles of Agriculture.

By Jas. Mills, M. A., President of the Ontario Agricultural College, and Professor Thos. Shaw, late professor in Ontario Agricultural College, now Professor of Animal Husbandry in the Minnesota State College. Universally commended as the best elementary text-book on the principles of agriculture yet published. It is authorized by the Minister of Education for Ontario for use in the public schools. 256 pages, illustrated, cloth-bound. Price postpaid, 40 cents.

Gregory on Fertilizers.

Where the material comes from. Where to get them in the cheapest form. How to compound formulas, etc. Price, 40c.

Manures.

How to make and how to use them. By Frank W. Sempers. The author has made a concise, practical handbook, containing the latest researches in agriculture in all parts of the world. The reports of the agricultural experiment stations have furnished many valuable suggestions. Both commercial and home-made manures fully described, and many formulas for special crops and soils are given. Price, postpaid, paper, 50c.; cloth, 75c.

Tomato Culture.

By J. W. Day, D. Cummins, and A. I. Root. In three parts. Part First—Tomato culture in the South. Part Second—Tomato culture especially for canning factories. Part Third—Plant growing for market and high pressure. Gardening in general. A practical book for those who work under either glass or cloth as a protection from frost. 135 pages; illustrated. Paper, 16mo., 35c.

Butter and Butter Making.

With the best methods for producing and marketing it. By Willis F. Hazard, president of the Chadd's Ford Farmers' Club, author of the "Jersey, Alderney, and Guernsey Cows." Illustrated. 25c.

Our Farm of Four Acres, and the Money we Made by it.

This work is written by a lady, and while containing many useful suggestions, it has the interest of a romance. Paper, 12mo., 30c.

Spraying Crops.

Why, when, and how. By Clarence M. Weed. Second (revised) edition. 130 pp. Illustrated. 16mo., 25c.

Wheat Culture.

How to double the yield and increase the profits. By D. S. Curtiss, Washington, D.C. Importance of the wheat crop. Varieties most grown in the United States. Examples of successful wheat culture. Illustrated. Paper covers, 50c.

Bennett's Farm Law.

A treatise on the legal rights and liabilities of farmers. By Hon. Edmund H. Bennett, LL.D. 12mo. Cloth, 75c.

Quinn's Pear Culture for Profit.

Teaching how to raise pears intelligently, and with the best results, how to find out the character of the soil, the best methods of preparing it, the best varieties to select under existing conditions, the best modes of planting, pruning, fertilizing, grafting, and utilizing the ground before the trees come into bearing, and, finally, of gathering and packing for market. Illustrated. By P. T. Quinn, practical horticulturist. Cloth, 12mo., 75c.

Handbook for Fruit Growers.

By F. R. Elliott. Containing instruction as to soil and location, how to grow from seed, bud and graft, the making of cuttings, pruning, best age for transplanting, etc., etc., with a condensed list of varieties suited to climate. 75c.

Strawberry Culturist.

By Andrew S. Fuller. Containing the history, sexuality, field and garden culture of strawberries, forcing of pot culture, how to grow from seed, hybridizing, and all information neces-

sary to enable everybody to raise their own strawberries, together with a description of new varieties and a list of the best of the old sorts. Fully illustrated. Flexible cloth, 12mo., 25c.

Fungous Diseases of the Grape and other Plants, and their Treatment.

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Willard's Practical Butter Book.

A complete treatise on butter making at factories and farm dairies, including the selection, feeding and management of stock for butter dairying, with plans for dairy rooms and creameries, dairy fixtures, utensils, etc. By X. A. Willard. Cloth, 12mo., 75c.

Cattle.

Their varieties and management in health and disease. By George Armatage, M. R. C. V. S., London. This work is a guide to the farmer and breeder in reference to the ailments of his cattle. Separate chapters are devoted to each disease, with full details of the required medical and other treatment. The appropriate remedies with their doses, and usual form of combination, have been arranged with care. Price, postpaid, 50c.

American Dairying.

A practical treatise on dairy farming and the management of creameries, by H. B. Gurler. The book is in two parts. I. on private dairying, II. on creamery management. In part I. the herd, feed, management, milking, ripening, salting, working, and marketing are considered. In part II. the creamery management, patrons and more modern dairy machines and appliances are discussed. Illustrated. Cloth, 12mo., 75c.

The Winter Care of Horses and Cattle.

By T. B. Terry. Although the book is mainly in regard to the winter care of horses and cattle, it touches on almost everything connected with successful farming. 35c.

How to Handle and Educate Vicious Horses.

By Oscar R. Gleason. Directions for handling vicious horses, breaking colts, teaching horses tricks, etc. Illustrated. Cloth, 12mo., 50c.

The Horse.

Its varieties and management in health and disease. George Armatage, M. R. C. V. S., London. The object of this treatise is to show that an intelligent system of management will reduce, and in many cases prevent, the diseases of horses. The part on horse management is copious in detail, and the subsequent chapters on disease and its treatment are replete with information written in a simple style within the comprehension of most readers. Price, postpaid, 75c.

How to Judge a Horse.

A concise treatise as to its qualities and soundness, including bits and biting, saddles and saddling, stable drainage, driving one horse, a pair, four-in-hand, or tandem; and extracts from Rarey's and Rockwell's method of training young and obstinate horses. By Captain F. W. Bach. With thirty illustrations. 180 pp., 12mo., cloth, 75c.

The Sheep.

Its varieties and management to health and disease. By George Armatage, M. R. C. V. S., London. This volume conveys information on the numerous maladies of the sheep. The nature and causes of disease are fully treated. Considerable space is devoted to the most approved remedies and methods of treatment. The work is brought up to the present day experience, thus proving a safe guide to the sheep farmer. Price, postpaid, 75c.

Profits in Poultry.

Useful and ornamental breeds and their profitable management. This excellent work contains the combined experience of a number of practical men in all departments of poultry raising. It is profusely illustrated, and forms a unique and important addition to our poultry literature. Cloth, 12mo., 75c.

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The Smithfield of Canada.

The Provincial Fat Stock and Dairy Show held at Guelph, Ont., from December 10th to 12th, appropriately concluded the list of big shows held in the Dominion during 1895. The show differed from its predecessors in that a dairy and live poultry show was held in connection, thus increasing its attractiveness. Comparing the fat stock department with that of last year, it may be said that the exhibits on the whole were well up to the average, the sheep being especially good, while cattle and pigs were hardly up to last year's mark. Exhibitors who had been at the late New York show reported that the show of sheep was far superior even to the good exhibit there.

CATTLE.

Shorthorns came first on the catalogue. There were three two-year-old steers forward, two of them being shown by James Oke & Son, Alvinston, and one by Thomas Russell, Exeter. The judges did not find much difficulty in putting Ironclad 2nd, one of Messrs. Oke's pair, 1st, as he was the best fleshed of the three. Mr. Russell's white, a low-set animal of good quality, but not in full flesh, came 2nd. A promising white, owned by John Bolton, Armstrong's Mills, headed the yearling section, standing above Messrs. Oke's thick-set roan, who handled well, a smooth younger white of James Lindsay's, Fergus, taking 3rd place. Messrs. Oke had a good steer calf in Royal Oak, a thick, low-set, prime steer. A. Armstrong, Fergus, had a very fair red, which won the blue ribbon, 3rd prize going to a lengthy smooth white owned by Wm. Dredge & Son, Nassagaweya. There was only one entry for cows three years old and over, but she was a good one, exhibited by A. Armstrong. Duncan Stewart, Everton, had an even pair of two-year-olds, and there was just the same number of animals in the section for heifers under two years, where A. Armstrong again came to the front. The special prize given by the Dominion Shorthorn Breeders' Association for the best registered Shorthorn steer went to James Bolton's yearling, and that for the best Shorthorn grade steer of any age to a very good two-year-old, shown by Messrs. Oke.

There was a slight increase in the number of Herefords exhibited, as compared with 1894. One yearling steer was shown by the Stone Estate, Guelph, and three steer calves, two by the Stone Estate and one by H. D. Smith, Compton, Que., the latter a younger animal than the other two. The 1st and 2nd went to the Stone Estate. Three three-year-old cows were entered. H. D. Smith had the winner in Josephine 2nd, the thickest fleshed animal on the ground, and a grand one to boot. She was 1st at all the big shows wherever shown last fall. The 2nd prize

one, shown by the Stone Estate, was also a good one, in excellent condition.

Two Polled Angus cows were all the representatives of that breed, both owned by James Bowman, Guelph. Mysie 2nd of Verulam, winner of the diploma at Ottawa, an animal of excellent type, was placed 1st, and Kyma of Tweedhill, 2nd.

D. McCrae, Guelph, showed two Galloway cows, Queenie of Guelph and Caroline, and won the two prizes offered. The former was in choice order, and carried a beautiful coat of hair.

Six Devons competed in three classes, W. J. Rudd, Eden Mills, being the sole exhibitor, and winning 1st and 2nd in each class.

The exhibit of grades was better than that of purebreds. There were five entries in the two-year-old steer class. First place could not be denied to Messrs. Oke's thick, chunky steer, a splendid handler. J. R. Caldwell, Fergus, was 2nd with a good one, and James Rennie, Wick, a close 3rd. Yearling steers were headed by a very smooth, nicely-fleshed steer, with a great chest and lots of quality, shown by W. H. Nichols, Hamilton; while J. R. Caldwell had a very fair 2nd, and James Rennie's neat, smooth roan came 3rd. A very choice roan steer calf of Messrs. Oke's was placed first in that class, a younger roan, eleven and a half months old, of James Rennie's being 2nd; and a lengthy, fleshy Hereford grade, shown by H. D. Smith, won 3rd honors. There were five grade cows, three years and over, shown. Messrs. Oke won 1st and 2nd place with a grand roan and a well-fleshed red respectively, the latter, however, being somewhat plain at the tail head. James Riddoch, Everton, was 3rd. Grade heifers between two and three years were only fair, and only two in number, Messrs. Oke being 1st. The section for heifers under two years contained some choice things. Here 1st place fell rightly to James Rennie's Susie, a red by G. Jensen's Heir, and a half-sister to his phenomenal heifer of 1894, which deserved the sweepstakes, and did not get it. When we say that the present one was built very much after the model of her half-sister, it will be seen that she was a good one, being deep and thick, with a grandly covered shoulder and back, and of the best quality. Messrs. Oke had two excellent roans forward, which took 2nd and 3rd.

The championship prize for the best fat animal on the ground, of any breed or sex, fell to Mr. Rennie's heifer, mentioned above, her closest competitor being Messrs. Oke's two-year-old grade steer.

In the dairy department the entries were not numerous. Animals were judged here by performance and conformation. There was one Shorthorn cow shown in her class by Herbert Wright, Guelph, Lady Bright 2nd, a daughter of his World's Fair winner, Lady Bright. She won

in her class, making a total of 102.07 points. Three Ayrshires competed. W. M. & J. C. Smith, Fairfield Plains, won 1st and 3rd with Ada and Gurta 14th, respectively, their score being 129.07 and 87.53 points. Wm. Stewart & Son, Menie, were 2nd with Jean Armour, which totalled 87.62 points.

In Holsteins, Messrs. Rice, Curries, had their show cows, Eunice Clay (imp.), and Calamity Jane (imp.). The latter, who had a splendid udder, and showed great milk points, won with the highest score in the whole test, 153.06 points, Eunice Clay coming 3rd, with 108.26. Wm. McClure, Norval, had the second prize-winner in Aaggie Lady of Lorraine, scoring 116.11, his other entry, Aaggie Ida 5th, totalling 99.97 points.

Of the three grades shown, two were part Jersey and the third a Shorthorn grade shown by James Bowman, Guelph. The latter's score, 113.82, carried her to the top, H. McDougall, Guelph, and D. Keleher, Guelph, scoring 81.04 and 68.61 points respectively.

The sweepstakes prizes offered by the *Farmer's Advocate* and FARMING, the former for the best purebred cow and the latter for the best cow of any breed or cross, both went to Calamity Jane. Messrs. Smith's Ada won the *Sun's* prize for the best Ayrshire cow, and also F. W. Hodson's 2nd sweepstakes prize; and Bowman's Rose took the silver plate given by John S. Pearce & Co., seedsmen, for the best grade cow.

SHEEP.

This was one of the best displays of mutton sheep that has yet been turned out by Ontario's flockmasters. It was not to be expected that this show would be numerically as strong as when a full classification is given, but in the entire absence of animals of ordinary character, in the uniformly grand specimens on exhibition, together with the closely contested classes, the on-looker was impressed with the fact that Canadian sheepbreeders are in earnest as regards their work. Ribbon tying commenced in the section for long-woolled shearing ewes, in which Lincolns, Leicesters, and Cotswolds were grouped together, with Messrs. Alex. Smith, Maple Lodge; Wm. Thompson, Uxbridge; and R. W. Stevens, Lambton, as awarding committee.

In this section ten were brought out, six of which were Lincolns and four Leicesters, and a uniformly good lot they were. At the first draw two of Gibson & Walker's (Ilderton) Lincolns, a Leicester of John Kelly's (Shakespeare), and a Lincoln of T. G. Robson's (Ilderton), were pulled out. After a second inspection the committee turned down one of the former pair, although she was an even ewe, of great substance, with capital coat, deciding that she was not sufficiently firm to the touch, and awarded the ribbons to the others as they stood.

From an entry of twelve came ten beautiful ewe lambs, which again numbered six Lincolns and four Leicesters, and again victory went to the Lincoln contingent, Gibson & Walker gaining first with a handsome lamb of capital character, John Kelly's Leicester, and a good one, carrying off the blue ribbon, and Wm. Oliver's (Avonbank) Lincoln, third.

It was a grand wether of Gibson & Walker's that led in a ring of fine shearlings, of which the balance were Leicesters. This sheep carried a wonderful amount of flesh for a shearing, having a very meaty top, with great heart girth and Lincoln character withal. John Ruth-erford & Son, Roseville, came second and third with nicely fed sheep. In a section of twelve wether lambs John Kelly had the best of it with a firm-backed, splendidly-developed lamb of true Leicester character, in competition with a handsome pair of Gibson & Walker's Lincolns.

In the group of three ewes the ribbons went to Gibson & Walker, Kelly, and Oliver, in the order named, and for three wether lambs John Kelly and Gibson & Walker were declared winners, while Gibson & Walker's group of five under two years carried first and John Kelly's second.

Oxford, Hampshire, and Shropshire was the classification for medium wools, but no Oxford had been forwarded, and only one Hampshire, so the Shropshires had it out between themselves, the one Hampshire ewe being hardly in form for the great class of Shropshires brought out.

Nine shearing ewes answered the call for inspection before Messrs. H. Arkell, Teeswater; James McFarlane, Clinton; and John Miller, Markham; and the beautiful form in which these sheep appeared was remarked upon by all on-lookers.

On the first draw, D. G. Hanmer came in with a well-fitted pair, as did John Campbell, Woodville, and J. P. Phin, Hespeler, but it was a case of close competition, for all looked alike good from outside the ring until one went in for close inspection, when it was decided that the first named were first and third, with John Campbell's entry sandwiched between, and J. P. Phin was highly commended.

Ten as handsome Shropshire ewe lambs as nature and art ever furnished contended for honors, and a close fight it was. John Campbell led with a lamb of fine, even quality, good length, nicely covered, and well matured. D. G. Hanmer followed with a pair of good ones, better woolled down the legs and having perhaps a trifle more bone, but with hardly as much promise for the future. J. P. Phin was highly commended for a superior lamb.

Six Shropshire wethers promised work for the committee, but an outstanding first appeared in an entry of W. E. Wright, Glanworth. This

sheep not only had great size, but his wonderfully even finish, great substance, and all-round quality proclaimed extraordinary merit. John Campbell followed with two sheep, well developed and in fine form.

Twelve uniformly grand Shropshire wether lambs had been forwarded. First went to Richard Gibson, Delaware, for a beautifully finished lamb, followed by W. H. Bruce, Wilton Grove, and W. E. Wright, who both had good ones, and another good enough to be highly commended was found among R. Gibson's lot. In the group of three ewes under the year the honors went to D. G. Hanmer, J. P. Phin, and John Campbell, while the best wether lambs were found in Richard Gibson's entry, with W. E. Wright and W. H. Beattie second and third. D. G. Hanmer & Son had the best pen of five sheep under two years old, John Campbell being second.

Southdowns, Dorsets and Merinos came next in classification, but none of the two latter showed up, leaving the spoils for the pretty gray faces, and nobly they responded to the invitation. A better exhibit than the Southdown men put up it would be hard to find.

Seven shearling ewes came before the same committee as in the previous class, the decisions in this section going to A. Simenton & Son, Blackheath; T. C. Douglas, Calt; and John Jackson & Son, Abingdon, in the order named.

A more uniform lot of Southdown lambs we have yet to see; such quality and character is the outcome of the most careful breeding. There were fourteen entries, all good. First came Simenton & Son with a well-developed lamb of great merit; 2nd went to T. C. Douglas, 3rd to A. Simenton, and 4th to A. Telfer & Son, Paris.

Eleven shearling wethers were such as would tempt the palate of an epicure: such legs of mutton, such saddles and roasts as these bespoke! John Jackson & Son were first for a wonderfully well brought out sheep; to T. C. Douglas and A. Telfer & Son were 2nd and 3rd respectively.*

Twelve wether lambs formed another capital ring; 1st went to A. Simenton & Son, 2nd to John Jackson & Son, 3rd to T. C. Douglas. The prizes for groups of three ewe lambs fell to A. Simenton & Son, T. C. Douglas, and John Jackson & Son; while those for wether lambs were sent to T. C. Douglas, John Jackson & Son, and G. Baker & Sons, Simcoe. In the groups of five sheep under two years, T. C. Douglas and John Jackson & Son came in the order named.

The sweepstakes for the best purebred wether was a close and hot contest. There were entered Gibson & Walker's extraordinary Lincoln shearling before mentioned, W. E. Wright's equally good Shropshire, John Jackson's shearling Southdown, and Richard Gibson's Shropshire lamb. It was evident from the first that the fight

was between the two former, and so close was it that it might go either way: at least so thought the committee who had to settle it, and a long half hour was consumed before they decided. The Lincoln, as we have before said, carried a wealth of flesh and possessed a wonderfully meaty top, great girth and well-filled shoulders, while the Shropshire was, without exception, one of the most even handlers we have yet seen; not an ounce of superfluous flesh had he, yet was ripe as a peach. It was indeed a battle between the two breeds, which was at last decided in favor of the Lincoln. Sweepstakes for ewes brought out Gibson & Walker's Lincoln shearling and ewe lamb, D. G. Hanmer's shearling Shropshire, John Campbell's Shropshire lamb, and T. C. Douglas' Southdown shearling. After some deliberation the ribbon was given to the latter entry. To Gibson & Walker's phenomenal Lincoln wether was awarded the Cooper Sheep Dip sweepstakes for the best purebred sheep in the show.

The American Shropshire Association specials were awarded as follows: Shropshire wether, two years and over, 1st W. E. Wright, 2nd and 3rd J. Rutherford; wether, one year old, 1st W. E. Wright, 2nd and 3rd J. Campbell; wether lamb, 1st R. Gibson, 2nd W. H. Beattie, 3rd W. E. Wright; two year old wether, by Shropshire ram out of grade ewes, 1st and 2nd J. Rutherford; yearling wether, 1st and 2nd J. Campbell; wether lamb, 1st and 2nd J. Campbell.

The English Southdown Breeders' prize for sweepstakes ram went to J. Jackson & Sons, and that for sweepstakes ewe to A. Simenton & Sons. J. Jackson & Sons won the American Southdown Association's special for pen of four lambs.

Grades and crosses, which were a difficult class to judge, owing to their diversity in type, came under the inspection of the same committee as the longwools.

In ewes over two years, 1st went to James Leask for a Cotswold grade ewe, 2nd to Gibson & Walker's Lincoln cross, and 3rd to David Beattie. In grade wethers over two, 1st and 2nd went to John Rutherford, and 3rd to W. E. Wright. For grade ewes under two, John Campbell was first with a large handsome ewe with a Shropshire cross, 2nd fell to T. E. Robson for a Lincoln grade, and 3rd to Richard Gibson for a ewe with a Shropshire cross.

In grade wethers under two, John Campbell again took the red, and also the blue, with a pair of Shropshire grades, the 3rd being sent to W. E. Wright's Shropshire grade. First for group of three grade ewe lambs went to Douglas Lilico, 2nd to D. G. Hanmer, and 3rd to T. E. Robson. For pen of three shearling wethers John Campbell was 1st, John Rutherford 2nd, and Gibson & Walker 3rd.

The red ribbon for grade wether lambs was won by John Rutherford & Son, and 2nd and 3rd by John Campbell, all showing grade Shropshires. Douglas Lilico, W. E. Wright, and D. G. Hammer stood in the order named for grade ewe lambs. John Rutherford won the sweepstakes for best grade wether, and John Campbell that for best grade ewe.

SWINE.

The show of swine was not as good as that of 1894, although in point of numbers there was not much difference, the numbers being 113 this exhibition as against 120 the year before. In Berkshires the most successful exhibitors were J. G. Snell & Bro., Snelgrove, who had a good display of this old-time favorite breed. For barrows between nine and eighteen months they won 1st and 2nd with two pigs of excellent type, while for young barrows they took all three prizes, the first prize one being especially good. Their first prize aged barrow also won the sweepstakes for the best purebred barrow. In the senior section for sows they stood 2nd with a lengthy sow of fine quality and neat head, while the red and blue ribbons for young sows went to a very nice pair, not over fat, that stood 1st and 2nd at Toronto; 1st and 2nd for pen, offspring of one sow, also fell to them. H. J. Davis, Woodstock, scored 1st and 3rd for sows between nine and eighteen months; the first prize one being best on the back and quarters, while her companion had the neatest head. D. A. Graham, Parkhill, won 3rd on the pen for three pigs of nice length and quality, two of which had been prize-winners at London last fall. John Kitching, Corwhin, had a nice barrow and young sow that won 3rd in their sections.

Yorkshires were fewer than usual. There was only one entry in the aged and two in the young barrow classes, J. Featherston, M.P., Streetsville, winning first in both. R. Gibson, Delaware, had a nice young barrow, showing much quality, that was second. Four sows were entered in the aged and six in the younger section. J. Featherston, with a good, useful exhibit, took first and second in the first, and all three prizes in the second. He also won first in the pen prize, Thomas Watson, Springvale, being second with three pigs of nice type. R. Gibson had a deep, lengthy sow of good style, that won third in the aged class, and H. J. Davis, Woodstock, also had a neat entry.

There were some grand Poland-Chinas shown, notably the aged sows exhibited by W. & H. Jones, Mount Elgin, which took first and second in their class, and the first of which also won the sweepstakes for the best sow of any age or breed. This was a beautiful sow, of great smoothness, depth, and length, while her companion was

even deeper, but not so good on the back. Messrs. Jones had a good exhibit, and won nearly all the first prizes offered. W. M. & J. C. Smith, Fairfield Plains, were the other exhibitors. They won first for barrows over nine and under eighteen months, with a thick, level pig; also several second and third prizes with promising pigs.

There were three exhibitors of Chester Whites: William Butler & Son, Dereham Centre; R. H. Harding, Thorndale; and H. George & Sons, Crampton. The former won first for young barrows and for sows over nine months, their sow being especially good. They secured second also for barrows over and under nine months, and second for pen. R. H. Harding proved too strong for his competitors in the pen prize, winning first with a compact trio, composed of the first prize barrow over nine months and the first and second prize young sows. Messrs. George had three nice specimens of Chesters present, and won two third prizes.

William Butler & Son and H. George & Sons fought it out in the Tamworth class, the former carrying off most of the first prizes, including that for pen, their exhibit being most commendable. H. George & Sons also showed some choice pigs, their first-prize young sow being a very level, even pig, as was their older sow.

Although William Butler & Sons were the only exhibitors of Jersey Reds, still, their pigs showed great quality and excellence, including, as they did, the sweepstakes sow at Toronto, besides other prize winners.

R. Dorsey, Burnhamthorpe, showing Suffolks, secured all the first prizes for Suffolks and Essex, which showed together. J. Featherston showed both Suffolks and Essex, and won all the second and third prizes, except the thirds for pen and young sows, which went to A. Frank & Son, The Grange, for Suffolks.

There was not the usual turnout of grades, but the class for barrows over nine and under eighteen months had one of the features of the show in the two splendid hogs shown by Robert Agnew, Acton, which won first and second in their class, and to the first of which the sweepstakes for grade pigs fell. They were a grand pair, fifteen months old, being Yorkshires with one cross of Berkshire, thus showing well the merits of this favorite cross. J. G. Snell & Bros. came third with a very good hog, a Berkshire grade, and they also took first and second for younger barrows. W. M. & J. C. Smith had a capital grade sow under eighteen months, and S. Congdon, Everton, a good one under nine months.

The show of dressed poultry was very good. A. Hales, Guelph, won for best display, dressed, and R. Buchanan, Garrick, for best display undressed.

Dominion Sheep-Breeders' Association.

The twelfth annual meeting of the above association was held in the City Hall, Guelph, on December 10th, there being a good attendance of members. The president, Mr. John Jackson, occupied the chair. In his address he remarked on the improvements noticeable in the flocks of the county in recent years and the great possibilities for the future.

The reports from committees and Fair Board delegates were received. Mr. R. Gibson, in reporting on the Western Fair, severely criticized the mismanagement and want of system in the sheep and swine departments there.

The following were elected as representatives to the various boards for 1896:

- Toronto Industrial—Jas. Russell, Richmond Hill; J. C. Snell, Edmonton.
- Ottawa—J. Yuill, Carleton Place.
- Montreal—D. Brims, Athelstan, P.Q.
- London, R. H. Harding, Thorndale; Alex. Smith, Maple Lodge.
- Kingston—A. Brown, Picton.
- Peterboro—R. Vance, Ida.
- Belleville—J. M. Hurley.

The election of officers resulted as follows:

President, J. Tolton, Walkerton; vice-president, D. G. Hanmer, Mount Vernon; secretary-treasurer, F. W. Hodson, Guelph.

- Directors: Cotswolds, J. C. Snell, Snelgrove.
- Leicesters, Alex. Smith, Maple Grove.
- Southdowns, T. C. Douglas, Galt.
- Shropshires, R. Gibson, Delaware.
- Oxfords, H. Arkell, Arkell.
- Hampshires, John Kelly, Shakespeare.
- Lincolns, John Gibson, Denfield.
- Horned Dorsets, R. H. Harding, Thorndale.
- Merinos, Wm. Smith, Fairfield Plains.

General Director, Mr. John I. Hobson, Mosborough.

Auditors: Geo. E. Day, O.A.C., and Andrew Whitelaw, Guelph.

Messrs. R. Gibson and J. C. Snell were appointed a Fat Stock Committee, and Messrs. Gibson, Hanmer, and Campbell a committee to devise some plan for improvement in the judging of sheep at district and county fairs.

In the evening a joint meeting of the sheep and swine breeders, the Guelph Fat Stock Club, and the Western Dairymen's Association was held, Hon. John Dryden, Minister of Agriculture for Ontario, in the chair. In a pleasing address Mr. Dryden referred to the state of agriculture in general, and urged on his hearers the necessity of giving strict attention to quality.

The address of the evening was that of Prof. Robertson, who, in a lengthy speech, foreshadowed the intention of the Dominion Government to inaugurate a chilled meat trade between Canada and Great Britain, the government slaughtering some 500 head per week till a company could be formed to take over the business, which, he expected, would be on a satisfactory basis in twelve months' time. The professor considered that, when the trade was well started, the Canadian feeder would get better prices for his stock.

Dominion Swine Breeders' Association.

The seventh annual meeting of this association was held at Guelph on December 11th, Mr. D. DeCoursey, Bornholm, president, in the chair. After receiving the reports of the delegates to fair boards, the election of delegates for 1896 was proceeded with, and resulted as follows:

Toronto—Thomas Teasdale, Concord, and J. E. Brethour, Burford.

Ottawa—Joseph Featherston, M.P., Streetsville, and Joseph Yuill, Carleton Place.

Kingston—B. H. Frink, Napanee, and J. M. Hurley, Belleville.

Montreal—Godfrey Beaudet, Valleyfield, P.Q., and W. Tait, St. Laurent, P.Q.

Peterborough—R. Vance, Ida.

Guelph—G. B. Hood and James Anderson, Guelph.

London—George Green, Fairview, and R. H. Harding, Thorndale.

Belleville—J. M. Hurley.

The officers for the ensuing year are: President, J. E. Brethour, Burford; vice-president, Geo. Green, Fairview; secretary-treasurer, F. W. Hodson, O.A.C. Directors—Yorkshires, G. B. Hood, Guelph; Berkshires, Thos. Teasdale, Concord; Suffolks, R. Dorsey, Burnhamthorpe; Chester Whites, R. Harding, Thorndale; Poland-Chinas, W. Jones, Mt. Elgin; Essex, Jos. Featherston, M.P., Streetsville; Tamworths, Andrew Elliot, Galt; Duroc-Jerseys, W. E. Butler, Dereham Centre. General Director, J. C. Snell, Snelgrove, Edmonton. Auditors, Messrs. J. I. Hobson, Mosborough, and R. P. Snell.

Mr. Frank wished the association to recommend the various fair boards to grant a class for Improved Suffolks, as he was now breeding a larger Suffolk than could be shown in the regular class. The request was not granted.

Capt. Young, Tupperville, read a paper, in which he criticized the report of the previous meeting.

Jottings.

Farm for Sale.—In consequence of the death of his only son, Mr. John I. Hobson, Mosborough, wishes to dispose of his fine farm, situated close to Mosborough station. It is in the highest state of cultivation, and should not long have to wait for a purchaser.

"North American Review."—Dr. Louis Robinson furnishes, for the December number of the *North American Review*, the fourth of a series of articles on "Wild Traits in Tame Animals," and has something extremely interesting to say on the subject of "The Fig."

Ontario Creameries' Association.—This association will hold its annual meeting, commencing on Tuesday, January 14th, at Brockville. Addresses will be given by Hon. John Dryden, Prof. Robertson; Prof. Brooks, Amherst College, Mass.; Prof. Fletcher, Prof. Shutt, Prof. Dean, and others.

Western Dairymen's Association.—The nineteenth annual convention of this association will be held at Woodstock, Ont., on January 7th, 8th, and 9th. Among those who will address the convention are the Hon. John Dryden, Minister of Agriculture for Ontario, Toronto; Theodore Louis, Wisconsin; John Gould, Ohio; Prof. Robertson, Dominion Dairy Commissioner, Ottawa; Prof. Dean, O.A.C., Guelph, and a number of other practical men. A large attendance of representative dairymen from all parts of Western Ontario is expected.

Holiday Number "Breeder's Gazette."—The holiday issue of *The Breeder's Gazette* is unquestionably the largest and handsomest single number of an agricultural newspaper ever published. It is a book of sixty-eight pages, with a colored lithograph cover showing a cluster of ripened ears of corn bursting from the husk. It contains a portfolio of fifteen large engravings illustrating various celebrated animals of different breeds, the central picture being a spirited double-page plate of a coach-and-four in motion. These are all the work of the most noted live-stock artists of the day. The literary features of this great paper are also of the highest order, including illustrated contributions from many clever writers, written especially for this number. *The Gazette* is clearly the leader of the American agricultural and live-stock press, and no wide-awake farmer or stock-grower can afford to be without it. Price of this \$2,500 Christmas issue, fifty cents per copy. Single subscription, one year, \$2. In clubs as low as \$1 per year. Sample copy of any regular issue free. Address J. H. Sanders Publishing Co., 358 Dearborn street, Chicago, Ill.

Stock Notes:

Cattle.

MR. JOHN A. DOUGLAS, Warkworth, Ont., has decided to sell his fine Ayrshire stock bull, Dominion Chief 1214, an illustration of whom appears in this month's issue. This is a rare opportunity to secure a most excellent sire.

MR. JOS. W. BARNETT, manager for Messrs. W. C. Edwards & Co., Rockland, Ont., writes: Our stock are all in fine, healthy condition, though perhaps a little thinner than usual. Our young bulls are doing well, and are a thick, robust lot, just the kind that our country is wanting at the present time. Our calves are coming better than ever; all

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The GREAT FRENCH VETERINARY REMEDY

A Safe, Speedy and
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SUPERSEDES ALL CAUTERY OR FIRING

Impossible to produce any scar or blemish. The Safest best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses or Cattle.

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 "The only perfect lamp made."



It gives a clear, white light, and
 Will Not Blow Nor Jar Out.

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If you mention this Journal when writing, a special discount will be given.

R. E. DIETZ CO., 60 Laight St., New York.

TO STOCKMEN AND BREEDERS

**LITTLE'S
 PATENT FLUID
 (NON-POISONOUS)
 SHEEP DIP
 AND CATTLE WASH.**

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.
 Sole Agent for the Dominion.

ONTARIO VETERINARY COLLEGE

Temperance St., Toronto, Can.

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

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

Stock Notes.—Continued.

straight reds but two, and they are all good roans. The red imported show cow, Rosebloom, has given us a red bull calf, and the roan cow, the medal cow this season, a nice roan bull. The show things are all doing well, and would show again if necessary. Enquiries are coming in more briskly than for some time.

MR. W. J. BIGGINS, Elmhurst Farm, Clinton, Ont., writes: Our cattle are somewhat thinner than usual on account of very bare pastures this fall. We have sold a very nice bull calf, Fairfax, from Matchless of Elmhurst Fourteenth, to Mr. James Crich, Tucker-smith, the second bull that Mr. Crich has purchased from Elmhurst. He also takes Mina Jan, a smooth, thick heifer, ten months old, of the Mina family. Both these calves are sired by the well-known imported General Booth (54353). We have now for sale Holyrood, a red of December 15th, 1894, a good one at a moderate price. The present stock bull, imported Royal Don (64717), the sweepstakes bull at Winnipeg, Manitoba, in 1894, also at the South Riding Show at Brucefield last spring, is doing well, and we expect something good from him in the spring.

MR. ARTHUR JOHNSTON, Greenwood, Ont., writes: Though stock matters, as is usual at this time of the year, are very quiet, yet there is an uncommonly hopeful feeling among breeders of cattle especially. There have been several shipments of young Short-horn bulls to the Northwest, which is an unusually early start in that direction. The prices paid were about the same as prevailed last year. There is no doubt but there will be a very considerable demand for young bulls for ranching purposes in the Northwest during the months of January, February, March, and April of the approaching year. Our own Short-horns are surely, though slowly, pulling up in condition—slowly, because like most other breeders we have not the feed to put them into the form we like to see them in. Our young bulls are now doing wonderfully well, both in condition and as to shape and quality. They, at any rate, are fast approaching our form at this time of year. We have sold the two oldest of the seventeen recently advertised by us, so that we have still fifteen beautiful young bulls fit for service in the early months of the coming year. We also have three very fine yearlings for immediate and extensive service. Indian Brave, the Toronto prize winner, has developed and improved immensely since the Industrial Exhibition. He is now a big, healthy fellow, and as pretty as a picture.

Sheep.

MR. T. W. TOOP, Chichester, England, was very successful with Southdown lambs at the Chichester Fat Stock Show.

SIR T. LENNARD BARRETT, Rottingdean, Brighton, England, has sold several head of Southdown sheep to go to France.

THE PAGHAM HARBOR CO., Selsey, Chichester, England, have been visited by French buyers, who selected a number of Southdowns to take back with them.

MESSRS. JOHN MILLER & SONS, Brougham, Ont. under date of November 23rd, report: We are selling a great many sheep just now, and, though prices are low, it is a healthy sign to see them moving. Rams, both Shropshire and Cotswold, from these parts are nearly all gone, and their scarcity will make them dear next year. We have sent away three cars of rams and three cars of both rams and ewes, with from eighteen to twenty-four in each, during the past four weeks, and have still a lot of ten to send off. We shall not carry more than two hundred over through the winter. Our cattle are doing well, our young bulls being very good.

MR. C. T. GARBUTT, Clarendon, Ont., reports: I have had a very busy fall, having shown Cotswold sheep at eight county and provincial shows, winning 39 firsts, 29 seconds, three diplomas, and several special prizes. My ewe and ram lambs won first and second at six shows. My three stud rams weigh fifteen pounds over half a ton, and are doing good work. I have lately purchased a pair of shearlings from Messrs. John Watson & Son, which have a record of thirteen first and six second prizes. They won first and second at Guelph in '94 and '95 as single sheep. I have sold all my rams that I could spare, and my sales of sheep and pigs have been good.

MR. JOHN CAMPBELL, Woodville, Ont., writes: The year 1895, now past and gone, brought a good large measure of prosperity and much satisfaction to me. Breeders of good Shropshires have little fault to find with the business of the past year. While the values of all ordinary farm productions are unusually low, with the exception of hay, well-bred "Shrops" of the right type, put on the market in good condition, have been making good money. The trade in ranch rams has been good enough to clear our country of them, so that the outlook is very encouraging to the ones who are determined to raise first-class stock. Coming to my own flock, it has done very well for me. The prices realized for my homebred rams reached the highest average of any year. In the showyards, with every sheep exhibited being homebred, my flock won a full share of honors. Competing with several winners at England's largest shows, the foremost flock of the United States, and Canada's best, which latter are fast getting to be the strongest competitors, twenty-six first premiums were won, including one sweepstakes, the diploma at Ottawa for best Shropshire flock, and at Toronto the first for Canadian-bred pen. Among the later sales are those of one ram and two ewes to Mr. D. E. Corbett, Swan Lake, Man.; one ram and two ewes to Mr. R. M. Thurston, Dunsford, Ont.; a ram lamb to Mr. D. Kennedy, Bristol, Ill., U.S.A.; a ram lamb to Mr.

MISCELLANEOUS.

**\$200
IN GOLD !!**

Will be offered by the undersigned in the various classes at the New York Poultry Show, next February, for special prizes for birds fed and put into show condition on Spratts' Patent Poultry Foods.

Send for catalogue to
SPRATTS' PATENT LIMITED
DOG AND POULTRY FOODS
245 East 36th Street, New York

Swallow it.

That is the best way to take a Ripans Tabule, best because the most pleasant. For liver and stomach disorders Ripans Tabules are the most effective remedy—in fact, the standard.

Ripans Tabules may be obtained through your nearest druggist. Price 50 cents a box.

**Windsor
Salt**

Windsor Dairy Salt is Purest and Best for butter making.

Mrs. Marvin Burke, of Bowmanville, uses nothing but WINDSOR SALT, and has taken a gold medal, and 29 first prizes as follows: Industrial Exhibition, Toronto, 2; Quebec Provincial, Montreal, 1; Central Canada, Ottawa, gold medal and 2 highest awards; Whitby, 4; Bowmanville, 3; Orono, 3; Markham, 4; Stouffville, 3; Woodbridge, 4. Grocers should remember this fact when ordering Dairy Salt from any wholesale house. Put up fifteen 20 lb. bags per barrel; in 50 lb. and 200 lb. white duck sacks, and in paper lined barrels, 280 lbs. net.

9 CORDS IN 10 HOURS



BY ONE MAN, with the FOLDING SAWING MACHINE. It saws down trees. Folds like a pocketknife. 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. \$7,000 in use. Send for FREE Illustrated catalogue showing latest IMPROVEMENTS and testimonials from thousands. First order secures agency. Address **FOLDING SAWING MACHINE CO.** 62-68 S. Clinton Street, Chicago, Ill.

We manufacture in Canada. No duty to pay.

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Successful

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

Actual Potash.

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

Our pamphlets are not advertising circulars booming special fertilizers, but are practical works, containing latest researches on the subject of fertilization, and are really helpful to farmers. They are sent free for the asking

GERMAN KALI WORKS,
93 Nassau St., New York.

Just a Moment

**You use matches—
every one must, 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.**

Stock Notes—Continued.

John F. Weaver, Sussex, Wis., U.S.A.; one ram and three ewes, to Mr. A. McKay, Woodville, Ont.; and to Messrs. C. & W. Frazee, Green Valley, Ill., U.S.A., six ewes. I have still a lot of extra well-bred young ewes to sell, and, in order to make the room needed, will reduce prices.

Swine.

MR. E. BUSS, Elphicks, Horsmonden, Kent, England, has been again adding to his extensive list of prizes by winning several more at the recent Tunbridge Wells show.

MR. J. M. HURLEY, Belleville, Ont., writes: My Yorkshires still continued in the lead at the fall exhibitions, and I took the majority of the prizes where I exhibited. Sales are numerous and enquiries come in by every mail. The following are a few of the sales recently made: To Mr. John Boker, Marlbank, a boar; to Mr. J. H. MacCormack, Tamworth, a boar; to Messrs. Farley & Mgran, Belleville, a boar; to Messrs. Hicks & Joyd, Plainfield, a boar; to Mr. T. Haslip, Montreal, a boar; to Mr. T. W. Huyck, Allisonville, a boar.

MR. C. R. DECKER, Chesterfield, Ont., reports: Berkshires are in good demand, considering the dull times. I have sold a good number in different parts of Ontario and the United States. I have on hand a large stock of first-class animals from Major General and Star, and choice sows, some of which won the herd prize from the herds that won at London this fall. My stock have been carefully selected, and are always headed by the best stock boars that I can find, sound in constitution, and large in size. My recent sales are as follows: To Mr. George Thomson, Bright, Ont., one boar; to Mr. William Stock, Cassel, Ont., one boar; to Mr. Gilmer, Haysville, one sow in pig; to Mr. William Kerr, Haysville, one sow; to Mr. John Snyder, Haysville, one sow; to Mr. Reuben Babcock, Wolverton, one boar; to Mr. E. W. Siprell, Carholme, three boars and five sows; to Mr. C. M. Glasgow, Fingal, one boar; to Mr. T. G. Eastland, Apsley, one boar; to Mr. Wm. Hastings, Chatham, one boar and one sow; to Mr. U. Z. Green, Indianola, Ill., one boar and three sows; to Mr. George Jackson, Scugog, Ont., one boar and one sow.

Poultry.

MR. C. J. WRIGHT, Dixville, Que., writes: My poultry are in fine condition after moulting, and are standing the winter well. I am booking orders for sittings of eggs, and have already a number booked.

MR. W. J. HAYCRAFT, Agincourt, Ont., states that if Mr. Hodgson desires the public to infer that he won 2nd on 1895 Toulouse gander he is mistaken. Mr. Haycraft says he won 2nd on young birds and 1st for 1895 female. Mr. Hodgson won 2nd on old gander. Our report, therefore, was correct.

MISCELLANEOUS.

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

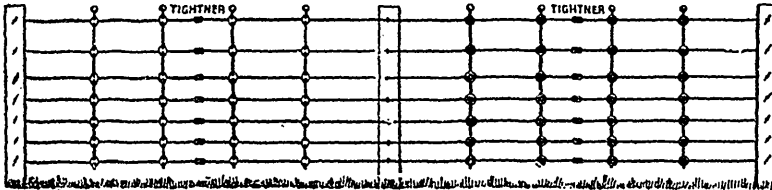
is a scientific preparation in the form of a powder. It purifies the blood, strengthens the digestion, turns a rough coat into a smooth and glossy one and puts the animal "in condition." He then has "good life" and feels like holding up his head and lifting his feet.

MILK COWS are greatly benefitted 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.



No better wire fence built than the Casey Diamond Grip, Pat. Just the thing for farmers—neat, strong, and durable. Will last a lifetime, barring accidents. Uses only straight wires, with so little depression as not to cause the galvanize to crack or peel. If a dealer wants something better to handle than he has had let



him try it. We also supply the Double Lock Wire Fence, which is claimed by some to be second to none, the lateral wire of which, as well as the upright stay, being crimped at joints. Our agents build either on premises. Agents wanted everywhere in Canada, to whom sole territory will be allotted. County and township rights for sale. Our Gas Pipe Frame Gate takes the lead. No better or cheaper place in the city to get plain or fancy turning done. Call on, or address,

CANADA FENCE CO. Cor. Bathurst and Clarence Sts. **LONDON ONT.**

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We manufacture a full line of

Root Pulpers and Slicers

(Single or Combined, and for Hand or Power.)

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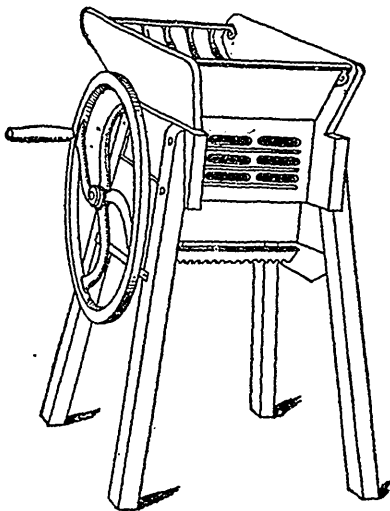
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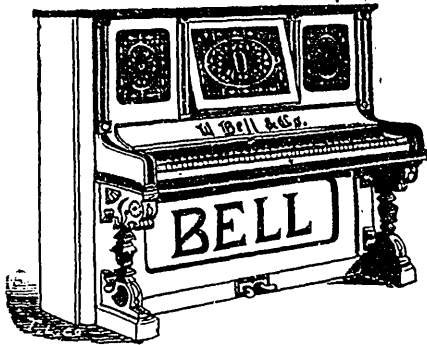
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Agents wanted in all unoccupied territory.



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421 Mention this paper.

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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.

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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).

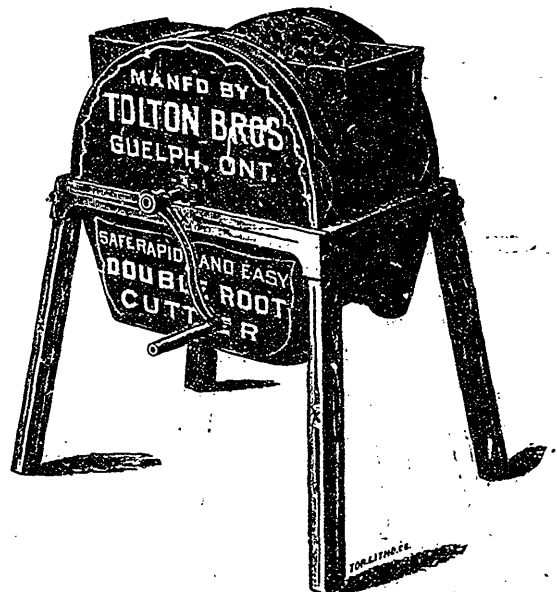
3rd.—The united force of both wheels is always used in doing the work in either capacity. This accounts for it being a steady, easy-running, and rapid root cutter.

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,

TOLTON BROS., GUELPH, ONT.



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