

J. G. Hatherly, Editor
 100 St. James St., Winnipeg, Man.

THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE
 SUCCEED
 FOUNDED 1875

* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE *

VOL. XXXVII. WINNIPEG. APRIL 5, 1902. MANITOBA. No. 547

15 cents.
 For 15 cents (stamps will do),
 SENT TO THE
Western Veterinary Co., Box 573, Winnipeg
 YOU WILL RECEIVE (POSTPAID) ONE SAMPLE BOTTLE
Dr. Warnock's Ulcerkure THE MODERN WOUND-
 HEALING WONDER,
 ONE SAMPLE **Owen's Liquid Catarrh Snuff,**
 BOTTLE
 AND ONE 25c. **Owen's Cascara Liver Tablets,**
 BOTTLE OF
 CONTAINING 40 DOSES.
 These tablets cure constipation, dyspepsia and all
 stomach and liver disorders.
 All for 15c. No repeats allowed. Merely to
 introduce 3 very worthy medicines. In
 ordering, mention the FARMER'S ADVOCATE.

BANK OF HAMILTON
 HEAD OFFICE:
HAMILTON, ONTARIO.
 Paid-up Capital, \$2,000,000;
 Reserve, \$1,500,000;
 Total Assets, \$19,000,000.
 BRANCHES IN MANITOBA and N.-W. T.,
 WINNIPEG
 (CORNER MAIN AND McDERMOT STREETS;
 C. BARLETT, AGENT),
 PILOT MOUND,
 BRANDON, MANITOU,
 CARMAN, MORDEN,
 HAMIOUA, STONEWALL,
 PLUM COULEE, WINKLER,
 INDIAN HEAD, N.-W. T. MOOSE JAW, N.-W. T.

Deposits Received and Interest Allowed
 GENERAL BANKING BUSINESS
 TRANSACTED.
 Collections carefully and promptly effected at all
 points in Canada. Savings Banks at all Offices.
 Correspondence solicited.

To build up the West support its institutions.
**THE MANITOBA
 FIRE ASSURANCE CO'Y**
 ESTABLISHED 1886.
 Head Office: Winnipeg.
 Full Government deposit. Licensed by Ter-
 ritorial Government. Special inducements
 to Farmers to insure in this Company.
 Reliable, energetic agents wanted in un-
 represented districts.
HON. H. J. MACDONALD, K. C., President.
J. T. GORDON, M. P. P., Vice-President.
H. H. BECK, Managing Director.
 Address all communications to Managing Director,
 WINNIPEG, MANITOBA.

**Irish and Scotch
 Terriers**
 of the best blood obtainable.
 Puppies from \$10.00 up.
Mrs. Bradley-Dyne,
 Sidney P. O., British Columbia.

CONTENTS OF THIS NUMBER. PAGE.

FARMING IN MANITOBA .. 239
 IS THE SMALL CREAMERY DOOMED? .. 239
 SELECT THE BEST MILKING EWES .. 239
 TO MAKE BOX MEASURES .. 239
 ASSINIBOIA HORTICULTURAL SOCIETY .. 239
 AN EGG-EATING-PROOF NEST .. 239
 AFTER THE STORM THE SUN SHINES .. 239
 AN ESSENTIAL IN A GOOD POTATO .. 240
 THE ONTARIO AGRICULTURAL COLLEGE .. 240
 COL. DENT TO BUY MORE ARMY HORSES .. 240
 HAZZARD MINES (ILLUSTRATION) .. 241
 A WESTERN INDUSTRY OF GROWING IMPORTANCE .. 241
 A COMMON MISTAKE REGARDING WORK .. 241
 THE FARMER AS A THINKER .. 241
 A COMPETENT ENGINEER CAN RUN A TRACTION .. 241
 THE ROCHE PERCEE, OR PIERCED ROCK (ILLUSTRATION) .. 241
 THE PRODUCTION OF MILK BY THE AVERAGE COW .. 242
 A TYPICAL HUNTER (ILLUSTRATION) .. 243
 THE LONDON HORSE SHOWS .. 244
 1902 FAIR DATES .. 244
 STARTING HORSES TO WORK IN THE SPRING .. 244
 FRUIT-GROWING IN SOUTH DAKOTA .. 244
 A COMFORTABLE HOMESTEAD, A. W. KENT'S, RALPHTON, MAN.
 (ILLUSTRATION) .. 245
 ARGENTINE PORTS REOPENED .. 245
 THE GERMINATING QUALITY OF ALBERTA OATS .. 245
 THE POTATO CROP .. 245
 PLOWING ON FARM OF A. W. KENT, RALPHTON (ILLUSTRATION) .. 245
 THE SHORTHORN "IDEAL" AGAIN .. 246
 BREEDERS OF ABERDEEN-ANGUS IN THE WEST .. 246
 PURE-BRED VS. SCRUB FOWL .. 246
 IMPROVE THE BEEF GRADE .. 247
 STRATHCONA (ILLUSTRATION) .. 247
 IMPROVING THE FAIRS .. 248
 BIRMINGHAM SHORTHORN SHOW AND SALE .. 248
 THE LATE MR. HENRY ARKELL (PORTRAIT) .. 249
 DEATH OF MR. HENRY ARKELL .. 249
 PLANTING WIND-BREAKS; PLEASED .. 249
 WHAT IS NATURE STUDY? .. 249
 SIR WILLIAM C. MACDONALD (PORTRAIT) .. 249
 THE WORK OF THE FORESTRY DEPARTMENT IN MANITOBA .. 250
 THE SHORTHORN A BIT ON HIS DIGNITY .. 250
 CROSS FERTILIZING .. 251
 "DUSTER" (ILLUSTRATION) .. 251
 GUERNSEY HERD IN PAN-AMERICAN MODEL DAIRY BREED
 TEST, 1901 (ILLUSTRATION) .. 251
 GALLOWAYS AT CASTLE-DOUGLAS .. 251
 A BEAVER COLONY; THE EDMONTON INDUSTRIAL EXHIBITION .. 251
 MAKING HIGH-CLASS BUTTER .. 252
 A WESTERN HORTICULTURAL SHOW .. 252
 OUR SCOTCH LETTER .. 252
 BARRED PLYMOUTH ROCK COCKEREL (ILLUSTRATION) .. 253
 WHITE WYANDOTTE COCKEREL, SNOWBALL (ILLUSTRATION) .. 253
 THREE YEARS' EXPERIENCE WITH THE TEST SYSTEM .. 253
 ANNUAL MEETING OF THE WINNIPEG FORESTRY ASSOCIATION
 RE BIG THRESHING OUTFITS; VALUE OF WHEAT FED TO HOGS .. 253
 EGGS FOR HATCHING .. 254
 HURRAH FOR THE HEN! .. 254
 THE BEEKEEPER'S WORK IN APRIL .. 254
 THE X-RAYS IN BOVINE TUBERCULOSIS .. 254
 CARE OF MILK ON THE FARM .. 255
 HOW TO CONSTRUCT A JERRY TO LAISE BARN (ILLUSTRATED) .. 255
 CHURNING TEMPERATURES .. 255
 QUESTIONS AND ANSWERS:—VETERINARY: SCOURS AND RHU-
 MATISM IN PIGS; ABSCESS ON HEIFER'S SIDE; SKIN DISEASE
 IN COLT; COLT WITH DEFORMED LEG AND FOOT; PARTIAL
 IMPOTENCY IN STALLION; OPHTHALMIA AND SORE NECKS IN
 HORSES; INAPETENCE IN COW—WORMS IN MARE—FOOD FOR
 PIGS; COLTS WITH A COUGH; PROBABLY DEAD FETUS; STEER
 WITH SORE LEG; FETLOCK ENLARGED FROM INTERFERING .. 256
 MISCELLANEOUS: RE BREAKING LAND—CHILD FOR ADOPTION;
 IS CALF IMPROVED?; AGRICULTURAL VALUE OF COAL ASHES;
 WORMS IN HOUSE-PLANT POTS; WIDENING A BARN .. 256, 257
 FARM GOSSIP: THE PAINTING SEASON; POULTRY FOR BRITAIN;
 TARIFF UNCHANGED .. 257
 CATTLE DEALERS COMPLAIN .. 257
 CHICAGO MARKETS .. 257
 MONTREAL MARKETS .. 257
 BRITISH CATTLE MARKETS .. 257
 POPULAR PREMIUMS .. 257
 HOME MAGAZINE.—THE FAMILY CIRCLE .. 258
 "WHEN DID YOU LAST SEE YOUR FATHER?" (ILLUSTRATION) .. 258
 THE CHILDREN'S CORNER .. 259
 THE QUIET HOUR .. 260
 GOSSIP .. 262, 263, 265, 266, 267, 269, 270, 273, 275
 NOTICES .. 263, 291, 291, 275
 ADVERTISEMENTS .. 237 and 238, 262 to 276

PUBLISHED TWICE A MONTH AT WINNIPEG, MANITOBA.

Watch Repairing
 Is our business, and we would like to
 show you how expert we are. We
 give special attention to repairing of
 fine watches. We try to have our
 work give satisfaction such as will win
 the confidence of all who deal with us.
 We want you to feel that your watch
 is safe in our hands, and that the re-
 pairs will be done in the most com-
 petent manner. A mailing-box sent for
 the asking. Try us.
D. A. REESOR, "THE JEWELLER,"
 Brandon, Man.
 Official Watch Inspect- Issuer of Marriage
 or for the C.P.R. & N.P.R. License.

**Our New Spring
 Catalogue**
 Is free, and quotes prices, freight paid to
 your station, on groceries, crockery, china
 and glassware. This catalogue describes our
 new plan of selling you a dinner set in such
 a way that if a piece gets broken at any time
 we can supply you with another piece ex-
 actly like it at small cost. We can also send
 you a sample of the set before you buy.
 Send your name and address to-day and get
 our catalogue.
 You can save 15 cents a pound on your Tea
 and Coffee and get the guarantee—"Satis-
 faction or your money back."
Smith & Burton,
 BRANDON, MAN.

DR. BARNARDO'S HOMES.
 The managers of these institutions invite applica-
 tions from farmers and others for the boys and
 youths who are being sent out periodically from
 their English training-homes. The older boys remain
 for a period of one year at the Farm Home at Rus-
 sel, during which time they receive practical instruc-
 tion in general farm work before being placed in situ-
 ations. Boys from eleven to thirteen are placed from
 the distributing home in Winnipeg. Applications for
 younger boys should be addressed to the Secretary,
 115 Pacific Avenue, Winnipeg, or P. O. Box 206; and
 for older boys, possessing experience in farm work,
 to Manager, Dr. Barnardo's Farm Home, Barnardo,
 Man.

R. A. BONNAR,
 Barrister, Notary Public,
 Conveyancer, Etc.
 Office 494½ Main St., Winnipeg, Man.
 Special attention to collections. Solicitor for "Farm-
 ar's Advocate," Winnipeg. 24-a-m
 PLEASE MENTION FARMER'S ADVOCATE.

"BLACKLEGINE"

Pasteur Blackleg Vaccine Quite Ready for Use.

This is in the form of a cord impregnated with the vaccine. Each dose is separate and applied with a special needle. The dose is hitched on to a notch in the needle and then inserted under the skin at the shoulder. The needle is provided with a detachable handle. Vaccination with "Blacklegine" is as rapid and easy as taking a stitch. There is no dissolving, or mixing, or filtering a powder; no injecting or trouble in measuring doses; **no expensive syringe outfit.**



BLACKLEGINE OUTFIT, SHOWING NEEDLE INSERTED IN HANDLE AND DOSE OF VACCINE ATTACHED READY FOR VACCINATING.

Prices: "Single Blacklegine" (for common stock): No. 1 (ten doses), \$1.50; No. 2 (twenty doses), \$2.50; No. 3 (fifty doses), \$6.00. "Double Blacklegine" (for choice stock) (first lymph and second lymph, applied at an interval of eight days), \$2.00 per packet of ten double doses. **Blacklegine Outfit** (handle and two needles), 50 cents.

PASTEUR VACCINE COMPANY,
Chicago, New York, Omaha, Kansas City, Ft. Worth, San Francisco.

AS SUPPLIED TO

H. R. H. THE PRINCESS OF WALES

Ogilvie's Hungarian Flour.
Ogilvie's New Rolled Oats.
Ogilvie's Whole Wheat Flour.
Ogilvie's Royal Breakfast Food.

ASK YOUR GROCER FOR **OGILVIE'S PRODUCTS** THE BEST THE WORLD PRODUCES

Fleming's 3 are free if they fail.

No Need of Spavins.

Fleming's Spavin Cure will not fail. Simple, harmless, not painful, and one application usually cures. All old ideas about spavins do not count against this remedy; it is different and certain.

Short, Texas, July 24, 1901.
"I bought a bottle of your Spavin Cure last year. The horse treated is now perfectly sound."—Dr. John R. Simms.

Curbs, Splint, Ringbone, etc., cured just as quick. You can't afford not to write at once for our free booklet.

Lump Jaw Wholly Mastered.

Fleming's Lump Jaw Cure long passed the experimental stage. It positively does cure cases of every degree of severity. Easy to use, harmless, humane. But one to three applications needed. Not a cent of cost if it fails. Free book.

Fistula and Poll Evil Now Easily Cured.

Fleming's Fistula and Poll Evil Cure makes the cure of these diseases easy, and a matter of two to four weeks only where other treatment requires months and often fails. This has never yet failed, and if it ever does it costs nothing. We have an important treatise for you.

Write us today for circulars. Mention this paper.

FLEMING BROS., Chemists,
36 Front St., West, Toronto, Ont.

IT PAYS TO ADVERTISE IN
The Farmer's Advocate.

Will You Spend a Penny For a Sick Friend?

Here is my proposition. I have written the six books shown below. I want no money. I simply desire the privilege of sending the book needed to some one who is not well; I will do more: To prove my faith in my newly-found principles of curing the sick, I'll send you an order on your nearest druggist for six bottles of Dr. Shoop's Restorative. I will let you or your friend take it for a month, and if it succeeds he will charge you \$5.50 for it. If it fails, your druggist will send the bill to me. I will tell him to trust to your honesty, leaving the decision to you. You will know then what my Restorative can do. My Restorative will gain your good-will and endorsement under such a trial.

No physician ever has or ever will, I believe, make an offer like this—my remedy is the only prescription yet found to stand a test like this.

And I do exactly as here stated. No catch. No deceit. You deal with your own druggist, who may be your neighbor and a stranger to me. The plan protects you absolutely.

You will see this offer published in every high-class magazine and widely-circulated paper in America, and here lies the proof of my success. My records show that 39 out of each 40 who accepted the six bottles paid for them. They paid because they were cured. There are 39 chances in 40 that I can cure you. Is not this a remarkable offer? Is not the record of cures even more remarkable? I fail sometimes, but not often. A few of these diseases arise from causes like cancer, for which, as yet, no man knows a cure.

And how do I accomplish this? I will tell you. I have found a way to strengthen the inside nerves—the only way yet known. These nerves alone operate each vital organ. The Heart, Stomach, Kidneys, etc., each have their nerve branch. The power that makes each organ do its duty is the inside nerve power—nothing else. I know how to restore that power. No matter which organ is weak, this nerve system operates them all. Nerve strength or weakness extends to all.

My Restorative goes directly to this cause—these nerves. That is the secret of my success. Don't let prejudice keep you from learning what my books will tell you. They are practical books, written for intelligent people. I am not appealing to ignorance, and I wish to discourage prejudice. No matter what your doubts, remember I have spent a lifetime on my method, and it is unknown to you. I cannot call personally upon seventy-six million of people; then I must tell you of my offer through the papers you read.

The telephone, the telegraph, the wonders of electricity have been solved by man. May I not have found a way to do as much for human ills?

Thousands who are sick will read this—who are discouraged because of others' failures to cure them. That is no reason why they should not get my book. You cannot know too much about ways to get well when such ways can be tried at my risk. This offer is too fair to need argument. Won't you spend a penny for a sick friend? Write a postal to-day for the book he needs. Your reward will come in knowing that you opened the way to a cure.

- Book No. 1 on Dyspepsia.
 - Book No. 2 on the Heart.
 - Book No. 3 on the Kidneys.
 - Book No. 4 for Women.
 - Book No. 5 for Men (Sealed).
 - Book No. 6 on Rheumatism.
- Mild cases, not chronic, are often cured by one or two bottles. At all om

WOODSTOCK STEEL WINDMILLS

Galvanized or Painted. For Power or Pumping. The **DANDY Windmill** with Graphite Bearings, runs easy and controls itself in the storm.

GRINDERS, PUMPS, WATER TANKS, DRINKING BASINS AND SAW BENCHES.

WOODSTOCK WIND-MOTOR CO.,
WOODSTOCK, ONT. (Ltd.)

Baby's Own Soap

Specially adapted for children, on account of its absolute purity.

Baby's Own Soap is used by young and old alike and commands an immense sale.

Don't trifle with imitations.

ALBERT TOILET SOAP CO., MFRS.
MONTREAL.

THE **Excelsior Life** INSURANCE CO.

Head Office: Toronto, Ont.
Absolute Protection. Profitable Investment. Agents wanted.

ADVERTISE IN
THE FARMER'S ADVOCATE.

FARMER'S ADVOCATE

AND HOME MAGAZINE

* AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.*

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875

Vol. XXXVII.

WINNIPEG, MANITOBA, APRIL 5, 1902.

No. 547

Farming in Manitoba.

IMPORTANCE OF UTILIZING EVERY HOUR OF TIME DURING THE FIRST YEAR.

Much valuable time is often wasted by the new settler during the first summer, mainly through inexperience. He frequently fails to see the necessity of doing the right thing at the most opportune time.

Usually, as soon as the season for breaking is passed, the natural hay meadows are ready for cutting, and it is a fortunate provision of nature that nearly all parts of the Northwest are, during the first years of settlement, well provided with marsh hay. This marsh hay is of many varieties and of varying quality, but even the poorest makes good fodder if properly cured, and I have seen some of the finer kinds from the western part of Manitoba with a beautiful green color and an aroma equal to that made from the best cultivated grasses. As a rule, the native grasses require very little curing in the swath, and should be bunched within 24 hours of cutting, and cured as much as possible in the coil. This plan preserves both color and flavor, and there is very little danger of mould. In selecting a spot for stacking, low spots should be avoided, so as to lessen the risk of loss during a wet season. The stacks should also be located where it is possible to plow a good wide fire-break around them. Our native hay readily sheds rain, and if the center of the stack is kept well filled and tramped, there is very little danger of loss from wet in the stack. The principal source of loss is from the careless habit of leaving the hay in cocks until rain or surface water has ruined it. Another source of loss is from fire, through neglecting sufficient fire-breaks.

The quantity of hay required per head will vary with the season, but it is wise to put up an abundance, especially as there is a large demand for any surplus, at profitable prices.

Advantage should be taken of every opportunity to prepare outbuildings for the stock, remembering that unless cattle are housed before fall storms commence, they will lose flesh rapidly, and it will be difficult to restore them to their former condition without grain. Where capital is limited, a properly-built log stable is not to be despised, and it can be quickly and cheaply built by one accustomed to an ax, and the settlers from the British Isle will find no difficulty in getting the assistance of a skilled Canadian by the exchange of work.

Another important work which can often be undertaken between breaking and backsetting is the digging of a well. In some parts of Manitoba this is a very easy matter, water being obtainable on nearly any part of the farm at a depth of from 20 to 30 feet, but in other districts the water runs in very narrow veins, and many attempts are made before water is struck. For this reason it is advisable to begin work as early in the year as possible. Where it is possible to obtain a long iron testing rod and a two-inch auger fitted to the end of it, it will greatly facilitate matters.

When there are many young men in the family it will often pay them to hire out in the older settlements during the harvest, as wages are generally good at this time of the year, and it affords an agreeable change, besides the opportunity of gaining a practical knowledge of this important part of Manitoba farm operations. It is always advisable for the new settler to get acquainted with the most improved methods in use

here, for while farming in one sense is the same the world over, there are many details of farm work practiced here that are entirely different from those practiced in older-settled countries.

The ground is generally frozen up here by the 10th of November, and before this time all backsetting and harrowing should be finished, the dwelling and the stables completed, and a portion, at least, of the hay convenient. During the autumn and winter, a good supply of fuel should be secured, materials for fencing, such as rails and posts, cut and drawn home. All building materials required for the coming year should also be prepared and placed convenient to the building site. This is also the proper time to secure and properly clean the seed grain needed for the second year, but I will write more fully on this subject in my next.

S. A. BEDFORD.

Is the Small Creamery Doomed?

A short time ago the "Farmer's Advocate" drew attention to Prof. Ruddick's utterances regarding the creamery business, in which that gentleman said that centralization of creameries was the trend in the dairy business, and that he intimated that two or three creameries at central points could do all the manufacturing in Manitoba of butter intended for export, and do it far more cheaply than is now done. Recent happenings seem to point that the Professor had rightly gauged the situation, inasmuch as we hear that negotiations are on foot to buy up or control several local Manitoba creameries, with a view of closing them after a time and sending the raw material to a city creamery. The bought-up creameries will then, we suppose, be nurseries, as it were, to increase the number of patrons and the raw material, which will later on be diverted to the central manufacturing establishment in Winnipeg, which, we trust, will be so directed as to give the patrons a good return for their milk. It will only be a few years, it is thought, before centralization will have been accomplished. It will be well for farmers and townsmen approached to give aid to start a creamery at a local point, to remember the possibility of the contingency mentioned above, resulting in a year or two in a loss on the plant they may have purchased.

Select the Best Milking Ewes.

The importance of breeding from ewes which are known to belong to a good milking strain of sheep cannot be overestimated. The lamb which has for dam the heaviest-milking ewe in the flock is, as a rule, the first ready for the market when the time comes for disposing of the first fruits of the flock. Ewes, like cows, differ very largely both as regards the amount and the quality of the milk which they yield. During the early stages of their growth, lambs depend almost entirely for their sustenance upon the milk which they obtain from their dams, and it will be almost invariably found that the heaviest and plumpest lambs in the flock are those whose mothers are the heaviest milkers.

To Make Box Measures.

A box 24 inches long by 16 inches wide, and 28 inches deep, will contain a barrel or three bushels.

A box 24 inches long by 16 inches wide, and 14 inches deep, will contain half a barrel.

A box 16 inches square and 8 2 1/2 inches deep, will contain one bushel.

A box 16 inches by 8 2 1/2 inches square, and 8 inches deep, will contain one peck.

A box 8 inches by 8 inches square, and 14 1/2 inches deep, will contain one gallon.

A box 7 inches by 4 inches square, and 14 1/2 inches deep, will contain one quart.

A box 4 feet long, 3 feet 5 inches wide, and 2 feet 8 inches deep, will contain one ton of coal.

Assiniboia Horticultural Society.

The first annual flower show of the Assiniboia Horticultural Society will be held in Regina on Thursday, August 21st, and is open to all amateurs in the district. Exhibits will be divided into two classes—house plants and cut flowers. In the first class cash prizes aggregating \$51 will be distributed; in the second class the prizes will amount to \$41.50 in cash. There are 17 sections in class one, and 18 sections in class two. The rules require that all exhibits must have been the property of the exhibitor for 30 days prior to the 21st of August, 1902. Entries close on Wednesday, August 20th, and exhibits must be on the ground not later than ten o'clock on the morning of the exhibition. An entrance fee of 10 cents will be charged for each section. Full particulars may be obtained from Mr. W. B. Pocklington, Honorary Secretary, Regina.

An Egg-eating-proof Nest.

I have noticed several inquiries in the columns of your paper asking how to prevent hens from eating their eggs. As there have been several methods explained and articles written on the subject and different plans of hens' nests given, I will endeavor to describe a nest which has been worked successfully with our hens.

Take a ten-inch board, any length, measure 22 inches from the end and draw a line square across the board. Cut a six-inch slant on the end of the board, then cut a four-inch slant in the opposite direction to the six-inch slant, starting at the 22-inch mark. This gives you a board with a 12-inch and a 22-inch edge. Place this piece on the board from which you have just cut it, placing the four-inch slant to the end where it came off, and cut another board the same shape (and as many as you please); these pieces form the sides of the nests. Then take a two-inch strip, 12 inches long, and nail on to the 12-inch edge, two inches from the four-inch slant, having the sides of the nest 11 inches apart. Also on the 22-inch edge nail two-inch strip square across from the two-inch strip on the 12-inch edges, then nail a 4-inch strip six inches higher up, then nail a 12-inch board on the six-inch slant. This forms the roof of the nest, and is too steep for the hens to stand on. Then take a piece of an old sack, about 14 inches square, and tack it to the two 2-inch strips stated above, so that there will be a lap on both the sides of the nest, having it a little slack, then take pieces of lath and nail them on the sides of the nest and the two 2-inch pieces in front and behind, having the canvas between, punch a small hole in the center, cut the canvas one and one-half inches in four opposite directions, making four corners; this makes a hole big enough for the egg to drop through. Then take another piece of canvas, 14x18 inches, and nail it on the four-inch slant, leaving a space of two inches below the two-inch strip that the former canvas is nailed to (to put your hand in to take out the eggs), and bringing it up at the back of the 2-inch piece, nail it securely, the same as the top canvas. The hen, when laying, as a rule, drops the egg in the center of the nest, but in case she does not, the canvas being slack, the egg will roll to the center, dropping through the hole onto the lower canvas, which is on a slant, causing the egg to roll to the back, out of the reach of the hen.

J. S. LITTLE.

Woodworth Municipality, Man.

After the Storm the Sun Shines.

The late snowstorm, though it may have been a disappointment to farmers who were counting on an early seedtime, and though it was an inconvenience and cause of discomfort to many people, especially to newcomers to the country, will doubtless be found to bring a compensation, as the supply of moisture it brought with it will probably tell for good on the coming crop, and now that brighter days are in sight, the work of seed-sowing will go on briskly, and we may hope for a repetition of last year's returns in the harvest yield.

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN MANITOBA
AND N.-W. T.

PUBLISHED SEMI-MONTHLY BY
THE WILLIAM WELD COMPANY (LIMITED).

WESTERN OFFICE:
MCINTYRE BLOCK, MAIN STREET, WINNIPEG, MAN.

EASTERN OFFICE:
CARLING STREET, LONDON, ONT.

LONDON (ENGLAND) OFFICE:
W. W. CHAPMAN, Agent, Fitzalan House, Strand,
London, W. C., England.

1. THE FARMER'S ADVOCATE is published on the fifth and twentieth of each month. It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairy-men, gardeners, and stockmen, of any publication in Canada.
2. TERMS OF SUBSCRIPTION—\$1.00 per year *in advance*; \$1.50 if in arrears; sample copy free. European subscriptions, 6s. 2d., or \$1.50. New subscriptions can commence with any month.
3. ADVERTISING RATES—Single insertion, 10 cents per line, agate. Contract rates furnished on application.
4. THE ADVOCATE is sent to subscribers until an explicit order is received for its discontinuance. All payments of arrearages must be made as required by law.
5. THE LAW IS, that all subscribers to newspapers are held responsible until all arrearages are paid and their paper ordered to be discontinued.
6. REMITTANCES should be made direct to this office, either by Money Order or Registered Letter, which will be at our risk. When made otherwise we will not be responsible.
7. THE DATE ON YOUR LABEL shows to what time your subscription is paid.
8. ANONYMOUS communications will receive no attention.
9. LETTERS intended for publication should be written on one side of the paper only.
10. WE INVITE FARMERS to write us on any agricultural topic. We are always pleased to receive practical articles. For such as we consider valuable we will pay ten cents per inch printed matter. Criticisms of Articles, Suggestions How to Improve the ADVOCATE, Descriptions of New Grains, Roots or Vegetables not generally known, Particulars of Experiments Tried, or Improved Methods of Cultivation, are each and all welcome. Contributions sent us must not be furnished other papers until after they have appeared in our columns. Rejected matter will be returned on receipt of postage.
11. ALL COMMUNICATIONS in reference to any matter connected with this paper should be addressed as below, and not to any individual connected with the paper.

Address—THE FARMER'S ADVOCATE, or
THE WILLIAM WELD COMPANY (LIMITED),
WINNIPEG, MANITOBA.

An Essential in a Good Potato.

The tendency in agricultural lines is more and more towards knowledge of the products of the farm. It is not alone sufficient to produce things, but the article produced must be the best possible. To render such a result possible, it is incumbent on the producer "to know a good thing when he sees it." In potatoes, size, as far as is compatible with smoothness and soundness, is desired, as is also the mealy texture, about which the Farmer's Gazette has the following to say:

"Why is it that the potato on being boiled becomes so floury or 'mealy' in texture? When cut up in the raw state the flesh or substance of the tuber is quite soft and juicy, whereas the same tuber after being boiled becomes quite crisp and mealy in texture. The explanation is that in the process of cooking the starch grains which are stored up in such large quantities in tubers become so acted upon by the heat that they burst the little cells or coatings in which they are enveloped, and in this way give the peculiar floury appearance, characteristic of a well-cooked potato of good quality. The higher the percentage of starch present the more mealy the appearance which the tuber will present after being cooked. A simple test of the quality of a potato may be applied by cutting it in two and then placing the cut edges against each other so as to get them into the positions which they occupied before cutting. One of the sections should then be taken hold of and the other allowed to depend or hang down. In almost all cases the lower portion will remain attached to the upper, but by jerking the hand slightly the two can be made to part company. The more difficult it is to shake them apart in this way the better the quality of the tuber, the explanation being that the pieces are held together by the adhesive nature of the starch, and that the more starch that is present the more difficult it will be to part them. On the other hand, the less starch there is present and the more water, the softer and less floury the flesh will be when cooked."

George Rankin & Sons, Melrose Stock Farm, Manitoba, Man., March 15th, 1902: "Please accept my thanks for the knife which I received last mail. I think it is a good knife, well finished, a desirable size for a farmer, and I am pleased to have one."

The Ontario Agricultural College.

To the Editor "Farmer's Advocate":

Sir,—The above institution is one of which Ontario, and, indeed, Canada, may well be proud, yet self-satisfaction must not be allowed to blind us to the fact that even the O. A. C. course is not perfect or in no need of an occasional awakening. This Canadian college may be considered, for all practical purposes, the pioneer agricultural college of the continent, from whose loins have sprung teachers who have led the way in the colleges south of the line. These men have gone further when permitted to, and have been quicker to see than their Alma Mater the course of instruction best suited and most attractive to the average farmer. The attendance at the O. A. C. has increased, but not as rapidly as it should have done when compared with the more successful colleges across the line. Lack of funds is not a valid excuse to advance for the slowness in the increase of students. The fault must be, and is, that the course has not been heretofore shaped to attract the farmer. When the farmer sums up the course, much as we deplore the fact, the ethical is by him outweighed by the material. He wants to know whether the college course will enable his son to earn money more readily in the pursuit of agriculture, and unless he can see the dollar (\$) at the end of it, the son rarely gets to an agricultural college.

The live-stock end is not made as much of as it should be, and as further evidence in favor of my contention for more work in animal husbandry, I quote from the last-published report of the O. A. C., 1901, page 56, in which Prof. Day states that "animal husbandry is the most important branch of agriculture in Ontario," etc., a statement which no fair-minded man can dispute; consequently, more time should be given to the live-stock end of the course, so that students may get lots of practice in stock judging, and right here the appropriations should be liberal to enable the purchase of good stock for student work, to become familiar with the laws of breeding and general management. The Hon. John Dryden, referring a short time ago to the work done at the two-weeks' courses, stated that the instruction in horse judging was one of the most popular subjects of the lot. Horse judging has only been taken up at the O. A. C. within the last 18 months. The non-acquaintance with points of horses was the reason given in the public press for the Guelph man not getting higher honors in the international judging competition at Chicago, 1900. In 1901 we understand it was, among other things, the judging of horses that carried the Minister's son, Mr. Wm. A. Dryden, into the list of prizewinners.

Food for thought will be found in the following table, compiled from statistics furnished by the several agricultural colleges:

THE ATTENDANCE AT SOME AGRICULTURAL COLLEGES.

College.	When established.	Population of State or Province.	Courses given.	No. of students in long courses.	No. of students in short courses.	No. of students in dairy school.	No. of students at special 2-weeks courses.
Guelph.	1874	2,167,978	4 years, 2 years, 2 weeks, Dairy.	176	Included in preceding column.	75	258
Michigan.	1857	2,420,982	4 years, 2 years, Dairy.	162	75	24	
Indiana.	1874	2,516,462	4 years, 2 years, Dairy.	36	85	21	
Ohio.	1873	4,157,545	4 years, 2 years, Dairy.	86	66	50	
Wisconsin.	1886	2,000,000	4 years, 2 years, Dairy.	20	255	130	
Minnesota.	1878	1,751,385	4 years, 3 years, 2 weeks, Dairy.	26	440	116	35
North Dakota.	1890	319,146	4 years, 2 years, Dairy.	20	200	30	
Illinois.	1868	4,500,000	4 years.	200			
Iowa.	1869	2,231,853	4 years, 2 weeks, Dairy.	100		150	300

It will be noticed that the total attendance in two colleges, Guelph and Iowa, is greatly increased by the large attendance (which, by the way, evidences the popularity of the step) at the two weeks' special course in stock judging, etc., given by those institutions. The number of students given in the long course at Guelph is 176, of which number about 20 or 30 complete the four years; the remainder drop out at varying periods, the majority of whom probably take the associate diploma given at the end of two years. Nearly all the agricultural colleges give special attention to their long course (the one of four years' duration), and in them students drop out from time to time without completing the four

years, thus proving that the short course (of two years, or thereabouts) suits the farmers' pocket and time the better, and therefore it must be considered, for the present, at least, as the most desirable course to strengthen and develop.

Attendance at any agricultural college will show that the greatest interest taken by students is in the live stock, and if there is any place where they "gag," as it were, it is when they come to grind biology, chemistry, etc. They do not see the use of such subjects, and I must agree with them this far, that in the agricultural college, the farmers' professional school, the importance of such subjects is magnified beyond their real or apparent worth to the farmer. Then, again, the farm labor system should be abolished altogether, and a certain farm apprenticeship be insisted upon to qualify for entrance. One of the most ridiculous things, to my mind, is the employment of a body of students at manual labor on the farm, calling for no particular skill, when they are sent to college to get training in subjects which they cannot very well get at home. The farm labor system is a relic of the swaddling clothes days of the college, and was part of the programme instituted to break in the wild colts who arrived from all parts of the world. That day has gone, and the interests of the Canadian agricultural student should be studied ahead of his old country and city confrere.

A perusal of the reports of the O. A. C. for the last six years shows that a steady increase in number of students can be noted, although not commensurate with the increased interest in live stock in the same length of time. The table given below shows the number on the roll for each year, but it does not show accurately the number of students in attendance at the beginning of each session. In the reports, the same students are evidently counted twice, at the beginning of the college year and the end of it; i. e., in April and October, judging from the information given by the table of attendance at the various colleges.

	Students in general course.	Students in dairy course.
1895.....	150	100
1896.....	168	69
1897.....	212	63
1898.....	223	110
1899.....	237	129
1900.....	259	83

In general farm management it will be found that the income is derived mainly through attention to live stock and soil cultivation, next farm dairying and shop work. Following that comes horticulture, which has to do, also, with the pleasures and luxuries of farm life, then agricultural chemistry, farm bookkeeping, bacteriology, etc., and literature, etc., last, if at all. In the two-year course, even in the four-year course,

the practical must be steadily kept in view, or the man with the agricultural-college degree may become the laughing-stock of the farmers.
EX-STUDENT.

Col. Dent to Buy More Army Horses.

Col. Dent will inspect horses with a view to purchasing them for army purposes in the N.-W. T., at High River, Calgary, Cochrane, during the first week of June. The N.-W. T. Government expect to hold a sale of brood sows the end of March at Rosthern and Prince Albert. The stock is being procured in Ontario.



HAZZARD MINES.

A Western Industry of Growing Importance.

To the great majority of the settlers of the wheat-producing districts of the West the question of supply is one of greatest importance. As a necessity arises, however, a means of supplying it is generally found. In the south-eastern corner of Assiniboia, just west of the Manitoba boundary line, near the junction of the C. P. R. south-western branches with the Soo line, a large area of lignite coal was discovered some years ago. Engravings are produced on this page, one showing the mine mouth of the pit that is now being worked at Coalfields, the other the Roche Percee, or pierced rock, from which the mines take their name. These mines are the property of the Souris Coal Mining Co. (Ltd.), and the property owned by the Company, comprising 2,500 acres, is located in townships 1 and 2, range 6, west of the 2nd meridian, about 290 miles south-west of Winnipeg, where are the headquarters of the Company. There are two workable seams of coal. The upper, about 20 feet below the prairie level, is four feet thick; the other seam, 100 feet below the prairie level, is from 7 to 10 feet thick, and is the one that is being worked. The yield is estimated at 8,000 tons per acre, so that this property would give about nineteen million tons of coal. This lignite coal, while inferior to anthracite or bituminous, is a very useful fuel, and is rapidly increasing in favor as furnaces and stoves are being improved so as to be more adapted to its use. As an evidence of the increasing demand for the coal, the output for the years 1895 and 1896 was only about 10,000 tons, while last year about 40,000 tons were mined. This winter about 150 men are employed.

A Common Mistake Regarding Work.

The farmer is a busy man if he is worthy of his occupation. So is every other man, no matter what his business in the world may be. The idler and the trifler are like the sinner who "cannot stand in the judgment"; they cannot stand long in the stern trial which the world has for every business man. But too many men misunderstand the meaning of the word, work. To many it means only manual labor; to many farmers it looms up as necessary and important above all other things. For the sake of their work they will neglect their business; for the sake of their work they will pass by opportunities of great value if they were improved. The wise man spoke of him who is "diligent in business" as worthy of the highest honor; not of the man who is a slave to his every-day work.

There is a nice problem confronting every business man. It is what and how much of the drudgery or detail of his business he shall attend to personally. We have known a man whose time was worth several thousand dollars a year to spend it on work that a cheap clerk could do as well. He was losing something. We know farmers and stockmen who are sticking at home and not labor all the time who ought to be attending to their business affairs, instead of taking the place of a hired man. They are putting their ability in at too low a price, they are undervaluing themselves. Consider what work can be done most effectively, and do it. It may be that writing a letter will bring returns enough to pay for a laborer for several days. It may be that reading an article or an advertisement will be worth more money than a month's labor. No man can lay down a rule for another in such matters, but I suppose people would labor less and attend to business more they would let their work do all manual labor, it is the intelligent direction of energy to the furtherance of business. The change

The Farmer as a Thinker.

It is long since I heard it remarked of a certain farmer, well known for the successful management of his farm, that he "was always thinking." And, it was added, that is the first quality of a good farmer. Perhaps the same might be said of any other business or profession. To be so saturated with it that it is never out of one's thoughts means success. The person who made the remark went on to discourse of the change that has taken place in farming during the last fifty years, or thereabouts, in the relative importance of manual labor and thought. When one listens to the talk of elderly people—if those over sixty will pardon being called "elderly"—it is noticeable what emphasis they put upon the fact that in their "young days" farmers worked much harder than they now do. Hard labor, unceasing industry and thrift were the only gateways to success—at least among the class from which I sprang. No idling with reading, correspondence or half-holidays for them; no dabbling in science or theories or experiments or lectures; nothing but dogged persistence in rough, hard work from year to year. Such tales I have listened to of our forebears; of the prodigies they performed with scythe and heuk and flail; of their zeal in cleaning sheughs, which was so great that such a one would never be seen to lift his head from the task for half a day! Indeed, it seemed to be a favorite pastime for the long summer evenings. One was telling me of the loneliness of her early bridal days on a moorland farm, and when I asked her if her man didn't keep her company in the evenings after the kye were milked, she replied, "Oh, no! He aye gaed out tae clean sheughs." It must have been because the land was insufficiently drained that they were constrained to spend so much of their time in dyke-backs.

It is not suggested that these farmers were not thinkers, but simply that necessity put hard manual labor in the place of first importance. Among them there would be, then as now, the thoughtful and the thoughtless. But while thrift and industry can never lessen in value, it becomes more and more important that the farmer, even of few acres, should use his brains—his thinking faculty. So much occasion is there for forethought, planning, and a constant alert supervision, not to speak of anxiety, about the rent that I have often thought a farmer's life would be too hard if it were not that the conditions of his work give him ample opportunity for quiet thought. Walking from field to field to inspect his stock or his crops he can mature his plans in peaceful surroundings without interruptions. If he puts forth his hand to milk, to sow, to lead a horse, or to build a stack, the work is not so absorbing that his mind is not free. And I have it on the testimony of more than one—that a great amount of useful thinking can be done between the stints of the plow. A way has

been found through many a mental thicket as the skillful hand and eye made the furrows straight.—The Scottish Farmer.

A Competent Engineer Can Run a Traction.

To the Editor "Farmer's Advocate":

In reading your valuable and interesting paper of March 5th, I noticed a letter from "Rotary" on "Steam Engineers' Certificates." I cannot understand how a stationary engineer could not operate a traction engine, or vice versa, as a traction engine is simply a portable engine with the traction gear added. A very short experience will enable any one to steer a traction, but this can only be done right by the engineer, as he alone knows just what his engine can do, and this is a most important thing to know on hilly or bad roads.

"Rotary" states that a first-class steamboat engineer may fail in handling a traction. He must mean this as a joke, as he must know that all first-class steamboat engineers have to go through a strict examination, much more so than any other class of steam engineers. Any competent engineer can run a traction engine. He further says that the examinations on theory should come before apprenticeship. This would put the finish on competent men. There are many smart fellows that would soon pass a theoretical examination and would not know anything about the practical operations of an engine, and many men, for want of an early education, could not pass an examination on the theory, but can show by years of actual work that they understand their business. Which of these men will "Rotary" hire to run his engine? Theory can only be applied where practice is possible.

In the Northwest Territories one has to give proof that he has had charge of an engine at least two seasons; he is then given a provisional certificate good for one year. This enables him to study up his work in order to gain a third, second or first class, according to his ability. This plan has been satisfactory here, and has resulted in our having a better class of engineers, and in consigning some would-be engineers to their proper place, to run something that is not dangerous to life and property.

The supply will, I think, be regulated by the demand. There are plenty of young men who would become engineers under the above system, who would not do so if they had to compete with those who called themselves engineers.

MAN IN CHARGE OF SEPARATOR SHOULD HAVE CERTIFICATE.

I endorse everything your correspondent, George Kerr, says re threshing machines, and would add that all men in charge of a machine should have a certificate of their ability in this line. There is more in this than is generally supposed. A machine all out of line, with belts put on any way, calls for two or three horse power more to do the amount of work required. This results in rapid destruction to the outfit and loss to the owner. A machine with shafting lined up true, cylinder balanced, belts right, bearings right, requires less power for the work done, there are no breakdowns, and a gain results in place of a loss to the owner.

I would like to say before closing, that many threshers try to transmit a given horse power with a main drive belt too light for the work. This is a great mistake, as the belt has to be run at such a tension that it soon goes to pieces. A belt should not be run so tight as to impair its elasticity and still transmit 45 lbs per inch. How many do so? OBSERVER

Broadview, Assa.



THE ROCHE PERCEE, OR PIERCED ROCK.

The Production of Milk by the Average Cow.

BY PROF. E. H. FARRINGTON, CHIEF WISCONSIN DAIRY SCHOOL.

In discussing this important part of the dairy industry, I wish to make it plain at the beginning that I am not the champion of any particular breed of cows; my knowledge of the different strains or types of dairy cows is not sufficient for me to enlarge on the advantages of a long-horned cow over a short horn, neither do I pretend to say that a Guernsey, a Jersey, a Holstein or an Ayrshire is the best cow for a farmer to keep. My information on the cow question is confined to observations made at some of the ninety-five farms that are supplying milk to the Wisconsin Dairy School.

In visiting these farms in the past seven years I have not attempted to train myself so that I might become sufficiently expert to tell a farmer all about the different cows in his herd by simply looking them over while sitting in a buggy on the highway, but my efforts have all been directed towards trying to induce the farmer to keep a record of what his cows are doing. This, it seems to me, is going to help him, and I am afraid that if I ever tried to discuss the points of a cow with a farmer I would be in the plight of the professor of agriculture who was once talking with a young lady, and she suddenly turned on him and asked: "Professor, can you tell a good cow?" The professor, without any hesitation, replied: "Why, yes, I think I can." "Then what would you tell her?" said the young lady.

BY THEIR FRUITS YE SHALL KNOW THEM.

I did not wait to hear the rest of this interesting conversation, but without further delay I wish to say that my position on the cow question is expressed in the text, "By their fruits ye shall know them." If a cow gives milk and butter enough in a year to pay for her keep, and a profit besides, she is worth telling something of a story about; but if her food costs more than her milk brings, the less said about her the better. It is encouraging, however, once in a while to hear someone tell about an unprofitable cow that has been disposed of, and to know that such an animal is no longer being bought and sold among farmers.

The lack of exact knowledge regarding the annual production of each cow in a farmer's herd is in some cases rather surprising. It often happens that the cows are milked and fed in the same way every year, and if the check from the creamery or cheese factory is not large enough to suit the patron, and it never is, then a great many complaints are heard about the price of butter or the cost of feed, and very little, if any, effort is made to find out whether or not the cows are what they should be.

An illustration or two will serve to show the extent to which some farmers make an effort to think or how well informed they are about their cows and other business affairs. I once asked a farmer, who was bringing milk to the creamery, what breed of cows he kept, and he said: "Oh, I don't know, I guess they are Poland-China cows." Another farmer, who was drawing his own and some of the neighbors' milk to the factory, came to see me one day about the price he was receiving for his work. He said he had come to the conclusion that he could not afford to make the trip unless he was paid a dollar and a half a day. I asked him what he was getting, and he said he didn't know, but it wasn't enough. I looked up the records, showing how much he had received for several months, and found from his own creamery checks that he had been paid \$1.75 per day for drawing milk. This was twenty-five cents more than he said he wanted, but he had not taken the trouble to find out how much he was receiving before he came in to make his complaint and demand for \$1.50 per day.

It is too often the case that

FARMERS KEEP NO RECORDS.

whatever, and do not have the slightest idea as to where they are at. They look at the amount of their creamery- or cheese-factory check without thinking that the size of their cows and their own size is responsible for the size of their monthly check. Many of them talk like a woman I met on the street, December 23rd. As I passed her I said, "Good morning, Mrs. Blank, I suppose you are out buying Christmas presents this morning?" "No," she said, "it's too hard times to buy Christmas presents this year; the creamery don't pay enough for the milk." Now, that woman keeps nine cows and the creamery paid her about \$250 in a year for the milk she sent to it. This is between \$25 and \$30 per cow per year that she

receives, and she never once thinks that it is the cow's fault or her own fault that she does not get more money, but according to her way of thinking, and there are others that are of the same opinion, the fault lies in the price of butter, the creamery management, or the hard times.

There is such a tendency in human nature "to look out and not in," as the Sunday-school teacher used to tell us—to think that the causes of our hard lot are all outside our own doorway instead of in it—that we are sometimes helped by being reminded that a little investigation at home may be a profitable undertaking. This sort of an enquiry would be very helpful to many farmers if they can be led to realize what a difference there is in the earning capacity of the cows in their own herds, and then be induced to part with those that eat more than they produce; then the price of butter and "hard times" will not be continually worrying them. There's nothing like the inspiration of playing a winning game to make us forget our troubles, and, this being true, the most cheerful dairyman ought to be the one who knows the most about his cows.

It was with the hope of helping farmers, and of illustrating the condition of some dairy herds, that we undertook, some four years ago, to begin testing the cows of the patrons supplying milk to the Wisconsin Dairy School. These patrons keep cows and deliver milk to the factory in the same way as is customary at the creameries and cheese factories throughout the State. They do not have large herds, and it was observed during the past year that the cows owned by one hundred of them were probably similar to the one million in the State. Only eight out of the one hundred patrons kept more than twenty cows, and thirty-five owned from two to five cows only. This shows that the majority of our patrons do not pretend to be dairymen in the sense of making the production of milk a serious business, and I fear there are many farmers in so-called dairy districts who do not allow the cows to make much of an impression on their minds; other lines of farming crowd the cows out, so that they receive only a little attention at milking time.

WHY TEST THE COW?

During past years we have, like other creameries, urged our patrons to take samples of each cow's milk and allow us to test them, as this will aid in obtaining definite knowledge of the amount of milk and butter each cow produces. The patron's usual reply to these suggestions is that he "supposes it would be a good plan to test his cows," or he plainly states that it is too much bother to take samples. He is either so much attached to his cows that he does not care to part with any of them, even if it is proved that some cows do not produce milk enough in a year to pay for their feed, or he seems to think he knows enough about his cows without having their milk tested. Not one of our patrons during the past seven years has voluntarily brought samples of milk to us for any length of time with the request that we test them for him. This indifference to an exact knowledge of the profit or loss from cows is common among farmers, and on account of it they suffer annually very large financial losses. It was with the hope of convincing our patrons that cow records are valuable that a systematic testing of a number of herds was begun in August, 1897.

In preparation for these tests we had boxes made for carrying four-ounce sample bottles of milk from the farms to our creamery. Small books, in which might be recorded the weight of each cow's milk once a week, and accurate weighing scales were also provided. We offered this outfit to our patrons, and agreed to test all samples they would send us if these were taken for one day at regular intervals of one, two or four weeks during the year. We were able to test six herds the first year, beginning August 1st, 1897. These tests included the weighing, sampling and testing the milk of forty cows once every week through one complete period of lactation; eleven more cows were tested for a part of the year. Since that time the testing of patrons' herds has continued. During the year beginning April 1st, 1899, sixty-two cows on nine farms were tested through one complete period of lactation, and fifty-four cows for only part of the year. The following year fifty cows on six farms were tested, and up to the present time 217 cows on thirteen of our patrons' farms have been tested. These tests represent 135 complete and 98 partial periods of lactation. The cows in three herds were tested for three years consecutively, and four other herds were tested for two consecutive years.

During the first year of testing, the milk of each cow was weighed and tested once each week, but it was impossible to get this done so often after the first year. Some patrons were willing to weigh and sample the milk of each cow once in two weeks, and others could only be induced to do this "extra work" once a month.

The results obtained by this three years of testing have shown that farmers may gain a great deal of useful information by such work, and that it is one of the most profitable fields for careful observations in the whole domain of agriculture.

A description of our methods of making the tests and some of the results obtained may be of interest to you.

METHOD OF MAKING THE FARM TEST.

The milk of each cow was weighed and sampled at the morning and night milking one day in each week, every two weeks or once a month, as the farmer desired. The testing day was selected by the farmer.

Each dairy was supplied with a pair of scales for weighing the milk, a box of bottles for milk samples, a small one-ounce tin sampling dipper, and a record book. Each cow was given a number, which was placed on the label of a two-ounce sample bottle, the cow being known by this number throughout the test. About one-half gram of potassium bichromate was added to each sample bottle to keep the milk sweet until tested. The box of samples and the record book were sent to the University creamery, where the samples were tested; the tests were recorded in the patron's book as well as in the permanent record at the creamery, after which the book and box of sample bottles were returned to the farm.

The following instructions were plainly written on the first few pages of the record book sent with each box of sampling bottles:

DIRECTIONS.

1. Give each cow a permanent name or number.
2. Provide a place for using the scales at milking time.
3. Select a milk-weighing pail or bucket.
4. Record the weight of this empty pail or provide some sure way of deducting its weight from each lot of milk.
5. After milking a cow dry, pour all her milk into the weighing pail.
6. Record the weight of this milk in the proper place in the book.
7. Pour milk from weighing-pail into milking-bucket and immediately dip a sample from it into a bottle having the number of this cow.
8. The sample from the first milking should only fill the bottle one-half full.
9. At the next milking repeat the weighing and sampling and pour the second sample into the same bottle that was previously half filled.
10. Each sample bottle should contain a mixture of milk from two consecutive milkings of one cow.
11. Cork the sample bottles to prevent evaporation.
12. Weigh and sample the milk of each cow once, twice or four times per month.
13. Note time of each milking.
14. Record the date each cow calves.
15. State how many days each calf was fed its mother's milk.
16. How did you dispose of each calf?
17. Weekly statement of cow's feed, including the weight, price and kind of grain, if any, with the amount and kind of hay, cornstalks or other coarse fodder.
18. Health of cows.
19. Note any change of milkers.
20. Record date when cow was dry.

One farmer with twelve cows estimated that fifteen minutes' extra time was required to weigh, sample and record the milk of his cows on testing days. At another place the records were taken by a boy who was too young to milk, but capable of doing the extra work required at milking time on testing days. At one farm this work was done by the women, who strongly objected to it, especially when it was necessary to use a lantern at the barn in winter.

ACCURACY OF THE RECORDS.

The accuracy of such methods as these is necessarily influenced by conditions common to nearly all farms. Milking is usually done with more or less haste, especially at the planting, haying or harvesting seasons. The milkers, as a rule, are not accustomed to the use of scales, and often consider a weight within one pound of the true figure to be "near enough." They do not understand the necessity of promptness in sampling milk after it has been poured from one pail to another before the cream has begun to separate. In spite of these and other disturbing factors, our results show that tests of dairy cows can be made by the farmers themselves with sufficient accuracy to give a very satisfactory knowledge of the performance of each cow.

From these weights and samples taken at the farm, the total annual production of a cow is found by multiplying the average of the daily weights of milk and of butter-fat taken each month by the number of days in the month and adding the products together. The money value of the milk of each cow is found by multiplying the monthly weight of butter-fat by a certain figure which, during the year ending August 1st, 1898, was one-half cent less than the average Elgin market price of butter for that month; in 1900 and 1901 it was the average Elgin price. The figures obtained for each month are added together to get the production for the year.

(Note.—At this point of his paper, Prof. Farrington gives a detailed statement of the "Feed and care of the herds," which appeared in full in our issue of March 20th, on page 212, to which the reader is referred.—Editor.)

THE CARE OF MILK.

It matters not how profitable the cows may be if the milk they produce is spoiled by the milker. Very few, if any, food products are so susceptible to defects or so easily contaminated as is milk, and still the protection of its purity until it reaches the consumer is largely a matter of common cleanliness—a very simple duty, but one which, when faithfully performed, will more than pay for the effort made.

Directions for the proper handling of milk have been printed over and over again. The rules given generally include an old story, familiar to many a milk producer, but I am repeating it in order, first, to refresh the memory of some who may need to be reminded of things forgotten; second, to induce others to do as well as they know, how to do; and third, to overcome any tendency all may have to slight the little things that are known to be important for preserving the natural purity of milk.

In taking up the discussion of this subject, it is hoped that some of this old story may make a new impression on those who have heard it many times before, and that it may possibly furnish a new idea or two to those who are less familiar with the subject.

The Milker's Responsibility.—When a man is milking he should bear in mind that he is handling a food product which will undoubtedly be placed on the tables of many people in essentially the same condition that it is obtained from him. He should be just as particular and as careful when milking to supply his customers or for a factory as he is when filling the glass pitcher which his wife or child brings him when milking and asks to have it filled for his own supper table.

Milk and its products are, as a rule, used raw with all the impurities that may have gotten into them on the way from the cow to the table, and the consumer does not like to be reminded of these possibilities of contamination by the appearance of the milk when he gets it.

Milk is sometimes a source of positive danger to a community, as it has been demonstrated that diseases may be spread by this food product from one farm to many households. When such contagious diseases as typhoid fever, diphtheria, scarlet fever, etc., occur in a family selling milk, the fact should at once be made known to the proper authorities, and the milk produced on that farm should be disposed of as directed by them.

No loud talking should be permitted during milking. Go about this work promptly and quietly, with as much regularity in the time of milking as is possible. Some successful dairymen milk their cows "by the watch," and are very particular about the exact time each cow is milked. They are also careful to have the same cows milked by the same men in the same order. Experience has taught them that regularity in milking aids in developing a tendency to prolong the period of lactation.

Always milk with dry hands. Moistening the hands with milk or water during milking is one of the most filthy practices imaginable.

Wooden pails should not be used as milking pails, as they easily get sour and can only be kept thoroughly clean when new. Tin pails ought to have all seams and cracks flushed smooth with solder in order to make them easy to clean. This soldering should be done when the milk pails are bought and before they are taken home.

The Cow Stable and Yard.—Cows ought to be milked in a comfortable, clean, thoroughly-drained and well-lighted place. Ventilation is best secured by some well-constructed and easily-operated device rather than by loose boards or accidental holes in a window. The walls and ceiling of the stable may be purified by a coat of whitewash, which can be effectually applied with a spray pump. This ought to be used several times in a year. Some cow stables are covered with straw or old hay placed on boards with large cracks between them. No amount of whitewash will keep such a ceiling in a sanitary condition. Chaff and loose straw dropping through the cracks are a constant source of dust and dirt during milking; the floor above the cows ought to be as tight as the walls of the stable.

The gutters and mangers of the cow stable should be cleaned out daily, and laid plaster (gypsum) or clean bedding spread over the floor.

Cows should be tied or stalled in a humane way, made contented in every particular and liberally fed. No loud talking should be permitted during milking, and anything that will excite the cows must be avoided. Driving them from pasture in a hurry or chasing the cows with dogs will diminish both the quantity and the quality of the milk.

Cleaning the Cows.—A gentle brushing or carding of the cows every day will be found to be very beneficial to them; if this is not done regularly, the flanks and udder of a cow should be brushed just before milking in order to remove all loose hair and dirt that might fall into the pail during milking. The mud which cows have gotten on their legs and udders should be brushed off before milking is begun and before the pails are brought to the stable so that the dust will not



From Rider and Driver.

A TYPICAL HUNTER.

settle on the tinware and thus get into the milk.

Milk the Cows Dry.—A great many milkers are in too much of a hurry to get through milking to milk the cows dry. This loss may amount to one-half a pound of milk from each cow at every milking, as was found to be the case by a farmer who followed his hired man and milked all the cows after him. By this second milking he got over a pound from some cows and less than one-half a pound from others, but from ten cows he got five pounds of strippings at one milking. This to some does not seem to be a very large amount of milk to bother with, but if milking in general were done so carelessly, the total loss of milk in the United States from dry milking would amount to sixteen million pounds per day. This startling figure is undoubtedly as correct as the statistical reports which give the number of milch cows in the United States as 16,292,360, and it shows that a great saving may be made by milking the cows dry. The last milk, or strippings, is also much richer than the first milk, so that it is worth an extra effort to obtain it.

Another point which should be considered in milking cows is the quickness with which the milking is done. Fast milking has been found to give better results than slow milking.

The Milk Cans into which the milk is strained must not be left standing in the stable where the cows are being milked. The stable odor or dust may contaminate the milk unless it is at once taken to another room or into the pure outside air where the straining into cans may be done.

Pure Water.—This is as essential for cows as it is for humanity, and nothing but deep well, spring or pure running water is fit for cows. Pond holes or stagnant water must be fenced in so that the cows will not drink from them; serious defects in milk, butter and cheese have been traced to a pond hole or to swampy land through which the cows had walked. The mud and dirt from such places cling to the legs, body and udder of the cow and if these are not groomed the dirt gets into the milk and contaminates both it and the products made therefrom.

Straining Milk.—If a covered milking pail has not been used, the milk must be poured through a cloth strainer made of cotton flannel or of four thicknesses of cheese cloth. A wire gauze strainer is not sufficient, and when the milk is dirty or a large amount of it strained, the cloth should be changed as soon as any accumulation of dirt from the milk is noticed on the strainer. Milk should never be strained in the stable.

Aeration of Milk.—Milk is benefited more from mixing pure air with it as soon as possible after milking than from almost any other method of handling. The flavor is especially improved by

aeration, and when the milk is also suddenly cooled at this time it will keep sweet much longer than milk which has not received this treatment.

A great many good milk aerators are on the market. A certain amount of aeration may be obtained by dipping the milk with a long-handled dipper, lifting it high in the air and pouring it into the can again. This dipping should be repeated occasionally for an hour or more after milking, but as it is not so thorough and takes more time than pouring the milk over an aerator and cooler as soon as each cow is milked, it is recommended that an aerator be bought and used.

Cooling Milk.—Immediately after milking, the temperature of milk ought to be reduced to forty or fifty degrees, either by pouring it in a thin layer over a smooth metal surface, which is kept cold with water, ice or brine, or by setting the cans of milk into cold water and stirring frequently to hasten the cooling. The quicker this is done the better, as the sudden chilling of milk is very beneficial—it improves the flavor and hastens the separation of cream.

There are many good milk coolers on the market, and in making a selection the purchaser should be sure to get one that has capacity enough to thoroughly and quickly chill all the milk run over it. The cooler should never be crowded with too much milk.

Keep Night and Morning's Milk Separate.—Never mix warm milk with cold milk, as this will spoil both. The morning and night's milk should be kept in separate cans until thoroughly cold. The cans of milk must be loosely covered and kept in a perfectly clean place, protected from dirt and bad odors. In winter the milk should not be allowed to freeze, and in summer it must be kept sweet without the use of any kind of preservative. In some States there are strict laws against the use of preservatives in milk.

Delivering the Milk.—During transportation the cans of milk must be filled to prevent churning, and must be closed with tightly-fitting covers and jackets or a canvas placed over them as a protection from dust, mud or rain. These coverings will aid in keeping the milk cool in extremely hot weather and in winter they may prevent the milk from freezing.

Buttermilk should not be returned in the sweet-milk cans, as the sour taint is very hard to remove from them.

Washing Cans, Pails, Strainer Cloths, and Tinware.—All efforts to produce clean milk that will keep sweet for a reasonable length of time are useless if the pails, cans, etc., are not faithfully washed and scalded every day. After emptying the milk, the cans should be rinsed with cold water, then scrubbed with frequent changes of

warm water, using a brush to clean all the seams and cracks inside and outside the cans; they should be rinsed with scalding hot water and set to dry in the sun, if possible, but protected from dust. Tinware should not be wiped dry with a cloth, but scalded with boiling hot water. All the joints and corners in pails and cans should be filled smooth with solder, as before stated, and those having rusty iron spots ought not to be used, as these places may cause taints in the milk. One of the hardest taints to remove from cans is that caused by allowing milk to sour therein. The cans should be emptied and cleaned as soon as they are returned to the farm and left to dry and air in some clean place.

Inspection.—When a can of milk is emptied, the last quart should be as free from sediment as the first. There will be no dirt in the bottom of cans if the milking has been cleanly and the cans have been protected from dust.

Both the odor and the taste of milk should be pure and sweet when the can cover is first removed. Perfectly sweet milk will have an acidity of less than two-tenths of one per cent., as is shown by the alkaline-tablet test.

The Purity of Milk is entirely within the control of the milker. If the cows are healthy there is no excuse for dirty, tainted or sour milk. The defects most commonly met with in milk may be avoided by following the directions given in this brief outline.

The London Horse Shows.

These shows are all but over at the time of writing. The Shire men are to be congratulated on the magnificent display of animals of that breed which they gathered together. Basking in the sunshine of the royal favor, and the pet of "society," as the Shorthorn once was, the Shire horse is at present in great vogue. The show was favored with the presence of the Prince and Princess of Wales on the cup day, and the King himself was present on the day following. A preposterous story has gone the round of the press concerning the alleged narrow escape of the Prince and Princess through the zeal and energy of the champion stallion, "Stroxtan Tom." Having been an eye-witness, I can certify that their Royal Highnesses were in no greater danger than anyone is who visits a horse show and enters the ring when the horses are being paraded. One of the illustrated papers here publishes a wholly imaginary sketch of the scene, which was indeed no scene at all, and, so far as I am concerned, the result is to make me hereafter mistrust all sketches of a like nature. Mr. Forshaw, who owns the champion horse, has long been known as owner of high-class horses. Like so many others of the best judges in England, he began with Clydesdales, one of the first horses he ever owned being Ben Nevis 1066 in the C. H. S. B. It was also from him that the famous horse, Royal Exchange, which Mr. Beith took to Canada many years ago, came. Since the Shire Horse Society was started there has been no more constant exhibitor at its shows than Jimmy Forshaw, and although he has waited long, he has come to his kingdom at last. The Shire horse at present is a much better cart horse than he was twenty years ago. But he still lacks the suppleness of joints and clean, active gait of the Clydesdale. He is, as of yore, the big, slow-moving wagon horse, but undoubtedly a much sounder horse than he was when the Shire Horse Society began its work.

Hackney men have had a good week, but it cannot be said that the sun shone on their show, as it did on that of the Shire Horse Society. In fact, in no sense could the Hackney show be classed as other than simply an average event of its kind. The horses were a capital lot, and the mares were possibly better, but there were few new faces of any outstanding merit, and the best animals were clearly those with which the public have for several years been familiar. Sir Walter Gilbey, Bart., had deservedly champion honors for stallions with the grand horse, Royal Danegelt, while a son of the same horse, the four-year-old Bonny Danegelt, was reserve. Sir Walter also secured the junior female championship with Merry Dorothy, own sister to Bonny Danegelt, so that Royal Danegelt as a sire made quite a record for himself. He easily won the Produce group prize as sire of three stallions. His son, Danegelt Royal, won the junior stallion cup. The supreme honors for mares all came to Scotland. Mr. Charles E. Galbraith, Terregles House, Dumfries, who owns one of the finest Hackney studs in the world, secured the supreme honors with Rosarene, and reserve with Rosadora, the former four and the latter five years old. Both mares are daughters of the great champion horse, Rosador, and as the former has been twice champion, she cannot enter the lists for that honor. "SCOTLAND YET!"

1902 Fair Dates.

Edmonton	July 1, 2 and 3
Carberry	July 15 and 16
Wawanesa	July 17
Portage la Prairie	July 17 to 19
Winnipeg Industrial	July 21 to 26
Dauphin	July 23 and 24
Brandon, Western Agriculture and Arts Association	July 29 to Aug. 1
Neepawa	Aug. 5 to 6

Starting Horses to Work in the Spring.

As the time is near when horses will be taken to the field to do a day's work, a few remarks upon the subject may be timely. Some horses have been worked more or less all winter, and hence are in shape to continue their labors, but others have been idle, or comparatively so, for months, and it is of those we wish to speak. Horses should be gradually prepared for regular work by being given regular exercise and having their grain ration gradually increased, but in many cases these precautions are not observed, and in such cases it is unreasonable to expect them to go out and do a full day's work at first. All will admit that the grain ration of a horse should be in proportion to the amount of work performed. At the same time, experience teaches us that violent changes in the food given is productive of digestive derangement, even though the labor performed be proportionately increased; hence it is dangerous, where a horse has been idle and fed accordingly, to suddenly give increased rations and increased labor. Not only is there danger of digestive troubles on account of the violent change in food, but the shoulders, being unaccustomed to pressure by the collar, are very liable to become scalded and sore, and hence the utility of the animal greatly decreased, if not for a time entirely suspended. In such cases it is better to go slowly, to be satisfied with a small amount of work for the first few days. The amount of grain given should be gradually increased, and when the team is taken to the field it should be worked gently. It is necessary to see that the harness, especially the collars, fit properly, and that the bearing surface is perfectly clean. After going a few rounds, whether to plow, cultivator, seeder or harrow, the team should be allowed to stand for a few minutes and the collars lifted forwards on the necks, in order to allow the air to circulate upon the shoulders, and thereby cool them. It is also good practice to hand rub the shoulders in order to loosen the hair that has become more or less matted. Then, before starting, the collars should be lifted back to position, care being taken that none of the hair of the mane is left between the shoulder and collar. This rest should be given frequently the first day or two, gradually becoming less frequent and of shorter duration day by day, and the food proportionately increased. The harness should be taken off every time the horses are brought to the stable, even for a short time. The facing of the collars should be cleaned daily, and if the weather be warm, the shoulders should be well bathed with cold water two or three times daily. If either from a compression and flattening of the collar or a lessening in the size of the muscles of the shoulder the collar become too large, a sweat collar should be used or a proper-fitting collar substituted. In this way the shoulders gradually become toughened without soreness or scalding, and the general muscular and respiratory systems become accustomed to performing their increased functions; the digestive system also acquires greater force without suffering, and the horse is soon able to do a full day's work; while if too much haste be made at first, the shoulders become sore, and will give more or less trouble during the whole season and be a source of agony to the horse and annoyance to the teamster. The horse should be well groomed twice daily and be allowed water as frequently as convenient. Many claim that horses should not be allowed water after a meal. There are some that will suffer from digestive trouble if water be given shortly after eating, but, with rare exceptions, the practice is safe, and, especially in warm weather, an animal is thirsty after eating, and it is well to allow him to quench his thirst rather than take him to the field and work him four or five hours in this state. A horse, in this respect, is like his driver; when he is thirsty he wants a drink, and, with few exceptions, should have one.

Many horses have long, heavy coats of hair in the spring, and do not shed readily. Such will perspire very freely, and on account of the quantity of hair will remain wet for a long time. In such cases it is advisable to clip. It will be found that a clipped horse will perform his work with much more ease and on less food in warm weather than one with a long coat. Clipped horses require greater care in regard to clothing and exposure from drafts if the weather should become cold, but they are much more easily groomed and perspire less, and hence will do better if properly looked after. "WHIP."

Fruit-growing in South Dakota.

The following extracts from a paper by Prof. N. E. Hansen, the well-known Horticulturist of the South Dakota Experiment Station, will be read with interest by our readers, as much of what he says regarding the conditions in South Dakota are applicable here. What Prof. Hansen says as to the importance of starting on a proper foundation—hardy root stocks—is worthy of special note, and, as has been previously pointed out in the "Advocate," is just the work our own pomologist, Mr. A. P. Stevenson, of Nelson, has been working at for years—growing hardy root stocks from seeds of hardy varieties fruited in his own orchard.

Prof. Hansen says: Many people in South Dakota who have tried to cultivate eastern fruits by eastern methods, and have planted varieties of fruit suited to the southern climate on the fertile Dakota prairies have a firm belief, gathered from very dearly bought experience, that our grand State rests under a horticultural cloud, and that fruit culture and even the cultivation of shade and ornamental trees is a matter of the greatest difficulty. This impression is wrong from start to finish, and the brief time allotted for the discussion of this subject will, I trust, suffice to dispel these erroneous impressions. I maintain, after a careful investigation and study of the subject, that dwellers upon these vast wind-swept prairies can raise an abundance of fruit for home use and even considerable to sell in the open market, of a number of fruits fit to grace the table and please the palate. All pessimistic prognostications as to the horticultural future of the State should cease, because all the signs indicate that fair weather is coming and that the next few years will see a multitude of new creations in fruit trees, shrubs and flowering plants that will make the gardens of this State bowers of beauty, with fruit in abundance, vegetables in surplus, and shade trees and beautiful flowers to please the eye and satisfy the soul. The case may be stated in a few words, as follows:

Eastern and southern methods and varieties are largely a failure on the Northwestern prairies. The experiences of the past generation show that methods must be modified for prairie conditions, and that new varieties of Northwestern ancestry and breeding must be developed to fit our local conditions.

APPLES.

The apple is "the king fruit of the temperate zone." Since the first apple was planted on the governor's island in Boston harbor, 1639, the apple has been on a march across the continent, following closely in the footsteps of man. Experience shows that at the south its progress is uninterrupted across the continent, but the northern part of the Mississippi Valley offers climatic obstacles. It has been shown that the race of apples from the milder, moist sections of Western Europe is not adapted to the continental climate of the prairie in the Northwest; hence, a new race from the continental climate of eastern Europe has been put on the skirmish line. The Duchess, from the plains of Russia, was the first to wage successful warfare against the elements, and now there are plenty of reinforcements, including some like the Wealthy, of native birth. Beyond any shadow of doubt, South Dakota can raise an abundance of summer, autumn and early winter apples if proper care be given, but South Dakota, in common with several other Northwestern States, is awaiting anxiously the advent of the winter keeper. Minnesota offers \$1,000 reward for a hardy winter apple, as a bonus. A million dollars would be a small recompense for the production of such an apple. At the experiment station in Brookings we are endeavoring to solve this problem and have now over 12,000 seedling apples, raised from the hardiest known varieties. We are crossing the hardiest Russian with the longest-keeping American apples with this end in view. It is the greatest problem in horticulture at the present time. No stone shall be left unturned to reach the result.

The greatest trouble at present in the raising of apples is the foundation upon which our orchards are built. The roots of stocks upon which the trees are grafted or budded at the present time in the nurseries are tender and are apt to freeze out the first hard winter before getting established, leaving the hardy tops to die. This can be overcome for the present by mulching in the fall, but the mulch should be cultivated in during the next season to avoid bringing the roots too near the surface. In Russia this problem of root-killing was solved by using the pure Siberian crab as a foundation, or stock, as I learned in a course of two trips to Russia in 1894 and 1897. The value of this method for Dakota is now being tested at Brookings and elsewhere.

If anyone doubts the raising of apples in old-established orchards in this State, a visit to the 132-acre Alderman orchard, Turner county, will convince the most skeptical. About 10,000 bushels came from this orchard two years ago. It is an orchard of the year 1870. Largest number of Wealthy (1900) trees of 1900 of any one orchard in the world is in this orchard.



A COMFORTABLE HOMESTEAD, A. W. KENT'S, RALPHTON, MAN.

CRABS.

At the annual meeting of the Minnesota Horticultural Society, at Minneapolis last December, the fact was brought out by the commission men that there was a very great demand for crab apples from the Dakotas and northern Minnesota. The demand is greater than the supply, and the call is for red instead of yellow crabs. A word to the wise is sufficient. No one will deny that we can raise plenty of crab apples if we plant the right kind.

PLUMS.

An acre of land planted with the right kind of plums is one of the best-paying investments at the present time in this State, but only the improved northern native varieties, such as Wolf, Wyant and DeSoto and others, should be planted, and they must be on hardy roots or stocks. Most of the plum trees now sold by southern and eastern nurseries are grafted or budded on tender roots, such as Peach, Marianna and Myrobalan, which kill out the first hard winter, leaving the hardy tops to die. The sooner this subject is thoroughly understood, the better it will be for the planters of plums. As to varieties, we have tried the plums from Japan, from Western Europe, from the Eastern States, from the Southern States, and from the plains of Russia, but all proved inferior in hardiness or productiveness to the improved native plum of the Northwest, which now holds undisputed sway upon the Dakota prairies—all the protestations by southern and eastern agents to the contrary notwithstanding.

As for pears, cherries, apricots and peaches, I would advise, until further notice, to buy the fresh fruit as shipped in by our merchants.

Argentine Ports Reopened.

British breeders are jubilant over the announcement of the decision arrived at by the Argentine Republic, conveyed in a cablegram from Buenos Ayres under date of Feb. 17th, that in view of a statement by the British Legation that foot-and-mouth disease has disappeared from the United Kingdom, a decree has been issued reopening the Argentine ports to cattle coming from Great Britain. Although the word "cattle" is used in the despatch, it is presumed that sheep are also included in the removal of the prohibition. The announcement has been received with much gratification, especially by breeders of Shorthorn cattle and Lincoln sheep, who, previous to the imposition of the embargo, were finding their most liberal buyers among the South Americans, and will now look for a renewal of their patronage. What is good for British breeders in this proclamation will probably not be so favorable to North American importers and breeders, who will doubtless find competition for the best animals more keen than it has been in the past year or two, and will likely have to pay higher prices for such as they want. It is probable that the action of the Argentine Government now announced will induce the British Board of Agriculture to take an early opportunity of removing the restrictions on the importation into the Old Country of cattle and sheep from the Argentine for slaughter at the ports of landing, and while it is scarcely likely that the business will assume the proportions that it did previous to the closing of the ports, owing to the successful establishment and expansion of freezing companies, and the fairly satisfactory shipment of frozen or chilled meats, yet the competition to be met by the stock-growers of this country will doubtless be greater than of late, and in order to holding our own in the British market we shall need to pay more attention to the quality of our exports.

C. S. McGregor, Mekiwin, Man., Feb. 28th, 1902. "Your Christmas number was a treat. I would not like to have missed it. Your paper for the twelve months is excellent, and helps to keep its own with all the newspapers of the continent."

The Germinating Quality of Alberta Oats.

To decide the measure of justice in the contention of several Manitoba grain-men last spring, that Alberta oats were lacking in germinating power, a series of tests have been made by Mr. Donald Ross, our well-known horticulturist, the results of which are made known in the following communication from the Secretary of the Board of Trade:

Edmonton, March 12th, 1902.

Editor "Bulletin":

Sir,—As our Board was anxious to find out about the germinating powers of oats, one of the members, who had fifty thousand bushels on hand of last year's growth, handed Mr. Donald Ross, our well-known horticulturist, several samples indiscriminately taken from seven different bins, and the following explains the results:

Dear Sir,—I have tested the several samples of oats submitted to me, and report their germinating powers as follows: Sample No. 1, 90 per cent.; No. 2, 82 per cent.; No. 3, 96 per cent.; No. 4, 82 per cent.; No. 5, 90 per cent.; No. 6, 64 per cent.; No. 7, 80 per cent.

Yours truly,

Donald Ross.

F. FRASER TIMS,

Secretary-Treasurer.

The Edmonton Board of Trade.

The above is clipped from the Edmonton Bulletin, with a further request that the Winnipeg papers should publish it. The germination tests as given are very satisfactory, but as there is just a danger of some being misled by these tests, it is only fair to the farmers to give the following tests, obtained some little time ago by the "Advocate" from Director Saunders, of the Ottawa Experimental Farm. The samples were obtained from three carload lots of Alberta oats, simply numbered and submitted to Dr. Saunders for a germination test report, with the information that they were Western oats. Below is the result, which demonstrates that there are some oats of very low germinating power in Alberta, and that farmers should exercise due discrimination in selecting their seed, and further bears out what we have many times pointed out, that each farmer should make a test of his own seed, in order to know beyond any peradventure that its germinating power was uninjured.

Ottawa, February 4th, 1902.

"Farmer's Advocate," Winnipeg, Man.:

Gentlemen,—The testing of the vitality of the three samples of oats sent in by you has been completed, and I beg to report the result, as follows:

Of No. 1, 69 germinated; 59 plants being strong and 10 weak.
Of No. 2, 41 germinated; 33 plants being strong and 8 weak.
Of No. 3, 46 germinated; 31 plants being strong and 15 weak.

You will observe that Nos. 2 and 3 are of very

low vitality, and would not be suitable for seed. Sample No. 1 is very considerably better, but the number of strong plants in this also is below the average.

Yours very truly,
WM. SAUNDERS, Director.

(Sample No. 1 was taken from a car shipped from Calgary, No. 2 from Wetaskiwin, and No. 3 from Strathcona.—Ed. F. A.)

The Potato Crop.

Although the soil and climate of Manitoba are particularly suited to the growth of this useful tuber, many farmers fail to produce paying crops. This fact is my only reason for giving the plan adopted on the Experimental Farm.

The potato crop delights in a somewhat strong, well-drained soil, rich in humus. Very fair crops can, however, be grown on inferior soils, if well manured some time in advance. Badly-drained soil delays germination, and produces a wet, soggy tuber. We have found that barnyard manure applied just before sowing has a tendency to encourage scab. For that reason we prefer using it with the previous crop. Although the maximum yield can generally be obtained on summer-fallowed land, this crop has always been treated as a cleaning crop here, and by the system adopted the land after potatoes is found to be in the very best condition for future crops, especially for field roots and fodders.

As soon as the frost will permit, stubble land is plowed seven inches deep, and at once harrowed fine. This encourages the growth of weeds, and these are killed by cross harrowing every few days while the weeds are small. About the 20th of May the land is well rolled, and then plowed three inches deep, and the cuttings dropped into every third furrow. This plan of plowing deep at first and shallow the second time insures loose soil for the tuber to grow in, without the risk consequent on deep planting.

SELECTION OF SEED.

There are innumerable varieties of potatoes offered for sale, some having desirable qualities, but others unworthy of cultivation. A desirable variety should not only be productive, but dry and of good flavor. It must also ripen early and present an attractive appearance, free from deep eyes on the surface, and streaks of red through the center. The Early Rose held its own for many years as a standard of excellence, but of late years it has deteriorated, and now many other varieties excel it in yield and quality. One of the best varieties grown on the Experimental Farm is the Irish Daisy, a long, oval, white potato of good quality, and the average yield of this potato for the past six years is over 394 bushels per acre. Another good variety is Pearce's Prizewinner, also a white potato. The average yield of this potato for the past seven years is 363 bushels per acre. New Variety No. 1, although somewhat late, is of good quality, and the average yield for the past seven years has been 363 bushels per acre, while Early Rose in the same time has averaged 310 bushels per acre. For an early potato, nothing is equal to the Early Ohio.

Formerly it was the practice to cut the sets to two or three eyes, but many of these small sets failed to germinate, and of late years larger sets have been used, averaging, say, five eyes to a set, and in some instances, where the seed is small, whole potatoes are planted. The germination is now quite uniform in character. As soon as the planting is finished, the ground is harrowed to assist in retaining the moisture and to encourage the germination of weed seeds. As soon as the young weeds appear above ground, another harrowing is given. This breaks up the crust and kills all the young growing weeds, and if this is repeated in a few days, there will be very few weeds to destroy with hoe or cultivator. The whole system of cultivation is based on the fact that the weeds are destroyed with the least labor



PLOWING ON THE FARM OF A. W. KENT, RALPHTON, MAN.

when young, and that the iron harrow is the most economical implement for the purpose.

On the first appearance of blossom, a double mouldboard cultivator is run between the rows, throwing up a very light ridge on each side, to protect the potatoes near the surface from sunscald. Too high ridging has a tendency to dry out the plants.

The potatoes are plowed up and allowed to sweat in pits for a week or two before being placed in the cellar. This relieves them of a large amount of soil, and they keep better. For the best results, the temperature of the cellar should be kept between 35 and 40 degrees Fahr.

S. A. BEDFORD.

Brandon Experimental Farm.

The Shorthorn "Ideal" Again.

To the Editor "Farmer's Advocate":

In your March 5th issue, Mr. Collyer returns to the attack on my former statement as to what is an ideal type of beef animal. After eliminating Mr. Collyer's quotation from a "letter written by some person" to a "third party," and his ascribing an "apology" to me "for misstatements," neither of which is true (I made no misstatements and could not therefore make an apology for doing so), then a personal reference to myself (I am neither a Shorthorn nor a Polled Angus, he need not therefore discuss my demerits), another reference to the "top rail of the Winnipeg stock-yards," and a thrust at the "much-pampered Shorthorns," there is but little left in his letter. But I shall consider Mr. Collyer's letters a little more closely, to see upon what he is building. First, that wonderful sale of the prize Polled Angus steer in East Liberty at \$200 per 100 lbs., as against the best Shorthorn steer in Pittsburg at \$8.50 per 100 lbs. The price of an article may be fixed by the cost of production. I do not think Mr. Collyer would agree to this axiom in applying it to the cost of the Polled Angus steer. If he does, farmers and stock-breeders would do well to avoid raising such expensive beef, for people might (?) tire of eating such a luxury. Again, intrinsic merit or value may fix the price of an article. Would Mr. Collyer have us believe that 1 lb. of this Polled-Angus steer, value \$2, was in its constituent parts worth as much as 23½ lbs. of the Shorthorn beef at 8½ cents per pound? I am confident that if the beef were analyzed by any chemist in the Dominion, the finding would not be in accord with such an absurd statement, and I am positive that if 1 lb. roast beef of this Polled Angus steer and the equivalent in value—23½ lbs. of Shorthorn—were offered to twenty hungry threshers for dinner, they would take the Shorthorn roast every time. I fancy Mr. Collyer will have to reject this axiom as the reason why the fancy price was paid. But there is another reason; another axiom if you wish. A fad may run the price of an article away beyond its value, especially where there is only one of the kind. I imagined that all your readers would understand this, but it seems that one of them, Mr. Collyer, failed to understand this trick of advertising a restaurant or a hotel bill of fare. I am inclined to think that Mr. Collyer had better get to the "top rail" (I thank him for this expression) of something to see what is going on in the world. My original statement was that "a perfect Shorthorn is the type of shape, form and build at which breeders should aim." I still believe that 999 out of 1,000 of your readers understood and applied my statement as it was intended. Now, what is the "ideal" referred to? In the year 1900 the "Advocate" printed a lithograph, entitled "Canada's Ideal"—a beautiful picture of 12 Shorthorns, not a Polled Angus in the lot. This picture was sent to all your readers and may still be seen in the homes of thousands, in many cases framed as a souvenir. For more than a quarter of a century the "Advocate" has held an "ideal" (mark the word) before its readers in descriptive articles. What is the new "ideal" which Mr. Collyer has in his mind? Again, in the last issue of the "Advocate" (March 5th) we find on page 166 an article from J. J. Ferguson, Professor of Animal Husbandry, Agricultural College, Michigan, which practically announces the same view as was expressed in my first communication. He says:

"Without a definite standard—an ideal, if you please—we shall each one breed and mould our animal forms according to our own sweet will. Will the result be uniformity or working towards a common type? I fancy not."

A short time since the writer saw a comment in one of our leading stock journals upon a sweepstakes class of beef animals, in which we had the pleasure of placing awards at one of our recent large expositions. In one ring competed modern specimens of the Shorthorn, Hereford and Angus breeds. The comment read that had the animals all been of recognized Shorthorn colors and markings, they would have very closely typified Shorthorn ideals."

Why does Mr. Ferguson use such words about "Shorthorn ideals"? Because there is a meaning to them that all stockmen understand. Mr.

Collyer would, I presume, have him say that they typified Polled-Angus ideals.

The general characteristic qualities of the Shorthorn type are "compact form, wide and deep; medium length in coupling; wide, straight back; good handling qualities; wide, deep and full fore quarters, and long, wide and deep hind quarter; well balanced and having easy range." As a matter of fact, without such an ideal ever in mind, stock-raising for beef cannot be made a success.

Any man can learn in one-half day from the "top rail of the Winnipeg stock-yards," in company with Mr. Gordon, more about the kind of steers to breed for beef, that will put money in farmers' pockets, than he could learn in a lifetime eating Polled-Angus steaks sandwiched between chapters of Watson's and McCombie's experiences. Mr. Collyer's reference to the "much-pampered Shorthorns" and his "was all true" are indications of squirming and grabbing at anything to make out a case. The fact of the matter is there was nothing in my original comment but what has been reiterated again and again by farm journals and by speakers when addressing stock-breeders' associations on the subject of beef-producing animals, and nothing to cause any man who breeds beef cattle to take exception to.

I might be allowed to quote a few selections from a professor who has made a study of animal husbandry in Canada and the United States. Professor Shaw, in his "The Study of Breeds," says: "(1) Shorthorns have unquestionably been the most popular breed of cattle in the world during the whole of the present century. (2) Of this we have abundant evidence in the fact that they are cosmopolitan to an extent far in advance of any other breed. (3) As enduring popularity is always the result of merit, we find in the favor shown to Shorthorns a proof of their great utility."

And again, "In early-maturing properties they stand second to no breed and are superior to many." And once more: "No breed has been equally useful for purposes of crossing either upon grade cattle or upon pure breeds of other breeds."

And once more: "Nearly all the cattle exported to Britain from these countries (referring to Ireland, North and South America, Australia and Newfoundland) are Shorthorn grades." And lastly, from this authority: "They impart to other breeds and especially to grades, size, form, quality, rapid growth, early maturity, marked fattening properties, and in many instances good milk production." I do not think I was wide of the mark in advising the farmers of Manitoba and the Territories to take the pure-bred Shorthorn as their ideal in improving their stock for beef purposes.

HUGH McKEILAR.

Breeders of Aberdeen-Angus in the West.

To the Editor "Farmer's Advocate":

In your issue of March 5th I notice that the Ontario breeders of Aberdeen-Angus have formed what they call a "Canadian Branch of the American Aberdeen-Angus Association," but strange to relate that although there is one herd in Manitoba (that of Mr. J. D. McGregor, Brandon) that numbers more than the combined herds of the Angus breeders of Ontario (as shown by the Directory of Breeders of Pure-bred Live Stock, published by the Dom. Dept. of Agriculture), the name of no breeder west of the Great Lakes appears on the committee, and one is tempted to believe that the aims of the Association will be purely local and the name "Canadian" consequently a misnomer. I would suggest that the name should be changed to that of "Ontario," and this is all the more necessary, as it appears from your report that the new Association does not intend to take charge of the Dominion Polled-Angus Herdbook, of which Mr. H. Wade is registrar, as they express themselves, and rightly so, as thoroughly satisfied with the workings of the American Association.

This matter of the herdbook has been the subject of much thought of some, at least, of the Angus breeders of the West, for up to the present the registrar of the Dominion Herdbook has had no breeders' association at his back, being answerable only to the Ontario Department of Agriculture, and according to the report in question the Ontario breeders have "gone back on him," and are going to support the American book in the future. Under the circumstances, the Western breeders will have to follow suit, as it would, of course, be impossible at present for them to maintain a book, and, in any event, it could hardly be expected that the Ontario Department of Agriculture would do the work for a Western association.

It has, however, been arranged to hold a meeting of the Western breeders in Western Canada, next week, to discuss the matter, and to elect a committee to represent their interests, and to consider the will and endeavor to attend the meeting.

I do not know the length of the meeting, but I am sure it will be a very profitable one.

Yours very truly,

W. H. AUSTIN.

Pure-bred vs. Scrub Fowl.

BY A SUBSCRIBER'S WIFE.

After reading Mr. Pettit's article on "Mongrel or pure-bred fowls?" I feel as though I would like to give my experience in breeding B. P. Rocks. I am a farmer's wife. I started in the business about six years ago for the purpose of earning my own pin money. I have kept my flock up by buying from some of the best poultrymen in the Province. I have good comfortable quarters for my fowls, and I like the work of caring for them, but my profits for the first few years were very small. First of all, some of my neighbors wished to exchange eggs with me for hatching, and when I told them I charged \$1 per setting of fifteen eggs, they said they would change with someone else. Said they did not care for pure-bred fowls, that I must not think it was that; they only wanted something different from their own. Another instance was of a neighbor who really did want B. P. Rocks, and although he grumbled about the price, he finally bought a setting of eggs, but he came back some three weeks later, saying he had very poor success with them, and thought \$1 was rather much to pay for half a dozen chicks, and badgered away until I was glad to give him another setting to get rid of him. In the meantime, an old friend had called, and said she would take two settings. I well remember how delighted I was, and how I told her about the good points of the B. P. Rocks, as I counted and packed the eggs. When I had them all ready, she asked what the price would be. I said as she was taking two settings I would give them to her for \$1.50. She asked if I did not think that rather steep? I replied that I did not, as I had never got any as cheap as that. She replied that her hens were not setting very well; not good enough to risk such expensive eggs under them, but when they were she would come and get the eggs. Needless to say, the eggs were never called for. Having such poor success, I thought I would sell the eggs at the stores. I asked a cent or two more on account of their fine color and size, but the storekeeper said that did not make any difference, that an egg was just an egg. But when I told him they were from pure-bred fowls, he looked quite pleased, and said they would come in very nicely, as his mother-in-law out in the country was interested in pure-bred fowls, and he would send them to her for hatching. It was now my turn to smile, and I am thinking it was a very wicked smile. I did not tell him that before starting for town those eggs had been put in a wire basket and suspended in boiling water long enough to make sure that not one of them would ever hatch. Just imagine the disgust of the poor old hens, and the disappointment of the mother-in-law, but I was not selling eggs for hatching at 8 cents per dozen. I have tried so often to talk up the superiority of pure breeds over mongrels, and sometimes people will tell me that their flock is nearly pure-bred, as they had traded a rooster with someone who had bought a pure-bred one from me two or three years previous.

The last few years I have sold a few lots of pullets and cockerels. I am sorry to say most of them went to people at a distance, but I have yet to see the man who is to give me \$5, \$10 or \$100 for a cockerel. I would like him to come quick, I would give him a right royal welcome, and, yes, I would give him 40 of my best hens and pullets, the pick of my flock, and none of them over two years old, for his \$100, and then I would have enough left to go right on, for I would have no other breed. I think they are the ideal fowl, both for eggs and the table. One full-grown bird when cooked is sufficient for a good-sized family. That reminds me of a time when I asked a man what he would give a pound for capons. Capons, he said, a new breed I suppose! Oh, we pay the same price for all kinds. I hope you will not think that people in this part of the world are ignorant, or that we live in the woods, for, on the contrary, we are a very much enlightened people, and can stand on our housetops and count half a dozen good-sized towns around us.

This has been a good winter for fowls, with few exceptions, mine have been out every day. I give them plenty of grit and gravel, chopped cabbage once a week, fresh meat and bones occasionally, and grain. Such feed, combined with cleanliness and plenty of sunshine, has been the means of keeping us supplied with fresh eggs all winter, and a good many dozen to sell, realizing, of course, the same price as those who sell from mongrels. Through all the papers nowadays, farmers are urged to improve on everything they breed or raise. I think it would not be a bad idea to urge consumers to recognize their efforts by paying a better price for a better article. When they are willing to do that the mongrel will go, but not before.

Improve the Beef Grade.

(From our Ontario and Eastern edition.)

In many localities farmers sell their stockers in the early fall, and quite often they are dissatisfied with the prices realized. I wish to point out some of the numerous causes of this dissatisfaction, and, if possible, throw out suggestions which, if acted upon, will benefit both buyer and seller. If even one farmer through any of the following suggestions should make a decided move to better his own interests by improving his herd, this article will not have been written in vain, for with the improvement of even one herd, an object lesson is taught which will change, more or less, the conditions of that neighborhood for the better.

Farmers see by the live-stock journals and agricultural papers, graded market price lists, and being owners, they are liable to consider the animals they have for sale as belonging to a higher class than their merits will bear out. Thus the intending seller is apt to take one of the higher grades as a criterion, and from it deduct but a meager allowance for transportation and feed, fully expecting the whole balance as his rightful share, and plainly dissatisfied if any other bargain has to be made.

Many of the smaller farmers, and especially those of the newer sections of our Dominion, are carrying on their operations with very limited capital, and hence are handicapped in numerous ways. They may believe that it is the right thing to possess males of the very best possible type and breeding, but that belief is of no immediate benefit when the means for purchasing are not available. All the same, it is by no means necessary that each small farmer should keep a first-class male, but it is necessary, if he wishes to succeed, that whatever stock he raises should be the progeny of such. Any farmer is seriously injuring his own business who for the difference in cost of service fee makes use of the "scrub." It should ever be remembered that the sire is at least half of the herd, and when this fact is constantly kept in view, it goes a long way towards compelling serious attention to individual worth and ancestry in the selection of a sire. There is still another and stronger reason which we must advocate in favor of good pure-bred males, namely, their progeny will mature earlier, thereby oftentimes saving one year's feed and labor.

Possibly in some out-of-the-way places there are no first-class males of the desired type available. In such districts those interested should call a public meeting to discuss the best means of overcoming this difficulty. No one rule will fit all cases, but one good method would be to have a thoroughly interested man invest, and all others concerned pledge him their patronage for a length of time sufficient to warrant him fair returns for buying a first-class animal. Then, with careful discrimination, some of the poorer class of females should be weeded out, and thus a much higher standard would be reached, better prices realized, and dissatisfaction would become more nearly a thing of the past. All this time those interested would be receiving practical lessons in live-stock judging. They would soon convince themselves of the well-known fact that the persistent use of pure-bred sires of individual merit lessens materially the cost of production of beef products, and seeing this truth demonstrated would stimulate improvement.

Quality, weight and age are all taken into consideration when the graded price lists are being formed, and should an animal be lacking in any one point, he is thrown out of that class. Quality is not all, neither is weight, and supposing even both of these points are up to the standard, we have still age and distance from market to deal with ere determining the true value of any animal as ascertained by these graded price lists. That distance from market necessarily detracts from value will at once be recognized by all. Age must also be taken into consideration, for the consumer is willing to pay more per pound for beef from a well-finished young animal than for the same cuts from one of more advanced years. Again, as an animal becomes older, it requires more food to produce a pound of gain. Quality and weight, therefore, do not include all, so this important question of age demands thoughtful consideration on the part of both buyer and feeder, and on this point (clear distinction of class) a large percentage of the trouble between producer and buyer turns.

Breeding plays a very important part in the financial outcome. The well-bred bullock commands a far better price per pound than one of hap-hazard origin, and invariably is a more economical feeder. Careful, systematic breeding, with the blood test always in view, has a marked tendency towards development of the portions of the animal which command the highest prices, and at the same time reduces in weight the portions for which the price is lowest, yet maintaining a pleasing, symmetrical uniformity throughout, and without any sense tampering with constitutional vigor. Each successive generation of the bovine kind which has been bred with this one purpose in view has proven beyond all doubt that the

standard (high as it would seem then) which our forefathers strove for has been surpassed, and that new standards, better ideals, are raised from time to time, far in advance of those of the very foremost breeders of that period; yet, as slowly and surely these are reached, others are again raised far in the van. This of itself should be sufficient to teach us the true value of careful mating, and when buying stockers this must be considered. Worth commands price. Good breeding largely ensures economic feeding, therefore quality is very necessary, even in stockers, and this quality which the consumer demands cannot be gotten by any other means than a combination of ancestry and good feeding. Like begets like; this being universally true, the improvement which is daily being made must be attributed to careful mating and judicious feeding. Any competent man when buying cattle for feeding purposes will readily pay more for a smooth, right-proportioned, growthy, good handler, with strong constitution, well-sprung ribs and good straight top and under lines, than for a much heavier one of a rougher stamp, the all-important point not being present weight, but, rather, well-defined indications of marked ability to convert coarse foods into a finished product with the greatest possible gain to the owner. Both individual experience and co-operative experiments combine to prove that the well-bred animal, liberally fed from calfhood up, is an outstanding sample of the class which pays, and, as this fact is proven beyond dispute, all breeders of beef cattle should do their utmost to increase the percentage of animals of the first quality. That is the quality which yields good profits, and, as it is the profits each individual in reality wishes to obtain, per-

emasculate when quite young, and thus avoid the staggy appearance which is very objectionable. By so doing, other things being favorable, the highest market price will be obtained.

Often the weather affects our pasture: a hot dry spell scorches until there is scarcely any feed left, consequently the animals are thin and prices accordingly unsatisfactory. Constitution, bone, and, in fact, complete outfits of perfect machinery for manufacturing beef at a good profit, have been at a standstill, or worse, all summer, simply through lack of feed during, perhaps, one month. A small patch of soiling crop would have overcome this loss, and even should the season have proved favorable for pasture, and this plot not have been required for its intended use, it could economically be converted into winter fodder. So there would be no loss under either conditions and great gain under one. Try it. One of the most wasteful practices known in the beef producer's business is allowing an animal to actually decrease in weight through lack of feed. The gain was once made, but is now lost, and has therefore to be all gone over again: produced twice, yet paid for but once. Can any man expect to live by such a business? Therefore be exceedingly careful to avoid so unprofitable an error.

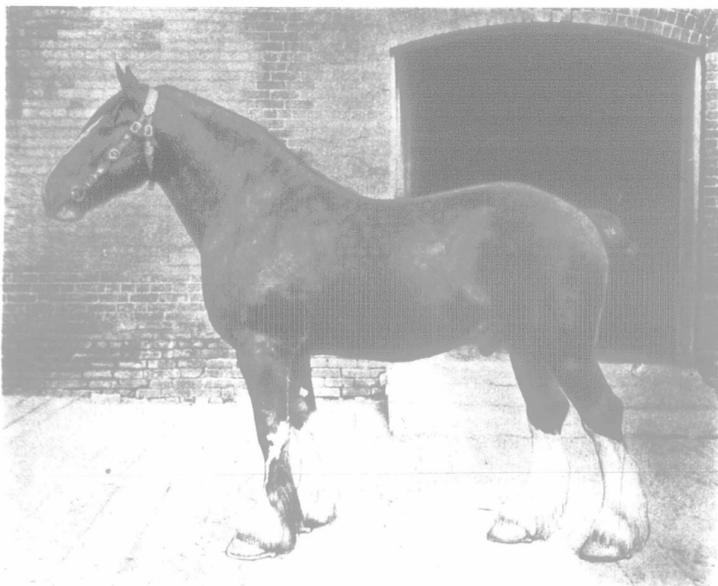
Often cattle are so harassed by flies that their gain in flesh is small. The wise farmer will make use of some application which will give the animals a better chance to feed and rest in peace. A very good mixture for this purpose is crude carbolic acid, one tablespoonful to one gallon of fish or seal oil; mix thoroughly and apply with a brush, rubbing in well, once a week in dry weather; somewhat oftener if the weather be showery.

Another very important point is pure drinking-water. This must be attended to or loss again will be the result. Apart from the humane side of this question (and no other can be stronger), the actual financial aspect demands in the most emphatic terms that this be carefully attended to. When the large percentage of water contained in the animal body is carefully considered, the full importance of this question is recognized.

In catering to the daily needs of the bullock, it is important that his salt-lick should be regularly replenished, summer and winter. This may seem a trifle, yet perfect health cannot exist without it, and every farmer knows that an animal must be in perfect health in order to insure the best gains.

Just a word on stables. Have them light and well ventilated. Foul air fosters disease; indeed, often starts it. Many stables are kept warm during winter by foul air without any systematic ventilation. The building being made as nearly air-tight as possible, the breath of the animals necessarily warms the place. When the animals are turned out for a short time, as is frequently done, they feel the cold keenly. Lack of pure air leaves them in the poorest possible condition to withstand cold, and when they are exposed to it, as often happens on the average farm, it is sure to find a weak spot, if any exists, and permanent injury is the result. There are many stables which, through their poor construction, do not require any systematic means of ventilation. Tiny apertures are quite numerous, but there is no provision made for closing them when it would be a decided advantage to the comfort of the animals, and that is the time when the systematized method has the outstanding advantage. Pure air with a temperature a few degrees lower will be found far more healthful than a higher temperature when purity of air has to be sacrificed to obtain it.

Let me advocate as a cheap, yet practicable, method, the use of 2½ or 3 inch tiles through the walls near the ceiling, say about 10 feet apart. Of course the distance apart will vary according to the dimensions of the stable. Then, by having a hinged-board attachment, the air supply can be regulated to a nicety. Have the hinge or the lower side, just below the tile, and a very small pulley above the tile, then by means of a cord the supply can be changed at any moment without creating a draft, for the board will naturally scatter the air upward away from the animals. This plan works very well in tolerably high



STRATHCONA.

Imported Clydesdale stallion, rising three years old. Owned by J. M. Gardhouse, Highfield, Ont. IMPORTED BY JAMES DALGETY, LONDON, ONT. (SEE GOSSIP, PAGE 267.)

sonal interest demands that animals of that stamp should be raised. Taking for granted now that all are agreed that heredity is of prime importance, let us pass on and give a few general directions, which may be found helpful in promoting growth and vigor in the young animal, and by that means help to improve, financially, a portion of the farming community.

On very many farms calves are but a few days old when they are suddenly changed from whole to skim milk, and frequently fed but twice a day, whereas they ought to have whole milk three times a day for two weeks at least, and even then the change should be very gradual, as otherwise their digestive organs are liable to become deranged, which, of course, checks the growth and weakens the system. Begin very early and add a little boiled flaxseed or oil-cake meal. Before long you may change to oatmeal or finely-ground oat chop, if such is found cheaper or more convenient. A very little fed regularly will make a marked difference upon the calf, costing but a trifle, yet building and developing both frame and system to a degree which more than amply repays cost, laying the foundation for a growthy, vigorous animal, the kind that pays, and materially hastening the time when good pasture will make a complete ration.

Feed liberally from the start, for it is a well-recognized fact that as the animal becomes older it requires more food to produce a pound of gain. Experiments along this line amply warrant the emphasizing of this statement. So it behooves farmers to carefully hasten maturity by liberal feeding, thereby producing the same finished article at a much smaller cost. It is also well to

stables. Of course, if the stables are very low, there certainly will be some draft on the animals.

Avoid undue exposure at any time; it sooner or later affects the pocket, thus making itself felt by the owner of the suffering beasts. No need to let cattle stand outside shivering, either for exercise or air. A judicious amount of exercise is good, especially for growing animals, but before they begin to huddle up and stand shivering, the exercise period is over, and the sooner they are housed again the better for all concerned. It is quite common at present with many farmers to keep their stockers unsheltered somewhat late in the fall. This unnecessary exposure always checks increase of weight, and oftentimes starts a backward tendency, which is very difficult to counteract. Many animals which under present conditions do not pay, would yield fair profits without any more cost in feed if a little more attention were given to comfort, and also a trifle more forethought to the compounding of rations.

M. D. GEDDES.

Improving the Fairs.

(From our Ontario and Eastern edition.)

Sir,—I expected to have seen some discussion in the agricultural journals on the proposed improvements in the management of local and district fairs as set forth by the leading and lesser spirits at the annual meeting of the Canadian Fairs Association held in Toronto in February last. I believe it is generally admitted that there is not only much room for improvement in this direction, but urgent need for it. While some of the fairs have fortunately fallen into the hands of wise and practical directors, and been successfully managed financially, as well as in maintaining a high standard of exhibits, it is lamentably true that too many of them have retrograded not only in the quality of exhibits but also in their influence for good. This state of things has been brought about largely by the pandering to the demand of a certain class for exciting attractions, such as horse racing and circus performances, that are foreign to the true objects of an agricultural exhibition, and which draw the attention of most of the young people and many of the older away from the instructive and helpful features of a fair primarily designed for the improvement of live stock and agricultural products generally. These extraneous attractions, which were designed to help the fair associations financially, have in most cases failed in course of time to meet that expectation, while their influence has been far from helpful in any good sense.

The proposition to encourage the introduction of more educative features into the fairs, such as practical demonstrations in the manufacturing of various articles and products upon the ground, a systematic parade of live stock, and the provision of seats around judging-rings, where people interested or desirous of learning may with comfort see the awards of merit placed and study the approved types, is certainly commendable and should be strongly supported. The appointment of a superintendent of fairs may be an improvement, provided his influence is wisely used in seeking to secure uniformity in the classification of prize offerings and the introduction of useful features. The arrangement of fairs in circuits, to avoid clashing of dates and events, may, with the consent and concurrence of the local associations interested, be made helpful by facilitating the carrying of the educative features from one to the other, thereby attracting a larger attendance to all and spreading the influence of those improvements over the largest possible area. Whether amicable arrangements can be made for amalgamating existing District Fair Associations with the Farmers' Institute system is a problem which can only be solved by the effort to do so. It will doubtless be found in many instances a difficult task and one requiring the exercise of wisdom and discretion on the part of all interested, and especially of those charged with the introduction of the innovation, in order to its working out satisfactorily and successfully.

The scheme being exploited to have the power of appointing the judges vested in Government officials, an authority which has to some extent already been assumed, with, I am credibly informed, far from uniformly satisfactory results, in some respects (notwithstanding statements to the contrary by the promoters) is one of the most objectionable of the proposals that have been formulated. In no country is a better system of selecting judges in operation than here, the breeders' associations nominating a list of competent men from which selections are to be made, and fair associations having the privilege of making their own choice from these, and I am confident, from close observation of the work of judges at leading shows in Great Britain and the United States, that, as a rule, better and more consistent judging is done in Canada than in either. The statement that local fairs have not satisfactory facilities for securing competent judges is without foundation. The list of judges nominated by the breeders' associations is made up of men from all sections of the country and are available to the smaller as well as the larger fairs, and, as a rule, as good judging is done at

the local as at the larger fairs. It is true that unfortunate selections are sometimes made, but this applies as frequently to the one as to the other. There always have been and always will be cases of complaint, but is it not a fact that the most vigorous "kicking" is generally done at the big shows and the provocation as pronounced there as elsewhere? The placing of Government officials in the hands of Government officials will be liable to engender suspicion and charges of favoritism, the effect of which will be to shake confidence in the system, and this is a point that should be carefully guarded by the stockmen who are likely to be exhibitors.

The idea of placing the same set of judges on a circuit of fairs looks very well in theory, but has failed where tried and is sure to fail of giving satisfaction in practice for the reason that exhibitors who have stock or articles prepared for exhibition desire to show at a number of fairs to recoup themselves for the expense of such preparation, and as it is clear that those who are defeated under a judge at the first fair will have no chance of better success at the next under the same judge, they will go no further, and the result will be a less extensive and attractive exhibit at the following fairs, while the exhibitor who is fortunate in securing the favor of the judge at the first appearance will have a snap, whereas with a change of judges the awards might be very different in some instances, and, owing to difference of opinion and difference in condition, the later rulings might be quite as justifiable as the first. This has been proven frequently where the same animals have come in competition at Toronto and at Ottawa or London, the placing being in many classes quite different at the latter and quite as consistent. It may be claimed that this furnishes an argument against the present system, inasmuch as under the new proposal there would be more uniformity and less apparent inconsistency in the awards. There would be some force in this could exhibitors and the public be persuaded that the Government brand of judges would be infallible, but it will be difficult to dispel all scepticism on that point.

The idea suggested by a speaker at the convention that judges should be subject to examination by constituted authority and granted certificates of qualification as experts sounds very pretty, but it will be difficult to persuade intelligent stockmen that competent judges can be machine-made. They would probably have more confidence in the statement that judges are born, not made, and it may with safety be said that the best judges as a rule are those who have grown up from boyhood with good stock and had the care and handling of them. Practical stockmen have a wholesome contempt for and distrust of men claiming to be expert judges. Associations of expert judges were formed some years ago in some of the States across the line and promised to work a revolution in stock-judging. They met for study and practice on living subjects, working by means of a score card and a standard of excellence, figuring out on paper the comparative value of the various points, and by mathematical demonstration deciding, as they thought, the relative merits of the animals exhibited. They were dead sure they had reduced stock-judging to a science. They granted each other certificates of qualification as expert judges and advertised their services as such, doubtless expecting that fair associations would jump at the offer and gladly be relieved from the worry incident to the complaints of incompetent judging, as it was clear to them that figures could not lie. These men were no doubt quite as sincere in their belief that they had discovered a panacea for inconsistent judging and were doing their country a great good in placing their services at its disposal for a reasonable consideration as were the "tailors of Tooley street," who, in convention assembled, seriously issued their famous manifesto starting with the declaration, "We, the people of Great Britain and Ireland," etc.; but the experts waited in vain for the confidence of stockmen. In a few instances, fair associations run by city people gave them a trial, but their work when finished by figuring was so fearful and wonderful that they soon found their occupation gone and "none so poor as to do them reverence." One of these Yankee experts judged all breeds of cattle at a Montreal exhibition some years ago, and though he did a marvellous amount of figuring, he made a terrible mess of the work, and drew from an exhibitor the audible remark, "You can never know where lightning is going to strike." And yet there are people in this country who cannot see why so apparently reasonable a proposition cannot be worked out successfully. They fail to perceive that dealing with animal life and its various types is a widely different thing from working in wood or stone with compass and square and chisel, and that stock-judging at its best is more than a science or an art that can be acquired by deduction—that it is an intuition of natural gift developed by experience.

The idea of requiring judges of breeding stock to give reasons for their decisions is another fad that I predict will be as short-lived as that of the score card. It is about as reasonable as to ask a man to say why he loves one woman better

than another or than all others, for in many a close case in stock-judging the woman's reason, "because," would probably be as sensible and as nearly right as any he could give. One of the first and surest results of this requirement will be to disqualify some of the very best judges we have, men who know their business from long experience, and who know they know it, but who would shrink from making a public exhibition of themselves by attempting to address an audience, giving reasons for their work. Yet there are glib-tongued upstarts, whose judgment and experience is not to be compared with that of the others, who can talk by the hour, who would be glad of an opportunity to air their eloquence, and could no doubt succeed in persuading themselves they were right in their decisions whether they could convince others or not. This scheme may be useful for practice at an institute meeting or in a college course, where young men who have not had the advantage of handling pure-bred stock may be instructed in the distinctive characteristics of the different breeds and in the rudimentary principles of judging, and where the stock to be passed upon belongs to the Government or some other soulless corporation with no feelings to be hurt, and it may possibly, to a limited extent, be adapted to the judging of fat stock doomed to the butcher's knife at an early date, but it is not reasonable to expect a man of natural feelings, who may be a better judge than the professional who places his best second in the competition, to stand dumbly by while the judge, in his opinion, adds insult to injury by publishing to the assembled crowd faults in his animal, the existence of which he would stoutly deny were he permitted to do so, but of course the rules would be framed to gag the exhibitor and to involve a penalty for contempt of court if he presumed to give "back chat." It is bad enough to be done out of a prize you feel sure you are entitled to, without having the injury rubbed in by public proclamation, and no judge with proper feeling would want to be put in such a position where breeding stock is concerned. Fancy the owner of a stallion placed lower than he believed he ought to be, standing quietly by while the horse he held for sale or for service was publicly damned, after being defeated, as he believes, by the judge and not by the competing horse. The thing is simply impracticable in judging pure-bred stock, and even in judging fat stock, as was evidenced at Guelph last December, where it was adopted in the cattle classes; it was a dismal failure, for while the judges were capable and did excellent work in judging, though they were accustomed to public speaking, must have felt that their attempts to give reasons for their rulings were little better than a farce.

Hon. Mr. Dryden wisely counselled the convention to not attempt too many things at once, and it will certainly be well to go slowly in the introduction of some of the schemes that have been proposed. The people interested should not fail to give them full consideration and discussion before allowing them to be thrust upon them.

In attempting this work of local-exhibition reform, I have myself more faith in the slower but more natural and permanent educational processes already at work than in any revolutionary methods. I am certain it will prove necessary to so direct the movement as to avoid exciting local antipathy against centralization, on which score local agricultural societies are naturally very sensitive. One-man power in some undertakings is all right, but in a case like this it might prove all wrong and disastrous if it alienated local sympathy and effort.

STOCKMAN.

Birmingham Shorthorn Show and Sale.

(Our special report.)

The thirty-fourth annual fixture took place on March 5, 6 and 7 last, when the record entry of 611 was made. Taken all through, the average of merit and quality was fully maintained, but as is generally the case with so large an entry, there were more than the usual number of weeds present. The award list, however, very clearly indicates the opinion of the judges, which, we believe, fairly represents that of the general public, there being no fewer than 172 animals placed therein, being practically a third of the number entered. These awards went to seventy-nine exhibitors, of whom thirty-three shared in the thirty-eight cash awards, the total number of exhibitors being 167. In cows, Mr. C. W. Brierley was nearly invincible, for he won three firsts and two seconds in the four classes for females, being second in the class where he missed the premier award, this animal afterwards being sold to Mr. W. T. Garne at \$500, the winner making \$360. Mr. W. J. Hosken was leading winner in the bull class, taking two firsts and a second, Mr. J. Handley running him close, with two firsts, one of which was for his fine old bull, Lord James Douglas, the second in that class going to Earl Manvers' Ruddy Star, by Star of morning. Mr. L. H. Holland took a first in each section, as well as a r. n. and three barren honors. Col. Sir N. Kingscote came in for a first and a second in the bull classes, and two minor honors, and Mr. W. Parkin-Moore took the



THE LATE MR. HENRY ARKELL.

other first award. Amongst the other winners of cash prizes we may mention Earl of Powis, who took the special for best five bulls, Mr. L. de Rothschild being the r. n., Mr. J. McWilliam being a winner of a second award. Lord Lovat, who was represented by a capital lot, secured a 4th, two 5ths, and a r. n. Reference to the catalogue discloses that the following herds were also represented: Mr. J. W. Barnes' (from Cumberland) name comes in the award list; Mr. A. Cameron, from Brechin, N. B.; Mr. H. Dudding, of Riby Grove, with an entry of three capital bulls; Mr. J. Gill, Cumberland; Mrs. Grey Whittingham, Northumberland; Mr. J. Harris, Carlisle; Mr. G. F. King, Bristol, etc.

The highest price in the sale was 280 guineas, paid by Mr. Maclellan for Lord Lovat's Highland Chief. Two hundred guineas, the second highest price, was paid by Mr. Colman for Mr. Koskens' Hayle Speculator, by Royal Sovereign; dam a cow of the Waterloo tribe. He was only just over a year, but of fine quality, and won first award of £50 in the class for bulls over 10 and not exceeding 20 months.

W. W. C.

Death of Mr. Henry Arkell.

We regret to record the death, on March 23rd, 1902, of Mr. Henry Arkell, of Teeswater, Ontario, at the age of 70 years. Mr. Arkell was born in 1832, at Bampton, Oxfordshire, England. His early years were spent on his father's farm, of which he was manager for a few years. In the year 1858 he came to Canada, and for the first two years worked with his late uncle, Mr. Thomas Arkell, on the Farnham farm, now owned by his cousin, Mr. Henry Arkell, of Arkell, near Guelph, after which he was for ten years manager of "Moreton Lodge," the 600-acre farm of the late Mr. F. W. Stone, at Guelph, the farm now owned by the Ontario Government, on which the Agricultural College stands. Here, by faithful service, he gained a wide experience in the care and breeding of pure-bred stock, and won for Mr. Stone prominent recognition among Canadian breeders of Shorthorn and Hereford cattle and Cotswold and Southdown sheep. At the end of this term he settled on the 200-acre farm, in the County of Bruce, on which he died, which he had owned for about 12 years previously, and on which he maintained, up to the time of his death, a high class flock of Oxford Down sheep. He was an excellent judge of stock, and a very intelligent, conscientious and upright man. His services were frequently called for as a judge at the leading shows, and especially of late years at the Provincial Winter Fairs, where his ripe judgment and experience enabled him to give good satisfaction. Mr. Arkell was highly esteemed in his own county, where he was best known, and was repeatedly elected to offices of trust, including the Presidency of the Electoral District Agricultural Society and the Farmers' Institute. He was from time to time a valued contributor to the columns of the "Farmer's Advocate" on stock matters throughout its entire history, his first contribution appearing in the initial number of the paper 36 years ago, and his last, "A short history of the Oxford Down sheep," in December, 1901. At that time his health had been failing, and he suffered long and severely, but patiently, from stomach and liver troubles. His wife, two sons and two daughters survive him. In his death the "Farmer's Advocate" suffers the loss of a faithful and true friend, and the community in which he lived an honor-

able and public-spirited citizen, and his family a wise and affectionate counsellor, whose consistent life and character will ever be an inspiration and a benediction.

Planting Wind-breaks.

[Read by John Caldwell, Virden, Manitoba, at the annual meeting of the Winnipeg Forestry Association.]

The men with whom we have mostly to deal are those on the open prairies, with probably no trees within ten miles. What these men want is something that will grow fast and stand the climate, to add value to their property and make their homes homelike and cheerful as fast as possible.

The varieties we have to work with are the elm, ash, birch, bass-wood, native maple, and the spruces, besides the Dakota cottonwood and half a dozen varieties of the Russian poplars and willows.

The most valuable of these for a beginner are the maple, elm, ash, Russian poplars and willows, also the cottonwood, if not too generally subject to disease, as reported from Brandon Experimental Farm. There is nothing more desirable than the spruce, but they are more expensive to grow and more liable to die than any other tree the Forestry Department are likely to send out. The birch and basswood are good, but rather hard to procure; the elm and ash are easily raised from seed, and should be extensively grown; the maple is more easily grown, and more easily transplanted than any other tree we have, and when planted in breaks on good soil will live for 30 years and serve a very good purpose. On light land, with a dry, gravelly bottom, the maple is a failure. The Russian willows are hardy, fast growers, and are to be recommended. The Peterfsky and Wobstii Russian poplars are head and shoulders above all the rest for general usefulness; the further West you go into the dry belt the more marked will the superiority of these trees be over all others. I consider these two Russian poplars the most valuable trees we have, and the most valuable lesson you can give the settler is to furnish him with two or three hundred young Russian poplars, and in three years show him how to take cuttings off his own trees, and how to make them grow. These trees are sure to do so well he will take a pride and interest in them, and in this way every farmer will become a tree planter to some extent, and will be able to extend his plantation at his own pleasure.

I am very much in favor of planting blocks or wood lots of elm, ash, and the Russian poplars, each by themselves. The poplars in fourteen years will be forty feet high and one foot through. Five acres will hold nearly 15,000 trees, and it is not hard to imagine the value of that many trees on any farm. The elm and ash would be considerably slower, but in a few years later they would become very valuable.

Plant in rows about four feet apart and three feet in the row. Planting with a dibble is a faster and easier way, and makes a better job than with a plow. If your trees are too large for a dibble, you must use a plow, which means extra trouble and expense, with no extra benefits.

For some years to come, I expect to see the supply of young trees a long way short of the demand, and the Forestry Department should lose no time in arranging for the growing of large quantities under the most favorable conditions. The best soil for nursery purposes is a sweet, sandy loam, lying close to water and well sheltered. The work is easier and the stock will do better than on heavy land. I also believe that stock does better transplanted from light to heavy soil than from heavy to light.

All young stock for spring planting should be dug in the fall and buried. Wood for cuttings may be cut in the fall and turned into cuttings later on, when there is little else to do.

A good deal of work, sorting, etc., may be done after the winter closes in. The handling of stock from the time it is dug in the fall until it reaches the farmer in the spring, is of the first importance. A large storage cellar is an absolute necessity, and on sandy land, with an abundance of moist sand, which is the best place, the cost would be very small. As much of the work as possible should be done in the fall and winter, to relieve the rush of work in the spring.

The planting of wind-breaks should be a great success and of immense value to this country, and should be carried out as rigorously as means will permit.

Pleased.

I received, by mail to-day, the premium, No. 2 Teachers' Bible, for which please accept my hearty thanks. I shall endeavor to get more subscribers for the valuable paper.

R. B. STEWART

What is Nature Study?

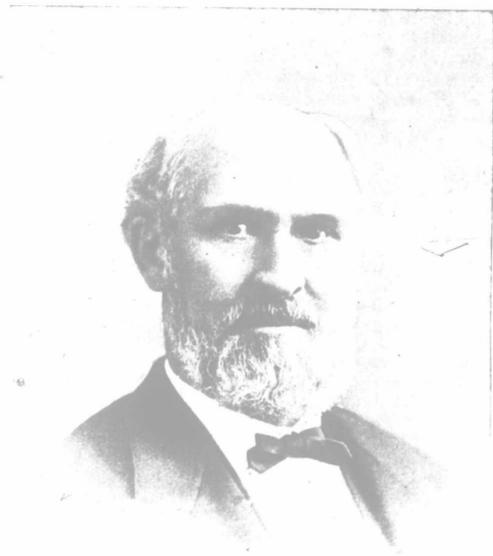
Sir Wm. C. Macdonald's munificent gift of \$125,000 for the establishment of a school for the training of public-school teachers in nature-study and domestic science, at Guelph, Ont., has already been discussed in its general bearings in recent issues of the "Farmer's Advocate." We have drawn public attention to several important considerations arising in connection with the relation of the proposed institution to the present academic and normal training of our teachers. The domestic-science aspect of the subject is tolerably clear in the public mind, but "nature-study" is as yet but seen as through a glass darkly. We are pleased to see "The Nature-study Idea" presented at some length recently in Country Life in America (under the editorship of Prof. L. H. Bailey, of Cornell University). He points out that there is a rapidly-growing feeling that people must live closer to nature, and we must, therefore, begin with the child. Hence the effort to teach nature-love by nature-study. Attention is called to two or three fundamental misconceptions of what nature-study is or should be.

Fundamentally, says this writer, nature-study is seeing what one looks at and drawing proper conclusions from what one sees; and thereby the learner comes into personal relation and sympathy with the object. It is not the teaching of science, not the systematic pursuit of a logical body of principles. Its object is to broaden the child's horizon, not primarily to teach him how to widen the boundaries of human knowledge. It is not the teaching of botany or entomology or geology, but of plants, insects and fields. Many persons who are teaching under name of nature-study are merely teaching and interpreting elementary science.

Again, nature-study is studying things and the reason of things, not about things. It is not reading from books. Nature-readers may be of the greatest use, if they are made incidental and secondary features of the instruction. The child should first see the thing. It should then think about the thing. Having a concrete impression, it may now go to the book to widen its knowledge and sympathies.

Yet again, nature-study is not the teaching of facts for the sake of the facts. We must begin with the fact, to be sure, but the lesson is not the fact, but the significance of the fact. It is not necessary that the fact have direct practical value to the daily life; for the object is the effort to train the mind and the sympathies. It is a common notion that when the subject matter is insects, the child should be taught the life-histories of injurious insects and how to destroy the pests. Now, nature-study may be equally valuable whether the subject is the codling moth or the ant; but to confine the child's attention to insects which are injurious to man is to give him a distorted and untrue view of nature. Children should be interested more in seeing things live than in killing them. Yet we would not directly emphasize the injunction, "Thou shalt not kill." Nature-study is not recommended for the explicit teaching of morals. We prefer to have the child become so much interested in living things that it has no desire to kill. It is true that we must fight insects, but this is a matter of later practice, not of education. It should be an application of knowledge, not a means of acquiring it.

We Should Cultivate Feeling.—We have a right to a poetic interpretation of nature. The child comes to know nature through its imagination and feeling and sympathy. Notice the intent and sympathetic face as the child watches the ant



SIR WILLIAM C. MACDONALD.

carrying its grains of sand, and pictures to itself the home and the bed and the kitchen and the sisters and the school which compose the little ant's life. What is the brook saying as it rolls over the pebbles? Why is the wind so sorrowful as it moans on the house-corners in the dull November days? There are elves whispering in the trees, and there are chariots of fire rolling on the long, low clouds at twilight. Wherever it may look, the young mind is impressed with the mystery of the unknown. The child looks out to nature with great eyes of wonder.

Two factors determine the proper subjects for nature-study: First, the subject must be that in which the teacher or parent is interested and of which he has knowledge; second, the subject must be one that is common and that can be easily seen and appreciated by the child, and that is nearest and dearest to his life. The tendency is to go too far afield for the subject-matter. If the subject-matter is of such kind that the child can collect the objects, the results will be the better. With children, begin with naked-eye objects. As the child matures and becomes interested, the simple microscope may be introduced now and then. Children of twelve years and more may carry a pocket lens; but the best place to use this lens is in the field. The best nature-study observation is that which is done out of doors, but some of it can be made from material brought into the home or the school-room. The subject should be vital.

It is a sound pedagogical principle that the child should not be taught those things which are necessarily foreign to the sphere of its life and experiences. It should not have mere dilutions of science. Usually the young child cannot understand the subject of cross-pollination of flowers. It should not be forced to learn the names of the parts of the flower. Such technical subjects are likely to be beyond the child's realm. They are exotic things to the beginner. They are translations of the knowledge of grown-up investigators. Pollen and stamens are not near and dear to the child.

There are three factors in the teaching of nature-study: (1) the fact, (2) the reason for the fact, (3) the interrogation left in the mind of the learner. It is impossible to find a natural-history object from which these three factors cannot be drawn. For example, a twig or branch may be at hand on a February day. Let the teacher or parent ask the child what it sees. The reply will discover the first factor in the teaching—the fact. However, not every fact is significant to the teacher or to the particular child. It remains for the teacher to pick out the fact or answer that is most significant. The questioner should know what is significant, and he should keep the point clearly before him. A child says that the twig is long; that it is brown; that it is crooked; that it is from an apple tree; that it has several unlike branchlets or parts. Now, this last reply may appeal to the teacher as the most significant fact. Stop the questioning and open the second epoch in the instruction—the reason why no two parts are alike. As before, from the responses the significant reason may be developed: It is because no two parts have lived under exactly the same conditions. One had more room or more sunlight, and it grew larger. The third epoch follows naturally: Are there any two objects in nature exactly alike? Let the child think about it.

It is a common mistake to attempt to teach too much at every exercise, and the parent or teacher is also appalled at the amount of information which he must have. Suppose that one teaches two hundred and fifty days in the year. Start out with the determination to drop into the child's mind two hundred and fifty suggestions about nature. One suggestion is sufficient for a day. Five minutes a day of nature-study may be preferable to an hour, but make it quick and sharp. Let it be designed to develop the observation and reasoning powers, and not to give mere information. Spirit counts for more than knowledge.

What may be the results of nature-study teaching? Its legitimate result is education—the development of mental power, the opening of the eyes and the mind, the civilizing of the individual. As with all education, its central purpose is to make the individual happy; for happiness is pleasant thinking. The happiness of the ignorant man is largely the thoughts born of physical pleasures; that of the educated man is the thoughts born of intellectual pleasures. One way to lessen evil-doing is to interest the coming generation in dandelions.

Nature-study not only educates, but it educates nature-ward; and nature is ever our companion, whether we will or no. Even though we are determined to shut ourselves in an office, nature sends her messengers. The light, the dark, the moon, the cloud, the rain, the wind, the falling leaf, the fly, the bird,—they are all ours. Nature-love tends towards naturalness, and towards simplicity of living. It tends country-ward. If one is to be happy, he must be in sympathy with common things. Few of us can travel. We must know the things at home. No person should depend wholly on another person for his happiness.

The Work of the Forestry Department in Manitoba.

[From a paper read by A. P. Stevenson, at the meeting of the Forestry Association, in Winnipeg.]

The peculiar weakness of human nature to be in haste to become rich, continually acts as a drawback to the sure but gradual accumulation of wealth. The young man of enterprise, industry and ambition is generally in too big a hurry for permanent success. The profits on a quarter-section of wheat, with its speedy returns in ready money within a year or two from the commencement of his work, is more alluring than the slow accumulations through stock-raising or tree-planting and their consequent permanent values. The too common but mistaken idea that it takes too long to get any good from tree-planting must be corrected.

What encouragement have we to plant trees? In the first place, we are assured that the planting of trees will accomplish what we seek to accomplish, they will protect from winds, modify the temperature, and yield a certain amount of fuel.

In the second place, we have good reason to believe that other good effects will follow, that the rainfall will be better distributed, our springs and streams preserved, the air rendered more humid, and fruit culture facilitated.

In the third place, we know that trees will grow on our prairies if properly planted and protected. It was formerly believed, because nature had not permitted them to grow, that trees would not grow on our prairies. This the artificial groves scattered over our Province, as well as our own experience here at home, sufficiently refute.

In the fourth place, we are not pioneers in the business of forestry. The Western States have led the way, and now have thousands of groves of trees from 40 to 50 feet in height. Our Government have already begun the work here, and last year thousands of trees were planted by the settlers in the prairie portions of our Province and the Northwest Territories under the supervision of the Forestry Branch of the Department of the Interior. Seven hundred applications have already been made, and of these 500 have their land in the proper shape for planting. It will require at least half a million trees to meet the demand of applicants who are taking advantage of this co-operative tree-planting scheme inaugurated by the Dominion Government. The increasing number taking advantage of this scheme show that our people are alive to the necessities and possibilities of tree-planting. We have only to keep the ball in motion to produce grand results to show that the encouragement and assistance given will not be tendered in vain.

THE PREPARATION AND KIND OF TREES TO PLANT.

In order to make a success in growing trees, we must be thorough in the preparing of the land before the trees are planted. They need to be well cultivated until they are large enough to take care of themselves, and unless this is done, it is of but little use to think of growing a good shelter belt. After breaking up the sod, it is advisable to take off at least one crop of grain before planting trees. The sod will then be fairly well rotted and the trees will grow faster, but, without doubt, the best preparation is summer-fallow the year previous to planting. The next best is land that has been under hoed crops of some kind. A hoed crop between the rows of trees the first year is also of great benefit. This can easily be accomplished, as the trees being small the first year (one-year-old seedlings), there is ample room, the trees being planted in rows five feet apart, and three feet apart in the rows.

As regards the best kinds of timber to plant on the prairies, the adaptability of certain varieties to certain soils must be recognized. Russian poplar and Manitoba maple succeed fairly well on high, sandy soil, but cottonwood and elm delight in a deep, moist loam. For wind-breaks, the most rapid growers are the Russian poplar and willow, cottonwood and maple. These varieties should be the pioneer trees in starting a shelter belt.

It is also a matter of no small importance to know how best to arrange our trees so as to have them both ornamental and useful. If we would grow tall, straight trees, we must have them quite near together; if too far apart they will grow short trunks with spreading tops, which are not desirable. There is another benefit derived from close planting, for if well cultivated, in three or four years they will be able to take care of themselves. Some persons make a fatal mistake in planting a grove around their buildings; they plant a few trees quite near buildings, and think they have done a very good thing. Well, they have, as far as it goes, but if they go no further they will some day think that it was not so wise a plan after all. This small grove will break the wind and stop the snow, but the snow will be stopped and piled up just where they don't want it. Their dooryards and barnyards will become

filled with snow, and they will be likely to wish they had not planted any trees.

To overcome this difficulty, the shelter belt should be started at least 50 or 60 yards from the buildings on north and west, and to save the trees in the shelter belt from being broken down with heavy snowbanks, it is advisable to have a snow-break of one or two rows of trees (willow preferred) on north and west of wind-break, but at a distance of 10 or 50 yards from the latter. This space always to be left clear of trees to hold the snowbanks in winter.

The Shorthorn a Bit on His Dignity.

To the Editor "Farmer's Advocate":

I see by your March 5th issue, that Mr. Collyer is still after Mr. McKellar, or, rather, making Mr. McKellar a target at which to aim some shooting material he is loaded up with and really meant for someone else.

Now, I have no desire to enter into any controversy between Mr. Collyer and Mr. McKellar, but Mr. Collyer made some remarks in his last letter—that any of the beef breeds of cattle were as good or better for this country than the much-pampered Shorthorn—calling for some reply from Shorthorn breeders.

Anyone who has followed the correspondence can easily see that Mr. Collyer has been spoiling for a fight with the Shorthorn men, and, as one who thinks that the Shorthorn has nothing to lose and everything to gain by being held up to the light, I will draw a few comparisons between the two breeds, and leave unbiased minds to draw conclusions.

First of all, I would just like to say that I have no prejudice against the Aberdeen-Angus. On the contrary, it is one of the finest breeds of beef cattle in the world and in some respects the greatest, and it is impossible to conceal the fact that the breeders in Manitoba themselves are the greatest obstacle to the advancement of the breed. The way they bring out their cattle to the Industrial Exhibition is simply disastrous to any advancement, and if Mr. Collyer would devote some of his time between now and exhibition time getting some of his cattle in shape, he would have little need to uphold his side of the case in the columns of the "Advocate," as hard facts and living illustrations are far in advance of fine-spun theories.

But to come to comparisons. He says that the muley blacks and the whitefaces are better than the pampered Shorthorn. Where does Mr. Collyer get his information? I venture to make the statement, and know whereof I speak, that 75 per cent. of all the cattle (beef) owned in this country are Shorthorn or Shorthorn grades. That does not look as if the public think that the Shorthorn is the least of all breeds named. Take the ranges: what breed is predominant there? Certainly, the Shorthorn. Of late years the Galloway and the Hereford have been introduced. What to do—make them harder? By no means. The two breeds named are a little better at rusting in a snowstorm, but in every range the foundation is Shorthorn, and after a cross with some other breed the rancher comes back again to the original. Now, where does the Aberdeen-Angus, which Mr. Collyer claims are so hardy, come in? Simply nowhere. Any rangeman will tell you that Aberdeen-Angus cattle are too much like hot-house plants set in the open when tried on the range, and simply dwindle down to mere dwarfs.

Now, take the Aberdeen-Angus as a breed the world over, how do they compare? I venture to say that for every muley you will find 10 Shorthorns? How do they stand in their native country, Scotland? In all the southern and midland counties they are as scarce as hens' teeth. You may see a few, bought from their native counties, brought south to fatten, but there is scarcely a hoof raised outside of their own original home. Take the States Mr. Collyer makes so much of as going wild after them. Where are they found? In a few of the central Western States—principally the corn belt—where corn is cheap, and where all that is required of them is, hog-like, to be born into the world and get stuffed with corn until they are out of it. No other call is made upon them, for the reason that none is required, and if called upon they have none to give.

Compare the Shorthorn with the Angus the world over, how do they stand, even in the corn States? Mr. Collyer will think before he makes the statement that muleys are more plentiful than Shorthorns. In their own native counties of Aberdeen and adjacent counties, why that is the home of some of the best herds of Shorthorns in the world. Will Mr. Collyer claim that they are equally predominant even there?

As I stated before, I have no intention of crying down the Angus cattle, but when compared with the Shorthorn, as the all-round breed of cattle, they are simply not in it. Where will you find a dairy full of Angus cattle? While in nearly every dairy, if not in all, you will find some Shorthorns or their crosses. Look at their position at the Pan-American. Where do we find the Angus at the fat stock shows, where profit is

thrown to Shorthorn the Angus I might see. I might ever you the confine old Short beef, to I ever you Shorthorn the Short changes a from the they have time to d them on t and his own laure sede what North C

I am grains and certain land which will not c toes, corn, they will tity of the this is so nature? sides of a with peas and keep t

Ans.—T to be fert by its own e., the pot affected by case of th flower only very readil distances. grass fami pollinate b species in have the s tilized by

Grey m Whalebone, Tatton Syle mare has b J. H. Reed months old saddle and is an exce saddle, and work with is up to an make a mi ways close is as sound she had as tickets in 7 years old, performan wrong, t either hand



thrown to the winds? Right at the top, and the Shorthorns there, too, and sometimes above even the Angus.

I might go on and enlarge, but such will suffice. In conclusion, allow me to say that wherever you find the settler pushing his way beyond the confines of civilization, you will find the grand old Shorthorn there to give his children milk and beef, to till the soil and clear the forest. Wherever you find the Anglo-Saxon you will find the Shorthorn. Other breeds may be there, too, but the Shorthorn there always. They have seen many changes and striven against many disadvantages from the ignorance of friend and foe alike, but they have still held on their way, and will continue to do so as long as there is a place left for them on this hemisphere. They need no defence; they can take care of themselves, and Mr. Collyer and his muley blackheads better look to their own laurels, or the Shorthorn may even supersede what little attainments they have made.

North Cypress, Man. JOHN GRAHAM.

Cross Fertilizing.

I am trying several varieties of vegetables, grains and roots this year for the purpose of ascertaining which variety is most suitable for the land which is to grow them. I am told that it will not do to plant different varieties of potatoes, corn, oats, wheat and barley side by side, as they will be sure to inoculate and spoil the identity of the seeds. Will you please let me know if this is so, and how to avoid it, if a law of nature? Would planting potatoes on opposite sides of a field with corn in the middle, and so with peas and oats, etc., accomplish my purpose and keep the seed pure for another year?

SIMCOE INQUIRER.

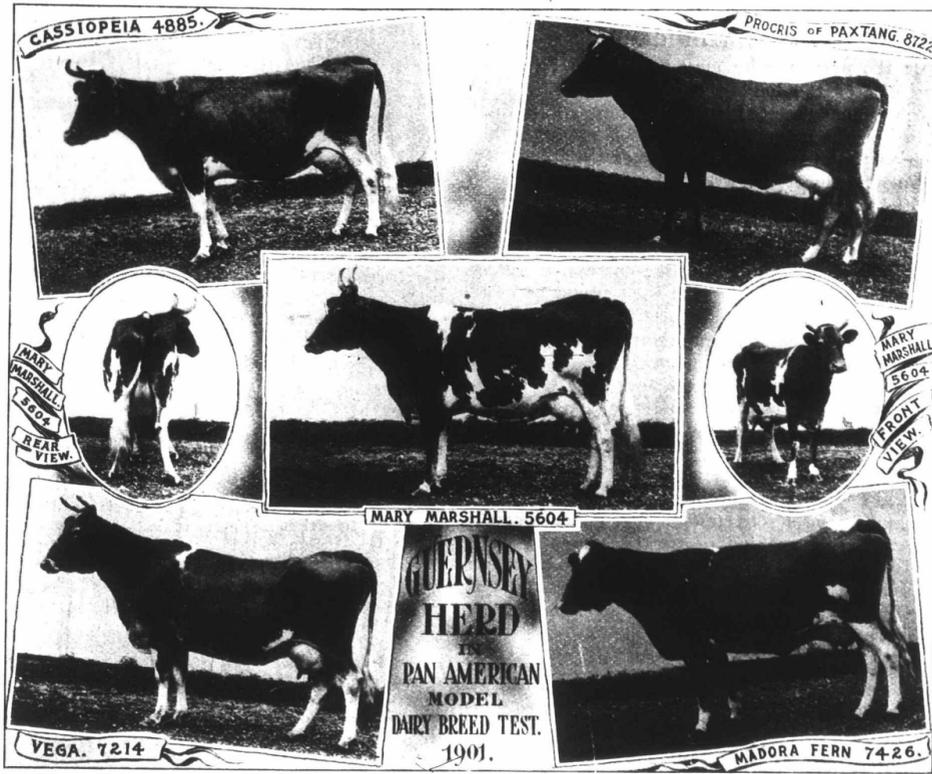
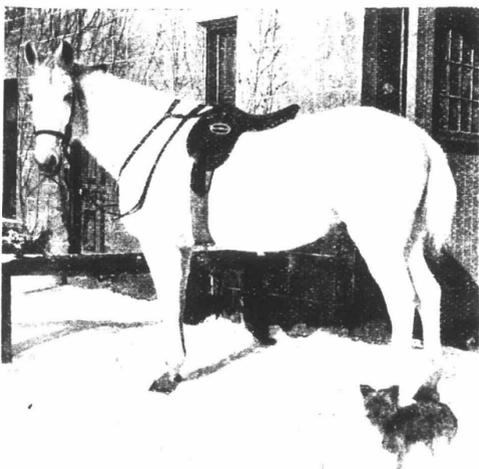
Ans.—The flower of one potato is more liable to be fertilized by the pollen of another than by its own, but it is impossible for one tuber (i. e., the potato as cut and planted) to affect or be affected by another in the slightest degree. In the case of the potato, crossing takes place in the flower only. Closely related varieties of corn cross very readily. Wind will carry pollen of corn long distances. Most of the other members of the grass family are very persistent to species. Oats pollinate before the flowers open, so that different species in adjacent rows keep distinct. Peas that have the same season of flowering are cross fertilized by insects.

J. D.

"Duster."

(SEND AT 25)

Grey mare, foaled 1876, by Henry Clay, by Whalebone, by Lexington; dam by Imported Sir Tatton Sykes; 16 hands, weighs 1,200 lbs. This mare has been the property of her present owner, J. H. Reed, V. S., of Guilph, since she was five months old, and has been in constant use in both saddle and harness since the spring of 1882. She is an excellent harness mare, but excels in the saddle, and has done a great deal of cross country work with owner (who rides at 215 lbs. up). She is up to any weight, and has never been known to make a mistake in the hunting field, and was always close up at the finish; generally first. She is as sound to-day and has as much ambition as she had as a six-year-old. She has won many red tickets in the show-ring, and was retired at 20 years old, after winning in good company for performance over hurdles. Though all others go wrong, the old grey mare is always ready for either harness or saddle.



Galloways at Castle-Douglas.

We have just received a report of the annual sale of young Galloway bulls held at Castle-Douglas, on the 6th March. Castle-Douglas is in the heart of the home of the Galloway breed of cattle, and many of the best known herds are within easy drive of this ancient town. The annual sale is always looked forward to with interest by lovers of the black breed, and the judging in the prize ring, which precedes the sale, often settles the prize record of many an animal which in future heads the honor list at more widely-known shows. The champions at the Royal, of England, and the Highland Society, of Scotland, have, nine times in ten, got their first hallmark at Castle-Douglas.

This year, owing, no doubt, to the extended interest in Galloways, the number of entries was larger than on most former occasions. The number of entries was a hundred and ninety-three, representing the produce of forty-eight breeders.

The entries are confined to bulls of two years old and under, and as a number such as were entered would be a heavy load for any sale, it is not to be wondered that many of the poorer animals brought somewhat low figures.

The good animals from the herds of the old and well-known breeders, however, brought good prices. The old reliable Castlemilk herd of Sir Robert Jardine was well up in front with the young bull, Scottish Chief 3rd of Castlemilk (8059), calved January 25th, 1901, whose sire, grandsire and great-grandsire were all champions at the great Scottish and English shows, and which promises to keep up the record, as he was placed first at this show, and sold afterwards for 51 guineas. Mr. David Brown, of Stepford, Dumfries, a new breeder, took second and fourth prizes with Crusoe of Stepford (8337), sired by a Castlemilk bull, and Chief 2nd of Stepford, sired by the first-prize two-year-old at the last Highland Society Show, Campfollower of Stepford (7176), and which sold at 36 and 41 guineas, respectively.

The veteran breeders, Messrs. Sherman, of Balig, took the third prize with Dreadnought (8122), sired by another Castlemilk bull, Norseman of Castlemilk (6395), and which sold for 53 guineas. It is worthy of note that of the four prizewinners in this class, bulls calved after 1st December, 1900, and before March 1st, 1901, three were sired by bulls from the Castlemilk herd.

In the class for younger bulls, calved after March 1st, 1901, the first prize went to Mr. Brown, of Stepford, for the young Campfollower 3rd of Stepford (8497), which was sold for 49 guineas. Messrs. Bregar, of Choptleton, got second for an excellent youngster, Foundationer (8072), by Mackenzie of Lochokit (7382), now at the head of the Hope Farm herd in Manitoba, and which brought 36 guineas, to go to the herd of the Countess of Carlisle.

The third and fourth prizes went to Mr. Forwick, of Walsingham, Durham, for Jacobite (8228)

and the Duke of Buccleuch, for Brucine 3rd of Drumlanrig. Fifth, sixth and seventh prizes were awarded, as well as several "commended" in each class, but the names might not interest our readers.

The principal interest in the show is in the great increase of breeders competing, and the rival distribution among new owners at the sale.

Ireland took quite a large proportion of the animals sold, while a great many found new owners in England and the United States, and Canada will add new blood to their Galloway herds from the Castle-Douglas sale.

Galloway breeders are becoming aggressive, and the increased interest in this breed as a hardy and handsome breed of cattle will rapidly extend the number of herds and bring them more into the eye of the public. The recent dispersion sale at Omaha of the Wavertree herd, where at a closing-out sale over 200 head, including many sucking calves, averaged \$184, speaks well for the interest taken in the Galloways, and the fact that not only in the United States and Canada, but in their native land, the number of enthusiastic breeders is increasing should encourage owners of Galloway herds to push harder than ever to the front.

Galloways may not look so large on their feet, but when the block test is applied, as at the fat show at Smithfield, they are all there, and while their number may not be so great as those of some other breeds, they occupy no insignificant place in the "best breeds" of cattle, and are justly becoming better and more favorably known.

A Beaver Colony.

Quite near Hartney, on the Souris River, there is a colony of beavers. The animals have selected for their home a place where the bank of the river is comparatively low and overhanging the deep water, which in winter is kept warm and open by the influence of strong springs. Young poplar trees selected from the grove along the shore afford plenty of food, and the chips from the freshly-cut green wood can be noticed scattered on the ground wherever the animals have been at work. It is said that the beavers have occupied this winter home for several years, and are increasing in numbers. The man on whose farm the interesting animals have located uses every means in his power to prevent the destruction of the creatures. This is perhaps the only family of beavers to be found within the settled portion of Manitoba.—Hartney Star.

The Edmonton Industrial Exhibition.

The annual meeting of the above association was recently held and the following were elected officers for the ensuing year: President, C. Galagher; Vice-President, J. H. Garopp; Secretary-Treasurer, F. H. Tom; Directors, J. H. Morris, J. Kennedy, D. Ross, W. S. Robson, T. Bellanay, J. McPherson, and J. Daly. The dates for the summer fair were fixed for July 1st, 2nd and 3rd.

Making High-class Butter.

THE PATRON'S SHARE OF RESPONSIBILITY

For the patron—who may be said to have the heavy end of the load—the greatest drawback is his being unacquainted with the importance attached to the manner in which he executes his duties so that perfection may be sighted. Should he be negligent in the work, the united efforts of the other parties cannot atone for his lack of vigilance. And it falls to the buttermaker to use his best efforts with the patrons to prevent this. He must impress on them the necessity of co-operating and supplying him with cream of good quality, perfectly sweet, and free from taints and bad odors, as it is impossible for him, no matter how competent a maker he may be, to produce first-class butter from second-class raw material. Here is where the great difficulty rests, in educating the patrons to handle the milk and cream in such a way that the wrong fermentations will not develop. Some have not a fit place to keep the cream in; many do not try to care for it, but simply have a routine of labor to get through with, and in every kind of weather and under all sorts of conditions treat it the same, regardless of results; while others fail through being unfamiliar with the right methods of handling it, and of the consequences of practicing wrong methods. Here is where effective work may be done by an intelligent buttermaker. By intelligence I do not necessarily mean knowledge, or the possession of knowledge, nor even the acquiring of information, but "comprehension," or an understanding of the relationship of things, so that in explaining any part of the work he will be able to give intelligent reasons for what he teaches.

If, by the patrons, two things would be strictly attended to, viz., low temperatures and cleanliness, many serious difficulties would be overcome. In nine cases out of ten, rancid flavors are due to faulty or filthy handling of the milk or cream at some stage of the process from the time it is drawn from the cow until it reaches the manufacturer. This, then, shows the relationship of cleanliness and dairying, as injurious germs are inevitably associated with filth, and high-class butter cannot be made when the preliminary work is carried on in the midst of unsanitary conditions or surroundings.

Cream, as soon as it is separated, should be cooled to 60 degrees Fahr., and held at or below that temperature until delivered at the creamery. Below this temperature the fermentations develop slowly. Many farmers are adopting the plan of storing ice in the winter time for use in the warm months for cooling purposes. In this way they can keep the cream sweet until the gatherer comes round, which is very desirable.

Some hold the view that, since the cream has to be soured before churning, it is no injury to let it sour on the farm. This is objectionable, for the following reasons: 1. It is the butter-makers' work to introduce and develop the flavor in the cream, which gives us the fine aroma in butter which we, as well as the consumers, so much desire. 2. The butter will be more uniform in flavor when one man who understands the work does it than when a number who don't understand it are trying to do it. 3. The proper facilities to do the work are always available at the creamery. 4. To most farmers all sorts of flavors come under the head of souring, some of which to the buttermaker might be most objectionable. 5. The maker has made a study of the work, consequently is in a better position to produce what is required than those who are unlearned in this respect. The buttermaker is responsible for a great part of the patrons' work in supplying good cream, by dealing with and treating them in such a way that they will respect him and place unlimited confidence in what he tells them. It costs nothing to be polite and affable, but on the contrary, it very often pays, in so much that the patron will do his utmost to oblige you in return, even to sending good cream. This, then, is what to aim at to encourage the patron to unite with you to make butter of first grade, in supplying you with good sweet clean-flavored cream.

Dealing more directly, and very briefly, with THE BUTTERMAKER'S PART OF THE WORK. He should be vigilant in every part of it, even the minor details claim his best attention. Keep the temperature of the refrigerator at or below freezing. The lower the better, as butter will not deteriorate as rapidly at 32 degrees Fahr. as it will at 40 degrees Fahr. Everything in and about the creamery should be a model of neatness and cleanliness, his own person included. He should preserve his equanimity in all business transactions. Do not adopt the plan of churning at a set hour, regardless of the degree of acidity in the cream. Have this as uniform as possible from day to day. Make a study or report of any unusual conditions of the cream, and note the effect in the butter when finished. In this way you will learn why certain conditions bring about certain

results. Very often a maker continues making mistakes day by day through being ignorant of what really constitutes a good article, and even if he knows that it is not what it should be, yet he is at a loss to know how to remedy the trouble. Although it is hard for a maker to judge his own butter, yet he should be able to tell whether it is good, bad, or indifferent.

In shipping the butter, I would not recommend making weekly shipments by the regular refrigerator service. These cars are filled with small lots of butter going to all parts of the West, and at some of the divisional points of the railway are unloaded and reloaded. The butter going to the farthest point is put into the car first, and that to the nearest point put in last. In handling it thus, in hot weather, some of the butter is exposed to the sun for upwards of twelve hours, the results of which need not be dwelt upon. Butter that is firm or almost frozen when taken from the refrigerator, when subject to such treatment is generally placed on the market in a soft, greasy state, probably selling for two or three cents less per pound than it would have brought had it been landed as it was first loaded from the refrigerator. The best way to overcome this difficulty is to hold the butter until enough is made to fill a car, or at least to secure a car-load rate, then order a car and ship it direct to its destination. In this way the butter is not handled from the time it leaves the shipper until it reaches the purchaser, and is never exposed to the heat.

It will be easily seen that the making of high-class butter does not rest with the buttermaker alone, and that many outside things have to be attended to. The slackened vigilance of any one of the previously-mentioned parties, their neglect or their ignorance in performing the work, must necessarily affect the quality of the butter in some way. It must not be supposed that if the farmer overlooks his duties the maker can overcome the trouble resulting therefrom. Each have a part to perform, and it must be done by him alone or remain forever undone, and the consequences fall equally on the just and on the unjust.

W. A. WILSON,
Dairy Superintendent of Assa.

A Western Horticultural Show.

PRIZES OFFERED EXHIBITS MADE BY AGRICULTURAL OR HORTICULTURAL SOCIETIES.

The prize-list of the provincial exhibition of fruit, vegetables and flowers, to be held in Winnipeg, Aug. 28, 29 and 30, 1902, by the Western Horticultural Society, is now complete. The total amount of prizes will be in the neighborhood of \$1,000, open for competition to the Province of Manitoba and the Northwest Territories. Amateurs and professionals will compete in separate classes in flowers and vegetables, but in fruits no such distinction will be drawn.

Special attention is directed to a prize of \$25, offered for the best collection of vegetables and flowers exhibited by an agricultural or horticultural society. The only condition necessary for competition is that all the exhibits shall be grown by a member of the agricultural or horticultural society making the exhibit.

With the object of encouraging flower growing on school grounds, the Secretary of the Society, Mr. Bartlett, offers special prizes of \$5, \$3 and \$1 for collections of sweet peas grown on a rural school ground by the children attending the school. The teacher may advise or direct the work of the children, but all work except spading or plowing soil for planting must be done by the pupils. As a further encouragement, Mr. Bartlett also offers to supply a collection of valuable sweet pea seed to each school where there are six members of the Society residing in the school district. Applications for these seeds must be made by April 20. Each collection of seed will be accompanied by full instructions for cultivation.

The Society is preparing a circular, giving lists of fruits and flowers which are recommended for planting in Manitoba and the Northwest Territories. This will be sent free of charge to all applicants, and can be secured by addressing the Secretary of the Society.

The following privileges are offered to members for the present year:

Copies of all publications, past and future.
New flowering and fruit plants of known and tested varieties.
Free entry and admission to exhibit.

Practical advice on any horticultural subject.
A list of plants for free distribution will be published at an early date, and a copy will be sent to all members as soon as issued. Orders may secure same by application to Melvin Bartlett, Secretary Western Horticultural Society, Winnipeg, who will also be pleased to answer all inquiries regarding the Society.

Our Scottish Letter.

Still the main topic is the bull sales, and since last writing, the red, white and roans have had their innings, and to some purpose. Great sales have been held at Perth in the north and at Birmingham in the south, and throughout it has been a case of the Aberdeen Shorthorns first, and the rest nowhere in comparison. It is to be noted that the spring bull sales of Shorthorns are not quite parallel with the same sales of Aberdeen-Angus cattle. The pick of the young bulls from the latter breed are sold in spring, but as all the world knows, the bull calves of the two great Shorthorn herds in Scotland—Collynie and Uppermill—are sold in autumn. It would therefore be futile to contrast the two breeds on the basis of the spring bull sales. The highest individual price for a Shorthorn young bull this season has been recorded at Birmingham, where Mr. MacLennan, the well-known South American buyer, gave £294 for Highland Chief, a yearling bred by Lord Lovat in his famous herd at Beaufort Castle, Beaulieu, in Inverness-shire. This bull, sired by Royal Star, was not placed very high in the prize-list, but he made four times the price of the first-prize winner in his own class. The highest price at Perth was made by Sir John Gilmour of Montrave, Bart., who got £152 5s. for one also placed rather far back in the prize-list. His buyer was Captain Graham Stirling, of Strowan, Crieff, who has bred or brought out some of the greatest bulls seen during recent years. By far the best average at Perth was made by Mr. James Durno, Jackston, Rothie-Norman, one of the shrewdest and most capable of all the Aberdeenshire farmers. He has good cattle, and manages them splendidly. He got no less than £97 2s. 6d. of an average for four young bulls. This is capital business. Sir John Gilmour was the most extensive exposé at Perth. He sold nine yearling bulls at an average of £38 5s. 4d. Mr. J. Douglas Fletcher, of Roschaugh, who has an exceedingly good herd, made an average of £46 16s. 7d. for five, while Mr. Graham, of Redgorton, Perth, made £67 8s. 2d. for four. Mr. James Merson, Craigeville, Huntly, the owner of last year's Highland champion, Choice Goods, sold right at an average of £44 9s. 10d. Lord Lovat had the second best average, selling three at £74 18s. All of these herds are strong in Cruickshank blood, and, indeed, Shorthorns are nothing without this. About two dozen head purchased from the Royal herd at Windsor are being shipped this week to Buenos Ayres. The opening of the Argentine and Uruguayan ports has undoubtedly given a fillip to the Shorthorn, and big trade is the result.

No other cattle breed but the Shorthorn has as yet, to any appreciable extent, caught the popular taste in South America. The Aberdeen-Angus has not made any impression there, and this suggests a variety of thoughts. Foreigners do not seem impressed with the potency of that breed for grading-up purposes on ranches. As cattle for stall or court feeding, they are bad to beat, but as ordinary commercial ranchers, nothing has as yet been discovered to equal the Shorthorn. No doubt somewhat of this is due to the impression that the Shorthorn makes a better dairy breed than the other. But there is a present-day danger that this feature is not receiving the prominence which it once did. Dairy Shorthorns are sometimes regarded as an inferior section of the breed, and certainly those exclusively bred for that purpose do not make the same prices as the other kind. A capital sale of the dairy class is held at Carlisle, and the prices recorded are certainly remunerative, but they do not count in comparison with prices of the beef sorts. An effort is being made by the Shorthorn society to emphasize the milking properties of the Shorthorn. It gives special prizes at certain shows each year for milking types, and no doubt this leads to an increase of interest in that side of the Shorthorn character. Many good breeding cows, however, do not give as much milk as they ought to. It is even said that some of them could not rear their own calves. This is a bad fault. A cow which milks badly can hardly be relied upon to breed regularly. In some quarters the agitation for milking Shorthorns was regarded as inimical to the Scots type. This almost seemed equivalent to an acknowledgment that the Cruickshank cattle were not milkers. It would be presumptuous in me to express a dogmatic opinion on this point. All I will say is that dairy farmers, when in quest of Shorthorns never go north to look for them. Carlisle is invariably the goal when that class is wanted.

SCOTLAND YET



BARRED PLYMOUTH ROCK COCKEREL.

Imported from A. C. Hawkins, Lancaster, Mass., by A. B. Armstrong, Codrington, Ont. Now at head of No. 1 pen.

Three Years' Experience with the Test System.

For the past three seasons we have paid for the milk delivered at the Thamesford cheese factory by the result of the Babcock test plus 2 per cent., and it was sustained at last annual meeting without a dissenting voice. Our average pounds of milk to a pound of cheese was the lowest last season that it has been for several years, and the inspector has not had to report any patrons for watering or skimming milk, because in tampering with the milk under our system, a man is mainly hurting himself. The cheesemaker takes a small sample of milk every day, which is treated with chemicals to preserve it, and he tests once or twice a month. Makes a lot of work? Of course it does. The cheesemaker gets 50 cents per patron for the season, which buys the chemicals and keeps up the machine, bottles, etc. It is also at least 30 per cent. more work for the secretary, but he is supposed to be choke-full of figures and calculations and such like, and he only gets a very few dollars extra, and charges the balance of his time to profit and loss.

The difference it makes to the patrons is something like the following, taken from our books for September last:

John Jones sent 6,884 lbs. of milk; test 4 per cent.; received \$55.88; if pooled would have been \$53. Jonas Scribber sent 6,884 lbs. of milk; test 3.6 per cent.; received \$52.16; if pooled would have been \$53. Peter Paton sent 6,884 lbs. of milk; test 3.1 per cent.; received \$47.50; if pooled would have been \$53.

Now, this is quite a difference in the returns, instead of the old pooling system, when each would have got \$53. It should be mentioned that there are generally only a few patrons who have cows who give very rick milk, and these men take extra good care of it, which helps very much, especially in hot weather, and then there are a few patrons who have poor cows and are poor feeders, and take little or no care of their milk. But the milk of a large proportion of our patrons generally tests about the average, say between 3.3 and 3.6 per cent.

One farmer takes a load of wheat to the mill which weighs 60 lbs. to the bushel, and receives the market price. Another takes a load of wheat weighing 62 lbs., for which he receives two cents a bushel more than market price. Still another farmer brings a load which only weighs 58 lbs. per bushel. The miller says: "I cannot possibly make as much flour out of 58 lbs. wheat. I will have to give you two cents less than market price," and this is how we do at the cheese factory. We strive to pay a patron for the value of his milk according to the amount of cheese it will make.

Some farmers seem to have a special talent for taking care of cows and milk. We have some patrons whose cheques are always larger than some of their neighbors. Strict and close attention to details and patient perseverance will accomplish much. The cheese business is a great industry. Last season we distributed about \$20,000, and ours is only one of many.

D. LAWRENCE, Secretary.

Annual Meeting of the Winnipeg Forestry Association.

The annual meeting of the Forestry Association was held in the City Hall, Winnipeg, on March 20th. There was a very good attendance, and marked interest manifested in the addresses and discussions.

The Rev. Dr. Bryce, president of the Association, occupied the chair, and read the report of the executive committee, which briefly reviewed the work undertaken by the society during the past year. In the report reference was made to the action taken by the committee early in the year, in calling the attention of the authorities to the importance of reserving waste and timber land from settlement for the establishment of central parks, and through the kindness of Crown Timber Inspector Mr. E. F. Stevenson, information was furnished showing decided progress along this line, the following reserves having been created:

	Acres.
1. Riding Mountain reserve, approximate area.....	927,376
2. Moose Mountain (Assa.) reserve, approximate area.....	103,760
3. Turtle Mountain reserve, approximate area.....	70,400
4. Spruce Woods reserve (near Carberry), approximate area.....	151,040
5. Lake Manitoba, West Teulon reserve, approximate area.....	159,360
Total.....	1,411,936

Reference was also made in the report to the publication of the 96-page booklet entitled, "William Silvering's Surrender," edited by the president, of which 20,000 copies were distributed throughout Western Canada. The executive had also conferred with the Provincial Minister of Education, urging the desirability of having Arbor Day observed in a more practical way than it has been in the past, and were assured that the department would give the most hearty co-operation in this matter.

The work done by the Forestry Branch of the Department of the Interior, especially through the practical efforts of Mr. A. P. Stevenson, was commended.

Reference was also made to the inability of the society, through lack of funds (the annual membership fee of \$1 having, according to present arrangements, to be sent to Ottawa to constitute the members members of the Canadian Forestry Association), to accomplish much aggressive work, and it was felt that the society should be made more Western in its character. It was also pointed out "that the vast extent and claims of the West on the Forestry Association make it imperative that its officials should be permanent residents in a Western center. Just as it is found necessary to have an executive for the land department, as, in the opinion of your committee, it may be found possible, it will be found advisable in the closely-related Department of Forestry to have a Western executive."

On this point considerable discussion took place, the feeling of the meeting being, that while it was desirable to retain connection with the Canadian Forestry Association, it was absolutely essential that the funds of the Association in the West should be retained, and the executive was instructed to take the matter up at an early date, and, if possible, arrange a more equitable basis.

The election of officers for the ensuing year resulted as follows: Hon. President, Lt.-Gov. McMillan; President, Dr. Bryce; Vice-President, A. P. Stevenson, Nelson; Sec.-Treasurer, M. Bartlett. Directors—R. T. Riley, D. B. Buchanan, H. Sandison, C. J. Thompson (Virden), Frank Schultz (Baldur), Ald. Robt. Barclay, E. F. Stephenson.

Mr. A. P. Stevenson read a short paper, outlining the work of the Forestry Department in Manitoba. Mr. John Caldwell, of Virden, on the "Planting of Wind-breaks," touching briefly on some practical phases of the work of tree-planting. Mr. Atkinson, the well-known taxidermist, addressed the meeting briefly on the relation of forestry to bird protection, pointing out that while nearly all of the most useful insectivorous and weed-seed destroying birds were considered by many people to do more harm than good on account of their fondness at certain seasons of the year for fruit, in reality all of these birds, by the benefits conferred on the agriculturist, more than compensate for the small amount of fruit they may destroy, and he also pointed out that the birds preferred the wild fruits to the cultivated varieties and suggested that in setting out tree plantations, the birds should be remembered and provided for by the planting, along with shelter trees, some of the wild fruit-bearing shrubs, such as wild cherries, saskatoons, high-bush cranberries, etc.

Mr. E. Stewart, Superintendent of Forestry Department, who had come from Ottawa to attend the meeting, then read a very interesting paper on "The Utility of Forests in Relation to Water Supply," which was very much appreciated by those present.

Re Big Threshing Outfits.

To the Editor "Farmer's Advocate":

I have just read a letter in your paper from Mr. George Kerr, on big threshing outfits. He is, I think, out on some things. He favors a big rig—say such an outfit costing from \$3,500 to \$4,000, with 40-inch cylinder and 60-inch body. He says such a machine should average 1,800 bushels per day. How many threshers have done that for this last three or four years? Twelve hundred of an average is nearer it. I know of several big rigs in this district that did not make that. He says, further, they should thresh for 3 or 4 cents out of the stack, and 4 and 5½ cents from stook. I am afraid at that rate they would be a long time in paying \$3,500 or \$4,000 for the outfit. For instance, they average, we will say, 1,300 bushels per day at Mr. Kerr's figures, 4 and 5½ cents in stook—say 300 bushels oats and barley, and 1,000 wheat; that will mean to the thresher \$67. It will cost

For an engineer.....	\$ 3.50
For two feeders.....	5.50
For 10 men, at \$1.60 per day.....	16.00
For 8 teams, at \$3 per day.....	24.00
Oil per day.....	50
Wear and tear of machine, and repairs.....	10.00
	\$59.50

The thresher makes \$67 per day, and his expenses are \$59.50, leaving him a balance of \$7.50. It will take a long time to pay \$3,500 for his outfit at those prices. I favor the same size of an outfit as Mr. Kerr, but the thresher should get 4 cents all around out of the stack, and 6 cents out of the stook, and then he has not any too good a chance, if he has to pay a board bill for a week or two in wet weather.

I use a 22-horse-power engine and 36x60 separator, with feeder and Cyclone blower. The blowers are all right, but I don't think there is any money in the feeders, as, after the first year or two, there is always trouble with them, and you must have experienced men for pitchers to make them work satisfactorily. I have run my separator four years without feeder, and three years with it on, and I think there is more money to be made without them. I am not in favor of threshing out of stook, as an hour's rain will stop threshing for a day, while if it is in stack, then there need be no delay. Farmers lost from ten to fifteen cents per bushel by leaving it for stook threshing last year. ED. GIBSON, South Cypress, Man.

Value of Wheat Fed to Hogs.

Mr. Brennan, speaking at institute meetings in the Territories, gave the following personal experience in feeding wheat to hogs: In the year 1900 he had in his possession 500 bushels of inferior wheat which, if marketed, would have brought only 45 cents per bushel, or 500 x 45 = \$225.00.

He fed practically all of this to hogs, cattle, and poultry, and sold

\$162.00 worth of pork on local market.
110.50 " " pork to Indian Head Farm.
35.00 " " pork—private sales.
125.00 " " beef.
20.00 " " poultry.

\$452.50

There was also something over a bushel of the wheat unfed, which, if marketed at 45 cents, would have brought the proceeds out to \$453.00, or 90.6 cents per bushel.



WHITE WYANDOTTE COCKEREL, SNOWBALL.

Imported from A. C. Hawkins, Lancaster, Mass., by A. B. Armstrong, Codrington, Ont.

Eggs for Hatching.

The mating season is now once more with us, and in order that we may have the good fortune of owning a nice large flock of well-matured pullets that will begin operations early next fall, we must at this season exercise extreme care in selecting our breeders and in choosing the food that is to be supplied them during the period of time that we are gathering eggs for hatching purposes. In the majority of instances too little attention is paid to these two most important points, and as a consequence, instead of the individual members of the flock being each year built up in constitution, and as a consequence the flock greatly improved, as a whole, it gradually degenerates and sinks to the level of the "scrub."

In breeding poultry it is just the same as in breeding any other kind of stock—"like begets like"—and it has been found out that if we desire to secure good strong, healthy, promising chicks, the stock selected to produce the eggs from which these chicks are to be hatched must have these same constitutional characteristics. In the first place, none but healthy and fully-matured birds should be used. Fowls that have been stunted by disease, neglect or abuse, or whose constitutions have been weakened by too close inbreeding, should be discarded, as they will not lay eggs containing germs likely to produce healthy and vigorous chicks. Pullets that are not matured, or that have been forced to too early laying by stimulating foods, and as a natural consequence have had the system overtaxed, will not make good breeders, and hens that have become so old that they have dropped their wisdom teeth are also poor specimens for a breeding pen. By rights nothing but fully-matured pullets and one and two year hens should be used for females, and these strong, well shaped, and healthy.

For the male side select a strong, well-matured, vigorous cockerel or yearling cock, not too closely related to the females. If the cockerel has never been allowed to run with any females until he is mated in the breeding pen, all the better, and if you can get a cock that was never used as a cockerel, better still. Considerable has been said as to the number of females to each male, and opinions are much divided. Last year we had an interesting experience along this line. At the first of the season we had fifteen two-year Plymouth Rock hens mated with a two-year-old cock. From six settings of eggs from this mating not a single egg was fertile. We immediately mated these same fifteen hens with a vigorous young cockerel, and from this mating nearly every egg was fertile and hatched strong, healthy chicks. In another yard a Brown Leghorn cockerel was mated with fifteen hens, and nearly every egg hatched.

Care should be exercised in feeding and in choosing the food for breeding pens. If the fowls have unlimited range, as a rule there is little difficulty in securing fertile eggs with good, strong germs. But quite often they do not have this unlimited range, and then it taxes us to supply them in a natural way. Fowls, either male or female, should not be too fat if we want fertile eggs. If they are yarded we should provide some means for exercise, such as scratching in litter for their hard grain rations. If these yards are bare of grass they must be supplied with something as a substitute. For this, green mangels, sugar beets and cabbage may be successfully used.

Hens that are roaming the fields in the spring and summer secure a grand mixture of food from which to manufacture their eggs, and, along with other things, they secure a great number of worms, grubs, bugs, etc., which contain the needed albumen to produce fertile and strong germs. These they do not generally get when in limited yards. To make up for this loss we should supply them with all the meat scraps from the table, with milk to drink, and with a small quantity of green cut bone if possible. These same foods give vigor to the male as well as the females.

By exercising care along these lines and using pure-bred fowls, one cannot fail in producing a handsome, vigorous flock.

JOHN B. PETTIT.

Hurrah for the Hen!

Sir,—The old-time Canadian farmer paid little or no attention to the hen business, and left it to the women folks. With the fall in price of wheat, they turned their efforts to hog and beef raising. The younger farmer finds that for capital invested, there is more profit in poultry for eggs and meat, and to-day the value of the hen product is greater than that of hogs or heaves. It is also greater than the wheat crop. Some of the farmers' journals have not paid the attention to it that it deserves, and better methods of feeding and management are required. I know of one young farmer at Bond Head, Ont., who converted wheat at 65 cents into eggs and meat, and made the wheat worth \$1.25. FRED HARTY.

The Beekeeper's Work in April.

As the vernal equinox comes and goes, stormy weather is replaced by balmy days, and old Sol begins to assert his rights. Among the many signs that spring has arrived, none are more convincing than the hum of the busy bees as they hie away to the pussy willows, soft maples, black alders and other early pollen-producing plants. One of the interesting things for the beekeeper to watch for each spring is the first appearance of fresh pollen; indeed, I cannot conceive of any one who would not be interested in watching the busy little workers hustling out of the hives and returning laden with bulky loads of various-colored pollen. April has been called by someone the "let-alone month," as far as work with the bees is concerned, and there is a deal of truth in it, as I believe more harm is done by too much manipulation than by too little in this month.

However, there is some necessary work, and, as a noted apiarist has said, the most important motto for a beekeeper is "know what to do and do it in time," we will consider briefly what should and what should not be done. Of course, if the bees have been wintered indoors and have not been put on the summer stands ere this, the first warm day they should be carried out. Beekeepers differ as to the right time to bring the bees out of the cellar. The old orthodox rule was to place them outdoors when the maple comes in bloom, and it is probably about as near right as any set rule can be. In carrying them out, some are very careful that each hive shall occupy the same stand as they did in the fall, while others pay no attention to this; no doubt much confusion is avoided if all occupy same stands as they did previously. If all have sufficient stores (which can be determined as they are carried out), entrances should be contracted, and, if possible, some dry packing should be placed over the brood nest, such as a cushion filled with sawdust or other dry material; then leave them severely alone. I know some do not think it necessary to provide any protection for the bees in the spring, but remember the many thousands of workers to be raised to insure a honey crop, and that one of the most essential things necessary to help along brood-rearing at this time of the year is conservation of heat, as a brood nest at normal temperature ranges somewhat about 90 degrees Fah. Personally, I lay great stress on the matter of keeping bees as warm as possible as long as we have cool days and chilly nights.

If any colonies are short of stores, they should be marked and attended to as soon as possible. The best way is to give them sealed stores if you have them on hand; if not, sugar syrup can be put in combs and then placed in the hives. Under no circumstances think of feeding with a view to stimulating during this month, as you will excite the bees unduly, cause them to fly out in unseasonable weather in search of water, etc., and for every young bee raised, half a dozen old ones will be worn out. Colonies that have been wintered on the summer stands should have hive entrances contracted, and the same treatment as regards stores as given for indoor-wintered colonies. The best way is to be sure in either case that all have sufficient stores in the fall to last till fruit bloom. If all have their full complement of frames and appear from external conditions to be all right, they will need no further manipulation for some weeks; if, however, they have been contracted in the fall (as they should have been), the stronger colonies may need more room. This can be given by simply shifting the division board over and giving the necessary frames. Never tear apart the brood nest at so early a date nor expose the bees unnecessarily. If any colonies do not appear to be doing right—i. e., very few bees flying when others are busy, appearance of drones or other unmatured conditions—such colonies should have a hasty examination some day when the thermometer is at 70 or above. Drones flying so early is a sure sign of a failing queen, if not queenlessness. While it is possible to get queens from the south in this month, I doubt if it pays from a financial standpoint. If a queenless colony is sufficiently strong, they can often be held together by giving them a comb with eggs in; of course, you need expect but little profit from a swarm that is queenless in the spring. Do not attempt, as yet, at least, to double up or try to strengthen in any way any weak colonies you may have; leave them alone for the present. As intimated in the beginning of this article, there is more danger of fussing with the bees too much than of not giving them needed attention. Particularly is this true of the beginner; if he has a bad case of bee fever, no doubt it will be quite a trial to keep from looking through the hives from time to time to see how they are getting along. I can speak from experience in this matter, and I feel sure that it is to the detriment of the bees when we give them such unseasonable attention. If not previously done, frames should be wired, foundation put in sections, and frames and other things got ready for the honey-flow in June. Don't wait till next month to do this work, as May brings work of its own. Our honey-flow often comes with a rush, and sometimes lasts only a few days. As it

is not pleasant to be caught with "our porridge dish upside down," it is well to be prepared for emergencies.

April is a good time to look ahead for bee-pasturage. While no honey-plant has ever been cultivated with profit for honey alone, yet some honey-producing plants can be raised on the farm at a profit. Chief among these is alsike clover. If you do not care to raise it for seed, at least, sow some in your meadows, and persuade (if you can) your neighbors to do likewise; if they are not so disposed, sweeten them up once in a while. All wise farmers make provision for the wants of their live stock. Be as thoughtful in regard to your bees, and I think you will find that they pay you for your forethought as well as in other cases.

J. L. BYER.

The X-rays in Bovine Tuberculosis.

J. V. Laddey, D. V. S., of New Jersey, writing in the Journal of Comparative Medicine and Veterinary Archives, states that the very slow and, in some respects, often impractical way of examining cattle for tuberculosis by means of the tuberculin test led him to experiment with the X-rays as a feasible means of detecting the disease in the living animal. He announces that he arrived at satisfactory results. The X or Roentgen X-rays were the discovery of Prof. Roentgen, of Germany, a couple of years since. In this means of investigating a body, what is called the Crooke's tube, actuated from a storage battery or other source of electricity through a Ruhmkorff coil, is placed on one side of the body. The rays are allowed to fall upon the body, or the part of it to be investigated, and on the other side upon a quick photograph-plate in its plate-holder, which is exposed to the rays for a time. The rays pass through the soft tissues freely, but not through bones and other substances. Hence a shadow of these obstacles appears upon the plate. Dr. Laddey states that in his experiment the infiltrated calcareous matter, which it seems already exists in the early stages of tubercular lesions, prevents the X-rays from passing through, thus causing a shadow, or opacity, to appear on the photograph. The examination was made in a dark booth erected for the purpose, and a twelve-plate static machine to generate the electrical current. The examination was made on both sides of the animal. An assistant manipulated the "Crooke's tube" on one side of the animal, so as to have it directly opposite the fluoroscope, through which the cow was examined on the opposite side. The first subjects were four thin cows, which were selected because they were thought to be tuberculous, or predisposed. The observations noted were as follows:

Cow No. 1.—The view on both sides showed a few undefined opacities in the posterior portion of the thorax.

Cow No. 2.—The view presented more and somewhat smaller, but less sharply defined, shadows distributed over the entire thorax.

Cow No. 3 presented a similar view, with an exceptionally dark spot in the region of the liver.

Cow No. 4 showed a clear, unobstructed view, so clear that it enabled the experimenters to see the heart in action very distinctly.

The cows were killed and inspected by Dr. Laddey and another inspector of the Bureau of Animal Industry, the post-mortem report showing in cow No. 1 tubercular areas in the lungs; in cow No. 2, generalized tuberculosis, small tuberculous lesions in the lungs, liver, and over the entire pleura; cow No. 3, tuberculosis of lungs and liver, chiefly in the latter; cow No. 4, entirely free from tuberculosis.

In the second experiment three cows in good condition, presumably healthy, were examined. They were considerably fatter than those in the first experiment, and it was observed that adipose tissue does not decrease the penetrability of the rays. Upon fluoroscopic examination, cows 2 and 3 were judged to be free from tuberculosis, but in cow No. 1 a slight opacity was noticed near the posterior of the left caudal lobe. Nos. 2 and 3, upon post-mortem, were found free from tuberculosis, and No. 1 showed, at the spot of the shadow, lesions of a chronic circumscribed pleuritic inflammation with adhesions. He concludes that in the living animal an advanced case could not escape detection by the X-ray. As this mode of diagnosis occupies only two to four minutes for an animal, at the utmost, it would recommend itself, not only for ordinary diagnostic purposes, but particularly in ante-mortem work for meat inspection. He considers it would also be of value in diagnosing advanced cases of tuberculosis when the tuberculin test failed to give reaction. He thinks it also could be put to practical use in studying the age and progress of bovine tubercular lesions in the living animal. Whether it will ultimately turn out any more satisfactory in diagnosing this cattle ailment than the tuberculin test remains to be determined.

Care of Milk on the Farm.

We are receiving fresh evidence every year of the urgent need of more care being taken of the milk at the farm. That the average patron does not give his milk the best of attention is an undisputed fact.

The leading dairymen of our country are awake to the fact, and there seems to be something in the air which indicates that an extra effort is about to be put forth to improve the quality of our raw material for cheese and butter-making.

The importance of the industry demands it, the recognition which the industry is receiving at the hands of the Government demands it, and the reputation of our dairy products abroad demands it.

The last two years has seen a wonderful improvement in the quality of the milk supply in our large cities.

The public mind has become more or less educated, the composition and value of milk is being better understood, and the necessity for clean milk is being more fully realized.

A great deal of milking is now being done by men, and the average man has never been taught to regard the milking process as requiring any more cleanliness than ordinary farm work. No man can work around stock for even a short time without having his hands become more or less dirty, and yet how many ever think of having a wash basin and towel in the stable to wash their hands before sitting down to milk?

Milking with wet hands usually transfers the dirt from the hands and teats into the milk pail, and where a cow's side and udder are not carefully brushed or wiped with a damp cloth, a great deal of hair and loose dirt is worked off and falls into the pail.

At the Pan-American last summer there were ten herdsmen who had the milking to do. They were supposed to keep the cows in a state of "model" cleanliness, and there never was any question on that score: every cow was as carefully brushed and cleaned as a race-horse. Out of those ten milkers two always brought in their milk in a state of "model" cleanliness, five or six brought it in fairly clean, and the balance was brought in positively dirty, and this where the cows were getting the very best of care.

The difference was all in the milkers and in their methods of milking. Fully 25 per cent. of that milk was unfit to make the finest butter if it had been treated in the ordinary way, but it was strained and cooled immediately over a "star cooler," which checked the growth of undesirable taints over night, while the morning's milk was at once run through the separator.

Now, if we could get only 20 per cent. of "model" milk under such favorable conditions, what per cent. are we to get under ordinary conditions?

"Model" milk is scarce, average milk is fairly abundant, while dirty milk is far too common.

The chief causes for poor milk in summer are: Milking with wet hands, neglecting to wipe the cow's udder and side with a damp cloth, pails and cans whose seams are filled with putrefactive bacteria, allowing the milk to stand where the dust from the milking yard is blown into it, neglecting to aerate and cool the milk at night, and putting the milk into rusty cans. These are the principal causes of the bad flavors which our factorymen have to contend with in summer.

In winter dairying we have the greater part of the summer conditions, with the addition of dust in the stables, foul stable odors and manure hanging on the thigh and udder of the cow to contend with. Stable odors are the most common and the worst that we have to contend with in the winter at the factory.

The students at the O. A. C. dairy school have been experimenting with cultures which they made in the bacteriological laboratory from germs of different kinds, and among which were germs from cow manure and also from common road dust. These cultures were put into small quantities of cream and allowed to develop their taints or odors while the cream was ripening, when the butter was churned out. That from the cow manure culture gave off a flavor exactly identical with the flavor of any sample of our winter dairy butter which finds its way onto our markets, while that from the common road dust was the worst flavor of all in eight different samples, and scored 7 points for flavor out of a possible 15.

This goes to show that milk or cream which is being hauled over a dusty road on a hot summer's day is in great danger of being contaminated with one of the worst flavor-producing germs which it is possible to get. The dust from the milking yard is also another bad source of contamination, as the yard has, in all probability, been used for the past quarter of a century, more or less, as a milking yard in the summer, and during that time the ground has become pretty thoroughly seeded with the worst forms of bacteria from spilled milk, urine and manure from the cows. It seems incredible that we should be

drinking milk and eating butter which is seeded with germs from cow manure, but, in plain language, that is the fact. In winter milk, not ten per cent. of the morning's milk is free from it; the evening's milk is better, but it all goes together, and is all seeded.

Many will challenge the statement re the morning's milk, but here are the facts: Our stables are badly ventilated or not ventilated at all; the air is reeking with odors from the droppings of the cattle and the exhalations from their bodies, which have been accumulating all night; the stockmen go in in the morning and close the doors to keep the stables warm; feeding commences and the air is filled with dust from hay, straw, etc.; then the milking usually commences, and even if the cows are cleaned and the loose manure brushed off, more or less dirt always gets into the pail; the streams of milk are driven through the foul atmosphere, and carry more or less of the air down into the milk in the pail. Living germs are thus put into the milk by thousands and millions, and the temperature and the medium are just what they want for rapid development, and although they cannot be seen by the naked eye, still they are there and making rapid progress so long as the milk is at a favorable temperature. Warmth and food are just as essential to the growth of germ life as they are to the growth of any other living organism, and so long as these two conditions are present, the germs multiply rapidly, but let the milk be cooled down, and, although their food is present, their growth will be checked according to the temperature to which the milk is cooled.

Under present conditions it is impossible to get milk out of most stables comparatively free from bad odors or odor-producing germs, but by paying some attention to ventilation, keeping the cows better cleaned, exercising more care in milking and getting the milk out of the stable, strained, aerated and cooled as quickly as possible, great improvement could be made in a very short time.

If farmers who send their milk to the factory or creamery had some sort of a simple aerator and cooler over which to run their milk, the improved flavor and keeping quality would surprise them. There are such to be had, but very few farmers will go to any expense in connection with their milk so long as it passes inspection at the factory.

Old cans are another bad source of contamination. Any can which has the tin worn off in spots on the inside is not fit to keep either milk or cream in. Very few patrons care to discard a can so long as it will hold milk, but a rusty can is just as fatal to the good flavor of milk as anything we get out of the stables, and should never be tolerated for sending milk to the factory in.

JAS. STONEHOUSE

How to Construct a Jerry to Raise Barns.

BY JOHN D. M'GREGOR.

As a number of the "Advocate" readers have been enquiring how to construct a jerry to raise barns, I have tried, in a rough pencil sketch, to give an idea of how to build a machine. A and B are two poles of cedar, if possible 35 feet long. They should be secured at the top by a stout piece of iron or a casting, with provision for attaching the top block to it. The bottoms of the poles should be about five feet apart and firmly bolted to sills 3x8 inches and 14 feet long. Then two pieces, 4x6, (C) should be bolted to the other end of each sill. These should reach within about

five feet of the top of the poles, and be bolted to them there. Crosspieces spiked across will strengthen the structure, and will serve as a ladder, if it is found necessary to go up. The front of the jerry should be perpendicular when raised. But when raising a bent, the bottom should be back at least a foot to give room for the posts to swing into position. To accomplish this a block (e) should be inserted between the sills and the floor, large enough to give the machine the proper position, which is that the rope should swing perpendicular above the mortise to receive the bent, as the cut shows. A strong guy rope (f) is then securely tied to prevent the machine from upsetting. A snatch block is then attached to whichever pole is most convenient, and the rope passes through this and is hitched to the beam.

In starting to raise a barn, put together the first bent on the ground, with the tie beam towards the foundation and the foot of the posts away from it. Generally, a bent is taken in three lifts. First, the outside post, 16 or 18 feet long; the purlin post, 27 feet long, and the two beams, are raised and stayed. The other side is also put up. The machine is now shifted into the center and the tie beam and short posts raised. This is the most common style of frame. Some advocate using two jerries and raising a whole bent at once, but it is generally supposed to be better to take it in sections. In raising the plates, draw them alongside the building on the ground. Attach to the center of the plate, taking the main plate first. Use a guy rope at each end to balance it, put into position, then raise purlin up over the outside one and let rest on the cross-beams. Now shift your jerry into the center of the barn and raise the purlins onto their respective posts. Casters should be provided for moving the jerry around the barn. These should be removed when a lift is taken. Triple blocks should be used.

Churning Temperatures.

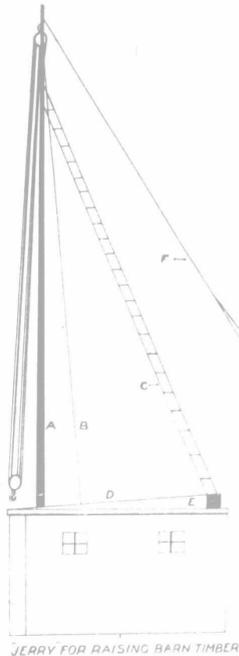
During winter we continually hear from all sides the remark, "I have so much trouble getting butter. I churn three hours, usually, and sometimes it takes me all day. What could I do to make it come as it should?"

Upon being asked the temperature of the cream when starting to churn, the reply usually is, "Why, 60 degrees! That is what my thermometer calls churning temperature, so I churn at that."

I find that this idea that there is some set temperature at which to churn at all times is one that is misleading a great many. If every one having this idea could be made to realize that the degree of 60 is marked "churning" on the thermometer as a guide only, and not to be taken as a hard and fast rule, and that churning temperatures range from below 50 to 70 degrees, and over in some cases, they would have less difficulty in churning. There are so many conditions which affect the churnability of cream that some practical experience is needed to determine the temperature at which to churn, so as to bring the butter in from 25 to 45 minutes, and have it in a nice firm condition. To do so, one must consider the following conditions:

1. The temperature of room in which we churn.
2. The amount we have in the churn. The more cream we have, the less concussion or fall there is, consequently a higher temperature is needed.
3. The richness of the cream. All conditions being the same, rich cream will churn at a lower temperature than poor cream.
4. The breed of cows kept. The butter-fat from Jerseys and Guernseys is of a softer nature than that from other breeds.
5. The feed the cows are getting. Any succulent food, and some kinds of grain, have a tendency to soften the butter.
6. The length of time the cows have been milking. This last condition is, I think, the one which causes the most trouble, and is the most difficult to understand. The fat from which we make our butter is in the milk or cream in the form of tiny globules or balls. The act of churning consists of dashing these tiny balls of fat against each other and the sides of the churn, thereby causing them to cling together to such an extent that the butter gathers up in nice grains or small lumps. With the advancement of lactation, or time of milking, these globules become smaller (decreased one half), and this accounts for part of the difficulty in churning strippers' milk. When these small globules are analyzed the chemist finds more of the high melting fats, with a proportional decrease in the softer fats, which also accounts for some of the churning difficulties. These facts teach us that as the period of lactation advances, the fat globules become smaller and harder, consequently they need more heat to enable them to adhere to one another, and makes it necessary to raise the temperature of the cream gradually and as it is needed. Some of our best authorities say that any cream will churn readily if it is at the right temperature, and I have found, from experience, that this is true.

Just one word of warning: If your cream is



too cold do not pour in boiling water to raise the temperature, as the effect will be detrimental to the appearance and quality of the butter, but rather take it from the churn, if you already have it there, and put the vessel containing the cream into another containing hot water, then stir well until the desired temperature is reached.

DAIRY MAID.

QUESTIONS AND ANSWERS.

1st.—Questions asked by bona-fide subscribers to the "Farmer's Advocate" are answered in this department free.

2nd.—Our purpose is to give help in real difficulties; therefore, we reserve the right to discard enquiries not of general interest, or which appear to be asked out of mere curiosity.

3rd.—Questions should be clearly stated and plainly written, on one side of the paper only, and must be accompanied by the full name and address of the writer, as a guarantee of good faith, though the name is not necessarily for publication.

4th.—In veterinary questions, the symptoms especially must be fully and clearly stated, otherwise satisfactory replies cannot be given.

Veterinary.

SCOURS AND RHEUMATISM IN PIGS.

To the Editor "Farmer's Advocate":

In your issue of the 5th inst. there is an article on "Fatality in Pigs." The whole trouble is in the buyer taking a sow due to pig away from her home. The change of food and surroundings were fatal to her litter. One of the best things to give for scours is to take a teaspoonful of copperas, dissolved in a cup of water, given to an ordinary litter of pigs.

Also re-rheumatism in pigs, we have found that hypo. of soda is one of the best remedies. Give a teaspoonful to two pigs twice a day in their food. Half the above quantity will be sufficient for suckers. Put the pigs in the sunlight whenever possible.

KING BROS.

Wawanesa.

ABSCESS ON HEIFER'S SIDE.

I have a heifer; when two months old I noticed a lump on her side; in about two months I opened it and black blood escaped; in a few hours it commenced to turn inside out and black flesh drop away in chunks. It healed up, but started to grow again, and is now about the size of a saucer.

C. W. B.

Ans.—Your heifer received a blow on the side, and this caused a serous abscess; some small blood vessels were wounded, and the blood escaped into the sac. The internal cavity had not quite filled when the skin healed, and it is probable a little pus was imprisoned, which acted as a foreign body and caused the present abscess. Open it up freely and flush it out with carbolic acid one part, water fifty parts. Inject some of this lotion into the sac every day, and do not allow the skin to heal until the cavity is entirely filled with healthy tissue.

SKIN DISEASE IN COLT.

My colts broke out last spring and ran for about 4 miles. When they returned they were very warm. One of them, a short time afterwards her right shoulder and side became covered with little pimples, which disappeared during the summer, but have returned this spring. I am feeding cornstalks, hay, and a little grain.

G. B. N.

Ans.—The first appearance of the pimples was doubtless a sequel to overheating. The present crop may or may not have any connection with the first. It is most probably due to an alteration in the condition of the blood, and requires both local and constitutional treatment. Give the affected parts a thorough washing with warm soft-soap suds, and rub her until dry; keep comfortable and excluded from drafts for a few hours after washing, then apply, twice daily, a solution made of one part creolin to 40 parts water. The lotion must be well rubbed in in order to get it directly into the skin. Give her a purgative of four to eight drams aloes, according to size, and two drams ginger. After the bowels become normal, give 1½ ounces Fowler's solution of arsenic on crushed oats or other soft food twice daily. Do not feed any more cornstalks.

COLT WITH DEFORMED LEG AND FOOT.

I have a two-year-old colt that when foaled was weak, but straight, in the fetlock. Since that time it has gone over at the fetlock, until it is quite crooked. Its knee is also starting to go crooked. It walks on one side of the foot. I had a shoe on one side of the foot which straightened it considerably when standing on the hard floor, but when I let her out she loses the shoe. If there is anything made for this kindly let me know.

C. C. C.

Ans.—It is not probable anything can be done for your colt. If the case had been properly treated at first with appliances especially adapted for the case, the limb might have grown straight, but the limb has become so deformed at two years old that no appliances would effect a cure. Even in young colts with deformities of this nature it is usually unprofitable to treat, as appliances to suit each case have to be made, and a great amount of attention is required in order to prevent scarification and injuries from the splints, etc. Your colt is not likely to be of any use, and I would advise you to destroy him.

PARTIAL IMPOTENCY IN STALLION.

A ten-year-old stallion produced but few colts last year. He will serve from two to four mares, and then may refuse. He is in good condition, strong and healthy.

A READER.

Ans.—Impotency in stallions is in most cases either congenital or the result of excessive stud service when young. The administration of drugs to increase venereal appetite by irritating the generative organs will cause him to apparently perform the functions of a sire, but a service under such conditions will not be fruitful, and is doing an injustice to the owner of the mare, as he certainly desires his mare to produce, and when the stallion selected is impotent he should have the opportunity of selecting another. I would advise you to give your stallion plenty of exercise, feed well on good hay and oats, with a feed of dampened bran three times weekly. Do not allow him to go to more than one mare daily, and if he will not serve well give him a mare only once in two days. The administration of drugs is injurious to the stallion and dishonest to the owners of mares.

OPHTHALMIA AND SORE NECKS IN HORSES.

A three-year-old filly is troubled with sore eyes every spring. She becomes partially blind for a time. The eye is a dark blue color, and some inflammation appears in the corner. It appears to come on when the sun is very strong. Also my horses are troubled with sore necks, particularly when worked to the binder. The neck gets raw and small abscesses form. I have used carbolic acid and water, five to one, with good results, but would like something that would harden up the parts and prevent soreness.

DURIHAM.

Ans.—Your filly suffers from a constitutional disease called periodic ophthalmia, which will probably sooner or later terminate in cataract and consequent blindness. Nothing can be done to prevent the attacks, but it is possible she may outgrow them. When she is affected keep her in a partially darkened, well-ventilated stall, give a laxative of six or seven drams aloes, and feed lightly. Bathe the eyes with warm water and put a few drops of the following lotion into each eye twice daily: Sulphate of atropia, 5 grs.; distilled water, 1 oz.

The soreness on the horses' necks is, of course, the result of pressure from the collars. Your treatment seems to give good results, but I would expect better results if you used less carbolic; one to twenty is considered quite strong enough. No application will harden the skin so as to prevent the soreness. All that can be done is to keep the parts thoroughly clean, and also have good fitting collars, kept clean. Washing the necks frequently with cold water and lifting the collars forward so as to allow the air to circulate through the hair when the horses are standing or in the stable is good practice.

INAPPETENCE IN COW—WORMS IN MARE—FOOD FOR PIGS.

1. I have a cow due to calve the last of this month. She was always a hearty cow until lately. We have been feeding her hay, straw, and a peck of turnips a day, and now she won't eat anything but straw, to speak of. What could I give her to make her eat, as she is getting very thin?

2. I also have a mare that passes white worms about two inches long; she seems dull and pretty thin. What could I give her for to kill the worms?

3. We are feeding our pigs sliced turnips in the morning, boiled potatoes with crushed barley in them at noon, and crushed oats at night. Some people say round oats would be better at night. What do you think is the best, round or crushed?

I am a new subscriber to your paper, and I think that it is well worth a dollar a year, as I consider the Veterinary Department worth the money.

H. L.

Ans.—1. Give the cow, three times daily, a powder composed of one dram each powdered sulphate of iron, gentian and nux vomica. Feed on good hay and give bran and pulped turnips in reasonable quantities.

2. Get the following prescription for the mare: Pulverized sulphate of iron, 1½ oz.; pulverized sulphate of copper, 1½ oz.; tartar emetic, 1½ oz.; calomel, 1½ oz.; mix and make into 12 powders. Give a powder every night and morning. When the last has been given starve the horse for 12 hours, and then give a purgative of eight drams Barbadoes aloes and two drams ginger. Feed bran only until purgation begins.

3. I consider crushed oats the better.

COLTS WITH A COUGH.

I have a pair of two-year-old colts which I recently drove about seven miles and put them in a warm stable, but did not blanket them. Each of them now has a bad cough. I am giving them pine tar. Will I continue it, or what would you recommend?

J. M.

Ans.—Your colts have a trouble that is very common in many sections—a form of catarrh or laryngitis. Keep them comfortable and feed on soft food. Rub their throats twice daily for three days with the following liniment: Raw Cotton oil

three parts, oil of turpentine three parts, liquor ammonia Fortier one part. Give two-dram doses of chlorate of potash three times daily. Do not expose to damp or cold weather. A little gentle exercise in fine weather is beneficial.

PROBABLY DEAD FETUS.

I have a mare due to foal on April 28th. On the 28th of February milk and wax began to run from her teats, and she had all appearance of approaching parturition. She is now very large. She does not lose so much milk as she did. She is considerably swollen under the abdomen. She passed blood on two occasions in January. She is quite hearty. I fed her one pint of wheat and straw up to the middle of February. Since then I give her two quarts of wheat and hay. She is getting thinner, yet in good condition.

C. E. B.

Ans.—It is very probable the fetus is dead. Cease giving the mare wheat. Give her good hay and crushed oats and bran. Give her regular exercise and watch her closely. She is liable to be sick at any time. When evident symptoms of parturition are manifested, if spontaneous delivery does not take place send for your veterinary obstetricist at once. You can do nothing in the meantime, and the treatment after parturition will depend upon complications occurring.

STEER WITH SORE LEG.

I have a feeding steer that has gone wrong in one of his front legs. I suspect it is the result of heavy feeding. The only symptoms presented are a swelling and soreness of the leg. It resembles a grease leg in horses.

E. M.

Ans.—Your steer has injured his leg by lying upon it, probably having worked the bedding backwards before lying down. Put him in a box stall, where he will have plenty of room, and give him plenty of straw for bedding. Bathe the leg long and frequently with warm water, and the soreness and swelling will disappear. Do not be surprised if the knee remains large and soft to the touch. There probably is a serous abscess, which will not interfere with him, but if opened will cause trouble.

FETLOCK ENLARGED FROM INTERFERING.

I have just purchased a ten-year-old mare with right hind fetlock enlarged, as the result of interfering. She has been carefully shod lately, and now goes without striking. There is a scab on the swelling, and a small windgall on the opposite side of the leg.

S. B. H.

Ans.—Enlargements of this nature and windgalls are very hard to reduce. It is probable they will never cause lameness, and unless she is a valuable animal and you are very anxious to have her clean, I would advise you to leave her alone. I presume you are not very particular about bunches of this kind, else you would not have bought her. Long rest and repeated blistering will reduce the lumps. If you cannot give her rest, rub a little of the following liniment into the parts once daily with smart friction: Iodine crystals, 6 drs.; iodide of ammonia, 1 oz.; iodide of potassium, 3 drs.; glycerine, 6 ozs.; alcohol, 6 ozs.

Miscellaneous.

RE BREAKING LAND—CHILD FOR ADOPTION.

I am an appreciative reader of the "Farmer's Advocate," and would like to ask information from you as to the best plan of breaking up 75 acres of land that was broken and cropped for a few years, but has been allowed to go back again into sod, and has not been touched for ten years.

1. Would it be best broken shallow and backset, or would one deep plowing do? Would you advise trying any kind of grain crop on it this year? I would like, if possible, to get interest on the money invested, if no injury would be done to the land. Any kind of crop suitable for mixed farming could be made good use of. The land is heavy clay loam, with an occasional "gumbo" spot, but naturally well drained.

2. Can you tell me how to get a little girl, say of four or six years of age, for adoption?

Minto, Man.

H. F. P.

Ans.—1. In breaking such land as you describe, it will depend upon how heavy a sod has been formed. If anything like as tough a sod as is found on virgin prairie, it will certainly be advisable to break and backset, breaking it shallow and backsetting after the sod has become thoroughly rotted, turning up an inch or more of soil when backsetting, but as is altogether likely, the sod is not very tough, it may answer to plow it, say, about four inches deep, and with a favorable spring, risk a crop of oats or barley on it. If you can get it out early enough, probably the oats would give you the best returns, as they can be cut green and fed in the sheaf, and will yield a large quantity of excellent fodder. Barley might do, but generally proves a mellowed seed-bed, and you are likely to get "Speltz" might do very well, but the grain should be seeded as early as possible, and it is not likely you can get much hard early grass for it. As you will doubtless have noticed in a recent issue, some people are now taking on breaking, seeding any time from the first of June, at the rate of half a

bushel of seed per acre, while other people as strongly condemn this crop as having a bad effect upon the soil, and very liable to introduce the seed of noxious weeds.

2. Apply to the Children's Home, Winnipeg.

IS CALF IMPORTED?

I am thinking of buying a calf that was dropped in quarantine. Is it a genuine imported calf, or not?

Ans.—Calves begotten in Great Britain and born in Canada are registered in the Dominion Shorthorn Herdbook in the list of imported animals as "imported in dam," and the breeder in Britain who coupled the parents is given in the Herdbook as the breeder of the calf. It is practically imported, and to dispute the fact is to quibble. The object in the statement, "imported in dam," is doubtless to avoid confusion, as such are not always registered in the English Herdbook, though they are eligible, and many such are registered there. Indeed, a good many American-bred animals have been registered in that book.

AGRICULTURAL VALUE OF COAL ASHES.

If coal ashes finely screened contain 7.2 per cent. of lime, 1.8 per cent. of phosphoric acid, 3.8 per cent. equal to phosphate of lime, 14.8 per cent. oxide iron and alumina, 7 per cent. potash, why should it not be useful on many lands? Can we have the experience of any who have had practical knowledge in this line?

SUBSCRIBER.

Ans.—Coal ashes will vary somewhat, according to the character of the coal producing them, but in any case the amounts of potash and phosphoric acid are very small. Thus we have for hard and soft coals:

	Potash per cent.	Phosphoric acid per cent.
*Hard coal ashes.....	.10	.10
Soft coal ashes.....	.40	.40

*These figures are taken from "The Chemistry of Soils and Fertilizers."—Snyder.

It is evident, therefore, that in ordinary hard coal ashes the chief mineral elements of plant food exist, practically, in traces only, and certainly in quantities very much smaller than those in ordinary fertile soils. Further, these elements are not present in an immediately available condition, so that their value for supplying nourishment to crops is considerably less than might be deduced from the above data. They contain a small percentage of lime, but this is for the most part inert and insoluble, owing to its combination with silica. Consequently, they cannot be regarded as of value for furnishing this element. Coal ashes, however, are of service for wet, stiff, plastic clays. These they improve by rendering them friable, more porous and less difficult to work, as well as more favorable to root extension. It is said also that they are useful, from a mechanical standpoint, on bog soils. We cannot, therefore, regard coal ashes as a fertilizer, but that they have a distinct value for ameliorating the physical condition of certain heavy, sticky clays, there is no doubt. When we remember that the texture of a soil is as important a factor towards productiveness as plant food, it will not be difficult to understand why some farmers have attributed a high value to this form of refuse.

FRANK T. SHUTT,

Chemist, Dom. Exp'l Farms.

WORMS IN HOUSE-PLANT POTS.

Could you tell me what to do for little worms in the earth of house plants? They are very much like the fine roots, about the length and size of a short pin. Have bothered geraniums mostly, but are starting at others. The buds blight, the leaves turn yellow and sickly looking, and plants soon die.

MRS. W. J. MORRIS.

Ans.—Put piece of fresh lime in water, and when it slacks and settles, pour off and sprinkle the soil in pot freely with the lime water; also, instead of ordinary manure, use bone dust. One of our staff has found this plan very efficacious.

WIDENING A BARN.

I have a barn widened by sawing lengthwise (60x36, 18-foot posts), changed to 60x60, 24-foot posts. We moved it on the foundation after the sleepers were in place and floor laid, being safer working. We jacked it up, put 6 feet to posts, leaving one side in its place, well propped; chained temporary girts to posts on the other side for rollers to work under, and leave ends of posts close to sill. We had four beams to cut and eight posts 36 feet long to put up in center. We cut beams 20 feet from side we moved out, had temporary posts under near cut end of beam, with plank and 3-inch rollers under it, then moved out far enough to put on posts and high plate. We spliced the beams on the other side to make them 20 feet, then moved out, put in end girts, drew together, put on rafters, and spliced them between plates. This gave me a barn 60x60, 24-foot posts, 42 feet to ridge. We were five days with builder moving rig, \$6 per day—\$30—and seven men at what you can get them for. The framing was partly done before.

WILLIAM WHITELAW.

FARM GOSSIP.

The Painting Season.

All travellers admire the thrifty appearance of a well-kept New England village, and it is safe to say that this is largely owing to the abundant use of paint upon the houses. With the advent of better times, we are about to enter upon the greatest painting era that has ever been experienced. It has become the fashion, almost a craze, to paint, stain and kalsomine, from a hygienic point of view, as well as the knowledge that the value of all buildings are enhanced by the plentiful application of good paint. This is a good sign, and farmers should take a day off before the busy season commences and "lay on" the brush. Old, rough buildings are vastly improved by a coat of some inexpensive paint. Most of the new buildings are sided with dressed lumber, and should all be thoroughly painted. They will look better, last longer, and be worth more to the owner. In fact, a building is not finished till properly painted. Vehicles and implements should also be brightened up before the warm weather begins.

Poultry for Britain.

Mr. F. C. Hare, Director of the Poultry Fattening Stations in Canada, states that the English consumer wants a chicken not weighing over five pounds, for if they have to buy a heavy fowl, they would sooner purchase a turkey weighing from eight to nine pounds, for the meat is more tender and juicy.

Mr. Hare has also prepared a model list for poultry prizes to be given at the coming fall exhibitions. Eight different breeds are included in the list, viz., White Wyandottes, any other variety of Wyandottes, Buff Orpingtons, Barred Rocks, Indian Games, Silver Grey Dorkings, Black Minorcas, and Leghorns. Fancy points will not be taken into consideration in judging the birds intended for table use, but they will be judged according to their merits suitable for the English market.

Tariff Unchanged.

Finance Minister Fielding, in his budget speech at Ottawa, a few days ago, announced no changes in the tariff, though many applications for increases had been made.

Cattle Dealers Complain.

At the recent annual meeting of the Dominion Cattle Dealers' Association, in Toronto, President John Dunn reported that the cattle yards at West St. John, N. B., had been greatly improved by the Government. Many complaints were made of poor transport facilities, bruising of cattle in shipping, needless delays at sidings causing loss in weight and death, and the president and executive were empowered to seek for redress from the railways. Through the delay of a steamer at Quebec for six days loading lumber, Mr. E. Snell, who had cattle on board, lost \$700, and as yet had obtained no satisfaction. The secretary was directed to obtain such information regarding the law, etc., as would enable shippers to get justice from the companies. There is evidently great need of an efficient Railway Commission.

Chicago Markets.

Chicago, March 31.—Good to prime steers, \$6.75 to \$7.50; poor to medium, \$4.50 to \$6.50; stockers and feeders, \$2.50 to \$5.25; bulls, \$2.50 to \$5.25; calves, \$2.50 to \$5.70.

Hogs—Mixed and butchers', \$6.50 to \$6.85; good to choice, heavy, \$6.55 to \$6.95; rough, heavy, \$6.50 to \$6.80; light, \$6.40 to \$6.75; bulk of sales, \$6.50 to \$6.85.

Sheep and Lambs—Lambs lower; good to choice wethers, \$5.25 to \$5.75; fair to choice mixed, \$4.25 to \$4.90; native lambs, \$4.50 to \$6.65.

Montreal Markets.

Montreal, March 31.—There were about 150 head of butchers' cattle, 4 calves and 14 sheep offered. Pretty good cattle, 3½c. to 5c., and common 2½c. to 3½c. per lb. The calves were a poor lot, and sold at from \$1.50 to \$4 each. About 1,000 calves were brought here yesterday, and some of them were sold as low as \$1 each. Old sheep sold at from 3½c. to 4c., and yearlings at from 4½c. to 5c. per lb. Spring lambs sold to-day at from \$2.50 to \$6 each. Among the sales of extra cattle in the early part of the week were ten very choice heaves, bought by Mr. George Nicholson at 6½c. per lb., and three spring lambs at \$7 each. Mr. J. F. Giguere bought four extra cattle at 6½c. per lb., and five spring lambs at \$6 each. Fat hogs sold at from 6c. to 6½c. per lb., weighed off the cars.

British Cattle Markets.

London, March 31.—Prices are firmer and sell at from 12c. to 13½c. per lb. dressed weight; fattening beef is higher, at from 10½c. to 11½c. per lb.

Popular Premiums.

This is the season when readers, both young and adult, can most readily obtain new subscribers for the "Farmer's Advocate." The growing popularity of the paper with farmers is shown by the splendid increases in our subscription list this winter; also by the growing demands on our space. To meet this and carry out our determination to give our readers the most complete and practical service possible, we are compelled for this issue again to enlarge the size of the paper. Show your copy to some friend who is not a reader, and he will appreciate its worth to the farmer and the home, and subscribe. We believe in encouraging our friends to do missionary work for the "Farmer's Advocate." No other periodical offers such valuable and useful premiums. Our full premium announcement is crowded out, but we call attention to a few of its most attractive features:

THE FARMER'S POCKETKNIFE.—The run on this premium was so great as to completely exhaust the consignment received from Sheffield, Eng., where they were specially made for us. So delighted are those who have received the knife that we decided to order another lot from the manufacturer, which have now arrived. It is a superb knife, with nickel handle, and can be secured by sending 2 new subscribers for the "Farmer's Advocate."

BAGSTER'S TEACHER'S BIBLE.—A truly magnificent volume, with flexible leather cover and useful S. S. helps; retailed for from \$2.50 to \$3.00. Can be secured for 2 new subscribers. Do not miss such a privilege.

THE BRACELET AND PADLOCK.—The beautiful silver filled curb-link bracelet and padlock for young ladies' wear is giving great delight to all who earn it by sending us 2 new subscribers; sterling silver bracelet for 3 new subscribers. Both are gems.

FOUR FARMERS' PICTURES.—The agricultural and live-stock public are appreciating as never before our offer of the four masterpieces—"Canada's Pride" (draft horses), "Canada's Glory" (light horses), "Canada's Ideal" (Short-horns), and "Canada's Columbian Victors" (Ayrshires)—for only 2 new subscribers, or any two of the four pictures for 1 new subscriber. Any or all of these engravings, properly framed, make a grand ornament for the home, and are an educator, creating a love for superior animals.

GENTS' WATCHES.—We offer a long list of watches for clubs of from 2 to 25 new names. Here are some of the most popular: Yankee Nickel, for 2 new names; Trump Nickel, 4 new names; Trump Gun Metal, 5 new names; No. 14 Silver, for 8 new names; and 7-jeweled Elgin, in 3-ounce nickel case, for 10 new names.

LADIES' WATCHES.—Gun Metal, Swiss Chatelaine, for 4 new names; Sterling Silver, Swiss Chatelaine, 5 new names; Nickel American O. F., large size, 5 new names; Gun Metal American O. F., large size, 5 new names; and Nickel, small size, for 9 new names.

The above are all handsome watches and good timekeepers.

BOOK PREMIUMS.—Complete list of all standard works for farmers. For titles and terms, also for complete list of watches, see page 105, February 5th issue "Farmer's Advocate."

If you need a free sample copy of the paper to help you in getting subscribers, drop us a post card at once. Address:

FARMER'S ADVOCATE,
Winnipeg, Man.



"We have cheerful words for the stranger,
And smiles for the some-time guest;
But we keep for our own the bitter tone,
Tho' we love our own the best."

Some More About Tunbridge Wells.

Tunbridge Wells still. Tired with my morning's packing, undertaken in preparation for a little longer flight than usual, I took up a torn sheet of a magazine, in which was a story, entitled, "The Wooing of the Grand Duke," and, although seeing that it was but a fragment, and that my beginning it would lead me, so to speak, to nowhere, yet I read what there was of it with some interest, because the main action of the story began at least in Tunbridge Wells. A designing mother, with Clara, an uninteresting daughter; a rich, and, of course, beautiful niece, and a most unmistakably caddish son, arrive in a disgusted frame of mind at the Grand Hotel, the doctor having ordered the drinking of the waters for Clara's health. Willoughby Baxter, the son, takes his seat leisurely at the belated breakfast, and says, with an air of affected indifference, but of barely-concealed self-importance: "I've been with the Grand Duke."

"The Grand Duke!" exclaim Mrs. Baxter and Clara in a breath. "Yes, the Grand Duke Michael of Lexitania; the fellow who's heir to some trump-cry little throne somewhere on the Continent, but whose health's very delicate. The last thing that was in the papers was that his father had sent him here to Tunbridge Wells with the idea that the waters would do him good. It's all rot, of course. If a fellow's badly put together in the beginning, doctors and waters won't patch him up, and it's no use trying," etc.

The youth, swelling with self-conceit, explains how he had seen H. R. H. "spilt" off his bicycle, had picked him up and thus had obtained a much-coveted introduction to him. "He has asked me to dine with him this evening at the Regent's."

Mrs. Baxter's matronly countenance positively shone. Here was luck and no mistake. "I really feel I can forgive your father now for persuading me to come down to this dead-and-alive place, where everything seems to belong to the middle ages, and everybody is as stiff as buckram. And all because he took it into his head that dear Clara would be benefited by drinking the waters! Ugh!" The mother made a shuddering grimace. "She's only had one taste of the wretched water, really. It was so abominably nasty that she couldn't take any more, and isn't likely to touch another drop; are you, Clara? I believe it's all nonsense about the stuff doing one any good; that's only a tale made up by the doctors to

bring people to the town. But how did it happen that the Grand Duke's attendants weren't with him this morning? I suppose they must have fallen behind or lost the way, or something. They're all foreigners, poor fellows, and can't be blamed if they lost themselves—especially in a place like this, all ups and downs and ins and outs. Perhaps they don't know enough English, either, to ask for directions or read the signposts; though you'd think that gentlemen forming the suite of a Grand Duke would be properly educated. What's that you are saying, Clara?" What Clara was saying was a lament that she had not brought her last two new frocks with her; all her mother's fault, of course! The crest-fallen Mrs. Baxter thus defends herself: "You see I never dreamt that we should meet anybody worth meeting in a town like this. It's not like Brighton, or the South of France, where you expect to pick up with strangers, and never know whom you may knock against."

"Perhaps not," replies the disgusted Clara, who knows that the grace and beauty of her Cousin Veronica makes her wholly independent of dress effects, "but the people here are better worth picking up, though they may be hard to get at."

How it all ends, whether His Royal Highness is a real Royal Highness at all, whether plain Clara or her handsome cousin wins the prize, I cannot even guess; but the quotation may not be without some point to it for those who may have read my previous notes on Tunbridge Wells. Like many other places in England, whether you like it, whether you appreciate its beauties or its points of interest, depends much upon your individual taste and intelligence. You may not nowadays meet sprigs of nobility as frequently as of yore, strolling "under the Pantiles" or drinking the waters, which may be healing, but are, as Mrs. Baxter remarked, "so abominably nasty," but the broad, gorse-crowned commons and the bracing, health-giving breezes are there still, and to any who can spare a few days out of their coming summer holiday across the Atlantic, I would venture to say you cannot do better than spend them in this town of many stories, in one of the most beautiful counties of the mother country.

MOLLIE.

"When Did You Last See Your Father?"

Our picture, "When did you last see your father?" reproduced by permission of the Corporation of Liverpool, is a masterpiece by the Royal Academician, Mr. Yeames, one of its older members, and a painter of historical subjects, of considerable reputation. In the footnote we read that it is a supposed incident of the Civil war, when a party of Cromwell's officers have invaded the home of one of the King's followers and are putting to his family, each in turn, the cruel question, "Wher did you last see your father?" in the hope that they may betray his place of concealment. The pale mother, in the background, hides her agony as best she can, while she strains her ears to hear the voice of the little son, who stands upon the footstool bravely facing the grim Puritans, who are trying to entangle him in his speech, and one can almost hear the sobs of the little daughter, whose turn is to come next. Each detail is carefully worked out, from the open chest which has

been ransacked, the casket which awaits examination, the armor on the wall, and the section of the ancestral picture which just shows above the heads of the hard-featured inquisitors. We, too, seem breathlessly to await the reply from the lips of the little lad, which may mean life or death to the fugitive father.

H. A. B.

A Winter "Idle."

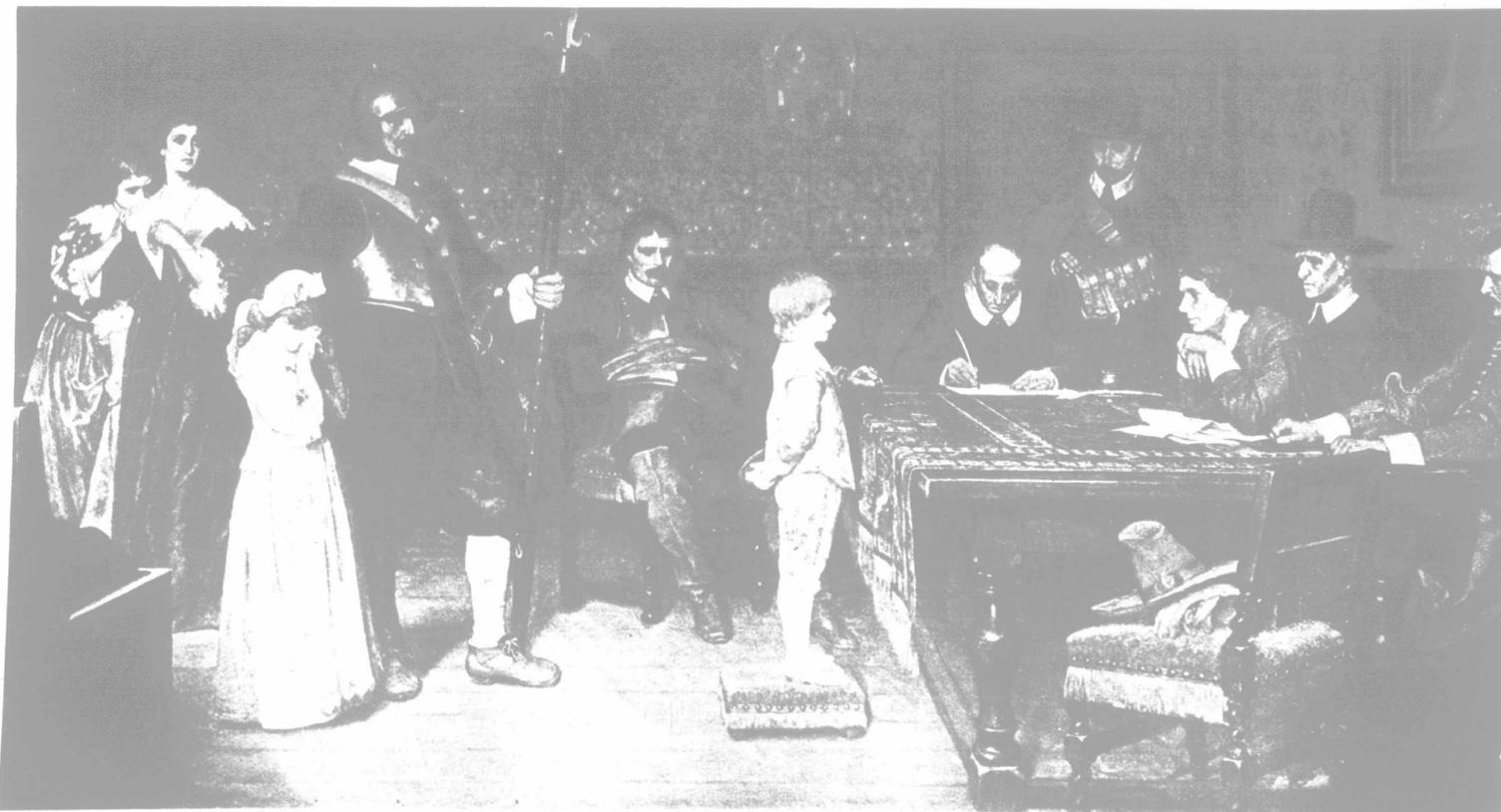
That is what I have been enjoying of late—a winter "idle." It lasted for just one month, and it is astonishing how few days there are in a month sometimes. It began on a day when clean, white drifts lay many feet thick over the country roads, and terminated on a March morning, with the March sun coaxing merry little rivulets over the brown earth in the wagon-tracks, and the sap trickling from the bruised maple bough.

Idleness was not uppermost in my mind when I started out, for be it known unto you, O "Advocate" friends, in the secret recesses of my valise there reposed the materials for a patchwork quilt, a ball of yarn for knitting purposes, and an unembroidered centerpiece. How very "old-fogyish" I was in those days! Nevertheless, I visited in several town houses during my "idle"—well-furnished ones, too—where "hit-and-miss" carpets were in evidence, and even patchwork quilts "glittered" cheerfully. My patchwork materials were not of the "glittering" sort; they had been so at one time, when they flaunted over a set of wire hoops and regaled themselves on a polonaise, but that was in their palmy days.

No, idleness was not uppermost in my thoughts; yet, for one whole month my idling propensities were busily employed. I was a veritable Lotos-eater. The patchwork quilt is still a dream of the future, the ball of yarn is as portentous as ever, the linen centerpiece looks pale from neglect. Perhaps it was a sinful waste of time, but for one month I didn't read one play of Bacon's (?), nor a Talmage sermon, nor even the "History of the Sphinx." There was just one bit of thorough reading that I undertook, and that, of course, was the "Advocate."

This spot, wherein I created a temporary little Lotos-land all my own, is suggestive of anything but the Lotos. On the contrary, it is full of life and activity through and through. It is a busy, energetic, Canadian town, and is surrounded by many a threefold elevating influence: to wit, many an oil-derrick. Beneath each is an oil well and a pump, with jerking-rods connecting it with other wells, and leading to, or, rather, from, a "rig"; that is, an engine that supplies the motive power to as many as eighty wells. The crude oil is conveyed through underground pipes to receiving-tanks, from whence it is drawn to the refineries and converted into many useful elements, chief of which are benzine, kerosene, paraffine, and coke, the latter being what remains after the entire refining process has been gone through. This coke makes excellent fuel, and one can almost burn the ashes over again.

It is not so very many years since the first



From the painting in the Walker Art Gallery, Liverpool.
By W. F. Yeames, R. A.

"WHEN DID YOU LAST SEE YOUR FATHER?"

oil well was drilled in that region. Before that time the oil used to ooze through the soil, and when the first well was put down it burst up with a great force sixty feet in the air, and the whole creek-valley that winds through the vicinity became overflowed with the black liquid to a depth of several feet. Since that time the number of wells has been steadily increasing, and now the whole district is like a mighty piece of machinery. The jerking-rods and pumps keep up their continuous rattle and wheeze all night, and it is rather disconcerting for a stranger to waken up and hear this sound in the dead of night, particularly if he is given to late suppers or insomnia. The town itself is a cheery, up-to-date place, and a most interesting spot to visit.

But that fated March morning arrived and my month was up. It had been a very pleasant one, full of walks and drives, and social chat and laughter, but I had just one other delightful little visit to make on my return trip, and my "winter idle" would be over. That was a very short visit, but a most enjoyable one; perhaps I shall tell you about it some time. We farmers have not much time for "summer idyls," but we can at least take a few weeks or days in a slack season to hearty, wholesome enjoyment, to see how others steer their barques on the sea of existence, and our lives will be the broader and the brighter for it.

This late afternoon the south wind is rustling the dead leaves that still cling to the oaks, and curling over the tips of the pine branches, showing up the delicate shades of green beneath; in warm corners the earliest, bright blades of grass are congregating; where the hollows used to be there are clear stretches of water; the woods look ruddy in the evening sunlight, and over there, on their outskirts, I catch a glimpse of something that glitters—O no, not a patchwork quilt, but a bright tin pail—and I know that it rests against a maple tree and that something sweet drops with a faint little echo into the pinky nectar below. Surely I feel the perfume of violets! And can that be a robin? O, ye who see only smoky walls and flashy windows, do ye not long for such a glimpse as this? Ah! spring is coming, and

"It will bring
The primrose by the brook, and all the wide
Green spaces of the forests glorified
With scent and singing."

CHRYSOLITE.

A Word to Mothers.

Just a word of personal experience which may help some anxious mother. Sensible parents are always glad to see a strong will manifest itself in the child; but just how to bend that will in obedience to their own often becomes a puzzling question.

In the first place, I would say, begin with the first manifestation of resistance, as the young will grows stronger with repeated resistance; and in the second place, in this, as "in everything, make your requests known unto God."

My little girl was scarcely two years old. We were away with friends for a day's visit in the country. I was in conversation with one of the ladies, when another (rather unwisely, it may be) appealed to me with, "Mamma, baby had better pick up the photo (which she had thrown on the floor), had she not?" Never thinking of the possibility of her disobeying me, I said in the pleasantest, most confident way, "Oh, certainly. Pick up the photo, dear." In a flash I saw the little back straighten and a resolute look swept over the baby face, which said as plainly as words could have said, "I don't intend to." Again and again, kindly, firmly and wisely as I knew how, I repeated my request, only to see the little figure become more erect, the lips more compressed, and the will more defiant. For one dreadful hour I tried, in turn, entreaty, persuasion, command, and punishment, without the slightest sign of yielding on the part of the child. I was at my wits' end. "Is it possible," I thought, "that I cannot secure obedience from a child of scarcely two years?" I saw that if I could not do it then, I might never hope to. In despair, I cried, "O, God, bend her will for I can't." Then, turning to her, I said, "R—, hand mamma the photo." Immediately, but slowly, slowly (Oh, what an anxious moment!), the little hand went out towards the photo. How I feared she would relent! But with words of encouragement from me, she at length grasped the photo and thrust it into my hand. Never from that day—thirteen years ago—to this, has she sought to measure her will with mine. The strength of will is there, but there has ever been the proper and loving recognition of parental authority.

"If the King's heart is in the Hand of the Lord, as the rivers of water"; and "He turneth it whithersoever He will," how much more, humanly speaking, as the heart of the little child in His Hand? And will He not "turn it" at the earnest request of a loving mother?

Humorous.

"Friend," said Aunt Mary, "you have a new little friend. He came this morning while you were asleep."
"Who?" exclaimed the eldest. "Then I know who he is," said the milkman, "because I saw on his cart, 'Families supplied daily.'"
First Friend—"How would you like to lend a friend a few shillings?" Second Friend—"I would be only too pleased, but I haven't got a friend in the world."

THE CHILDREN'S CORNER.

The Dependable Boy.

I have always liked boys—which is not surprising, considering that I was brought up with six brothers—but boys are not all alike, are they? I remember once, at a S-S. convention, the question was raised, "What to do with the bad boys?" One very energetic S-S. worker at once sprang to his feet, exclaiming, "I don't believe there are any bad boys!"

That was nice of him, wasn't it, boys? Possibly I may have the same opinion, but if there are no bad boys, at least they are not all as likeable as you, I am very sure of that.

Some boys are reliable, and some can't be depended on for anything. They may be generous, brave, good-natured, and have a hundred other good qualities, but sometimes they forget to do the things they are asked to do, and sometimes they put off doing it until it is too late. Very soon people give up asking them to do anything, if there is anyone else who can do it. Perhaps you may imagine that would be rather a pleasant punishment, but still you don't want your friends to think you are unreliable, do you?

"The boy who is bright and witty,
The boy who longs for fame,
The brilliant boy, his teacher's joy,
And the boy who leads each game—
Right cordially I greet them
And wish them every joy,
But the warmest part of my boy-loving heart,
I give the dependable boy.

"If he says he'll come at seven,
Ere the clock strikes he'll appear,
At a fine brisk pace, with a glowing face,
And a greeting good to hear,
If he says he'll mail your letter,
It will be mailed, don't doubt it;
He will not tuck it in some dark pocket
And then forget about it.

"He may be bright and witty,
He may be brilliant too,
He may lead in the race with his manly face,
He may plan great things to do,
He may have all gifts and graces,
But nought can make such joy
And pride in me, as to know that he
Is a staunch, dependable boy."

Once there were two boys picking up potatoes in a field for their father. About three o'clock their father had to leave them and drive to the station to meet his brother. Uncle Timothy was coming to take one of his nephews to Chicago, where he would train him up in his own business. Both boys were eager to go, and it was doubtful which the rich uncle might choose.

"Oh, by the way, boys," called Mr. Ball as he left the field and started off to the station. "There is a certain potato I meant to look for. Bring it home if you find it."

"What do you suppose father meant by that?" asked Tom.

"Oh, it was just one of his jokes," said Joe. "I'm hot and tired, and I'm going to get good and rested before I begin again."

Tom filled several bags before Joe felt rested enough to help, and even then his work was "steady by jerks," as his brother told him. At last came the sound of a distant whistle.

Joe straightened himself and called, "Six o'clock, Tom! I'm going to quit."

"Why, we can't quit till all the potatoes are picked up!" answered Tom. "Come on, Joe, it won't take long now."

"No, siree, not if I know myself. I'm going to look after number one. Uncle Timothy ain't going to catch me looking as dirty as this. First impressions, you know."

As Tom drove home with his load of potatoes, he saw Joe shaking hands with his uncle, who had just arrived. The lad looked very bright and manly in his best clothes, and it was easy to see that Uncle Timothy was delighted with his nephew.

"How is this, Joe?" asked Mr. Ball. "Why are you here with your clothes changed, and Tom only just coming home?"

"I thought you'd want me here to meet Uncle Timothy," answered Joe.

"Did you do your share of the work?" asked his father.

"I worked till six o'clock," was the rather defiant answer.

Tom had just finished scrubbing himself at the pump in the yard when Mr. Ball and his brother came round the corner of the house, and it was a bright, healthy-looking boy that came forward to meet his uncle.

"Well, young man, why weren't you here to meet me? This is a cool welcome for an uncle who comes once in fifteen years!"

"I know it, uncle," said Tom. "I was dreadfully sorry not to come up sooner, but I've only just finished my work."

"And you never leave your work until it's

finished?" asked Uncle Timothy, with a quizzical smile.

"Oh, yes, I might if it was my own work," laughed Tom.

"Yes," said his Uncle. "I see."

A week later, when Uncle Timothy started for his home, Tom was the boy who went with him.

"You see, Joe?" he explained, the night before they left. "I want a boy who will look after my interests; one who is not afraid to work overtime occasionally. The surest way to advance number one in this world is to forget all about him."

"Father," asked Joe, some days after, "what did you mean about that special potato you wanted us to look for?"

"Oh," laughed Mr. Ball, "the last one was the one I wanted, and Tom found it."

Which of these boys do you resemble most, do you think?

"Don't let another hit the load
Your back was meant to carry;
Don't think your task were done as well
By Tom or Dick or Harry."

The boy who is always looking out for "soft snaps" never accomplishes much. He generally thinks it is his bad luck when he is left behind in the race, when the truth of the matter is that no one wants to employ a young fellow who can't be depended on.

Our poetical competition has been very well responded to, and I hope to announce the names of the winners next issue. Some of our youthful poets have overlooked the fact that the subject was to be Canadian country life.

COUSIN DOROTHY.

Scallops.

The housekeeper often tires of the monotony of preparing food in the same old way, and longs for a change in the method of presenting her viands. Try the following recipes:

SCALLOPED BEEF.

For this take small pieces of roast beef. Put in a deep dish. Roll cracker crumbs fine and put a thin layer on top. Season with butter, pepper and salt. Then another layer of beef, then crackers, and season as before. It is improved with layers of stewed tomatoes on top of each layer of beef. Pour a little water on top to wet crackers. Bake one hour.

ESCALLOPED MUTTON.

Remove fat and skin from cold roast mutton. Cut the meat into small, thin slices; season with salt and pepper. Butter a dish, put in a layer of meat, then cold boiled macaroni; moisten with tomato sauce, and so continue until all is used. Cover with buttered crumbs and brown in the oven.

ESCALLOPED FISH.

Three pounds fresh fish—whitefish is best, but any can be used. Boil or steam until done. When cold remove all bones, and rub up fine with the fingers. Then make a dressing as follows:

Dressing.—To one pint of milk add one half of a small onion, chopped; one large cupful butter rubbed into two heaping tablespoonsful of flour. Stir this into the boiling milk; add plenty of salt, pepper, and parsley, and summer savory if desired. Grease an oyster dish, put in a layer of fish, then a layer of dressing, and so on until the dish is full, allowing the dressing for the top layer, over which grate a little cheese, and bake about twenty minutes.

ESCALLOPED POTATOES—NO. 1.

Into three cupfuls of mashed potatoes heat half a cupful of milk, two tablespoonsful of butter, one raw egg; pepper and salt to taste. Fill a baking dish with this. Spread bread crumbs over the top. Bake twenty minutes in the oven and brown.

ESCALLOPED POTATOES—NO. 2.

Pare and slice, not as thin as for Saratogas. Let stand an hour in cold water. Drain and put in a buttered nappy with bits of butter, pepper and salt, and a small onion if desired. Pour over milk. Put bits of butter on top and bake one hour.—(Ladies' World.)

Appropriate.

A Sunday school teacher in Carthage, Ill., has a class of little girls, and it is her custom to tell them each Sunday of one little incident that has happened in the week, and request the children to quote a verse of Scripture to illustrate the story. In the way she hopes to impress the usefulness of Biblical knowledge upon the little ones.

One Sunday she told her class of a cruel boy who would catch cats, and cut off their tails. "Now, can any little girl tell me of an appropriate verse?" she asked.

There was a pause for a few moments, when one little girl arose and in a solemn voice said: "Whatsoever God has joined together let no man put asunder."

THE QUIET HOUR.

The Communion of Saints.

"It seemeth such a little way to me
Across to that strange country, the beyond,
And yet not strange—for it has grown to be
The home of those of whom I am so fond;
They make it seem familiar and most dear,
As journeying friends bring distant countries near.

"So close it lies, that when my sight is clear,
I think I see the gleaming strand;
I know I feel that those who've gone from here
Come near enough to touch my hand,
I often think but for our veiled eyes,
We find that heaven right about us lies.

"I cannot make it seem a day to dread
When from this earth I soon shall journey out
To that still dearer country of the dead,
And join the lost ones so long dreamed about.

And so to me there is no sting in death,
And so the grave has lost its victory.
It is but crossing, with abated breath
And white, set face, a little strip of sea,
To find the loved ones waiting on the shore,
More beautiful, more precious than before."

At this joyful Easter season, when all the earth is bursting into new life after its winter sleep, our thoughts naturally turn to those who, like their risen Lord, have passed through the gate of death to the mysterious life beyond. Death seems to put an impassable barrier between us and them, yet surely it is not really so. Have we any right to let the watching world imagine that Death is still the king of terrors to a Christian? We say that Christ has won the victory over death, but do we believe it, really and practically?

Our friends are still alive, although for a little while they are hidden from our sight. We are not really parted from them, for, as the writer of the Epistle to the Hebrews says, we are come "to the general assembly and church of the firstborn, which are written in heaven, and to God the Judge of all, and to the spirits of just men made perfect, and to Jesus the mediator of the new covenant." That last clause makes all clear. If we are really abiding in Christ, dwelling in Him and He in us, members of His body, of His flesh and of His bones—as St. Paul declares—we must be in closest communion with them, for they also are one with Him. "Whether we wake or sleep, we should live together with Him."

The communion of saints is a very real thing, and the realization of it will help us concerning our friends who have passed "into the unseen," so that we may not sorrow even as others which have no hope. They are with Christ, living in closest communion with Him. We too are branches of the True Vine. How can we be separated from them, when Christ our Lord is the living link between us? If we can speak to Him and He to them, is it not almost the same as speaking directly to them? I remember once reading a story of a devout Scotchwoman, whose sons were living some distance from her. Instead of writing to them, she said she sent her messages by the "overhead route." Why don't we all use this overhead route constantly? I don't mean that our letter-writing should be given up; but how often we want to send a message which can't be written down—a message which will go right to the heart of our friend. Why not trust it to God to deliver?

After all, you know, we touch each other spiritually more than bodily, even in this world. A very plain face is often far more dear to us than a very beautiful one. We love the soul of our friend, and the soul is certainly not laid in the grave. People sometimes nurse a very morbid feeling about the place where a tired body has been laid to rest.

"We left her in the silent room,
But when we shut her door again,
'We cannot leave her in the dark.'
'We cried aloud with sudden pain.
'The dark?' said One. 'Have you forgot'
Where she is now the cold and dark are not."

"But when the cold rain swept the leaves,
We heard within our hearts the sound,
And thought of her we loved and lost,
Beneath the bleak November ground.
'She is not there!' said One. 'Why mind
The fading garment that she left behind?"

Longfellow says "There is no death!" and perhaps we may think that daring statement is only poetic license, and imagine that he doesn't mean what he says. Certainly there is no death to one who is joined to Christ, the Life, for He has declared: "Whosoever liveth and believeth in Me shall never die." Don't fancy that I am a Christian Scientist, for I don't deny that the body dies, but I do deny that the body is the man. When the question was once asked, "Have you a soul?" the very sensible answer was given, "I am a soul, I have a body." We recognize this fact when we speak of a body from which the soul has fled as "it." Yesterday he was a man, now it—the part we can see—is a corpse; but the man himself is not dead. As our Lord left the clothes which were wrapped round him, in the tomb, so the body, which clothes the soul here, is left behind in the grave. But still, when one we love has fallen asleep, we cannot help feeling very lonely sometimes; and our Lord showed by His sympathy with the sisters of Lazarus that grief at such times is natural and right, although He knows how to comfort the mourner who really trusts in Him.

Fleming has pointed out that it is comparatively easy to say, "Though He slay me yet will I trust in Him," while the sword still lies sleeping in the scabbard. But "to say this when the glittering sword is bare, and its point is quivering at our heart—here is the patience and faith of saints."

"Sayest thou then to all who will to hearken—
The Saint's star grows not dim,
But still through clouds that climb and deeps that darken

Is visible to him,—
Still when the sunset comes, He taketh order
To whom the right belongs
To send His own away across the border
Silverly and with songs?"

Nay! God prepares His kings for coronation
Not as might you or I,
And being wondrous, works His preparation
For kingship wondrously.

Not always is the triumph of the sainting
That which our hearts expect,
Tearfully, roughly, doubtfully, and fainting,
How many souls elect

Pass out from hence within the lifted curtain,—
Roughly into the smooth,
Doubtfully into the forever certain,
The circumfulgent truth!

Tearfully, tearfully, becoming tearless
When trouble's all but o'er,
Fainting when well they might at last be fearless,
Seeing they touch the shore.

Questioning hard by the school unemulous
Where half our questions cease,
Scarcely a bow-shot off their beds, and tremulous
Upon the verge of peace.

Head drooping just before the crown is fitted,
Eyes dim at break of day,
Feet walking feebly through the meadows wetted
With April—into May."

HOPE.

"I Must Not Complain."

Six years before his death, Sir Walter Scott, the great English novelist, through the failure of his publishing house, was thrown into a debt of \$600,000. He could have compromised with his creditors, who would gladly have accepted his personal share of the debt, but his sense of honor would not permit this. "Every pound must be paid!" he declared. Thus, at an age when many would have said, "I must have rest," he plunged anew into work, and, pen in hand, toiled on through the six years, from twelve to sixteen hours a day, giving to the world meanwhile some of his best books. At last the day came when the final pound was paid, and Sir Walter was a free man, with unstained honor. But his health was ruined; he could no longer walk; his hand had become enfeebled so that he could not easily grasp his pen. In his inability to do so, toward his last day, he sank back in his chair in tears, and, recovering himself, said to his daughter, "Put the pen in my hand again!" They did so, but the hand refused to hold it. "The life-work of the great hero was done! But he exclaimed, "I must not complain!" And complain he did not. His ambition was realized, and he had given to the world a legacy that should gladden it forever.

What Have We Done?

If we sit down at set of sun,
And count the things that we have done,
And counting find
One self-denying act, one word
That eased the heart of him who heard,
One glance most kind
That fell like sunshine where it went,
Then we may count the day well spent.

But if through all the fleeting day
We passed our heart by cost and care,
If through it all
We did no thing that we can trace
That brought the sunshine to a face,
No act most small

That helped some soul, and nothing more,
Then count that day as worse than none.
—Ella Wheeler Wilcox

A Dead Bird.

"The time of the singing of the birds was come," and even in so unromantic a place as the city park, I was revelling in their music.

But suddenly my enjoyment of their merriment ceased, and all the beauty of the time and place was overshadowed.

Coming swiftly toward me, down the graveled path, was a gorgeously-arrayed maiden, and perched airily among the flowers and laces of her hat was a dead bird.

I dropped upon a bench near by, and when she came up to me, she stopped to make some trifling inquiry, and then seated herself sociably beside me. Very gently and politely I asked her if she did not wish she could give life to the beautiful bird on her hat, that it might fly and sing with its comrades. She stared at me, but before she could reply, I said:

"It seems to me we women ought not to take a life that we cannot restore, just for our own adornment."

Then she found voice with the old plea:

"Oh, but you know, this bird is only a manufactured one."

"Manufactured," I repeated, "but out of what? Not wood or stone? You will scarcely deny that its body and wings are made of feathers, neither will you expect me to believe that any one of the edible fowls furnished them. Manufactured it may be, but out of parts of birds. Only the other day there was an advertisement in a Philadelphia paper for the skins of thirty thousand birds, and I heard, afterwards, that the contract to furnish these skins was taken by some men from the little State of Delaware. So, soothe your conscience no longer with the specious word 'manufactured,' for the natural birds represent less waste of bird life than the made ones, where three or four birds are sacrificed to form unnatural combinations. Milliners, 'wise in their generation,' use this high-sounding term to lull to sleep the conscience of the purchaser."

"But," said the maiden, with the air of bringing forward an unanswerable argument, "didn't you read in the paper the other day that Mrs. —, she who was once 'the first lady in the land,' and who has long been upheld as a model of gentleness and sweetness, wore at a certain dinner a costume of violet and white, and that her bonnet was a violet velvet toque trimmed with gulls' wings? And look here, too," she continued, unrolling a parcel, "here is a magazine a friend lent to me, and what do you think of that?"

She extended toward me a well-known illustrated publication, and pointed to the picture of a popular New York author, whose stories are full of gentle, womanly sentiments, and on her graceful head was a bonnet decked with birds' wings.

"Well," I said feebly, "that doesn't make it kind, does it? Would not the birds give up their lives as reluctantly for a social queen, or a talented author, as for yourself?"

"Oh, I suppose so," she said lightly, "but if women like these will wear birds and wings, of course there is nothing for the rest of us to do but to follow suit; but really," she continued, putting her hands up to her hat, "I don't enjoy this bird half as much as I did a few minutes ago. I can almost feel these wings trying to get loose and fly away, and I don't believe I'll ever buy another bird, even if they tell me it is manufactured out of goose quills."

At this moment a rose-breasted grosbeak alighted in the top of a tall oak near us and began his plaintive evening song.

"Hark," said the girl, "that grosbeak is singing a dirge over this dead bird in my hat. Oh, I cannot bear it."

And, rising, with swift feet she passed from the park.

As I watched her disappear, I wished most ardently that every wearer of bird millinery might hear in every feathered songster's lay a requiem over the lost life, joy and freedom represented by that martian but so-called ornament, a dead bird.—(Clara J. Denton.)

A Humane Pater.

One reads so frequently of the paternal boot as applied to the undesirable youthful suitor that it is a pleasure to chronicle the more humane method adopted by a wealthy Glasgow merchant for choking off a "follower" of his daughter. The girl was very young, so was the follower, but, nevertheless, he called formally on the object of his affections. The merchant and his wife entered the room, the latter bearing a glass of milk and a huge slice of bread spread with butter and jam. "Now, dear, run away to bed," said the kindly mother to her daughter. "It's time that all good girls should be in bed." Then the Glasgow merchant addressed the astonished young man: "Now, youngster, you drink that glass of milk, and take that slice of bread and jam to eat on the road home—and hurry, for your mother must be anxious about your being out so late by yourself." The young man did not call again.

Ingle Nook Chats.

My dear Guests,—

"When the warm sun, that brings
Seedtime and harvest, has returned again,
'Tis sweet to visit the still wood, where springs
The first flower of the plain.

"I love the season well,
When forest glades are teeming with bright forms,
Nor dark and many-folded clouds foretell
The coming-on of storms."

Who is this merry-eyed, sprightly maiden playfully appearing, now with sunshine and peals of laughter, now coquettishly veiling her mirth beneath assumed cloud-frowns and rain-tears? Ah! surely we know her well, for none other possesses just such charms—charms the more valued for their very fitfulness and uncertainty. This fair sprite is April, the merriest daughter of the season of new life. Under her magic touch the invigorating sap, released from the frost king's thrall, pulses triumphantly through all the veins of Nature's myriad children, the trees, the grass, the flowers.

"Sweet April! many a thought
Is wedded unto thee as hearts are wed;
Nor shall they fail; till, to its autumn brought,
Life's golden fruit is shed."

We grumble sometimes at the heat of summer; again at the cold of winter; and even the temperate springtime occasionally receives a share of our blame, because, perchance, she slyly gives us a sudden shower-bath when we had expected a full day's sunshine. Despite all our railing, deep down in our hearts we love each and every one of the seasons as they come, and none holds a warmer place in our affections than the bonnie, bonnie spring, when all the flowers awaken to gladden us with their sunny faces, and when the merry songsters whom winter's approach had driven away, return to enliven our days of toil with their sweet orisons. Pert robin red-breast has already made his appearance and saucily challenges our admiration, while the less-hardy swallow, gray-bird, oriole and canary will soon follow in his wake.

What music dwells in the first bird songs of early spring! Or is it but fancy, after their long absence, that makes them seem sweeter than at any other time?

My dear "Chrysolite," I enjoyed your nice letter, as I should also have enjoyed accompanying you on your tour through the "Advocate" building; I had that pleasure a few years ago, and found it very interesting indeed. Do you like to look at machinery? I do. The linotype was a continual source of wonder to me. The accuracy with which each tiny part does its own particular duty, and the serious result of its failure to do so, might furnish us with subject for reflection as to our own faithfulness in small things; for if a small thing, if a small lifeless piece of steel or wood possesses such power, how much more have we, who are endowed with mind and soul? How much more serious, too, will be the effect of our failing to fill the place for which we were intended? The smallest screw in any great piece of mechanism may be of just as much importance as the supposedly greatest part of the same, inasmuch as the perfect working of this mechanism is dependent upon that screw's keeping in proper place some other part of the great whole, which if deranged would render futile the perfect action of every other part. In like manner, it is not so much the place we fill, as the manner in which we fill it, that is of moment in the mechanism of our lives.

"The way at times may dark and dreary seem,
No ray of sunshine on our path may beam,
The dark clouds hover o'er us like a pall,
And gloom and sadness seem to compass all;
But still with honest purpose toil we on,
And if our steps be upright, straight and true,
Far in the east a golden light shall dawn,
And the bright smile of God come bursting through."

OUR COMPETITIONS.

Maud Jose acknowledges receipt of prize won in Contest XVI., and expresses much satisfaction with the same.

Our drawing contest has brought to light artistic ability beyond my highest expectations, and I am much pleased with results so far. The time having been extended to April 15th, I expect to receive many more good specimens of work.

CONTEST XIX.

We offer three prizes for the best original poems on the subject, "A Day in June," all work therefore to reach Pakenham not later than May 25th. Class I. will include those over 18 years old; II., over 14, and Class III., 14 years and under. One prize offered in each class. Poems must not exceed thirty lines, but need not necessarily contain so many. Knowing that there is much dormant literary ability among the frequenters of the Nook, I trust this contest will meet a warm response, and I look for some very good specimens.

THE HOSTESS.

Ingle Nook Chats, Pakenham, Ont.

On Some History-Telling Stones.

Mollie, in her notes, is always able to tell us something of the past—of histories in stones, in old castles, old monuments, or old ruins, each with its story full of vivid interest, each with its trace of man's handiwork in various stages of decay or of consequent renovation, but a new country is so busy history-making that it seems as if it were in too great a hurry to stop and build its stone records to be the pride and delight of ages to come. But Canada is awakening at last to the claims of coming generations, in token of which historical societies are being formed in many centres, and now the movement has been initiated, we have every reason to hope that it will not be allowed to die out. Our pioneers are fast passing away, and with them much precious information must perish if no steps are taken to pre-serve it. It is delightful to sit around the ingle nook at the old homestead and hear the story direct from his own lips of how grandad came as a boy to Canada, and how his father, and perhaps his father's father, had hewn a pathway through the wilderness, built first the log shanty, then the four-roomed house, and, at last, the comfortable home, with all its befitting farm surroundings, bespeaking present wealth and prosperity. But grandad's voice may soon be stilled for us, and we shall ever afterwards be saying, "Oh, why did we not ask him about this, or about that: why did we not write down, then and there, what he told us? Memories get confused, and in the course of time are hardly to be trusted for perfect accuracy. The backbone of our Dominion has taken form and shape in the backwoods homes of our land. Our big cities of to-day have all begun from the log shanty, until they have attained into the full growth of which their citizens are so proud. Every nation should have its carefully preserved archives. Every family should have its written family traditions, for it is out of families that nations are hewn. The recorded bravery, honesty, strength of purpose, or even of the simple patient perseverance of a forbear in the long past cannot be without its influence upon the young lad of the present. The gallant struggles which marked epochs in the history of the Dominion must ever be an inspiration to its defenders to-day. We rejoice, then, that on the Plains of Abraham, in Quebec, and on Queenston Heights, in Ontario, there stand two monuments, which will tell to all generations to come that what Canada has done Canada will do to uphold the honor of its flag and country. Let us, then, preserve such monuments as we have, and endeavor in future to mark every event of national or local importance by some tangible token that the Canada of its day recognized its value, and would not allow its story to sink into oblivion. Last autumn, in sending some holiday jottings from Cambridge, near Boston, Mass., I lamented that want of space prevented my giving all my notes in full. Now, what I did want to tell about then, but could not, was somewhat along the lines of my present subject. I had been told that Cambridge was rich in inscriptions, that every here and there would be found a stone marking an event which meant something in its history and development. It was often but a small stone, simply telling the fact itself, or it was an old colonial house or church, with a stone slab let in, with its date and the name of some occupant known to fame. The Harvard buildings were each named, of course, and had a special interest of their own, but it is not of them I speak. In the nature of things, I could not expect to find on this side of the Atlantic, anywhere, the time-worn memorials of nearly a thousand years ago as I had seen them in and around our fine old cathedrals in the dear Old Land, but in Cambridge, U. S., I found some dated from 1630 onwards, such as: "Thomas Dudley, founder of Cambridge, Governor of Massachusetts, lived here in 1680"; "Site of first meeting-house in Cambridge, erected A. D. 1630"; "Apthorp House, built in 1766; General Burgoyne and his staff officers were confined here, prisoners of war, 1777." In Brattle St., opposite Washington school, was "First school in Cambridge. Near this spot stood the spreading chestnut tree and the smithy referred to in Longfellow's poem, 'The Village Blacksmith.'" "Meeting house: here Washington worshipped in 1775; Constitutional convention of Massachusetts held here in 1799; Lafayette welcomed here in 1821." This stands in Harvard Square. . . . On a little triangular bit of sward, at crossroads within the town limits, still grows an old tree thus inscribed: "Under this tree Washington first took command of the American Army, July 3rd, 1775." Again, "Oldest church building in Cambridge, built in 1760; occupied by continental troops in 1775." Further on, "These guns were used by the continental army in the siege of Boston during the American revolution." This inscription is on the column around the monument. On the corner of Dunster and Winthrop streets we find, "Built in 1762 the house of John Hicks, who was killed by British soldiers, April 19th, 1775. Used by General Putnam for army office." Within the College grounds is "Wadsworth House, built 1726,

occupied by Harvard Presidents from Wadsworth to Everett, and in July, 1775, by Washington." In the law school grounds: "Here assembled, on the night of June 16th, 1775, 1,200 continental troops under command of General Prescott. After prayer, by President Langdon, they marched to Bunker Hill." Also "Site of the headquarters of General Ward and the committee of public safety, 1775"; "Birthplace of Oliver Wendell Holmes"; "On this spot, in 1630, stood an ancient oak, under which were held colonial elections."

Besides the above, there are probably many similar inscriptions, and perhaps it is to these faithful historians who thus, chipped out in stone, left in brief sentences such valuable traces of a troubled but finally-victorious past, is due in part the deep love, pride and veneration with which Boston and its neighborhood is enshrined in the hearts of its people; feelings which, in some degree, are shared even by the aliens who have more lately come to live amongst them. They, too, like to say, "I live in Boston," or, "My home is in Cambridge," and they enjoy, rather than resent, the frequent banter which this pride in their refined surroundings seems to have provoked. A Cambridge friend, who had helped me most kindly in what she called my "search for tombstones!" has since sent me the following, which will at least serve to illustrate my last assertion, and perhaps be amusing to our readers as a wind-up to my little story in stones.

It runs thus simply—"I'm from Boston."

"A mile from the City of Boston, on the old State road, has stood for many years a milestone marked in fading and storm-beaten characters: 'I'm from Boston.' One day a lady from Boston, now deceased, returned from a walk in tears. 'Oh, I have had such a touching experience,' she said. 'A little way out from the turmoil and unrest of the town, I came across a lonely grave—weeds had overgrown it, and the mound was sunken even with the surrounding earth. I sat beside it for a long time and laid flowers upon the undistinguishable resting-place of what was once, I am sure, a poet. For the inscription upon the mossy headstone was so unique, so eloquent, so sublimely touching—it merely said, 'I'm from Boston!'"

This episode was afterwards rendered in verse, entitled

AN EPITAPH.

"A lady (who will doubt her home?).
Whose blood was Bay State's bluest,
Once near St. Botolph's town did roam,
Among the suburbs newest,
Beside the way she saw a stone,
Small, neat, of plainest granite,
And on one side, with moss o'ergrown,
A lettering; thus ran it:
'I'm from Boston.' 'Ah!' she cried,
'What more could he desire?
When, after Boston's joys, he died,
And went up one step higher,
A traveller lies here at rest
Who life's rough ocean tossed on:
His many virtues all expressed
Thus simply: 'I'm from Boston.'"
—Anonymous.

H. A. B.

Stayin' Up Late.

Sometimes, when bed-time comes, I tease:
"Please, daddy, let me stay up late,
I ain't a single soap o' tired;
Jack Smith don't go to bed at eight."

An' daddy looks at mammy, nen,
An' of she wiggles with her head
He says, "All right, another hour
Before you hafter go to bed."

An' nen I feel lies like a man
(I tell you what it's hard to wait
Ter grow—a feller feels so small
When he has to go to bed at eight).

So me 'n' th' pup play drivin' horse
Until th' pup gets tired o' that,
An' he don't wunter play no more,
An' goes to sleep in daddy's hat!

An' nen I ask dad why it is
That I don't have hair on my face
Like him, An' who he thinks 'd win
Ef me an' Jack Smith run a race.

An' nen dad says, "I was mistook
In lettin' you stay up, I fear."
An' nen it's only half past eight—
An' nen—an' nen—th' mornin's here!
—From Harper's Bazar.

Blind; Oh, So Blind.

Isn't it strange how people
Gaze with enraptured face
On the cunning work of the painter
Limning sweet nature's grace,
And yet with eyes that see not,
Nor souls that beauty find,
Live in the world the painter paints,
—Blind; oh, so blind?

Isn't it strange how people
Thrill in the keenest way
To the stories of life and its living
Told in book or in play,
And yet, with darkened vision,
To naught of their charm inclined,
Live in the world where the stories live,
—Blind; oh, so blind?

Ripley D. Saunders



VINCENT & MACPHERSON,
The Leading Western
Undertakers and Embalmers.
Rosser Avenue, Brandon.

GOSSIP.

The Wawanesa Agricultural Society intend holding their annual summer fair on July 17th. The officers of the Society are: President, Alex. Nasmith; 1st and 2nd Vice-Presidents, R. B. Fawcett and Jas. Elliott; Directors—F. O. Fowler, J. E. Green, Chas. Leachman, Wm. Patterson, Wesley Rothwell, J. M. Henderson. Sec.-Treas., W. T. Johnston. Representative to Brandon Fair Board, J. E. Green.

ENGLISH JERSEYS SELL HIGH.

At Lady de Rothschild's annual sale of Jersey cattle, on March 20th, from the Rookery herd at Aston Clinton, Bucks, 290 guineas (\$1,650) was realized for the prize cow, Carol, purchased by Mr. A. Miller-Hallett. Mrs. Ratcliffe took Coralie at 115 guineas, and Lady Rowena at 105 guineas, while Sir T. Coach took Wild Rose at 110 guineas. The 56 head sold averaged close to £10. It is worthy of note that last year 34 cows in this herd yielded an average of 569 gallons milk. In 1900, 34 cows averaged 591 gallons, and in 1899 25 cows averaged 563 gallons. The highest individual yield in one of the three years was made by Rosebud, giving, in 1899, 8,037 lbs. or almost 804 imperial gallons. In the two succeeding years she gave 793 and 765 gallons, respectively.

Mr. E. Hysop, of D. Hysop & Son, Landzer Stock Farm, Killarney, Man., writes, under date of March 21st, as follows: "Just a word to say. We are all alive after the storm. Stock also all doing well. Lambs coming in twos and threes. Have sold our entire flock of sheep, to be delivered this spring. Shorthorn calves also arriving, all heifers so far. Have sold some work horses this winter and I am leaving this a. m. for the famous Oaklawn Farm of Messrs. Dunham, Fletcher & Coleman. I purpose in company with Mr. H. E. Waby, of Holmfild, Man., bringing back a consignment of Percheron and French Coach horses and mares of the very highest quality. This branch of horse-breeding has been neglected in this country, and there is a universal demand from our agriculturists for this stamp of horse (the Percheron, I mean), possessing as they do all the weight and strength of the Clyde with superior activity. In this Western country, of long distances, and big farms this is what we require. We are avoiding the light colors, however, as there exists a prejudice against white and greys. We realize the importance of getting only the best, and therefore we are dealing with 'Oaklawn,' the acknowledged peer of horse-breeding establishments."

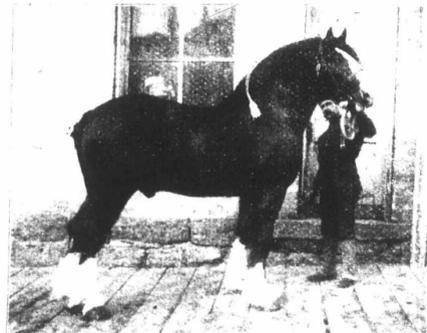
CLOTH OF GOLD GOES WEST.

Mr. O. Sorby, Guelph, Ont., has sold to Messrs. Watson & Co., Oxbow, N.-W. T., the fine five-year-old Clydesdale stallion, Cloth of Gold 2959, 8962, by Lord Charming 7564, dam Madge III., by Cedric, by Prince of Wales. He is considered by competent judges to be one of the best horses in Canada. He has won the following prizes: In 1900, 1st prize at Illinois State Fair, 1st prize at Iowa State Fair; in 1901, 1st prize at Guelph Spring Stallion Show, and 2nd at Elora Spring Stallion Show; 2nd at Toronto Spring Stallion Show; 1st at Toronto Industrial, 1st and sweepstakes at London, second at Ottawa. He also sold to the same party a yearling stallion, Ornament, and a two-year-old filly, Princess Choice.

J. E. Smith, Brandon, reports the following sales since returning from Ontario, March 6th: To Mr. Alex. Palen, of Rapid City, the Shorthorn bull, Lord Stanley 61st, sire Lord Stanley II., dam Brandon Primrose. Mr. Palen, though not breeding thoroughbreds, has a large herd of high-grade Shorthorns, and wishes to have his next crop of calves a step in the ladder upwards. He has one of the largest farms in the district, and, although in the past has been a very successful wheat-grower, has decided to grow only coarse grains and consume everything by feeding cattle. To Mr. Joseph Taylor, of Elgin, the Shorthorn bull, Lord Stanley 47th, sire Lord Stanley 14th, dam Clara of Smithfield; sire Windsor = 6456 = (56771) (imp.); g. dam Clara, by Baron Lenton = 1222 = (49081) (imp.); g. g. dam Claretta (imp.). The Claras are one of the favorite families of Scotland, and Baron Lenton was a pure Cruickshank bull imported by the late J. I. Davidson. This is the third bull Mr. Taylor has purchased from the Smithfield farm, and he has placed him at the head of his promising herd of Shorthorns. To Mr. W. C. Thorburn, of Broadview, the Shorthorn bull, Golden Measure III., a prizewinner at Brandon and Winnipeg summer shows, 1901; sire Golden Measure (imp.), dam Rosalie of Smithfield, by Lord Stanley II.; g. dam Roan Princess (imp.), first-prize winner at the Highland Society's Show in Scotland. Also two carloads of high-grade Clydesdale geldings and mares, sold to farmers in the Brandon and Beresford districts for agricultural purposes. For the past few months I have advertised in your journal farm lands for sale or to put on shares, and I am pleased to state that since the first of January I have disposed of twelve parcels, I handle nothing but my own lands, do not sell on commission, and still have a number of sections for sale or to rent on shrewd improved farms with buildings and land ready for crop. The list of lands disposed of is as follows: Wm. Paine, 320 acres; J. E. Pearson, 640 acres; Stanhope at Shields, 320 acres; John Clark, 320 acres; J. & W. Polson, 160 acres; W. J. McCool, 160 acres; G. H. Foreman, 160 acres; Arch. McIntyre, 320 acres; J. K. Campbell, 320 acres; James Holmes, 320 acres; Howard F. McKay, 320 acres; Arthur Lamstead, 180 acres.

**NEW IMPORTATION OF HIGH-CLASS
Clydesdale and Percheron Stallions**

ARRIVED AT BRANDON, MAN., FEB. 22.



PRIZEWINNERS AND THE GETS OF PRIZEWINNERS, AND EVERY ANIMAL THOROUGHLY GUARANTEED.

Parties in want of first class stallions, with size, substance, quality, action and fashionable breeding all combined, should see these horses, or communicate at once with

JAMES SMITH,
BRANCHER HOUSE,
BRANDON, MANITOBA.
First come, first served.

Alex. Galbraith, Janesville, Wisconsin.

— Above is probably the best lot of stallions ever offered for sale in Manitoba.



**THE MOST PROFITABLE INVESTMENT
ON THE FARM**
IS DECLARED BY EVERY USER OF
**THE NATIONAL
CREAM
SEPARATOR**

We invite every farmer with four or more cows to compare the NATIONAL in practical operation with any other cream separator for beauty of design, convenience in setting up, operating and cleaning, satisfactory work, time saved, finish and durability.

No gold or bronze medal humbug advertising about the National.

THERE IS NO GOOD POINT OF VALUE FOUND IN ANY OTHER SEPARATOR THAT IS NOT EQUALLED OR EXCELLED BY THE NATIONAL—the most salable separator made.

If you contemplate the purchase of a machine, our best recommendation is for you to ask one of your neighbors who has the National—its users are our strong advertisers.

An investigation as to its merits we confidently assert will be to your advantage. The National is a Canadian machine, made by the Raymond Mfg. Co., of Guelph, Ont., and full stock of repairs always on hand at Winnipeg.

National No. 1, capacity 330 to 350 lbs. per hour.
National No. 1 A, capacity 450 to 500 lbs. per hour.

JOS. A. MERRICK, AGENT MANITOBA AND NORTHWEST,
117 BANNATYNE STREET, EAST,
WINNIPEG, - - - MANITOBA.
AGENTS WANTED IN UNREPRESENTED DISTRICTS.

**FOR SALE:
DRAFT HORSES
OF ALL AGES.**

OWING to lack of range, we have decided to cut our herd of draft horses down to one-half, and sell 2,000 head at greatly reduced prices. This great selection of mares, geldings and growthy youngsters of all ages represents the results of seventeen years of judicious mating to strictly high-class Percheron, English Shire, Clydesdale and Hackney sires. We can furnish high-grade brood mares and fillies with foal to imported and home-bred registered stallions, and have always on hand a large and first-class selection of registered and high-grade Percheron and English Shire stallions, also registered mares and fillies of same breeds. Correspondence solicited. Inspection invited.

LITTLE MISSOURI HORSE COMPANY,
W. G. CLARK, SUPT. GLADSTONE, NORTH DAKOTA.

**BARGAINS
IN
STALLIONS!!**



Comprising winners at the International Live Stock Show, Chicago, 1901; also in Scotland. All must be sold to clean out. Intending purchasers should not miss this chance of buying first-class individuals of the very best breeding at reasonable prices.

For all particulars apply to
J. A. S. Macmillan,
P. O. BOX 483,
BRANDON, MANITOBA.

PRAIRIE HOME STOCK FARM

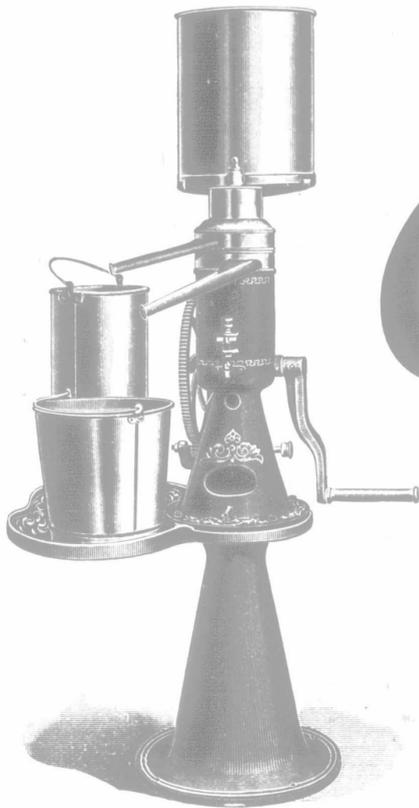


CLYDESDALES, SHORTHORNS, SHROPSHIRE, BERKSHIRES and YORKSHIRES.

Shorthorn herd headed by Judge, Imp. Jubilee, and Ribbon's Choice, Ayrshires of the best quality; herd headed by Surprise of Burnside. Oak Lodge Mighty 7th and a large number of high-class sows represent the approved bacon type of Yorkshires. The Berkshire boar, Victor (Teasdale), sweepstakes at Brandon and Winnipeg, 1900, and 30 sows of faultless conformation and superior breeding, make up the Berkshire herd. Farm one mile from the station. Visitors welcome. Prices and quality right.

THOMAS GREENWAY, PROPRIETOR,
Jas. Yule, Manager. Crystal City, Man.

Please Mention Farmer's Advocate.



Empire

EASY -
RUNNING
Cream
Separators

Are the Simplest, Most Durable, and the Closest Skimmers. You are not making a mistake when you purchase one.

The Manitoba Cream Separator Co.,

H. P. HANSEN, MANAGER.

187 LOMBARD STREET, WINNIPEG, MANITOBA.

Nome Bank Farm
OF LARGE ENGLISH BERKSHIRES

Are still to the front. Some grand sows, bred for the spring trade. Have two fine litters ready to ship about March 15th. Now booking orders. Call or write for prices.

Jos. Laidler, Neepawa, Man.

LOCAL AGENTS WANTED TO REPRESENT

THE WESTERN FARMERS'
Live Stock Insurance Co.

HEAD OFFICE: Winnipeg,
ROOM 251 GRAIN EXCHANGE.
Chartered by the Manitoba Govt. and the N.-W.T.
P. O. Box 1382.
D. PRITCHARD, President.
H. S. PATERSON, Secretary.

HEREFORDS.

The range favorites. Good rustlers and feeders. Prizewinners either male or female, for sale.

JOHN WALLACE, CARTWRIGHT, MAN.

GALLOWAYS:

Bulls and heifers for sale.

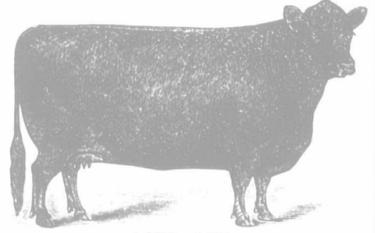
APPLY TO
T. M. CAMPBELL,
"HOPE FARM,"
St. Jean Baptiste, Manitoba.

Herefords.

The meat-makers. Range favorites and stocker-getters. FOR SALE: bulls of the right age and type. Also Barred Rocks—eggs or chickens.

FRED WEST, DELEAU, MANITOBA.

Aberdeen - Angus Cattle.



LADY AMY.
Bulls and heifers of all ages for sale. 300 head to select from. Farm 3 miles from Deleau and 10 miles from Oak Lake. **JAMES D. MCGREGOR,** Brandon P. O., Man.

RIVEREDGE FARM.
Shorthorn Cattle and Standard-bred Horses
Herd headed by Sittyton Stamp (imported). Females bred from or tracing to Windsor (imported).

A. TITUS, NAPINKA, MAN.



"What a Wise Old Chap!"
He has left his hide in good hands. Send for our circular in reference to custom tanning. We send samples of work with circular.

CARRUTHERS & CO.,
TANNERS,
and dealers in hides, wool, sheepskins, furs, tallow, etc.
9th Street, Brandon, Man.

Thorndale Shorthorns.

25 BULLS, and about
100 FEMALES, of all ages, to choose from.

JOHN S. ROBSON, Manitou, Man.

D. FRASER & SONS,

EMERSON, MAN.
Breeder and Importers of Durham Cattle, Shropshire and Southdown Sheep, and Pure-bred Poland-China Pigs a specialty. Young stock for sale.

SHORTHORNS

I am offering three red bulls, one aged, of the heavy-fleshed type, also well-bred females. LEICESTERS of both sexes for sale. **GEO. ALLISON,** R. R. STATION, ELKHORN, C. P. R. Burnbank, Man.

SHORTHORNS FOR SALE

of Scotch breeding, seven bulls and forty cows and heifers, mostly all in calf or calf at foot. A few Clydesdales of both sexes, **Geo. Rankin, Melrose Stock Farm, Hamiota, Man.**

OAK GROVE FARM.

Shorthorns and Yorkshires.

MASTERPIECE 23750, red roan, by Grand Sweep (imp.). Three young bulls by Masterpiece, and heifers by Kunkle Duster (imp.), Village Hero and Masterpiece.
Improved Yorkshire sows in pig. Boars fit for service. Orders booked now for young pigs. Pairs not akin.
White Plymouth Rock eggs.

JAMES BRAY, LONGBURN, MANITOBA.

Shorthorns, Tamworths and Yorkshires FOR SALE.
Young pigs, both sexes, both breeds. Yorkshire yearling boar. White Wyardotte and Indian Game cockerels and eggs.

W. G. STYLES, ROSSER, MAN.

CHOICE
Shorthorn Bulls
FOR SALE.

All nearly 2 years old. Apply for pedigrees and particulars.
FOREMAN, Castle Farm, TEULON, MAN.

FOR SALE:

SPELTZ, FLAX, RYE, BROME GRASS, AS WELL AS OATS, BARLEY AND WHEAT. All of the best.

W. J. LINDSAY, Box 69, BRANDON, MAN.

Maple Grove Stock Farm

SHORTHORN BULL CALVES FOR SALE.
From three months to eight months old. Sired by Lord Stanley 25th—29247—-. Also have left a few

P. R. COCKERELS.
WALTER JAMES, ROSSER, MAN.

15 mile west of Winnipeg, on main line C. P. R.

ROBERT I. CRISP,

SOURIS, MAN.
LIVE STOCK AUCTIONEER.

Sales conducted in any part of the Province. Apply early for terms and dates.

J. H. KINNEAR & SON, SOURIS, MAN.,

BREEDERS OF SHORTHORNS.
IMP. BARON'S PRIDE 28855 head of the herd.

SHORTHORNS

Have sold all our young bulls for this season. Have still some fine young heifers for sale. Call and see them, and compare prices and quality with what others are offering. Correspondence solicited.
PAULL BROS., Killarney, Man.

Lakeview Stock Farm.

SHORTHORNS FOR SALE.
I am offering for sale bulls and heifers of good quality. Cheap if sold soon.

THOMAS SPEERS,
OAK LAKE, MANITOBA.

SHORTHORNS

Gold Medal herd of 1890-1900. Bulls in service are: Nabbeman (imp.) and Topsman's Duke. Some good young bulls for sale.
J. G. BARRON, Carberry, Manitoba.

LAKESIDE SHORTHORNS FOR SALE

3 young bulls, 11 to 14 months old; quality and prices right.

R. McLENNAN, HOLMFIELD, MAN.

Shorthorns and Clydesdales.

One Shorthorn bull for sale.
J. G. WASHINGTON, Elysee Stock Farm, Ninga, Man.

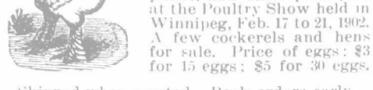
YORKSHIRES!

Bred sows all sold. Orders taken for spring pigs from large and matured sows. Send your orders in early and have first choice. Price: \$10 each, \$18 a pair. Address:

KING BROS., Wawanesa, Man.

THERE ARE GIANTS IN THESE DAYS.

BIG LIGHT BRAHMAS.



My birds won the Lieut.-Governor's cup (value \$100), Dreyfus cup (value \$100 and gold medal), the Brandon cup, the Winnipeg arm chair, the special for best breeding pen, special for best display, first for cockerel, cock and pullet, and other prizes, all at the Poultry Show held in Winnipeg, Feb. 17 to 21, 1902. A few cockerels and hens for sale. Price of eggs: \$3 for 15 eggs; \$5 for 30 eggs.

Shipped when wanted. Book orders early.
J. W. HIGGINBOTHAM, VIRIDEN, MANITOBA

Viriden Duck Yards.



Mammoth Pekin Ducks.
No more birds for sale, having completely sold out. Can now supply eggs for setting in any quantity. Write for catalogue; correspondence solicited. Agent for Cyphers incubators.

J. F. C. MENLOVE, VIRIDEN, MAN.

White Plymouth Rocks.

were each awarded 1st prize, Winnipeg Poultry Show, '02. Cock was 1st prize as cockerel, Toronto Poultry Show, '01. These are being peddled with highest scoring pullets in America. Eggs for sale.

E. SCARLETT, Oak Lake, Man.

Cock and Pullet

CHAMBERS' BARRED ROCKS ARE WINNERS.
 The shows prove it. Read the record. Has also Blk. Minorcas, Hamburgs, S. C. B. Leghorns, and S. L. Wyandottes. Eggs, \$2 a setting. See my exhibit at the next Grand show. Stock bred by me is fit to head any yard. Write for particulars.
THOS. H. CHAMBERS, Brandon, Man.

THE FARMER'S ACCOUNT BOOK
 Simple, complete, practical. Every page ruled for a specific purpose. Printed headings. No previous education necessary. Don't guess; have figures to prove what you are doing. Price, \$1.25, postpaid. If you breed registered stock, cattle, hogs or sheep, you should have our Private Herd Register; price, 50 cents. Circulars free. Address:
THE FRIMORE FARM, Box 62, Miles, Iowa.
 We breed Shorthorn cattle and Poland-China hogs.

Special Notice
CASH
 PAID FOR ALL STRICTLY FRESH BUTTER, EGGS AND POULTRY.
 WRITE TO
EVERTON & FRITH,
 P. O. BOX 338, WINNIPEG.

SPELTZ
 The most profitable feed grown.

SEED FOR SALE:
 75c. per bushel of 50 lbs. at our farm, section 15, 15, 2 E., near Balmoral. Buyer's own bags or charged extra at cost.

Samples on Application.
 Apply to the
EXORS. OF ALEX'D McINTYRE,
 Room 203, McIntyre Block, Winnipeg, Man.

The Veterinary Association of Manitoba
 Under the authority of Secs. 18, 19, 20, 22 and 26 of the Veterinary Association Act, 1890 (53 Vic., Chap. 60), the following persons only are entitled to practice as Veterinary Surgeons in the Province of Manitoba, or to collect fees for the service rendered as such:—

Alton, A. L.	McGregor, Russell
Baker, G. P.	Russell, Wawanesa
Brand, F. J.	Wawanesa
Brocken, G. E.	Clan William
Clark, J. S.	Russell
Coxe, S. A.	Brandon
Cruikshank, J. G.	Deloraine
Dunbar, W. A.	Winnipeg
Elliot, H. James	Brandon
Fisher, J. F.	Brandon
Fowler, J.	Souris
Freel, B. E.	Ninaga
Golley, J. P.	Treherne
Graham, N.	Dauphin
Harrison, W.	Cypress
Hutton, J.	Alexander
Henderson, W. S.	Carberry
Hilliard, W. A.	Minnedosa
Hilton, G.	Portage la Prairie
Hinman, W.	Winnipeg
Hopkins, A. G.	Neepawa
Hurt, W. N. J.	Belmont
Irwin, J. J.	Stonewall
Lake, W. H.	Miami
Lawson, R.	Shoal Lake
Lipsett, J. H.	Holland
Little, C.	Winnipeg
Little, M.	Plot Mount
Little, W.	Boisvein
McFadden, D. H.	Emerson
McGillivray, J.	Manitou
McGillivray, C. D.	Binscarth
McKay, D. H.	Brandon
McLaughry, R. A.	Moosomin
McMillan, A.	Onk Lake
Martin, W. E.	Winnipeg
Monteith, R. A.	Killarney
Marshall, R. G.	Griswold
Murray, G. P.	Winnipeg
Nagle, J. W.	Morden
Reid, D. D.	Hartney
Robinson, P. E.	Emerson
Rombouzi, M. B.	Emerson
Roweroff, G. V.	Birtle
Rutledge, J. W.	Boisvein
Scurfield, R. C.	Manitou
Shouls, W. A.	Manitou
Smith, W. H.	Carman
Spider, J. H.	Gladstone
Stevenson, C. A.	Emerson
Stevenson, J. A.	Carman
Swenson, W.	Gilbert Plains
Taylor, W. R.	Carberry
Thompson, S. J.	Portage la Prairie
Torrance, F.	Winnipeg
Walker, J. St.	Killarney
Wells, J.	Minto
Whitby, H. F.	Glenboro
Whitinger, M. A.	Hamtota
Williamson, A. E.	Winnipeg
Young, J. M.	Rapid City
Young, M.	Manitou

The practice of the veterinary profession in Manitoba by any other person is in direct contravention of the statute, and renders him liable for prosecution.
F. TORRANCE, REGISTRAR.

Authorized Capital, **\$500,000.00.**
 Head Office, Wawanesa, Man.
THE WESTERN CANADIAN HAIL INSURANCE COMPANY
 By proper construction of and care in working about farm buildings, danger of loss from fire is reduced to a minimum. Nevertheless, the most careful farmers carry fire insurance, considering it folly to take chances. That you never had a fire is no evidence that you will not be burned out to-night.
 But how about insurance against hail? Foresight and care do not influence hailstorms. That you never had hail is no guarantee that it will not come your way this year. Then why take chances? It is not evidence of good judgment to do so. The cost is trifling. There is a business side to farming. This is a business proposition. Think it over.
JOS. CORNELL, SECRETARY AND MANAGER.

Canadian Northern Railway
LOW RATE
Settlers' One Way Excursions.
 TICKETS FROM
St. Paul, Minneapolis, Duluth, AND THE Superiors
 Will be sold via Northern Pacific and Pembina to all points on the
CANADIAN NORTHERN RAILWAY,
 March 11th, 18th and 25th, and April 1st and 8th.
 Home-seekers' round-trip tickets will be sold at reduced rates from Pembina and Emerson to all points on the Canadian Northern Railway, March 20 and 27, April 3, 10, 17 and 24, May 1, 8, 15 and 22.
 For further particulars apply to any Canadian Northern Railway agent, or to
GEO. H. SHAW,
 TRAFFIC MANAGER.

David Maxwell & Sons,
 ST. MARY'S, ONTARIO.
 PATENTED
STEEL ROLLER BEARINGS, IMPROVED DETACHABLE LINK, IMPROVED STEEL FRAME, COMBINED LEVER AND FOOT DRIVE.
 Improvements you will not find on other churns. Do you want the best? Then don't purchase until you see it. Sold by the leading wholesale houses in the Dominion



No.	CAPACITY.	Churns from
0	6 gl.	1 to 3 gl. cream.
1	10	1 to 5 gl. cream.
2	15	2 to 7 gl. cream.
3	20	3 to 9 gl. cream.
4	26	4 to 12 gl. cream.
5	30	6 to 14 gl. cream.
6	40	8 to 20 gl. cream.

SOLD BY ALL LEADING WHOLESALE HOUSES AND DEALERS.

The New Kentucky Interchangeable Shoe and Disk Drill
 meets exactly the demands of the farmer who wants both a shoe and disk drill and who does not wish to make the expenditure necessary for two drills. In case of the Kentucky one drill does the business. Our disk bearing—absolutely dust proof, specially chilled will wear as long as the disk and is only two inches wide over all, leaving abundant room for clearance of clods, sods, rubbish, etc. Disks easily set at any desired angle. Our Detachable Heel shoe is already too well and favorably known to tell about it here. Shoe heel may be instantly detached and sharpened at almost no cost. New heels cost less than sharpening old style shoes. Shoes and Disks easily and quickly interchanged on the New Kentucky Drill. Fit every condition of soil and all varieties of crops. All about it in our New Illustrated Catalogue. Copy mailed free. Ask for it.
Brennan & Co., S. W. Agricultural Works,
 Dept. 135, Louisville, Ky.
 These drills carried in stock and can be shipped from Brandon, Man.



The Weekly Telegram
 Has proved itself to be the indispensable family journal of Western Canada farmers. It contains all the news in a bright, readable form. Besides this service, it also gives the fullest and most reliable market reports and special features, prepared specially to meet the needs of the farming community.
DO YOU READ IT?
 If not, permit us to send you a sample copy. After examining it you will be unable to do without it.
ONLY \$1 PER YEAR
 Clubbing rates with your local or agricultural paper. Address:
THE Telegram Printing Co. (LIMITED),
 WINNIPEG, MANITOBA.

THE TORONTO GENERAL TRUSTS CORPORATION
 CAPITAL, \$1,000,000. HEAD OFFICES: TORONTO, ONT. ESTABLISHED 1882. RESERVE FUND, \$270,000.
 Branch Office: Bank of Hamilton Building, Winnipeg.
 PRESIDENT: JOHN HOSKIN, K. C., LL. D. MANAGING DIRECTOR: J. W. LANGMUIR. VICE-PRESIDENTS: HON. C. S. WOOD, W. H. BEATTY.
 Authorized to accept and execute trusts of every description, and to act in any of the following capacities, namely: EXECUTOR, TRUSTEE, ADMINISTRATOR, GUARDIAN, LIQUIDATOR, ASSIGNEE, RECEIVER and GENERAL AGENT.
MONEY TO LEND.—The Corporation has a large amount of Trust and other Funds to lend on Mortgage Security at the Lowest Current Rates, either on first-class City Property or Improved Farms in the Provinces of Ontario and Manitoba.
MANAGER WINNIPEG BRANCH: JAMES DAVEY.

BRICK MACHINES
 WRITE FOR CATALOGUE AND PRICES.
THE BURRIDGE CO'Y,
 OFFICE AND WAREHOUSE:
 132 PRINCESS STREET,
 WINNIPEG, MANITOBA.

LIGHNING HAY PRESSES
 HORSE AND STEAM POWER CATALOGUE
KANSAS CITY HAY PRESS CO
 439 MILL ST. KANSAS CITY MO
THE OLD RELIABLE



GOSSIP.
 Owing to lack of patronage, the Government have decided to discontinue for the present running the creamery at Maple Creek. Any patrons that care to continue supplying cream may send it to the creamery at Calgary.

Manitoba Commission Co'y,
 LIMITED, LICENSED AND BONDED.
 Consign your grain and save middleman's profit. Perfectly reliable.
 251 GRAIN EXCHANGE, WINNIPEG.
 P. O. BOX 1382.
 H. S. PATERSON, MANAGER.
45,000 RUSSIAN POPLARS AND WILLOWS.
 20,000 Petrowsky Poplars, 10,000 Wobstll Riga Poplars, 5,000 Russian Golden Willows, 5,000 Russian Laurel Willows, 5,000 French Laurel Willows.
 We are offering the above quantity of beautiful, healthy, well rooted, young Russian trees, about two feet high, for next spring's planting, besides a good stock of small fruits, flowering shrubs, Virginia creepers, etc. For pretty trees, very hardy and fast growers, there is nothing that compares with this Russian stock. Send for descriptive price list.
CALDWELL & CO.
 "Virden Nurseries," VIRDEN, MAN.

...DALES.
 ...MAN.
 ...DALES.
 ...MAN.
 ...MAS.
 ...LIEUTENANT.
 ...\$1000.
 ...and
 ...Brandon
 ...armchair.
 ...breeding
 ...at di-play.
 ...cock and
 ...prizes, all
 ...w held in
 ...to 21, 1902.
 ...and hens
 ...eggs: \$3
 ...or 30 eggs.
 ...es early.
 ...ANITOIA
 ...ards.
 ...m moth
 ...in Ducks.
 ...more birds
 ...ale, having
 ...delately so'd
 ...Can now
 ...ly eggs for
 ...ng in any
 ...tity. Write
 ...atalogue:
 ...sponder ce
 ...ted, Acen't
 ...y phers in-
 ...ters.
 ...F. C.
 ...MLOVE,
 ...RDEN,
 ...MAN.
 ...Pullet
 ...d 1st prize,
 ...Show, 02-
 ...ze as cock-
 ...lby Show,
 ...ing pennon
 ...ring pullets
 ...is for sale.
 ...Lake, Man.

RAW FURS WANTED
We solicit your patronage. Our prices will meet with your approval. **A. & E. PIERCE,**
Tribune Building, Winnipeg, Man.
Reference: Dominion Bank.

4 Great Books Free

The Practical Horse and Cattle Doctor.
The Family Doctor Book.
The American Family Cook Book.
Home Amusements for Winter Evenings.

These four valuable books, neatly bound in attractive paper covers, are offered FREE as an

Alternative Proposition

to subscribers to **The Weekly Tribune.** That is, subscribers have the choice of one set of our great premium pictures of the King and Queen or Duke and Duchess, or these four great books, together with

The Weekly Tribune to Jan. 1, 1903, all for **\$1.00.**

Remember these four valuable books will be mailed free to all subscribers who prefer them to a set of our great premium pictures. This is an offer that is without a parallel in journalistic experience. Get your names on the list early—the premium books or pictures are sent in the order in which subscriptions are received. Address all orders to—

The Tribune Publishing Co'y,
WINNIPEG, MAN.

Canadian Pacific Rail'y

THE QUICKEST AND BEST ROUTE TO THE

EAST AND WEST.

THROUGH CARS TO
TORONTO,
MONTREAL,
VANCOUVER,
SEATTLE.

Passengers' comfort assured in through tourist cars to

TORONTO, MONTREAL,
BOSTON,
VANCOUVER, SEATTLE.

Rates quoted for tourists to

California, China, Japan.

AROUND THE WORLD.

For full particulars apply to the nearest C. P. R. agent, or write

C. E. McPHERSON,
General Passenger Agent,
WINNIPEG, MAN.

J. M. PERKINS,

SEEDS.

221 MARKET ST.,

1902 Seed Annual ready Jan. 1st. Send for it. **Winnipeg.**

E. J. C. SMITH,

Agent for Canadian Kodak Co.

Supplies of all Kinds.

Printing and Finishing for amateurs.

276 SMITH ST., WINNIPEG.

Send for Catalogue. Established 1892.

EVERY FARMER

SHOULD HAVE A **PUMP.**

Do you want the best? Then try one of my

20th Century Cattle Pumps.

These pumps fill a pail in three strokes. I keep a full line of wood pumps and repairs of all sizes. Sole agent for Myers Brass Lined Cylinder Pumps, and Hayes' Double-acting Force Pumps. Satisfaction guaranteed. Write for catalogue. Address: **BRANDON PUMP WORKS** (INC. CORP.), Box 410, Brandon, Man.

IN WRITING PLEASE MENTION FARMER'S ADVOCATE.

ZENOLEUM

Zenoleum is the greatest lice killer on the market. It is always reliable. We do not ask you to buy Zenoleum because it is cheap, but because it is sure and safe. While it is not dangerous to human beings or live stock, it is death to insects and parasites. This is what Mr. D. E. Corbett, of Swan Lake, Man., under date of Jan. 9th, 1902, says: "Allow me to state that I have given Zenoleum a fair trial, and am more than delighted with the result of its application. I find it to be of the utmost value as a disinfectant, and for destroying all kinds of vermin on cattle and sheep. I have not met with its equal. You might send me another two-gallon can of the liquid, as I do not want to be without it."

PRICES, F. O. B. WINNIPEG.
In 1-quart cans, \$0.75 per can.
In 1-gallon cans, 1.25 per can.
In 1-gallon cans, 2.00 per can.
Live agents wanted in every section of the country.

The F. O. Maber Co., Winnipeg.
LIMITED, DEPT. A.
Western Canada's exclusive mail-order house.

GOSSIP.

A HIGH-CLASS HERD OF SHORT-HORNS.

One of the very best herds of Scotch-bred Shorthorns in Canada, both in breeding and individual merit, is the Springhurst herd of Mr. H. Smith, of Hay, Ont., whose enlarged advertisement appears in this issue, and whose well-watered farm of 250 acres of superior grain and grass land lies 14 miles from the beautiful town of Exeter, on the Grand Trunk Railway, 30 miles north of the City of London. Few Canadian breeders have shown equal skill and discrimination in selection and breeding to build up a herd of uniform type and high-class excellence; few have been as successful in producing prize winners and champions at the leading shows in Canada; few are better judges of a Shorthorn and none more worthy of confidence.

The Springhurst herd, now numbering 75 head, was well founded on the grand imported Cruickshank cow, Village Blossom, the mother of the World's Fair champion, Young Abbotsburn, whose grand constitution carried her through a long life, breeding till she was nearly 20 years old, while a daughter now in the herd is fresh and fruitful at 15, and promising to produce for five years yet. From this cow Mr. Smith bred the noted bull, Abbotsford 19446, a championship winner, and the sire of not a few sweepstakers while in service in the herd, including Valiant, the championship bull at Toronto last year, in the strongest show seen in Canada in twenty years. Several of the Village Blossom family are yet in the herd, and from time to time have been added representatives of other Cruickshank tribes, until to-day we find in it excellent members of the Missie, Duchess of Gloster, Butterfly, Queen of Beauty (of the same foundation as the Orange Blossoms), Matchless, Mysie and Buckingham families, bearing the blood of the best of the Sittytown sires. Besides these are excellent specimens of the Kinellar Rosebuds, Golden Drops, Urys and Clarets, Marr Beautys and Minas, Bruce Augustas and Rosalinds; also Kibblean Beautys, Crombie Diamonds, Strathallans and Vain Duchesses. Among the imported cows at present in the herd is the handsome roan four-year-old Marr Missie, Mistletoe 21st, bred by Mr. Duthie, sire by Nonpareil Victor, dam by Scottish Archer and granddam by William of Orange; the Kibblean Beauty cow, Sensation, a thick-fleshed, rich roan daughter of the Duthie-bred Merry Mason, bred by Mr. W. S. Parr, and sired by William of Orange; the Bruce-bred Augusta 21st, a substantial cow of rare quality, sired by Sittytown Archer, a richly-bred Levender, of Mr. Duthie's breeding, got by Scottish Archer; Mollie 2nd, Mr. Smith's choice of 150 head in quarantine, is a meritorious, rich roan two-year-old, bred by Sir John Gilmour, and got by the \$6,000-bull, Brave Archer, who was also by Scottish Archer; Butterfly 51st, another handsome and heavy-fleshed roan two-year-old, is of the Cruickshank Butterfly tribe, bred by Mr. John Marr, Cambroge, and got by Royal Standard, by a son of Star of Morning. With such combination of choice families in the female end of the herd, comment on the character of the young stock is scarcely necessary; suffice it to say they not only maintain the standard, but show substantial improvement.

In a time when so much is said of the scarcity of good bulls, it is gratifying to find in this herd so well furnished in the regard as is the Springhurst herd. At the head of the list, and the principal stock bull, is the imported, red two-year-old Royal Prince, of Mr. Manson's favorite Kibblean Beauty tribe, his dam being a sister in blood to the champion female at the Royal Show last year, and he is of the blood royal on the paternal side of his pedigree, being a son of the Duthie-bred Mystic Archer, by Scottish Archer, and out of Missie 136th by William of Orange. Mystic Archer's breeding is almost identical with that of that greatest of latter-day show and breeding bulls, Marengo, the Royal champion, while the sire and grand-sire of Royal Prince, Merry Mason and Mount Royal, both bred by Mr. Marr, are richly-bred, the former being a son of the Duthie-bred Levender, by William of Orange, the latter a Missie by the Cruickshank bull, Criterion. Royal Prince is an uncommonly short-legged bull, with grand crops, a wide chest, big heart-girth, smooth shoulders, a well-packed back and loin, long level quarters, first-class flesh and hair, a good masculine head, and his legs well set under him. He has all the necessary qualifications to make a high-class sire. Prince Misty, a handsome, smooth, well-proportioned red yearling, is a son of the Marr Missie tribe, sired by Imp. Prince Bosquet, bred by Mr. Marr, from his favorite Princess Royal family, and got by the grand red Cruickshank bull, Wanderer. The dam of Prince Misty was sired by Beane Willis' Nonpareil Victor, by the Sittytown Victoria bull, Count Victor. This breeding is of the highest order, and the bull does it credit, as he gives promise of making a grand rood one. Bonnie Lad, a red bull, a year old in September last, is a show bull of the first water. Smooth, stylish and substantial long, deep and wide, with handsome masculine head and true legs, he is fit to head a herd, and his breeding is adding to the partnership lines, coming of the Cruickshank Queen of Beauty tribe, on the maternal side, while his sire is imported by the Duke of Devon, a Bruce Augusta, a first-prize winner at London over the Toronto winners, and his paternal

WHAT THEY THINK OF IT

Should Appeal to Westerners.
I do not know of anything in the shape of a premium that should so appeal to the average man in this western country.—C. H. Spera, Port Arthur.

A Dandy.
I think that your thermometer and barometer is a dandy. I am well pleased with it. I thank you very much for it.—Charles S. Yeo, Douglas, Man.

Sensible.
It is both useful and ornamental; the most sensible premium I ever got with any paper.—D. McGregor, Forrest.

The Best.
The best premium I have seen.—J. N. Johnson, Underhill.

Nothing Could Be Better.
Where the weather conditions are so closely watched all the year round as in this country, nothing could be better.—David Elliot, Sourisford.

A Leader.
I don't see how you can send it with such a good paper. But I look to the Free Press as a leader. Long may it prosper.—Thomas Speers, Oak Lake, Man.

Best Ever Sent Out.
Best premium ever sent out.—John Parr, Bradwardine.

Never Anything Equal to It.
Have been getting premiums from newspapers for the last ten years, and have never got anything to equal it.—Walter F. Popple, Minto, Man.

All He Could Wish.
It's all I could wish.—David Kirkpatrick, Sr., Kemnay.

All Right.
It is all right; worth the subscription.—V. E. Casselman, Lander.

The Best.
It is the best I have received or seen since I came to this country.—H. Kolterman, Lacombe, N.-W. T.

Most Useful Ever Seen.
It is the best and most useful premium I ever received or saw.—G. Ernest Gregory, Cochrane, Alta.

THE WEEKLY FREE PRESS
for one year and the combined **Thermometer and Barometer**, as referred to above, to any address for **\$1.00.**

SOMERVILLE & CO.

Steam Marble and Granite Works,

BRANDON

Dealers in Marble and Manitoba Granite.

MONUMENTS,
HEADSTONES,
MANTELPieces,
CEMETERY FENCING
TABLETS, ETC.

ROSSER AVE., BRANDON, MANITOBA.
Represented by W. Somerville, W. C. Stewart,
A. W. Thomson, E. Patterson,
WHEN WRITING MENTION THIS PAPER.

2,500 LBS. OF RYE GRASS SEED
(*Lolium leucostachyon*.)

RED EYE WHEAT 600 bushels from carefully selected seed. **FARM HORSES**—Clydesdales and drivers, home bred. **SHORTHORN BULL**, roan, 18 months old.

HENRY NICHOL,
FAIRVIEW FARM, BRANDON, MAN.

HORSEMEN!—THE ONLY GENUINE IS

GOMBAULT'S CAUSTIC BALSAM.

None genuine without the signature of **The Lawrence-Williams Co.**
Sole Importers & Proprietors for the U.S. & CANADA, CLEVELAND, O.

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. **SUPPESSES ALL CAUTERY OR FILING.** Impossible to produce scur or blemish. Every bottle is warranted to give satisfaction. Price \$1.50 per bottle. Sold by Druggists, or sent by Express, charges paid, with full directions for its use. Send for free descriptive circulars. **THE LAWRENCE-WILLIAMS CO., Toronto, Ont.**

FOR SALE: Imported Yorkshire Coach Stallion.

First prize and sweepstakes two yrs. in succession, in 1888 and 1890, at Western Fair, London. om **John Longfield, Crampton P. O., Ontario.**

grand sire was by the champion Barmpton Hero, whose dam was by Champion of England, and his great-grand sire by Imp. Royal Barmpton, the sire of Barmpton Hero. A superior white bull, full of character and quality, is Commander, a year old in February last, sired by Imp. Christopher, of the Sittytown Lovely tribe, by Emancipator. Commander's dam is Village Pansy, by Abbotsford, and of the Village Blossom family. He has in him the material to make a fine show bull. Rosario is a strong, smooth, roan yearling, by Mina Boy 4th, and of the Bruce Rosalind family. Checkmate, a smooth, compact, roan yearling, by Imp. Knuckle Duster and of the Marr Beauty tribe, is good enough for a herd-header, and there are several other very useful young bulls fit for service, as well as a number of very promising calves.

At the London Shire-horse sale, last month, 237 head sold for \$19,325, an average of \$388. The highest price was \$1,575, which was reached in two instances for stallions.

From the annual sheep returns collected by the New Zealand Government, a copy of which we have just received, we find that in 1890 the total number of sheep in that colony was 16,116,113. Since that time sheep have steadily increased, in 1901 the total reaching 20,233,099. Nearly every farmer is an extensive sheep-raiser, the flocks ranging in numbers from a few score to as high as 40,000 and 50,000 head.

At a meeting of the executive committee of the American Aberdeen-Angus Breeders' Ass'n, recently held, an appropriation of \$4,300 was made for the Chicago International Live Stock Exposition of 1902. The junior classes of bulls and heifers were reinstated in the premium list for that Exposition, making the list the same as that of 1900. The amount devoted to special premiums for car-lots of steers was fixed at \$1,500, and divided into six prizes for both one- and two-year-old steers. The appropriations reported above are in addition to the \$3,200 voted at the last annual meeting for special premiums at the State fairs and Canada expositions of 1902.

BEEKEEPERS WHO WISH TO IMPROVE THEIR STOCK should read carefully the advertisement in this issue of Mr. H. F. Holterman, manager of the bee department of Bow Park Farm, Brantford, Ont., in which the advantages of introducing into the colonies queen bees of improved blood are set forth. It is claimed that blood tells in bee-breeding as well as in other stock. See the advertisement.

THE ADVANTAGES OF LOW-DOWN WHEELS AND BROAD TIRES on the farm wagon are highly spoken of by those who have used them, saving as they do the high pitching and lifting required in loading the old-fashioned high-wheeled wagon. The wide tires render the draft on a team from 20 to 100 per cent. lighter, the wheels sinking less in the land. Their use also saves the fields from being cut into ruts, and the roads are improved rather than cut up and made uneven as they are by narrow tires. The low-down heavy wagons and broad-tired steel wheels manufactured by the Electric Wheel Company, of Quincy, Ill., and advertised in our columns, appear to fill the bill admirably for a 20th century farm wagon. Their advertising waterword is that their wheels and wagons are "Built to Last." We might add also that "They have come to stay." Readers of the "Advocate" who are not fully acquainted with these goods would do well to write for a catalogue and learn more about their merits.

BRANTFORD
Patent Roller and Ball-Bearing Galvanized Steel
Windmills, Towers and Flagstuffs.
"Maple Leaf" Grain Grinders, Wood, Iron and Spray Pumps.
Send for new illustrated Catalogue.

OLD SHAPLEY & MUIR CO. LIMITED
BRANTFORD CAN.

COCKSHUTT PLOW CO. (Limited), Agts. for Manitoba and N.-W. T., Winnipeg.

Queens You Should Have.

Does blood tell in other stock? Why not in bees? Stock used for breeding the queens offered, not from a sport—but my pick out of an apiary giving, last season, an average yield of 102 lbs. extracted, and 60 lbs. comb honey, per colony, besides increase and winter stores.

Quality of comb honey produced: "Man! it would dazzle you!" Wm. McEvoy, Ontario, Government Inspector of Apiaries.

Wintering Qualities: "Up to the present, Jan. 30, these bees have not shown the least unrest; always quiet. They are wintering perfectly." Frank T. Adams.

General Commendation: "Out of the queens you sent me, I have produced the best strain of bees I ever owned. Remember, that is saying a lot, as I have tried every breed imported to this country. The bees winter better, build up and stand the cold, chilly winds in the spring, and are more suitable than any bees I ever owned. For the season they gave me more increase and double the honey stored by pure Italians. Glad you are going into the queen business, and are going to join our ranks again. We are much in need of a few men like you." C. W. Post, ex-president of Ontario Beekeepers' Association, and owner of 365 colonies.

S. T. Pettit, Canada's most successful comb honey producer and beekeeper, says: "The blood in my apiary is largely the progeny of queens sent by you. They are grand bees."

Prices of queens: Tested, \$2.00 each; six for \$10.00; one dozen, \$18.00. Untested: before July 1st, \$1.25 each; six for \$7.00; one dozen, \$12.00. After July 1st, single untested queen, \$1.00; six for \$5.50; one dozen for \$10.00. Prices on larger quantities given upon application.

The above queens are bred from a careful selection of Italians and Carniolans. Pure Italians or Carniolan queens at same prices. Price of full colonies on application. Order early. Address

R. F. HOLTERMANN (Mgr. Bee Dept.),
BOW PARK CO., Limited,
Box 88, BRANTFORD, ONT., CANADA.

A Trotter for a Clydesdale.

Exchange wanted.—Hugo 17567, by Electioneer 125, the greatest trotting sire of the world; dam Helpmate, by Planet (sire of Dame Winnie, dam of Palo Alto, 2.08), once the world's champion trotting stallion; is offered in exchange for a registered Clydesdale stallion that has proved himself a good foal-getter and that has good conformation, size, style and action. Hugo is 15 years old, strong, smooth and handsome, and has sired many good ones, including Hunyadi, 2.25. Hugo had a winning race record of 2.27 as a 4-year-old, and afterward one of 2.24 with little training; has trotted quarters in 33 seconds.

Correspondence invited, but no one need answer this advertisement unless he has for exchange a horse that will fulfil the above requirements. Address

HOPKINS BROS., Proprietors DURHAM STOCK FARM,
FORT FAIRFIELD, MAINE.



PLOWING MADE EASY

The Wonder Plow Attachment can be attached to beam of any plow; regulates depth and width of furrow; saves one-third draft on horses; relieves all labor of man, as you need not hold plow handles to do perfect plowing. 10-year-old boy can plow in hardest soil. Agents Wanted. Fast seller everywhere. Good money for enterprising agents. Address at once

WONDER PLOW CO.,
Room 10, Hiscox Building, London, Ontario.

Mr. A. B. Armstrong, breeder of Yorkshire swine and poultry, Codrington, Ont., sends us excellent photos of Wm. Wyandotte and B. P. Rock cockerels, taken from life in 1902. The B. P. Rock cockerel weighs 11½ pounds, and the W. W. 10½ pounds, and neither one is fat. Mr. Armstrong writes: "We are offering a choice lot of March and April farrowed Yorkshires, bred from prizewinning imported stock. Our 800-pound sow, Summerhill Queen, is one of the few large sows that can carry weight without coarseness, and besides that she is a splendid breeder and mother. Her sire was Look-Me-Over, the well-known sire of many prizewinners. We have a lot of young pigs and so will be able to make good selections for our customers. In poultry, we were never stronger. We have two pens of each variety mentioned in our advertisement, and can supply eggs that will hatch prizewinners. We have as good stock as any breeder in Canada, and solicit a share of the trade. We are giving our entire attention to our fowls and Yorkshires and are in a position to supply any demand, but only one quality, and that the best."

J. M. GARDHOUSE'S CLYDES, SHIRES, SHORTHORNS, AND LEICESTERS.

A representative of the "Farmer's Advocate" recently had the pleasure of a look over the stock at Rosedale Farm, the property of Mr. J. M. Gardhouse, Highfield, Ont., whose handsome and substantial newly-imported Clydesdale stallion, Strathcona, is illustrated on another page in this issue. Strathcona is a dark bay, with white points, coming three this spring, bred by Mr. Wm. Finlayson, Throsk Mills, Stirling, Scotland; imported by Mr. James Dalgety, London, Ont., and was sired by The Gallant (Vol. 25), dam Kate Throsk by Boy in Blue 5578, by Top Gallant 1850, by Darnley 222. He has been a successful prizewinner in Scotland, and enjoys the honor of never having been beaten. He is a horse of ample size, combined with first-class quality of bone, hair and action; compact and strong in build, with big heart-girth, deep and well-sprung ribs, and the best of feet and legs. He will probably compete for honors at the coming Horse Show, though he will be at a disadvantage after the ordeal of a recent ocean voyage and a long railway run. Another excellent young Clyde stallion is Lewie Gordon 2nd, a thick, compact, rising yearling, of good quality, rising this year, sired by Imp. Lewie Gordon 1602, by McCannon, by Blue Ribbon, by Darnley 222; dam Bellgrove. An exceptionally meritorious colt is the yearling, Prince of Elm-grove, by Imp. King of the Clydes, first-prize winner in the mature-stallion class at the Toronto Spring Show last year, in the hands of Mr. Gardhouse; dam Maggie of Elm-grove. This colt is choke-full of quality from the ground up. These two last-named are sold to go to Manitoba, together with the choice yearling Shire colt, Darnley of Highfield, by the old imported Shire stallion, Darnley 183.

At the head of the Shires stands the grandly-bred and beautifully-moulded stallion, Imp. Newham Duke 343, a massive three-year-old, dark brown in color, with perfectly-balanced body, well-sprung ribs, powerful loins, heavy-muscled quarters, broad, intelligent head, properly set on a well-arched neck, the whole built on the best possible kind of feet and legs; such is but an imperfect picture of this truly grand horse. Next in service comes that old stalwart, Imp. Darnley 183, a horse that has left more prizewinners and high-priced animals than any Shire horse living in Canada to-day. Next we were shown the imported Shire mare, English Slut, by English King, dam English Lightsome, a heavy, well-balanced mare, that should be a choice producer; she is now in foal to Darnley. Another Shire mare is Cauliflower, by Kherkonk, dam Imp. Columbine. A tremendous, big, well-built filly is the three-year-old Victoria, by Darnley, out of the sweepstakes mare, Queen of Highfield. She is a solid black, and will make a ton animal. A full sister to her is the two-year-old Orphan Girl, also a big slashing filly. Next comes the Clyde mare, Maggie of Elm-grove, by Lord Lomand, dam Maggie of Rosedale, a big, breezy-looking mare. Minnie Gordon, by Imp. Lemie Gordon, dam Jess, by McNeilage, is an extra nice filly, showing large size combined with quality. She has also lately been sold to go to British Columbia.

The herd of Shorthorns has been established over thirty years and enjoys a continental fame, which has lately been augmented by the great heifer, Ruberta, winning the World's championship, she having been sired by St. Valentine, a bull bred in the Rosedale herd. In the herd are at present representatives of such noted Scotch families as the Strathallans, Emmas, Wimples, Crimson Flowers, Roan Duchesses, Verbenas, etc. The herd is headed by the imported bull, Loyalty (Vol. 17), sired by Prince Charlie 7362, by the Missie bull, Musgrave; dam Jenny Lind, by the great bull, Matador, by Prince of Fashion. The youngsters by this bull show that he bids fair to prove as successful a sire as his illustrious ancestors. The Rosedale Leicesters are too well-known to need any comment as for years they have been successful prizewinners at home and abroad. Suffice it to say, that the large flock have come through the winter well, many of them in show condition. The spring lambs are growing nicely and by fall will no doubt be in shape to add fresh laurels to this already famous flock.

"BIBBY'S CREAM EQUIVALENT"

A common-sense preparation for rearing calves. The outcome of extensive experimental tests. No drugs. Excellent results and entire satisfaction.

Specially adapted for feeding with separated or skimmed milk.

Price: 50-lb. bag, \$2.25; 100-lb. bag, \$4.00; f. o. b. Brandon. For sale at all creameries.

BRANDON SEED HOUSE

(A. E. MCKENZIE & CO.),
BRANDON, - - MANITOBA.
WHOLESALE AGENTS FOR MANITOBA AND TERRITORIES.

DR. HESS' STOCK FOOD

Is the result of scientific study. It is formulated by Dr. Hess, a graduate of both veterinary and medical colleges. If the colleges of veterinary science know of nothing better it must be good.

What prominent Indiana stockmen say of it:—

DR. HESS & CLARK, ASHLAND, OHIO.
Evansville, Ind., Dec. 7th, 1901.
GENTLEMEN,—We are feeders of Dr. Hess' Stock Food, and we will never do without it. We made a special test of it. We had a cow that was not doing well, little bit on the sick list. We began to feed Dr. Hess' Stock Food just as the directions stated, and in several days she showed an improvement in her appearance. A few days following we made a test of her milk, weighed it daily and in seven days she showed a gain of four pounds. We are feeding 60 head of cattle, 14 horses, 25 hogs, and our stock never did as well since we are in business. We cheerfully recommend Dr. Hess' Stock Food to the dairymen and stockmen. It will keep the cattle, horses and hogs in a fine condition.
Yours truly,
C. W. & C. KRATZ.

Dr. Hess' Stock Food is a Guaranteed Milk and Flesh Producer.

It is not a stimulant, but a tonic. It builds up the system of the animal generally. Horses show greater ambition when fed Dr. Hess' Stock Food. They do more work and stand it better.

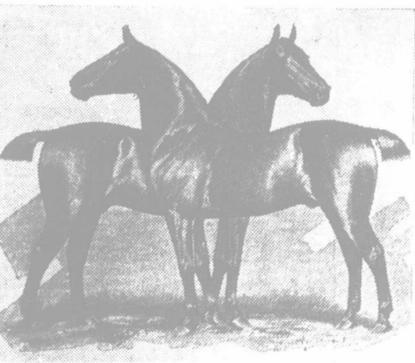
Feed Dr. Hess' Stock Food to your cows; if it doesn't pay, your money will be refunded. 7-lb. sack, 65c.; 12-lb. sack, \$1.00.

SOLD BY DEALERS GENERALLY, OR ADDRESS:—

THE GREIG MANUF'G CO'Y, CANADIAN AGENTS, MONTREAL, QUE.
FREE.—Dr. Hess' scientific veterinary work, giving the symptoms and latest treatment on stock diseases, will be mailed you for the asking. Address:

DR. HESS & CLARK, ASHLAND, OHIO.

Lafayette Stock Farm.



LEADING IMPORTERS OF HIGH-CLASS HORSES OF AMERICA.

One importation of German Coachers arrived January 30th, 1902; one of 12 head arrived March 9th, 1902. The best German Coach horse makes the best cross on small trotting-bred mares, producing horses that weigh from 1,000 to 1,100 pounds, and stand 16 to 16½ hands high, with finish and action. We give gilt-edge guarantee and terms to suit buyers.

Oldenburg German Coachers, Black Percherons, Normans and Belgians.

We import and sell more German Coach stallions than all other. We buy every horse ourselves direct from the breeder in Europe. Come to headquarters for high-class, serviceable stallions.

J. CROUCH & SON, LAFAYETTE, IND.

Zanzibar Paints

Weather-Proof. Water-Proof.
Rust-Proof.

For houses, barns, sheds, wagons, wind-mills, fences, agricultural implements of all kinds.
Every farmer can afford to keep all of his buildings and implements painted by using Zanzibar Paints.

Durable lustre and colors that never fade.

ASK YOUR DEALER FOR

Zanzibar Paints,
OR WRITE US DIRECT.

Manufactured only by

The Zanzibar Paint Co.
TORONTO, ONT. (Limited)



THE SPRAMOTOR COMBINATION
(crude oil and water) outfit at work cleaning up an orchard when the buds are swelling.

MR. GEO. E. FISHER REPORTS THAT THE

SPRAMOTOR

IS THE ONLY RELIABLE MACHINE FOR APPLICATION OF CRUDE OIL AND WATER MIXTURE.

SPRAMOTOR CO.,

109 Erie Street, BUFFALO, N. Y. 68-70 King Street, LONDON, CAN.



This Marvelous, Extra Early Potato originated by **HARRY N. HAMMOND SEED CO. Ltd** Box 225 BAY CITY, MICH. Largest growers of seed potatoes in America. 30 best varieties. Northern Grown always best. Bright proof, lb., bulk, or carload. Elegant postage Bargain Seed Catalogue FREE. Write for it today.

EIGHTH ANNUAL

Canadian Horse Show

UNDER THE JOINT AUSPICES OF

The Canadian Horse Breeders' Association
and The Toronto Hunt, Limited,

WILL BE HELD AT

The Armouries, Toronto, Can.,

ON

THURSDAY, FRIDAY and SATURDAY,

April 10, 11, 12, 1902

Entries close on Saturday, March 29, 1902, and should be addressed to **HENRY WADE**, Parliament Buildings, Toronto.

MOWER - FRAME STRENGTH

THE FRAME ON THE

MASSEY = HARRIS MOWERS

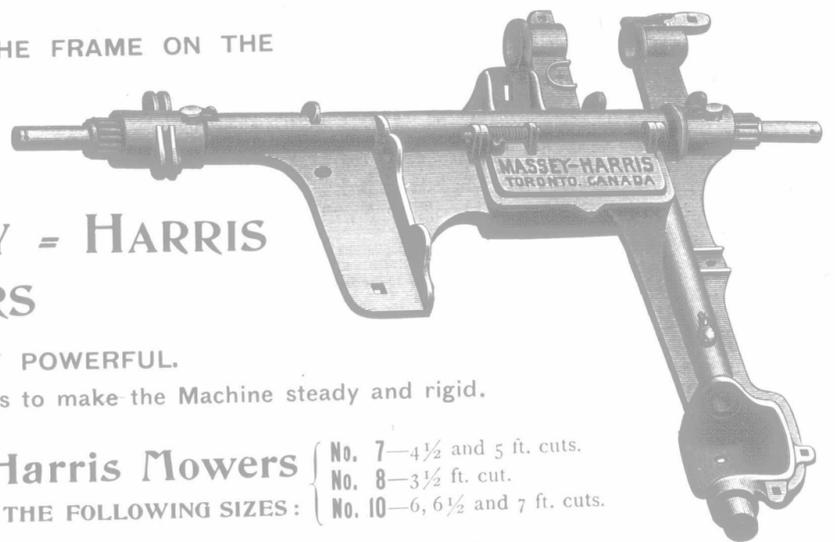
IS VERY POWERFUL.

This helps to make the Machine steady and rigid.

Massey-Harris Mowers

ARE MADE IN THE FOLLOWING SIZES:

- No. 7—4½ and 5 ft. cuts.
- No. 8—3½ ft. cut.
- No. 10—6, 6½ and 7 ft. cuts.



MASSEY-HARRIS AGENTS ARE EASILY FOUND.

COMPRESSED

Boiled Blood

A SPLENDID, CHEAP, FOOD FOR

Cattle, horses, hogs, poultry, dogs.

WRITE FOR INFORMATION.

The Canadian Packing Co.

LONDON, ONT.

Catalogue Printing Our Specialty.

Many of the best Catalogues in Canada are produced by us. Latest type faces, designs, ornaments, and modern machinery. Best in America. Up-to-date covers designed by special artists without extra charge.

London Printing & Litho. Company, Ltd., LONDON, ONTARIO.

Windsor Salt Makes Fine Butter!

Creameries that have gained a reputation for making the finest high-grade butter are the largest users of Windsor Salt. Can you have better proof of its purity, dryness, evenness, than this?

BEST GROCERS SELL IT.

EGGS FOR HATCHING.

Barred Rocks (exclusively) bred from C. Mueller's noted prizewinners, carefully selected and mated as to color, shape and size; \$1 per 13. Give me a trial and be convinced that my stock is right. **ALLEN SHANTZ**, Waterloo, Ont.

SHORTHORN BULLS FOR SALE. A choice lot of 16 months old, bred by Imp. British Statesman (63729) 2883 and cows of the Mara family. They must be sold at once. Prices away down to suit customers. **FITZGERALD BROS.**, Elmvale Station, G.T.R. Mount St. Louis P.O.

MAPLEWOOD HACKNEYS.

PROPERTY OF **FREDERICK C. STEVENS,**
ATTICA, N. Y.

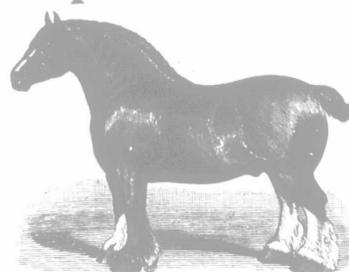
Have won more challenge cups, more championships, more first prizes, and more value in prizes during the past seven years than all the other Hackneys of America combined.

THIS IS THE PLACE TO BUY FOUNDATION STOCK.

Stallions of all ages, mares in foal, young mares and fillies. The best three carriage horse sires in America at the head of this stud: Langton Performer, Clifton 2nd, and Fandango.

SEND FOR CATALOGUE TO **E. T. GAY, MANAGER, ATTICA, N. Y.**

Imported Stallions for Sale.



FOURTH consignment, per steamship from Glasgow, due to arrive end of February, 1902.

DALGETY BROS., DUNDEE, SCOTLAND,

the largest importers and exporters of horses in Canada, have on hand just now a choice selection of above, including several prizewinners. Our fourth consignment this season. Largest and best lot from Glasgow show. They combine size, quality and action, and all good colors; age, from two years upwards; and will be for sale at

BLACK HORSE HOTEL,
FRONT STREET, TORONTO, ONT.

on Wednesday, March 5th, for one week; after that at our own stables, London, Ont. Any one in need of a good stallion should not miss seeing our stock before buying. Prices right. Apply:

JAMES DALGETY, 229 HYMAN STREET, LONDON, ONTARIO.

SPECIAL OFFER IN BARCLAY'S PATENT ATTACHMENT

FOR THE CONTROL AND CURE OF BALKING AND KICKING HORSES.



We will send our "Attachment," charges paid one way, to any part of Canada C. O. D., and subject to examination and approval of method. When satisfied it will do all we claim for it, pay the express agent our price, \$5.00. If not, the return freight will cost only a few cents. Our article will control any vice known to a horse, and is giving splendid satisfaction wherever used. Full illustrating splendid satisfaction wherever used. Full illustrating splendid satisfaction wherever used. Full illustrating splendid satisfaction wherever used.

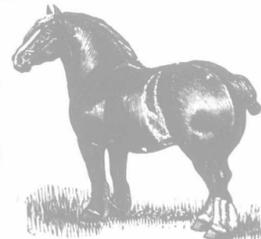
THE BARCLAY MFG. CO., BROUGHAM, ONTARIO.

JOHN BRIGHT, MYRTLE, ONTARIO.

BREEDER OF

Clydesdale Horses

AND
SHORTHORN CATTLE.....



SHORTHORNS.

For Sale: 16 head of bulls and bull calves; also a large and choice lot of cows and heifers of all ages.

CLYDESDALES.

11 registered mares, 6 of which are in foal to such notables as Royal Cairnton, Prince Patrick and Lord Lyndock; also 2 young stallions.

Myrtle P. O. and R. R. Stn., G. T. R. and C. P. R.

Large English Berkshires.

My herd consists of sows imported from England; three of them (including a show sow) were selected from the herd of Geo. Green and were bred to his show boars. Young stock for sale (not akin). **JNO. LAHMER, VINE, ONT.**

Nitrate of Soda
THE STANDARD AMMONIAC FERTILIZER FOR
MONEY CROPS
CORN, FRUIT, HAY,
SUGAR BEETS, AND WHEAT.
Send post card for formulas and free bulletins.

William S. Myers, Director,
Dept. A, 12 John Street, New York.

CLYDE AND SHIRE HORSES
SHORTHORN CATTLE, LEICESTER SHEEP.

One extra good Shorthorn bull, 16 months old, red, by Imp. Prime Minister, g. sire Imp. Warfare. My motto: "The best is none too good."

ROSEDALE STOCK FARM, HIGHFIELD P. O.
MALTON, G. T. R.; WESTON, C. P. R.
Rosedale is fifteen miles west of Toronto.

4 Imp. Clydesdale Stallions 4

Amphion, Vol. 24, 2 years old, bay; Bucepholus, Vol. 24, 2 years old, black; Voyageur, Vol. 24, 2 years old, brown; Lord Garty, Vol. 23, 4 years old, brown. Representing the blood of Golden Sovereign, Sir Christopher, Montrose Matchless, and Royal Garty.

GEO. G. STEWART,
ROSEBANK FARM,
P. O. and Station, Howick, Quebec.

Clydesdale Stallions
FOR SALE.

One seven-year-old.
One three-year-old.
Three two-year-olds.

Also a few mares and fillies of good size and good quality. I. Devitt & Sons, Freeman P. O., Ont. Burlington Junction Station 1/2 mile from farm.

WM. SMITH, COLUMBUS, ONT.,
IMPORTER AND BREEDER OF
Clydesdale Horses & Shorthorn Cattle

IMP. CLYDESDALES AND AYRSHIRE.
The three imp. stallions, Copyright, Baron Frederick and Baron Laing, and the Canadian-bred stallion, Laurentain. Ayshires all ages; and poultry, utility breeds. Eggs for sale.

ROBT. NESS & SONS, Howick, Que., P.O. & Sta.

Smith & Richardson
COLUMBUS, ONT., IMPORTERS OF
CLYDESDALE STALLIONS.

Our latest importation of 4 stallions is the best we ever made, weighing from 2,000 to 2,200 lbs., and of the well-known Darnley and Prince of Wales breeding. We have a number of pure-bred mares; also some young Canadian-bred stallions and fillies. Write for prices.

Railway Stations: **Oshawa, G. T. R.; Myrtle, C. P. R.**
Long-distance telephone at Columbus.

4 Imp. Clydesdale Stallions

31 Imported Shorthorn Cows and Heifers,
7 Canadian-bred Cows and Heifers,
3 Imported Shorthorn Bulls,
5 Canadian-bred Bulls.

GEO. ISAAC & BROS., BOMANTON, ONT.
COBourg STATION, G. T. R.

Shires, Shorthorns, and Leicesters.
Young stock of both sexes for sale. Imported Prince Louis = 32082 = heads the herd. Write for prices or come and see them.

John Gardhouse, Highfield P. O.
Weston, G. T. R. and C. P. R.

FOR SALE:
CLYDESDALES AND SHORTHORNS.

Stallions from sucking foals up. Brood mares and fillies of superior quality and breeding. A few grand young shorthorn heifers, bred in the purple. Special mention, the great four-year-old stallion "Prince Lyon."

THOS. GOOD,
Richmond P. O., Ont.
R. R. Station, Stittsville, C.P.R.

Cash for REAL ESTATE
no matter where it is. Send description and cash price and get my wonderfully successful plan. **W. M. OSTRANDER,** North American Bldg., Philadelphia, Pa.

DR. PAGE'S ENGLISH SPAVIN CURE
For the cure of Spavins, Kingbone, Curbs, Splints, Windgalls, Capped Hoof, Strains or Bruises, Thick Neck from Distemper, Ringworm on Cattle, and to remove all unnatural enlargements. This preparation (unlike others) acts by absorbing rather than blistering. This is the only preparation in the world guaranteed to kill a Ringbone or any Spavin, or money refunded, and will not kill the hair. Manufactured by **DR. FREDRICK A. PAGE & SON,** 7 and 9 YORKSHIRE ROAD, LONDON, E.C. Mailed to any address upon receipt of price, 2/6. Canadian agents: **J. A. JOHNSTON & CO., DRUGGISTS,** 171 KING STREET, EAST, TORONTO, ONT.

INTERNATIONAL LIVE-STOCK EXPOSITION
at Chicago, the Oaklawn Percherons won every Championship, First Prize, and Gold Medal and every Second Prize in classes. Notwithstanding the superior quality of our horses and the amply fair and certain terms of our breeding guaranty, backed by our well-known responsibility, it is a fact that our prices are lower than can be obtained elsewhere in America. Catalogue sent on application.

DUNHAM, FLETCHER & COLEMAN,
WAYNE, DU PAGE CO., ILLINOIS.

Prizewinning Carriage Stallion
JINGLE BELLS.
Full brother to Dr. Ling 16523 (winner at World's Fair). Bay stallion, 16 hands high. Good style and action. Will be sold cheap to close a partnership. Apply to

LORNE STOCK FARM, WEST LORNE, ONT.

OAKLAWN FARM
THE GREATEST
IMPORTING and BREEDING
ESTABLISHMENT
IN THE WORLD.
PERCHERONS,
FRENCH COACHERS.
On hand upward of
500 HEAD.
Our late importations included the Principal Prize Winners at the Great Shows of France.

At the recent
INTERNATIONAL LIVE-STOCK EXPOSITION
at Chicago, the Oaklawn Percherons won every Championship, First Prize, and Gold Medal and every Second Prize in classes. Notwithstanding the superior quality of our horses and the amply fair and certain terms of our breeding guaranty, backed by our well-known responsibility, it is a fact that our prices are lower than can be obtained elsewhere in America. Catalogue sent on application.

DUNHAM, FLETCHER & COLEMAN,
WAYNE, DU PAGE CO., ILLINOIS.

Corn Planting
must be well and carefully done, as the future crop depends upon it. For all purposes, in any soil, on all kinds of ground nothing equals the
SPANGLER
CORN PLANTER.
It saves time, labor, money and insures the crop. You know when it is working; you can see the corn on its way to the ground. Made with or without fertilizer attachment. New device for sowing peas, beans, melons, corn, etc. We also make the famous Spangler Low-Down Grain and Fertilizer Drill. Write for catalog and circular.
SPANGLER MANUFACTURING CO., 518 Queen St., York, Pa.

SITUATION WANTED
As manager or foreman on large farm, by capable married man, with thirteen years' experience in Canada. Best of references. Address: **P. F. R., FARMER'S ADVOCATE, LONDON, ONTARIO.**

1,000 Feet Above Sea Level.
The Muskoka Lakes District, situated in the "Highlands of Ontario," is one of the most charming summer resorts in the world. Its high altitude guarantees the purest of air, pleasant days and cool nights, no flies nor mosquitoes. Perfect immunity from Hay Fever assured. Modern, up-to-date hotels, with first-class service. A few weeks can be spent in this region, with pleasure and profit, at a reasonable outlay. Handsome illustrated descriptive matter giving full particulars may be had free by applying to **M. C. DICKSON,** District Passenger Agent, Union Station, Toronto.

A Common Bred Cow
When toned up by Dick's Blood Purifier will give as much and as rich milk as highly bred aristocratic Jersey cow gives upon ordinary feed, and a Jersey cow when given.
DICK'S BLOOD PURIFIER
will wonderfully increase her yield of milk. It saves feed too, because a smaller amount of well digested food satisfies the demands of the system and every particle of nourishment sticks.
50 cents a package.
Leeming, Miles & Co., Agents, MONTREAL.
Write for Book on Cattle and Horses free.

DICK'S BLOOD PURIFIER
will wonderfully increase her yield of milk. It saves feed too, because a smaller amount of well digested food satisfies the demands of the system and every particle of nourishment sticks.
50 cents a package.
Leeming, Miles & Co., Agents, MONTREAL.
Write for Book on Cattle and Horses free.

Prizewinning Carriage Stallion
JINGLE BELLS.
Full brother to Dr. Ling 16523 (winner at World's Fair). Bay stallion, 16 hands high. Good style and action. Will be sold cheap to close a partnership. Apply to
LORNE STOCK FARM, WEST LORNE, ONT.

OAKLAWN FARM
THE GREATEST
IMPORTING and BREEDING
ESTABLISHMENT
IN THE WORLD.
PERCHERONS,
FRENCH COACHERS.
On hand upward of
500 HEAD.
Our late importations included the Principal Prize Winners at the Great Shows of France.

GOSSIP.
At a public sale of Shorthorns, on March 19th, at Omaha, Neb., from the herds of Messrs. Geo. E. Ward, Hawarden, Iowa; C. A. Saunders, Manilla, Iowa, and others, 30 females sold for an average of \$408.85, 29 bulls for an average of \$242.35, and the whole 59 head for an average of \$327. The highest price of the day was \$1,200 for Mr. Ward's Imp. Jessica, a roan yearling heifer, by Golden Star. She was carrying a Lord Banff calf, and was purchased by Walpole Bros., Rock Valley, Iowa.

Messrs. C. & J. Carruthers, Cobourg, Ont., breeders of Shorthorn cattle, Yorkshire and Berkshire hogs, and Barred Plymouth Rock fowl, write that the two yearling bulls they are offering are choice ones, nicely bred, in real good breeding condition, and will be sold at reasonable prices. Both are red and were a year old in March, sired by Royal Charlie 30118 and British Hope 30916, prizewinning bulls of the Cruickshank Nonpareil and Maid of Primrose families, and from good milking cows and breeders of prize stock. Messrs. Carruthers are also offering Barred Rock eggs at \$1 per setting from a pen headed by a cockerel whose sire was a winner at the New York Show in 1901.

Messrs. H. Cargill & Son, Cargill, Ont., have recently issued a new catalogue of their famous Cargill herd of Shorthorns, containing the pedigrees of 65 animals, the great majority of which are imported Scotch-bred representatives of such choice families as Cruickshank Butterfly, Brawith Bud, Broadhooks, Clara, Claret, Dainty, Emma, Strawberry, Lancaster, Matilda, Mayflower, Mina, Missie, Mysie, Augusta, Duchess, Bessie, and others equally famous. The stock bulls are Golden Drop Victor, Count Douglas, and Marceno's Heydon Duke, all imported and from prominent herds in Britain. The herd is a choice one and has been selected and bred with a view to getting together a lot of breeding cows that would challenge comparison with any other in America. No expense has been spared to get the best, and the cream of a large number of importations has been kept for the purpose of reinforcing the breeding herd.

Hillside Herefords are the property of Mr. A. S. Hunter, of Durham, Ont. At present there are one hundred and twenty head of pure-bred animals in the herd, imported and home-bred. They are all in the pink of condition; in fact, many of them being in showing form. This is one of Canada's oldest established herds of pure-bred Herefords, and it is reasonably safe to say that individually and collectively they will stand the test of comparison with any herd in the country. The herd is headed by that grand old stock bull, Imp. True Briton, a bull that has done Mr. Hunter splendid service both in the herd and show-ring. Two other bulls in service at present are March-On 2nd bred by W. S. VanNatta & Sons, Fowler, Ind.; sired by that great bull, March-On 76035; dam Imp. Minnie; and Likely Lad 578, sired by the noted Commodore 402; dam Lily Wilton 654, by Imp. Conqueror. Although Mr. Hunter has sold a large number of animals, there are yet on hand for sale 7 yearling bulls and 15 yearling heifers that are typical animals, and will not stay long at the prices asked.

NOTICES.
THE USE OF THE INCUBATOR in poultry-raising is now regarded as an essential in extensive operations, and it is being more generally adopted every year by those engaged in the business in a smaller way. More uniform lots of chickens are secured by its use and early maturity is attained, enabling poultrymen to catch the early market for chickens when the prices are highest. The Prairie State Incubator Co., of Homer City, Pa. whose advertisement appears in this paper have had long experience in manufacturing incubators, and claim to have the largest and most complete incubator factory in the world, and have won 342 premiums, awards and medals in different countries. Their new catalogue which they state cost them \$15,000 to publish, is ready for distribution, and is one of the finest and most complete ever produced. They have booked this spring an order for 1,600 incubators to be shipped to New Zealand. Send for the catalogue, and mention the "Farmer's Advocate."

THE SHEEP-SHEARING MACHINE as manufactured and sold by the Chicago Flexible Shaft Co. is voted a complete success by all who have used it. Visitors to the International Show at Chicago last year were delighted with the demonstrations of its capabilities, all grades of sheep being neatly and quickly shorn in the buildings every 10 to 15 minutes each day during the show with the latest patent hand-power shearing machine. We have just received a beautiful catalogue published by the Chicago Flexible Shaft Co., illustrating their hand and power shearing machines, together with valuable hints on shearing by R. M. Marquis, champion of the world, who has a record of shearing 364 sheep in one day. This catalogue should be in the hands of every sheep owner, and will be sent on request, by addressing the manufacturers at Chicago.

How Some of Our Readers Can Make Money.

Having read of the success of some of your readers selling Dish-washers, I have tried the work with wonderful success. I have not made less than \$9.00 any day for the last six months. The Mound City Dish-washer gives good satisfaction and every family wants one. A lady can wash and dry the dishes without removing her gloves, and can do the work in two minutes. I got my sample machine from the Mound City Dish-Washer Co., of St. Louis, Mo. I used it to take orders, and sold 12 Dish-washers the first day. The Mound City Dish-Washer Co. will start you. Write them for particulars. Ladies can do as well as men. **JOHN F. M.**
—Adv't. om

CLYDESDALE STALLION
Kinellar Stamp (3041).
One-year old bay.

WM. BRASH, ASHBURN, ONTARIO.

FOR SALE:
A Clydesdale stallion, rising 3 years old. In splendid condition; excellent bone and action; a prizewinner wherever shown last fall and fall before.
L. BRADLEY, COLUMBUS, ONTARIO.

HIGH PARK STOCK FARM.
GALLOWAYS of the choicest breeding and most fashionable strains. Inspection or correspondence invited. **A. M. & ROBERT SHAW,**
P. O. Box 294, Brantford, Ont.

The Sunnyside Herefords.
Imp. Sunny Slope Tom 1st at head. The blood of Lord Wilton, Garfield, Grove 3rd, Beau Real and Diplomat represented. Special offering: 5 bulls, good ones, ranging in age from 9 mos. to 2 1/2 years; 6 young cows and heifers. Inspection and correspondence solicited. 2 choice registered Berkshire boars, price \$10.00 each.
O'NEIL BROS., Southgate, Ont.
Lucan station, G. T. R. Iderton station, L. H. & B.

JOHN DRYDEN,
BROOKLIN, ONTARIO,
BREEDER OF
CRUICKSHANK SHORTHORNS AND CHOICE SHROPSHIRE SHEEP.
Choice Young Bulls and Ram Lambs for sale. Write for prices.

J. R. McCallum, Iona Station, Ont.
Offers young SHORTHORN BULLS and HEIFERS, of choice breeding, at reasonable prices. Iona Sta. on M.C.R., half a mile from farm.

BELLEVUE SHORTHORNS.
Both sexes. IMPORTED AND HOME BRED. All ages.
Prizewinners at home and abroad.

EDWIN BATTYE,
GORE BAY P. O. AND PORT.
MANITOULIN ISLAND.

Mercer's Shorthorns for Sale
BULLS and heifers from such families as Matchless, Clarets, Missies, Stanfords, Fashions, Buttercups, Isabellas, Princesses, Beatrices, and other choice families. Herd headed by Village Squire = 2483 = (he by Abbotford), assisted by a son of old Royal Sailor (imp.). Cows and heifers in calf. Four nice young bulls. Our herd stands at the head of the show-ring in this northern country. Over 40 head now in the herd. Intending visitors drop a card and they will be met at the C. P. R. station, Markdale, one mile from farm. Write for prices. No business, no harm. Our motto: "The best is none too good."
THOS. MERCER, MARKDALE, ONT.

INGLESIDE HEREFORDS.
A few choice heifers and young bulls by **Mark Hanna,** sweepstakes bull at Pan-American.
Shropshire Sheep and Tamworth Swine.
H. D. SMITH,
Compton, Quebec.

"ORCHARD HILL" SHORTHORNS.
Herd comprises representatives of best Scotch-bred families, with Lord Lavender at head. Young animals of both sexes for sale.
om ARTHUR JOHNSTON, Vandeleur, Ont.

LAKE VIEW STOCK FARM.
SCOTCH SHORTHORNS, both sexes, all ages.
As good as the best.
Meaford Station, G. T. R. North. **JAMES BOWES,** Stratbairn P. O.

FOR SALE:
SHORTHORNS: 7 young bulls, from 8 to 10 mos. old, sired by Letak Lad and out of deep-milking cows. **H. E. HIND,** Hagersville P. O., and Station, G. T. R. and M. C. R.

"VIGILANT" NEST

SLIDING-ADJUSTABLE (Patented Can. & U.S.) The only nest in the World which positively prevents hens from eating their eggs. Simple-Effective-Durable No springs-Eggs cannot break. The inclined nest gathers them safely in lower section. Prevents fleas, or parasites, etc. Everlasting, never failing, comfortable. Thousands now in use. Ask your dealer for it or write to L. P. Morin, Inventor, Mfr., 12 Antoine St., St. Hyacinthe, Que. Price 45c. each. AGENTS WANTED.



STEWART'S SHEEP SHEARING MACHINE



Highest and Only Award at Pan-American Exposition. 1902 Model, price including grinder, only \$1850 Will be fitted with the wonderful Stewart Shear owner of 10 Sheep or more can afford to shear by hand even though the work be done for nothing. Don't butcher your sheep. Shear with this machine, and get ONE POUND WOOL EXTRA PER HEAD. Will more than cover the whole cost of shearing. Send today for valuable book on shearing. It is free and will save you money. CHICAGO FLEXIBLE SHAFT CO., 150 La Salle Ave., Chicago, Ill.

Wagon World Awheel.

Half a million of these steel wheels have been sent out on our own wagons and to fit other wagons. It is the wheel that determines the life of any wagon, and this is the longest lived wheel made. Do you want a low down Handy Wagon to use about the place? We will fit out your old wagon with Electric Wheels of any size and any shape tire, straight or staggered spokes. No cracked hubs, no loose spokes, no rotten felloes, no resetting. Write for the big new catalogue. It is free. Electric Wheel Co., Box 253, Quincy, Ills.

Shorthorn Bulls.

Scotch-bred, good color, lots of size and style-rare good ones. Also females all ages. Write for particulars, or, better, come and see them. DAVID MILNE & SON, ETHEL P. O., Huron Co., Ont. Ethel Station, G.T.R., half mile from farm.

JAMES A. CBERAR, Shakespeare, Ont. BREEDER AND IMPORTER OF HIGH-BRED SCOTCH SHORTHORNS

Wm. Linton, 1883 AURORA, ONT., 1902



Has for sale three imported Shorthorn bulls and a few heifers, various ages; also a few home-bred bulls fit for service. This is one of the herds that the late Amos Cruickshank used to resort to for stock bulls. Aurora is 24 miles north of Toronto, by Metropolitan R.R. Can leave Toronto any time during the day, and be back in Toronto in two hours and a half.

Bonnie Burn Stock Farm, 40 rods north of Shouffville Station, Ont., offers Shorthorn bulls and heifers with all Shropshire ewes with lamb, and Berkshire pigs. All at farmers' prices. Inspection invited. D. H. RUSSELL, Shouffville, Ontario.

J. & W. B. WATT, SALEM, ONTARIO (POST AND TELEGRAPH OFFICE)

BRICKERS OF- Shorthorn Cattle, Clydesdale Horses, Leicester and Oxford Sheep, and Berkshire Pigs.

Our herd contains such families as Matchless, English Ladies, Madreds, Village Buds, Mosses, Stamford, Claret, and Marthas. Royal Wonder - 3482 - junior champion of B.H.L. now heads the herd. A choice lot of young bulls and a few females for sale. We offer our whole flock of Leicester for sale - thirty-five ewes and ewe lambs and fifteen rams.

Farms 2 miles from Flora Stn., G.T.R. and C.P.R., 12 miles north of Guelph

SHORTHORNS, SHROPSHIRE, COTSWOLDS We are now offering a fine lot of yearling heifer calves; a few bull calves; also a few cows, all bred in the purple and white, and the best. Also Shropshire and Cotswold. JOSEPH BELL ESTATE, Bradford P.O. & Sta.

GOSSIP.

Messrs. Smith & Richardson, Columbus, Ont., importers and breeders of Clydesdales, who advertise a number of choice stallions and mares, report the sale of the imported stallion, King's Cross (10070), to the Clydesdale Association of Markham, of which Mr. George Gormley, of Unionville, is president, and Mr. R. C. Telfer is secretary-treasurer. It is thought and acknowledged by competent judges that King's Cross (10070), by Sir Everard (5353) and half-brother to the renowned Baron's Pride (9122), is the best Clydesdale stallion in Ontario.

Three exceptionally well-bred Shorthorn bulls are advertised for sale by Mr. N. A. Steen, Streetsville, Ont., whose Whitehall Stock Farm is situated in the County of Peel, about two miles from Streetsville Junction, on the C. P. R., and six miles from Brampton, G. T. R., where a small, but well-selected, herd of Scotch-bred Shorthorns of the Cruickshank Cecilia and Missie families is kept. The three bulls offered for sale are good ones: British Earl 37284, three years old, by British Comet, dam Margie Earl, by Imp. Toit-hills, Republican Statesman 39904, one year old, by Republican; dam Cecilia 17th, by Imp. British Statesman, Republican's Her 39905, one year old, by Republican; dam Cecilia 10th, by Brighton Lad. Their sire, Republican 30859, is by Indian Brave 21500, by Imp. Indian Chief, dam Mina of Sylvan, by Norseman. These bulls can be bought right.

SALE OF MR. F. A. GARDNER'S SHORTHORNS.

The dispersion sale by auction, on March 20th, of the Shorthorn herd of Mr. F. A. Gardner, Britannia, Ont., was quite successful and satisfactory, the attendance being large and representative, breeders being present from all parts of Ontario and several from the United States. The animals were in good condition, showing careful fitting, and, as a whole, were a good, useful lot. The better animals, with good straight pedigrees, showed their superiority by the spirited bidding for them and the larger prices they sold for. The fine imported two-year-old heifer, Scotch Thistle, bred by Mr. John Marr, Cairnbrogie, sired by Prince Cruickshank 75277, and in calf to Imp. Luxury 74958, bred by Mr. Bruce, Inverquhomery, fell to the bid of Mr. J. M. Gardhouse, Highfield, Ont., at \$565, the top price of the sale. The imported bull, Scotland's Fame 26063, of Mr. Manson's Kiblean Beauty tribe, bred by Mr. Garden, Tolquhon, and sired by the Collynie-bred, Golden Ray 67122, went to Col. John A. McGilivray, of Uxbridge, Ont., at \$300, and the handsome red ten-months bull calf, Golden Prince, bred by Mr. John Garhouse, Highfield, sired by his imported Lancaster bull, Prince Louis, and of the Kinellar Claret family, was taken by Mr. L. Parkinson, Eramosa, at \$225. Mr. John Smith, M. P. P., Brampton, conducted the sale with his usual tact and courtesy, and Mr. Gardner was well pleased with the result. The average for all sold, old and young, was \$118. Following is the list of sales and purchasers:

Table listing various Shorthorn animals for sale, including names like Scotch Thistle, Marchioness, and Golden Prince, along with their ages and prices.

FROM BULL TO HEN ELLWOOD Steel Wire FENCES. Strength and security are combined in ELLWOOD FENCES. Made of best steel wire, heavily galvanized. Small mesh at bottom, larger mesh at top, make them secure for large and small stock. Farms, ranches, orchards, nurseries are safest fenced with ELLWOOD Wire FENCES. The standard of strength, durability and economy in woven wire fences. Heavy steel wire, heavily galvanized, six heights, styles for all purposes. Sold everywhere. If your dealer hasn't them, write to Canadian Steel & Wire Co., Ltd., Hamilton, Ont.

... THE HOME ... ENVIRONMENTS. Are greatly improved by the judicious planting of Hardy Ornamental Shrubs, Hardy Perennial Plants, Hardy Roses; there is nothing better in the floral line for rural grounds. They are so easily managed, and live from year to year with very little care. We have the largest and most complete stocks in Canada. We sell direct to the planters. Our plants cannot be procured through agents. Our handsome illustrated price list, "Canadian Plants for Canadian People," gives full descriptions and prices. Write for it. Webster Bros., HAMILTON, CANADA.

Scotch Shorthorns BREEDING FEMALES ALL IMPORTED. Imp. Golden Drop Victor our present stock bull. Eleven young bulls and some young cows for sale at reasonable prices. H. CARGILL & SON, Cargill Station, G. T. R. CATALOGUE FREE. Cargill, Ontario.

Maple Lodge Stock Farm. ESTABLISHED 1854. SHORTHORNS.-First-prize milking strains, best Scotch breeding. Young bulls and heifers for sale. LEICESTERS.-A grand lot of ewes, bred to our imported rams, and a few choice rams, now for sale. Also Bronze turkeys. A. W. SMITH, Maple Lodge P. O., G.T.R., 3 1/2 miles.

10 SHORTHORN BULLS. From 6 to 18 months old. Nearly all from imp. dams, and sired by the imp. Golden Drop bull, Royal Prince. Catalogue upon application. John Miller & Sons, Brougham P.O., CLAREMONT STATION, C. P. R., ONT.

GREEN GROVE HERD OF SHORTHORNS. This herd is headed by the famous show bull, Spicy Robin = 25239 = (bred by J. & W. B. Watt), grandson of Imp. Royal Sailor, and of the noted English family, and contains such noted tribes as Nonpareils, Crimson Fuchsias, Mysies, Butterflies, and Lancushes. Short-horns of both sexes. Also a choice litter of Yorkshires, about 1 mos. old, for sale. Address: George D. Fletcher, Binkham P. O., Ont. Erin Shipping Station, C.P.R.

12 SHORTHORN BULLS. ALL UNDER TWO YEARS OLD. PRICE, FROM \$100 UPWARDS. At the Toronto Industrial, 1900, the herd was awarded first for aged cows, three-year-old cows, two-year-old heifers, sweepstakes for female any age, first for herd (bull and four females), and first for breeder's herd.

SHORTHORNS. Fashionably bred, of both sexes and all ages. Nothing reserved. H. PARKER, Durham P. O. and Station.

A QUICK, SHARP CUT DEHORNING KEYSTONE KNIFE. Done with the DEHORNING KEYSTONE KNIFE. Most humane method of dehorning known. Two highest award World's Fair. Write for free circulars before buying. Owned and Manufactured by R. H. MCKENNA, V. S., Picton, Ont.

J. & W. RUSSELL, RICHMOND HILL, ONT.

SHORTHORNS FOR SALE. Two good young bulls fit for service. Also females all ages. Herd headed by imp. Spicy Marquis. JAMES GIBB, Brookside, Ont.

W.G. PETTIT & SON, FREEMAN P. O., ONT. IMPORTERS AND BREEDERS OF

MILKING SHORTHORNS. 2 young bulls of good milking strains and all quality for sale. Come and see them. Stn. 34 miles from farm. H. C. GRAHAM, AILSA CRAIG, ONT.

Scotch Shorthorns and Shropshire Sheep. Are offering 10 Imp. bulls from 10 months to 2 years old; 10 home-bred bulls from Imp. stock, 10 to 15 months old; 40 Imp. cows and heifers, all ages. Home-bred cows and heifers all ages. Also a grand lot of ram and ewe lambs and yearling ewes for sale.

ROSEVALE SHORTHORNS. Are of the up-to-date sort. We have for sale a number of young bulls and heifers of all ages. Marlene Heifer 1000 Imp. heats the herd. W. J. SHEAN & CO. 1712 Broad St.

SHORTHORNS: We are offering 3 extra choice yearling bulls, all from imported sires, straight Cruickshank, with Lavender and Miss Ramsden dams. THOS. ALLIN & BROS., Oshawa, Ont.

PLEASE MENTION FARMER'S ADVOCATE.

Shorthorns and Berkshires. Four young bulls, 6 to 12 months old. Pigs, 2 to 3 mos. old. Pairs supplied not skim. MAC CAMPBELL, NORTHWOOD, ONT.

Shorthorn Bulls.

Good ones. Chocily bred. Moderate prices. Send for bull catalogue.
Also Scotch-bred cows and heifers.

H. SMITH, HAY, ONTARIO.

Exeter station on London and Wingham branch of the G. T. R. adjoins the farm.

ARTHUR JOHNSTON, GREENWOOD, ONTARIO.

BREKDER OF POST OFFICE AND TELEGRAPH OFFICE. IMPORTER OF

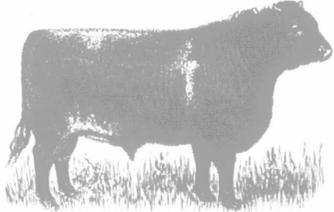
SHORTHORNS ONLY.

FOR SALE: 9 imported bulls and bull calves. 11 home-bred bulls and bull calves, from imported cows and by imported bulls. 17 home-bred bull calves. A large and excellent lot of young cows and heifers of various ages.

RAILWAY STATIONS: PICKERING, G. T. R., 22 MILES EAST OF TORONTO. CLAREMONT, C. P. R., 28 MILES EAST OF TORONTO.

Spring Grove Stock Farm.

Shorthorn Cattle
AND
Lincoln Sheep.



HERD prize and sweep-stake at Toronto Industrial Exhibition, 1897 and 1898. Herd headed by the Marr Missie bull, Imp. Wanderer's Last, last of the

get of the great sire, Wanderer, of the Cruickshank Bra with Bud tribe. High-class Shorthorns of all ages for sale. Also prizewinning Lincolns. Apply

T. E. Robson,
ILDERTON, ONT.

LESS LABOR AND MORE MONEY ON THE FARM.

BUY A LOW-DOWN, THICK-FLUSHED

Hillhurst Shorthorn Bull,

Scotch-topped, from Cumberland, Gloucestershire, or Canadian dairy strain, and raise DEEP-MILKING, BIG-FRAMED COWS AND BABY BEEF in nature's way. Many cows that do not pay board at the pail will give a handsome return in growing beef. Four handsome young bulls, seven to nine months old, reds and roans, by the celebrated imported sires, "Joy of Morning" and "Scottish Hero," for sale at moderate prices. Low freights.

M. H. COCHRANE, COMPTON CO., P. Q.,
G.T.R., 117 MILES EAST OF MONTREAL. HILLHURST STATION.

Farmers, Attention!

Extract from a letter just received by The CANADA PAINT COMPANY, Limited, Montreal, from Mr. A. Strachan, Hardware and Paint Merchant, Kingston, Ontario:

"By referring to your ledgers you will be able to ascertain the number of years we have been selling your paints.

"From the experience of these years and from actual and practical tests, backed by numerous testimonials from our customers, we can confidently state that THE CANADA PAINT COMPANY'S Mixed Paints are second to none in Canada, and, indeed, far superior to any we have met with."

A FEW CHOICE SHORTHORNS

YOUNG COWS AND HEIFERS

In calf to Imp. Prince of the Forest and Prince Ramsdell - also a few young bulls fit for service.

G. A. Brodie, Bethesda, Ont.

SHORTHORNS.

THORNTON HERD, ESTABLISHED 27 YEARS.

Imp. Royal Member and Sailor Champion now at head of herd, which are all bred on straight Scotch lines, and are of the up-to-date kind. Present offering: some choice young bulls.

REDMOND BROS., Millbrook Sta. and P. O.

HIGH-CLASS SCOTCH SHORTHORNS

of the following families, for sale at moderate prices: Village Girls, Broadhooks, Beaufort Roses, Missies, Clarets, Marr Floras, Nonpareils, Minas and other choice families. Write for catalogue. Shropshire rams and ewes for sale as usual.

ROBERT MILLER, Stouffville, Ont.

SHORTHORNS (IMP.)



Cows and heifers, imp. and home-bred. Bulls, imp. and home-bred—all ages. Representing the fashionable blood of Scotland.

EDWARD ROBINSON,
MARKHAM P. O. & STN.

Charles Rankin

WYEBRIDGE, ONT.,

IMPORTER AND BREKDER OF

SHORTHORNS,

OXFORD DOWNS

AND

BERKSHIRE PIGS.

Young stock always on hand.



Shorthorns, Berkshires, Leicesters

An offering at present the grand stock boar, Crown Prince; also some young ones.

ISRAEL GROFF, ALMA, ONTARIO.

SHORTHORNS: We are offering for sale 8 bulls, from 8 months to 3 years old, by Mungo 2nd and Scottish Bard. Also a few cows bred to Baron's Heir.

ROBT. GLEN, Owen Sound, Ontario.

Scotch-bred Shorthorns FOR SALE - One 3-year-old Gloucester dam; three bulls from 9 to 16 months old, from Cecilia dams. Prices right.

N. A. STEEN,
om MEADOWVALE STATION AND POST OFFICE.

HAWTHORN HERD

of deep-milking Shorthorns for sale. Six young bulls of first-class quality and breeding and from AI dairy cows.

WM. GRAINGER & SON,
Londesboro, Ont.

SHORTHORNS (imported)

One bull, 2 years old, and 1 imported cow, and 7 home-bred heifers.

THOS. RUSSELL, EXETER, ONT.

For Sale: Very heavy, massive cows of Bates and Cruickshank breed. Two-year-old heifers in calf. Stock bull, Imperial 2nd, No. 28883. Bull calf, 11 months (Cancopper Boy 2nd = 39878=), dam Flora = 32971=; also dark red heifer calves. **John McFarlane, Dutton, Ont.**

Scotch-bred Shorthorns

AT OAK GROVE ARE famous for size and quality. Eight bulls from 10 to 15 months old; reds and roans. Several heifers at prices that will save you money. Also Collie pups. **L. K. WEBER,** Hawkesville P. O., Ont., Co. Waterloo, St. Jacob's Station, G. T. R.

SCOTCH SHORTHORNS.

We are now offering a few young bulls, from 6 to 11 months; also a few heifers, from 6 months to 2 years; all showing No. 1 quality.

W. G. HOWDEN, om COLUMBUS P. O.

FOR SALE: 5 Scotch Shorthorn

Durhams (bulls), 5 to 16 months; 5 young cows and heifers. Berkshire pigs, both sexes. Prices reasonable. "Caden View Farm."

A. J. C. SHAW & SON, Thamesville P. O.

HOLWELL MANOR FARM

SHORTHORNS, SHROPSHIRE, YORKSHIRE, SCOTCH COLLIES.

D. G. GANTON, ELMVALE, ONT.

SHORTHORNS.

One bull, 1 year old; two bulls, 7 months old; a few heifers of choice breeding and superior quality.

AMOS SMITH, Listowel station, Trowbridge P. O., Ont.



T. DOUGLAS & SONS, STRATHROY, ONT.,
BREKDER OF

Shorthorns & Clydesdales

100 SHORTHORNS TO SELECT FROM - Herd bulls (imp.) Diamond Jubilee = 28861 and Double Gold = 3782. April offering: 1 bull, grand young bull, and cows and heifers of all ages. Clydesdales - one 3-year old stallion and one 1-year old mare in foal. Farm one mile north of town.

QUEENSTON HEIGHTS SHORTHORNS

SCOTCH AND SCOTCH TOPPED
In service: Derby (imp) = 32057 = ; Lord Montalis, by Collynie Archer (imp.) = 28890 =. Some choice heifers and young cows with calf at foot or in calf to imported bull at moderate prices.

HUDSON USHER,
QUEENSTON, ONT.
om
FARM 3 MILES NORTH NIAGARA FALLS

GEO. RAIKES, BARRIE, ONT.,

BREKDER OF

SHORTHORNS & SHROPSHIRE.

YOUNG STOCK FOR SALE.

SHORTHORNS -

Scotch and Scotch-topped. War Eagle = 27609 = at head of herd. Young bulls, cows and heifers for sale. Railway station: Coldwater, Midland branch, G. T. R. Write for prices. **S. Dunlap, Eady P. O., Ont.**

SHORTHORNS.

FOR SALE: 2 choice bulls - one 20 months old and the other 11 months. Also Barred Rock eggs, \$1 per setting. Millar strain. Write: **C. & J. CARRUTHERS, Cobourg, Ont.**

Shorthorn Cattle, Lincoln Sheep

Imp. Prime Minister at head of herd. Imp. Clippers, Miss Ramsdens, and other Scotch families. Lincolns won more than half the money and first for flock at the Pan-American; International, Chicago, 1901 and 1902.

J. T. GIBSON, om DENFIELD, ONT.

Hillside Shorthorns and Shropshires.

Bulls, from 8 to 18 months old; heifers, various ages, of true type and fashionable breeding; also 25 ram lambs and 15 ewe lambs, from imp. sire. Will quote prices right for quick sales.

L. Burrett, Greenbank P. O., Ont.; Uxbridge Sta., G. T. R.

4 HOLSTEIN BULLS 4

FOR SALE: From 4 to 7 months old, having sires in their pedigrees from such strains as Inka, Netherland, Royal Aggie, and Tritonia Prince, and out of imported females that have proven their worth at the pail. **THOS. B. CARLAW & SON,** Warkworth.

25 HOLSTEIN CALVES

For March, April and May delivery, from such noted strains as Homestead De Kol, Abbekerk Chief, and Corelia Ykema, imported, and others. We have spared no expense in getting the best pedigrees furnished. Express prepaid. Safe arrival guaranteed.

H. GEORGE & SONS, CRAMPTON, ONT.

RIDGELING CASTRATION.

om - **DR. J. WILSON, V. S., WINGHAM, ONT.,** Specialist in the castration of ridgeling horses and colts. Terms and testimonials on application.

Maple Glen Stock Farm.

EXHIBITION OFFERING: Two bull calves under 1 year. Also a Sylva and an Abbekerk bull calf, with spring and fall heifer calves of Sylva breeding, bred from winners and ones that will make winners. Prices according to quality.

C. J. GILROY & SON, Brookville, on C.P.R. and G.T.R. Glen Buell, Ont.

Ridgedale Farm Holstein-Friesians for Sale.

2 yearling bulls; also bull and heifer calves; all of choice breeding. Prices always reasonable. Write, or come and see them. **R. W. WALKER, Utica P. O.,** Shipping stations: Port Perry, G. T. R.; Myrtle, C.P.R. om

BRAMPTON JERSEY HERD

Offers: 3 St. Lambert bulls from 6 to 14 months old, out of high-testing cows; 1 yearling and 5 bull calves, sired by Brampton's Monarch (imp.). Four young bulls sired by him won 1st, 2nd and 3rd prizes under one year, and 1st prize under six months, also 1st, 2nd and 3rd at London and Ottawa, in 1901. The best is none too good. These young bulls have never been beaten. Get one to head your herd.

B. H. BULL & SON, BRAMPTON, ONT., G. T. R. and C. P. R. Stations.

FOR SALE: A SPLENDID LOT OF

Jersey Cattle.

41 HEAD TO CHOOSE FROM.

Close descendants of my most noted prizewinners, and closely related to many animals I have sold that have won easily in the Northwest and all over Canada. My shipments last summer ranged from Manitoba to State of Delaware, U. S.

MRS. E. M. JONES, BOX 324, BROCKVILLE, ONT., CAN.

PLEASE MENTION FARMER'S ADVOCATE.

F. L. GREEN,
BREEDER OF
Jersey Cattle and Yorkshire Pigs.
Choice stock of each sex for sale. -om
PICKERING STATION, G. T. R.
CLAREMONT STATION, C. P. R. **GREENWOOD P. O.**

"Here's Your Calf."
Get Your Tag On.
No need to silt the ear of your animals to mark them. Mark all your stock with the **Aluminaum "Stay There" Ear Marker**. Contains your name, address, and consecutive numbers on each tag. No rusting or wearing off, inexpensive and perfectly easy and simple to attach. We send free sample and prices upon application.
WILCOX & HARVEY MFG. CO. 194 Lake St., Chicago, Ill.



JERSEYS FOR SALE
A few choice Jersey bulls and bull calves for sale at very low prices. Choice breeding; good colors. Write for prices.
W. W. EVERITT,
CHATHAM, ONT.
"Dun Edia Park Farm," Box 555. -om

Wm. Willis, Newmarket, Ont.
Breeder of A. J. C. Jerseys and registered Cotswold sheep. Have yet two fine young bulls from Count, fit for service; also Yorkshire swine. -om

To Rid Stock of Lice
AND ALL SKIN DISEASES.
Also to Keep Poultry Healthy
USE
WEST'S FLUID

Which is also a SURE CURE OF CONTAGIOUS ABORTION. STANDARD SHEEP DIP IS CHEAP AND GOOD. Pedigree forms free to customers. Manufacturers:

The West Chemical Co'y,
TORONTO, ONT.
Agt. for Manitoba: **W. R. ROWAN,**
132 Princess St., Winnipeg.

FOR SALE:
Three grandly-bred Ayrshire bull calves, 12 to 15 mos. old. Also young calves, by Napoleon of Auchinbrain (imp.), whose dam has a record of 72 lbs. of milk per day. A few choice young Berkshire and Yorkshire sows could be served before shipping. Collie pups, from Perfection Queen. Address -
T. D. McCALLUM,
Nether Lea, -om Danville, Que.

AYRSHIRES AND YORKSHIRES.
We always have on hand choice individuals, male or female, of above breeds. Write us.
-om **ALEX. HUME & CO., Meule, Ontario.**

Maple Cliff Dairy and Stock Farm.
BREEDERS OF
AYRSHIRE CATTLE, IMPROVED BERKSHIRE AND TAMWORTH PIGS.
FOR SALE: 5 bull calves, a few heifers; young pigs, pairs not akin; 2 boars, 4 months old; young pigs. Farm adjoins Central Experimental Farm, Ottawa.
R. REID & CO., Hintonburg, Ont.

NEIDPATH AYRSHIRES. Four (4) August, 1901-bull calves. A number of heifer calves, yearlings and two-year-olds. Also a few March, 1902, bulls. **W. W. BALLANTYNE, Stratford, Ont.**
Farm adjoins city, main line G. T. R. -om

Ayrshire Bulls from 14 years to 6 months, from the sweepstakes bull, 1901, of the North - 1907 - also females all ages. Shropshire sheep, Berkshire pigs, either sex, and B. P. Rocks. For particulars write -om
J. YULL & SONS, Carleton Place, Ontario.



A LOST COW.
That can never happen where the cows wear our patented **Swiss Cow Bells**. Made from finest quality of Swiss Bell Metal, they are light but strong and lasting. Musical in tone. They add to the appearance of herd besides making them tame and tractable. Strap with each. Sold direct in sets or singly to introduce. Made in U.S.A. -
Bevin Bros. Mfg. Co., East Hampton, Conn.



Tredinnock Ayrshires.
Imported bulls at head of herd: Glencairn 3rd, Napoleon of Auchinbrain, and Lord Dudley. Forty imported females, selected from leading Scotch herds, and their produce from above-named bulls. Size combined with quality and style, well-formed udders, good-sized teats, and capacity for large milk production. Bull calves for sale; also a few young cows and heifers. For prices and particulars address **JAMES BODEN, Mgr., St. Anne de Bellevue, Quebec.**
Farm close to St. Anne Station, G. T. R. & C. P. R., 20 miles west of Montreal. -om

NO HUMBUG!
PERFECT instruments in one. Humane Swine V. Stock Marker and Calf Dehorner. Stops swine of all ages from rooting. Makes 48 different ear marks, large or small, with same blade. Extracts horns. Testimonials free. Price, \$1.50; or send \$1, get it on trial, if it suits send balance.
Patented April 23, 1901, U. S.
FARMER BRIGHTON, Fairfield, Iowa.



THE ONTARIO VETERINARY COLLEGE
(LIMITED),
TEMPERANCE ST., TORONTO, CANADA.
Affiliated with the University of Toronto.
Patrons: Governor-General of Canada, and Lieutenant-Governor of Ontario. Fee \$65.00 per session. Apply to **ANDREW SMITH, F.R.C.V.S., Principal.** 18-23-om

EUROPEAN ADVERTISEMENTS.
Ayrshire HERD OF 150 cows and heifers, bred from deep milkers, with large teats, of a commercial stamp. Established over half a century. **J. & A. Wilson, Boghall Farm, Houston, Renfrewshire, Scotland.** -om

PEDIGREE AYRSHIRES.
Cows and heifers, all bred from prizewinning stock at the leading shows.
Robert Wilson, Mansurae, Bridge of Weir, Renfrewshire, Scotland. -om

English Shorthorns.
Booth and Bates Shorthorns, topped with Cruickshank bulls. Young cows, bulls and heifers always on hand for sale. Eligible for the American herdbook. Royal and Highland prizewinners included for the last two years. Close on £400 won in prizes last year and this. -om
WM. BELL,
Ratcough Farm, Alnwick, Northumberland, Eng.

FAMOUS ALL OVER THE WORLD
ALFRED MANSELL & CO.,
LIVESTOCK AGENTS AND EXPORTERS,
SHREWSBURY.

BRITISH STOCK selected and shipped to all parts of the world. Write for prices to **ALFRED MANSELL & CO., Shrewsbury, England,** or to our American representative, **Robert Miller, Stouffville, Ont., Canada.**

W. W. CHAPMAN,
Secretary of the National Sheep Breeders' Association,
Secretary of the Kent or Romney Marsh Sheep Breeders' Association,
and late Secretary of the Southdown Sheep Society.
Pedigree Live Stock Agent, Exporter and Shipper. All kinds of registered stock personally selected and exported on commission; quotations given, and all enquiries answered.
Address: **FITZALAN HOUSE, ARUNDEL ST., STRAND, LONDON W. W.**
Cables—Sheepcote, London. -om

WALTON HERD
OF
PEDIGREE PIGS.
The property of Sir Gilbert Greenall, Bart., Walton Hall, Warrington, England.

This herd is unrivalled for its true type, large size and strong constitutional vigor. It is the premier herd in England at the present day. Its show-yard career is unique, the champion prize for the best Large White pig at the R. A. S. E. having been won by pigs bred in the herd in 1896, '97, '99 and 1901, besides leading prizes too numerous to mention at all the principal agricultural shows in England.
A choice selection of boars and sows for sale. Inspection invited. All purchases carefully shipped. For particulars, apply to the Manager, **MR. J. HALLAS, Higher Walton, Warrington, England.** Railway stations: Warrington (Bank Quay) per L. & N. W. Ry.; Central per Midland, G. N. or G. C. Ry. Telegrams, "HALLAS Higher-Walton."

FARMERS!
KEMP'S INSTANTANEOUS
Sheep Dip
Contains more value for the money than any other dip on the market. We will send a tin prepaid to any part of Ontario for **ONE DOLLAR.** Half gallon, Imperial measure, in each tin. It is the cheapest disinfectant for outbuildings, drains, etc. -om

W. W. Stephen,
MEAFORD, ONTARIO.

COTSWOLD HILL STOCK FARM
Offers imp. and home-bred Cotswolds of both sexes and all ages, from the Champion of Canada for the last six years. -om

JOHN PARK & SONS,
Burgessville P.O. and Stn.
PLEASE MENTION FARMER'S ADVOCATE

SUMMERHILL HERD OF Large English Yorkshires.
HEADQUARTERS FOR THE IDEAL BACON HOG.



ROYAL DUCHESS. **LOOK ME OVER.**
Our winnings at the large shows, for 1901, are as follows: At Toronto every possible first prize and five seconds, two silver medals, and first for pen of pure bred bacon hogs, also sweepstakes on bacon hogs over all breeds; at London every possible first but two; while at the Pan-American, where our herd was divided, half going to Toronto, we won six out of ten possible firsts, also sweepstakes on boar any age. At the Pan American (Buffalo), Toronto and London there were thirty-six first premiums and medals given; all the medals and every first prize but six won by the Summer Hill Yorkshires. When in need of the best write **D. C. FLATT & SON, MILLGROVE, ONT.** Telephone: Millgrove, Ont.

FAIRFIELD LINCOLNS
Imported ewes and lambs. Can supply show flocks. -om

J. H. PATRICK, ILBERTON, ONT., CAN.

American Leicester Breeders' ASSOCIATION.
A. W. Smith, Pres., Maple Lodge, Ont.

Pedigrees now being received for Vol. 4. For information, blanks, etc., address:
A. J. TEMPLE, SEC., CAMERON, ILL., U. S. A.

JOSEPH FERGUSON, UXBRIDGE, ONT.,
BREEDER OF
Pure-bred Cotswolds—choice quality
om **UXBRIDGE P. O. AND STATION.**

SUMMERHILL OXFORDS.
Present offering: A choice lot of ram lambs and ewe lambs. Also 50 extra nice yearling ewes.
PETER ARKELL & SONS,
om **Teeswater P. O. and Station.**

IMPORTED COTSWOLDS
We are now offering some choice shearlings of both sexes; also this season's crop of lambs, sired by Imp. Swanwick.

BROOKS & LANGMAID,
COURTICE P. O.
SIX MILES FROM OSHAWA STATION, G. T. R. -om

CHAS. GROAT,
BROOKLIN, ONT.,
OFFERS FOR SALE

Cotswold Ewes and Ewe Lambs
of good quality and breeding. Also a registered stallion, 1 year old, and one filly foal. Good ones. A Duchess of Gloster bull, 15 months old, for sale. Write for price and particulars. -om

BROAD LEA OXFORDS.
Can sell a few choice ewes of different ages, bred to our imported rams, May King 1st and Earl of Fairfield 2nd; also 75 good ewe and ram lambs, and an imported two-shear ram. Come and see our flock, or write us for prices, etc. -om
HENRY ARKELL & SON, TEESWATER, ONT.,
MILDWAY, G. T. R.; TEESWATER, C. P. R.

Linden Oxfords and Shorthorns
Flock composed of selections from the best English flocks and their progeny. None but the best imp rams used. Stock for sale. -om
R. J. HINE, Dutton, Ont.

HIGH-CLASS SHROPSHIRE
A flock of 75, of good type. Two-shear rams, shearing rams, ram lambs, ewe lambs, fine lusty fellows. Flock headed by a fine imported ram. Write for prices. **Abram Rudell, Hespeler P. O., Ont.**
C. P. R. and G. T. R.

SHEEP BREEDERS' ASSOCIATIONS
American Shropshire Registry Association, the largest live stock organization in the world. Hon. John Dryden, President, Toronto, Canada. Address correspondence to **MORTIMER LEVERING, Secretary, Lafayette, Indiana.** -om

W. S. CARPENTER,
"MODEL FARM," SIMCOE, ONT.,
IMPORTER AND BREEDER OF
Shropshire Sheep.
Ram and ewe lambs for sale. Well covered. Station One-half Mile from Farm. Wabash and G. T. R. -om

50 REG. SHROPS. 50
FOR SALE:
Shearling and two-shear rams; also stock ram, bred by John Miller & Sons, and this season's crop of lambs ready for the fall trade. Foundation stock bred by Mansell, England. Prices moderate. A card will bring them. **ROWAT BROS.,**
Phipps station, G. T. R., 5 **Hillsdale, Ont.** miles east, Simcoe County. -om

Imported Poland-China Hogs. We are offering something extra choice of both sexes, any age (pairs not akin), from imported stock, and of the true type. Easy feeders, rapid growers. **ROBT L. SMYTH & SONS,**
om **Fargo P. O. and Station, M. C. R.**

What an Editor Says of
SHREDDED WHEAT
"We have used Shredded Wheat in our family since it first appeared on the market, and find it by far the most satisfactory as a breakfast cereal of anything we ever tried. More recently we have been using it as the foundation of many other meals, following the admirable recipes as given in the 'Vital Question,' and the result is not only appetizing, but perceptibly advantageous to the general health of the family. We cannot find language too emphatic to express our high opinion of Shredded Wheat Biscuit as a convenient, economical and satisfying food." **W. H. BROOK, editor "Healthy Home,"** Athol, Mass. -om
SHREDDED WHOLE WHEAT BISCUIT
FOR SALE BY ALL GROCERS.
Send for Recipe Book—FREE.
Mention this paper.

WILLOW LODGE BERKSHIRES FOR SALE
Two boars 11 mos. old; 4 boars 6 mos. old; 3 boars 5 mos. old; 4 boars 3 mos. old; also a number of sows from 2 to 3 mos. old. Now is the time to order spring pigs, which are arriving daily, sired by Longfellow 10th of H. F. No. 8633, Willow Lodge Prince (9789) and Milton Lad (9660). Pairs supplied not akin. -om
WM. WILSON, SNELGROVE, ONTARIO.

Imported Chester Swine.
Our present offering is both sexes, not akin, as good as the country produces. Also eggs from B. P. Rocks, B. B. and C. I. Games, S. G. Dorkings, G. Seabright Bants, Mammoth Pekin ducks—all prizewinners—\$1.50 per 13. Six extra B. B. Game cockerels or pairs for sale. -om
GEO. BENNETT,
CHARING CROSS P. O. AND STATION.

YORKSHIRES.
TWO good 7-month-old, pure-bred Yorkshire sows, bred to a pure-bred Chester hog. For sale reasonable. -om
R. H. HARDING, Thorndale, Ontario.

YORKSHIRES
Headed by Oak Lodge Prince 5071. Litters 15 weeks, either sex; 2 sows to farrow. -om
WM. TEASDALE, Dollar, Ont.
Northern branch G. T. R., 15 miles from Toronto. -om

YORKSHIRES AND POULTRY.
Young pigs, both sexes, extra choice. Eggs for hatching. No. 1 pens \$1.50, No. 2 pens \$1. from B. P. Rocks, W. Wyandottes, White and Brown Leghorns. A few Buff Orpington eggs at \$2.00 per setting. Choice pedigree collie pups. M. B. turkey and Pekin duck eggs. -om
A. B. ARMSTRONG, CODRINGTON, ONT.

Imported and Canadian-bred
YORKSHIRES.
A number of good young sows in pig, boars ready for service and young pigs from 2 to 3 months old, direct from imported stock. Pairs and trios supplied not akin. -om
H. J. DAVIS,
Box 284 **WOODSTOCK, ONT.**
Importer and breeder of Shorthorns and Yorkshires.

YORKSHIRES FOR SALE.
Boars fit for service, sows in farrow and ready to breed, and young stock on hand. Prices reasonable. -om
WM. HOWE,
BRUCE CO. NORTH BRUCE, ONT.

Snelgrove Poultry Yard. Barred Rocks exclusively. Canada's business hens. Eggs for hatching, \$1 per setting, 3 settings \$2. W.J. Campbell, Snelgrove P.O., Ont.

All prizewinning strains—Bronze turkeys sired by imp. tom that won 2nd at Pan-American. Narragansett turkeys and Pekin ducks. Also Oxford sheep, Tamworth swine and Collie dogs. om
A. ELLIOT, POND MILLS, ONTARIO.

EGGS FOR SALE. B. P. Rock, W. Wyandotte, Buff Pekin ducks; \$1.25 per setting. om
C. W. HEAVEN, Prescott, Ontario.

Better Hatches with Hens by new method of experienced poulterer; beats incubators; simplifies work with sitters; saves your temper. Directions, 20 cents. Using my method you make many times this much on each setting. om
VALLEY POULTRY FARM, Helena, Montana.



CRAMMING MACHINES, FATTENING COOPS, Incubators and Brooders POULTRY SUPPLIES. A. J. MORGAN, MFR., LONDON. Catalogue free. om

SHOEMAKER'S BOOK ON POULTRY

And Family Almanac for 1902. 160 pages 120 engravings, the finest work of its kind ever published. Gives recipes for making condition powders, remedies for all diseases of fowls, plans and diagrams for building poultry houses, tells you how to raise chickens profitably. Gives description with illustrations of 48 leading varieties of pure bred fowls, also

INCUBATORS AND BROODERS and poultry supplies at lowest prices. It is an encyclopedia of chicken information, worth many times its cost to anyone interested in poultry. You positively cannot afford to be without it. Sent postpaid, on receipt of price, 15 cents. Address: om
C. G. Shoemaker, Box 82, Freeport, Ill.

IT'S THE MAN WITH
Canadian Incubators

THAT DOES THE WORK.
CANADIAN INCUBATOR & BROODER CO., om
GRT CATALOGUE TORONTO, CAN.

INCUBATORS AND BROODERS.
Guaranteed to give satisfaction. Built to last a lifetime. Absolutely self-regulating, self-ventilating, and perfectly reliable in every way. om

For circular giving prices, etc., write the manufacturer: J. E. MEYER, Kossuth, Ont. Shipping station: Guelph.



Satisfied People. That's the kind that run the **MARILLA** Incubators and Brooders. If they are not satisfied we refund their money. Larger hatches, perfect system of regulating temperature, moisture and ventilation. All these points explained in our catalog. Sent for two 2c stamps. om
MARILLA INCUBATOR COMPANY, BOX 102, ROSE HILL, N. Y. Machines may be seen at the store of our agent, G. J. DANIELS, 196 River St., Toronto, Canada.

TORONTO ENGRAVING CO.
92 BAY ST.
CUTS BY ALL PROCESSES
LIVE STOCK A SPECIALTY.

Trees! Trees! Trees!

We have a full line of Fruit and Ornamental Trees for spring, 1902, at lowest possible prices. Headquarters for packing dealers' orders. Farmers wishing to buy first-class stock absolutely first hand and without paying commission to agents, should write to us at once for a catalogue and price list. Don't wait until the last minute, as you will be disappointed. Place order early and secure the varieties you want. om
Correspondence solicited.

Winona Nursery Co., WINONA, ONT.

A MACHINE To weave your own fence of Colled Hard Steel Spring Wire. 22 inches high, at 25 Cts. per rod. \$25 buys wire for 100 rod fence. Agents Wanted Catalogue Free. om
WIRE FENCE MACH. CO. Box 4 Ridgeway, Ont.

A FULL GARDEN

YOUR OWN CHOICE. BY MAIL POSTPAID.
10 PACKETS SEEDS 25c.

- VEGETABLES.**
ORDER BY NUMBER.
1. BEANS, Golden Wax.
2. BEET, Eclipse, round.
3. BEET, Egyptian, flat round.
4. BEET, Long Smooth Blood.
5. CABBAGE, Wilmingsdale.
6. CABBAGE, Fother's Linn-wick.
7. CARROT, Half-Long Dan-
vers's Scarlet.
8. CARROT, Gem or Oxheart.
9. CAULIFLOWER, Early Paris.
10. CELERY, Golden Self-
Blanching.
11. CORN, Early Minnesota.
12. CORN, Stowell's Evergreen.
13. CUCUMBER, Chicago Pickling.
14. CUCUMBER, Long Green.
15. CUCUMBER, White Spine.
16. HERBS, Sage.
17. HERBS, Savory.
18. HERBS, Marjoram.
19. LETTUCE, Nonpareil.
20. LETTUCE, Denver Market.
21. MUSK MELON, Early
Hackensack.
22. WATER MELON, Early
Canada.
23. ONION, Large Red
Wetherfield.
24. ONION, Yellow Danvers.
25. ONION, Silver-kin.
26. PARSLEY, Moss Curled.
27. PARSLEY, Hollow Crown.
28. PEAS, First and Best.
29. PEAS, McLean's Little Gem.
30. PEPPER, Ruby King.
31. PUMPKIN, Large Cheese.
32. RADISH, Rosy Gem.
33. RADISH, French Breakfast.
34. RADISH, Long Scarlet.
35. SALSIFY, Sandwich Island.
36. SQUASH, Vegetable Marrow.
37. SQUASH, Hubbard.
38. TURNIP, Red Top Globe.
39. TOMATO, Dwarf Champion.
40. TOMATO, Extra Early.
- FLOWERS.**
41. ALYSSUM, Sweet.
42. ASTERS, Mixed.
43. BALSAM, Mixed.
44. CARNATION, Mixed.
45. CLIMBERS, Mixed.
46. EVERLASTING, (Heli-
chrysum), Mixed.
47. MIGNONETTE, Sweet.
48. MORNING GLORY, Mixed.
49. NASTURTIUM, Tall, Mixed.
50. NASTURTIUM, Dwarf,
Mixed.
51. PANSY, Mixed.
52. PETUNIA, Mixed.
53. PINKS, Dianthus, Mixed.
54. PILEOX, Drummond Mixed.
55. SWEET PEAS, Fine, Mixed.
56. VERBENA, Mixed.
57. WILD FLOWER, Garden.
58. ZINNIA, Mixed.



5 Giant Gloxinia Bulbs—50c. All Different.

FREE WITH EVERY ORDER. 1 Package New Midget Phlox Drummond—Forty shades and colors—(Price 20 cents). Mention this paper.

ADDRESS ALL ORDERS... **WM. RENNIE, - TORONTO.** REMIT CASH WITH ORDER.

Ewing's Seeds

ESTABLISHED 1869. [SUCCESSORS TO WM. KANS SEED CO.]
are thoroughly reliable, and better cannot be found. We in il Free our Illustrated Seed Catalogue for 1902, to all sending us their addresses. No seed house has a higher reputation nor can serve you better in regard to quality, extent of assortment or prices.

WM. EWING & CO., SEED MERCHANTS, 142 MCGILL ST., MONTREAL.

FERRY'S SEEDS

Known and sown wherever good crops are grown.
Sold everywhere.
1902 Annual FREE.
D. M. FERRY & CO. Windsor, Ont.

DO YOU KNOW THAT WORN-OUT LANDS MAY BE MADE PRODUCTIVE AND PROFITABLE BY THE JUDICIOUS USE OF THE RIGHT KIND OF FERTILIZER?
Now if you have a piece of land that won't grow anything but weeds, talk with us about it and let us suggest THE RIGHT FERTILIZER.
WE FEEL VERY SURE THAT WE CAN SHOW YOU HOW TO USE FERTILIZERS WITHOUT GREAT EXPENSE SO YOUR LAND WILL PAY.
CONSULT US FREELY IT IS OUR BUSINESS TO KNOW ENQUIRIES FREELY ANSWERED AGENTS WANTED FOR TERRITORY NOT TAKEN UP THE W.A. FREEMAN CO. LIMITED HAMILTON ONTARIO

PLEASE MENTION FARMER'S ADVOCATE

Every Landlord realizes that bills for interior repairs soon eat up the profits from his rentals. Every new tenant wishes a different wall paper or other changes in interior decorations. Wars, cracks and discolorations, no matter how small, are pointed out as needing immediate attention. Pedlar Steel Ceilings and Wall Patterns never crack or warp. The annoyance of falling plaster is avoided, while the artistic creations possible are bound to evoke enthusiasm from the most critical tenants. A large illustrated catalogue gives fullest particulars. We'll send one when we know you're interested. **THE PEDLAR PEOPLE, Oshawa, Ontario.** Eastern Branch 22 Victoria Square, Montreal.

LONDON Fence Machines

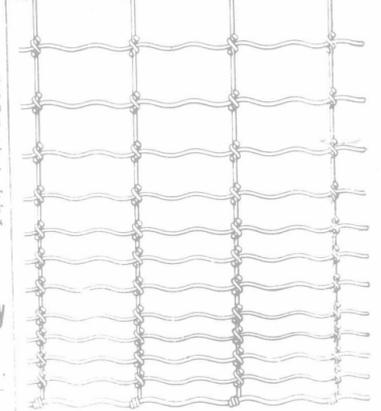
MAKE AND SAVE MORE MONEY THAN ANY OTHER IMPLEMENT ON THE FARM.

They build 10 to 60 rods per day. The same weight and quality of fence costs half the money, and is worth about 25 per cent. to 50 per cent. more for being built on the ground. Don't build your fence till you get our Catalogue and prices of wire. om
London Fence Machine Company (LIMITED), LONDON, CAN.

Family Knitter

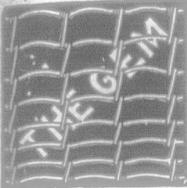
Cheapest, Simplest, Best. Price, \$8.00. Write for circular. om
Dundas Knitting Machine Company, DUNDAS, ONTARIO.

LAMB FENCE



Would You Think of Threshing Your Wheat by Hand? No. Then why make fence by hand. We can do the work much cheaper by machinery. Buy a fence made by our posts. om
H. R. LAMB, LONDON, ONT.

Latest and best devices for wire-fence building, including



GEM and McCLOSKEY
weaving machines, also Coiled Spring and other fence wire at lowest prices. Write on McGregor, Banwell & Co., Box 23, Windsor, Ont.

FENCING and GATES

Buy your fencing and gates direct from the manufacturer. The Oshawa Wire Fence Co., Limited, are the largest manufacturers of different styles of fencing and gates in Canada. Send for catalogue and prices.

OSHAWA WIRE FENCE CO., Ltd.,
OSHAWA, ONT.

Rain and sweat have no effect on harness treated with Eureka Harness Oil. It resists the damp, keeps the leather soft and pliable. Stitches do not break. No rough surface to chafe and cut. The harness not only keeps looking like new, but wears twice as long by the use of Eureka Harness Oil.



EUREKA HARNESS OIL

Sold everywhere in cans—all sizes. Made by Imperial Oil Company.



"I sell him cheap!"

YOU can judge the value of an animal and most articles in commerce by appearance and price. — With Seeds it is different. — Any Seed must be valued by what it will grow and not by a "cheap" price.

Poor Seeds are those of uncertain growth and product—they are as valueless as the broken-down mule. It is extravagant waste to use them. "Cheap" Seeds may give greater profit to the seller but the user is the loser.

"GOOD QUALITY" in Seeds is the foundation of worth—it is the result from selecting and improving strains, together with care and intelligence in growing and means success to the user.

Steele-Briggs Seeds are known for their "Good Quality" and "Worth." More of them are sold and used in Canada than any other kind.

Buy your Seeds from dealers who sell **Steele-Briggs Seeds** and insist upon having them. If you cannot get them from a local merchant send your order direct. Refuse substitutes or "Just as Good." Send for catalogue if you have not received it.

The Steele-Briggs Seed Co., Limited, Toronto.

"CANADA'S GREATEST SEED HOUSE."

GOSSIP.

The death is announced of Mr. Bronson C. Rumsey, Buffalo, N. Y., who for many years maintained a high-class herd of Bates-bred Shorthorn cattle at his Niagara stock farm at Buffalo, part of which is the ground on which the Pan-American Exhibition was held. Mr. Rumsey was wealthy, and continued to graze his Shorthorns for years on land worth \$2,000 an acre. The herd, in its palmy days, was for several years under the management of Mr. Wm. H. Gibson, now superintendent of Senator Drummond's Huntleywood Stock Farm, at Beaconsfield, Que. Mr. Rumsey continued breeding Shorthorns and Shropshires up to the time of his death at his farm of the old name at Lewiston, N. Y., and exhibited some of his cattle at the Pan-American.

At a sale of select Shorthorns, at Chicago, March 6th and 7th, contributed by ten prominent breeders, 90 head sold for an average of \$500. The highest price was \$1,500, for Imp. Spicy Clara, a roan yearling heifer, first-prize winner at the Chicago International, bought by Geo. Harding & Son, Waukesha, Wis. Imp. Minerva Maid, and bull calf, sold for \$1,100. The top price for a bull was \$1,000, for the red two-year-old, Robin Adair 151303, bred by C. C. Norton, Corning, Iowa, sired by Imp. Banker, sold by C. B. Dustin & Son, and bought by E. C. Sage, Des Moines, Iowa. British Glory (Imp.), a roan yearling, by Pride of the Realm, sold for \$860, the highest for an imported bull, to S. E. Prather & Son, Springfield, Ill.

Spring Brook Stock Farm is situated in the County of Waterloo, one mile from Breslau station, on the main line of the G. T. R., and ten miles west of Guelph, and is owned by Mr. A. C. Hallman, who is somewhat extensively engaged in the breeding of Holstein cattle, Tamworth hogs, and B. P. Rock poultry. The Holsteins, which now number 30 head, belong to the well and favorably known Aaggie, Netherland, Acma and Artis families, on which have been used such noted prize-winning bulls as Netherland Statesman's Germania 46, winner of medal and sweepstakes at Toronto; Royal Canadian Netherland 45, a son of the world-renowned Netherland Prince 716; Prairie Aaggie Prince 2, a bull that won first at Toronto and headed the bronze-medal herd in 1886, first and diploma at head of herd at Provincial at Guelph in 1887; and others equally good. The present stock bull is Judge Akkrum De Kol 3rd, Can. No. 25266, bred by Henry Stevens & Sons, Lacon, N. Y., sired by Judge Akkrum De Kol 20676, he by that great sire of producers, De Kol 2nd's Netherland, who sired such noted animals as Inka De Kol, whose record at two years old was 14 lbs. 11 ozs. butter in 7 days; Inka 8th, record at four years 16 lbs. 5 ozs. in 7 days; Susie De Kol, record at five years 19 lbs. 13 ozs. in 7 days; May De Kol, record two years 10 lbs. 5 ozs. in 7 days; Pietertje Hengerveld's Lady De Kol, record two years 15 lbs. 13 ozs.; and many other good ones. The dam of Judge Akkrum De Kol was Mosetta 32083, whose milk record as a two-year-old was 58 lbs. a day, which tested 8.5 of butter-fat. She is a half-sister to Netherland Hengerveld, whose butter record was 26 lbs. in 7 days. Her dam was Kekke 2nd's Pietertje 24064, whose milk record as a two-year-old was 50 lbs. a day on winter feed. This bull is a massive, well-developed animal, weighing over a ton, and is exceptionally evenly built, being low down and smooth to a turn. As a sire, the young stuff in the stables prove his worth, being, without an exception, built on the true dairy lines, showing a splendid width and depth of hind quarter, with a beautiful fawn-like head and neck, and if there is anything in breeding to produce producers, this bull should certainly be the sire of some good ones. His lieutenant in service is Sir Paul Albino De Kol 2154, sired by Homestead Albino De Kol, and out of Pietertje Queen, by Dora Betts 3rd's Pietertje Netherland, a straight De Kol-bred bull. This is one of the coming show bulls, it being impossible to fault him. Among the many dams in the herd is the cow, Queen Hengerveld De Kol 40835, bred by H. Stevens & Son, a granddaughter of De Kol 2nd, who was without doubt the greatest butter-producer of the breed that ever lived, having a record of 33 lbs. in 7 days; at 11 years of age she made 26 lbs. in 7 days. There is a bull calf and a year-old heifer out of this cow in the herd at present. Space forbids us mentioning the many other good ones in the herd, bred as richly as the one mentioned, suffice it to say this herd, individually and collectively, will stand comparison with any herd in the country. There are animals of both sexes and all ages for sale. The Tamworths number about 60 head, imported and home-bred, of both sexes and all ages. The breeding sows were selected for their perfect bacon conformation, and are certainly a choice lot. There are ten brood sows, some of them imported, the balance home-bred, and among them are several prize animals at the leading shows. The imports at the fair, British King, is a first-prize winner at Toronto, and is leaving his progeny living images of his own perfect build. Mr. Hallman reports sales in both Holsteins and Tamworths unprecedented; in fact, he cannot supply the demand for cattle. In poultry, and nothing but B. P. Rocks are kept, and new blood is infused every year, purchased from the best possible pens on the continent.

A Chain is no Stronger than its Weakest Link and a Wire Fence is no Stronger than its Uprights.



No one should expect a fence to hold up of itself between the posts. The Frost upright wires are large and strong. The Frost Lock holds them in place and each support its own share of the weight. Light tie wires give no support. Bending to tie weakens them and they are apt to break when the strain is severe. Frost Fence never breaks.

The Frost Lock
Strongest Made.

Write for Catalogue.
THE FROST WIRE FENCE CO., LIMITED, - WELLAND, ONT.

PAGE WIRE FENCE



This is the Page Standard II Bar Fence, made of "Page" wire which is twice as strong as common wire. The continuous coil, note wavy appearance, allows for expansion and contraction which is important owing to Canadian climate. Our upright wires are in one piece and have strength of about 800 pounds. If made of pieces spliced at each horizontal, they would have a strength of only about 300 pounds. We also make gates, ornamental fences, poultry netting, nails and staples. The Page Wire Fence Co., Limited, Walkerville, Ont.

THIS CUT ILLUSTRATES THE ONLY

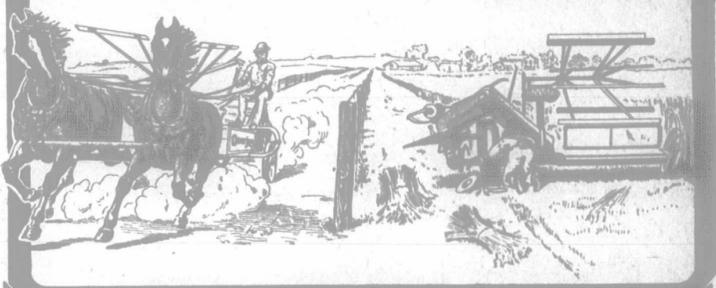
"Hinge" Stay Fence

It will not sag, and is cheap, strong and durable. Write for circular and prices. Good Agents Wanted in every locality, to whom we guarantee good returns.

The Strathy Wire Fence Co. (LIMITED), OWEN SOUND, ONT.



DEERING TO THE RESCUE!



WHEN SOMETHING GOES SNAP

on that binder for which so much was promised, and there is an enforced halt in the midst of the busy harvest, the farmer instinctively turns to the Deering for succor.

No crop is beyond harvesting when there is a DEERING IDEAL BINDER on the ground. It will cut, elevate and bind any condition of grain. It is built to meet every requirement, and meet it satisfactorily. It is the all-round, ever-dependable machine.

Get a Deering Binder and you will be always ready for harvest.

The Deering Harvester Company controls the entire output of the Mann Manufacturing Co., Limited, of Brockville, Ont., and are prepared to supply the trade with the famous Mann line of Seeding and Tillage machines.

DEERING HARVESTER COMPANY,
CHICAGO, U. S. A.

CANADIAN BRANCHES: TORONTO, LONDON, MONTREAL, WINNIPEG.

World's greatest manufacturers of Binders, Headers, Mowers, Reapers, Corn Binders, Corn Shockers, Huskers and Shredders, Rakes, Twine, and Oil.

THE MASSEY-HARRIS COMPANY and catalogue, mentioning the "Farmer's Advocate." The prizewinning carriage stallion, Jingle Bells, full brother to the World's Fair winner, Dr. Line, is offered for sale in our advertising columns.

Sale of Men's Suits

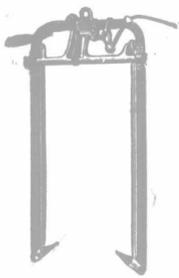
\$7.65 FOR SUITS THAT WERE \$9.50, \$10.50, AND \$12.50.

All the most stylish and up-to-date cut. The very newest weaves in Canadian, Scotch and English Tweeds; many of those **FAMOUS LEADER SUITS** being among the lot. Spring or winter weight.

\$9.65 FOR SUITS THAT WERE \$12.50, \$13.50, AND \$15.

Made of Scotch and Irish Tweeds and English Worsteds. This special sale was inaugurated for the special purpose of making room for spring stocks soon to arrive. Goods exchanged if not satisfactory.

THE HUDSON'S BAY CO., 178 to 184 MAIN ST., WINNIPEG.



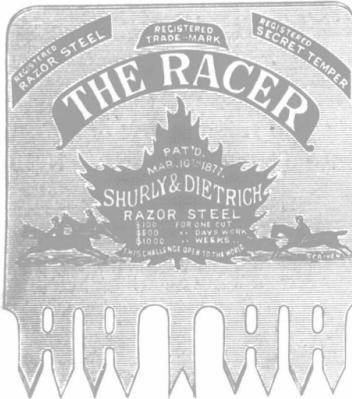
PROVAN'S PATENT REVERSIBLE Carriers, Fork and Slings

FOR ROUND IRON, WOOD, OR ANGLE STEEL TRACKS,

Have now become a standard of excellence with the farmers of Canada and the United States. At the World's Fair, Chicago, 1893, the only medal and diploma given on hay carriers, forks and slings was awarded to us on these implements. Following is a copy of the judges' award: AWARD.—"For open trip hook to receive the sling; automatic clutch, adjustable for size of load desired; ingenious design of stop-block, which enables perfect control of carriage; no springs required for locking car, which has motion in all directions; compact form of fork, which can be tripped in any position; the car is reversible and of double action; for novelty, ingenuity and usefulness, excellence of material and construction." Correspondence solicited. Manufactured by

JAMES W. PROVAN,
Special discount for cash. -om OSHAWA, ONT.; CAN.

The Razor Steel, Secret Temper, Cross-cut Saw.



WE take pleasure in offering to the public a saw manufactured of the finest quality of steel, and a temper which toughens and refines the steel, gives a keener cutting edge and holds it longer than by any process known. A saw to cut fast "must hold a keen cutting edge."

This secret process of temper is known and used only by ourselves.

These Saws are elliptic ground thin back, requiring less set than Saws now made perfect taper from tooth to back.

Now, we ask you, when you go to buy a Saw, to ask for the Maple Leaf, Razor Steel, Secret Temper Saw, and if you are told that some other Saw is as good, ask your merchant to let you take them both home, and try them, and keep the one you like best.

Silver steel is no longer a guarantee of quality, as some of the poorest steel made is now branded silver steel. We have the sole right for the "Razor Steel" brand.

It does not pay to buy a saw for one dollar less, and lose 25 cents per day in labor. Your saw must hold a keen edge to do a large day's work.

Thousands of these Saws are shipped to the United States and sold at a higher price than the best American Saws.

MANUFACTURED ONLY BY
SHURLY & DIETRICH,
Galt, Ontario.

SUNLIGHT SOAP

\$5,000 Reward will be paid by LEVER BROTHERS LIMITED, Toronto, Ont., to any person who can prove that this soap contains any form of adulteration, or any injurious chemicals.

REDUCES EXPENSE

One wash will make linen last clean longer than two washes with impure soap. Ask for the Octagon Bar.

BIG BANK ACCOUNTS



from little savings grow. It is due to the daily savings **MADE BY USING THE U.S. SEPARATOR** that it is so popular and that its sales are increasing so rapidly. Some of the ways it saves are

By getting more cream out of the milk;
By wearing longer and requiring less expense for repairs.

For these and other reasons more fully explained in our catalogues, which are free, no one should allow themselves to be induced to buy some other make.

VERMONT FARM MACHINE CO., BELLOWS FALLS, VERMONT.

Please Mention The Farmer's Advocate.

BELL PIANOS AND ORGANS

BUILT TO LAST A LIFETIME BY THE LARGEST MAKERS OF PIANOS & ORGANS IN CANADA.

The Bell Organ & Piano Co., Ltd., Guelph, Ont.

(CATALOGUE NO. 40 FREE ON REQUEST.)

J. J. H. McLEAN & CO.,

503 MAIN STREET, WINNIPEG, WHOLESALE AND RETAIL AGENTS FOR MANITOBA

FORWARD

IS THE WORD FOR THE NEW NO. 8. NO NEED TO BACK UP TO START. GO AHEAD AND CUTTING BEGINS AT ONCE.

HERE ARE SOME OF THE REASONS WHY OUR OLD CUSTOMERS BELIEVE IN THE NEW NO. 8:

1. Roller and Ball Bearings.
2. Powerful Internal Gear.
3. High-speed Pitman.
4. Close Cutting Knife.
5. Serrated Guardplates.
6. Perfect Balance.
7. Good Material and Excellent Design.

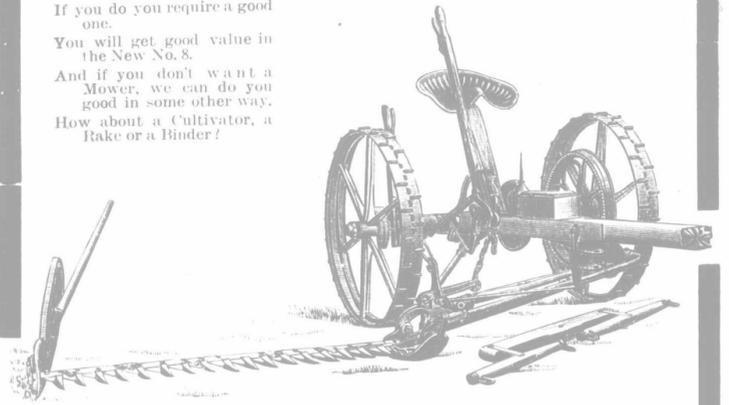
Do You Want a New Mower?

If you do you require a good one.

You will get good value in the New No. 8.

And if you don't want a Mower, we can do you good in some other way.

How about a Cultivator, a Rake or a Binder?



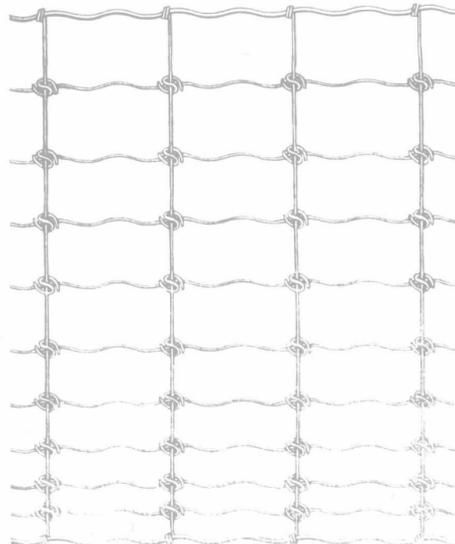
Head Office and Works:

Smith's Falls, Ontario.

THE *Prost & Wood Company* LIMITED

Branch Offices and Warehouses:

Toronto, Ont.
London, Ont.
Winnipeg, Man.
Montreal, Que.
Quebec, Que.
St. John, N. B.
Truro, N. S.



Woven Wire Fencing

A heavy stay in one piece. A perfect lock to hold. Complete in the roll. Made from hard spring wire throughout. Will stand up and do business when other styles fall.

WRITE:

Windsor, ONT.

McGregor, Banwell & Co'y.