

J H Cristdale  
Exp Farm dec 15, 99

# THE FARMER'S ADVOCATE

AND HOME MAGAZINE

PERSEVERE  
SUCCEED

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

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

Vol. XXXIV. LONDON, ONTARIO. MAY 15, 1899. WINNIPEG, MANITOBA. No. 478

## CHOICE FARM LANDS

FOR SALE IN ALL PARTS OF

### MANITOBA.

Improved  
AND Wild Lands

Prices Low. Very Easy Terms.

WRITE OR CALL ON

**G. J. MAULSON,**

195 LOMBARD ST.,

WINNIPEG, - MANITOBA.

8-c-om

### PUBLIC AUCTION SALE

OF

## 150 Manitoba Farms

Close to the thriving towns of Franklin, Minnedosa, Rapid City, Newdale, Strathclair, and Shoal Lake, will take place at

MINNEDOSA, MANITOBA,

Thursday, 15th June, 1899

COMMENCING AT 2 P. M.

This will be a rare opportunity to secure a desirable farm at a low figure on easy terms. Apply to the undersigned for catalogue or further particulars.

**R. H. MYERS,**

on MINNEDOSA, MAN.

## For Sale

That valuable property, three miles east of Cobourg, known as the Fowler Farm—400 acres. One of the best dairy farms in the Province. 100 acres fall plowed; 20 acres in fall wheat; large young orchard; complete creamery outfit; large brick dwelling; brick cottage; frame barn with stabling for 60 head of cattle; brick barn and pigery; good soil and splendid situation. Immediate possession. Stock and implements will also be sold at a valuation. For further particulars, ADDRESS—

**J. O'N. Ireland,**

25 Toronto Street, TORONTO, ONT.

## SPLENDID FARM FOR SALE.

The "Braeside Farm," of 250 acres—dairy and grain farm—near Mount Elgin, Durham, County Oxford; watered by spring creek and artesian wells. Large stone house; good buildings; good fences; in excellent state of cultivation. For further particulars apply to

**LEWIS A. PRICE, MOUNT ELGIN, ONT.,**  
or **M. WALSH, Barrister, Ingersoll.**

PLEASE MENTION FARMER'S ADVOCATE.

### CONTENTS OF THIS NUMBER.

EDITORIAL.	PAGE.
CARE OF MILK IN SUMMER .....	283
WHEAT VERSUS STOCK RAISING .....	283
WHAT SHALL THE TEACHING OF AGRICULTURE BE? .....	283
THE SECRETARY OF THE WESTERN FAIR .....	284
AGRICULTURE IN THE PUBLIC SCHOOLS .....	284
<b>STOCK.</b>	
THE HONOR ROLL OF THE ROYAL SHOW .....	284
PREVENTION OF MILK FEVER .....	285
THE RELATION OF DISINFECTANT TO THE HEALTH OF LIVE STOCK .....	286
THE OLD MESSENGER STOCK .....	286
BREEDING FROM IMMATURE SIRRES .....	286
THE BULL CONVEYS ABORTION .....	287
ADVANTAGES OF EARLY MATURITY .....	287
LADY FRAGRANT (ILLUSTRATION) .....	285
VIVANDIERE (ILLUSTRATION) .....	285
LORD IRWIN (29123) (ILLUSTRATION) .....	286
SIR ARTHUR INGRAM (32499) (ILLUSTRATION) .....	287
MOLLY MILLCENT (ILLUSTRATION) .....	287
FIELD MARSHAL (47870) (ILLUSTRATION) .....	287
MARENGO (69069) (ILLUSTRATION) .....	288
<b>FARM.</b>	
FALL WHEAT AND CLOVER SAVED FROM HEAVING .....	287
SPRAYING WILD MUSTARD .....	287
RAPE FOR PASTURE .....	288
CONTINUE ROOT GROWING .....	288
CLOVERS AS GREEN MANURE .....	288
THE GREAT POSSIBILITIES OF LARGER CROPS .....	289
STONE AND WOOD SILO .....	289
A VERY USEFUL IMPLEMENT .....	289
CHICORY GROWING .....	290
FINGER-AND-TOE IN TURNIPS .....	290
<b>DAIRY.</b>	
HOW MILK ABSORBS IMPURITIES .....	290
DISCOURAGES PRESERVATIVES .....	290
AERATION AND COOLING OF MILK .....	291
<b>GARDEN AND ORCHARD.</b>	
MISTAKES OF THE TREE PLANTER .....	292
HOW TO GROW LARGE STRAWBERRIES .....	292
<b>QUESTIONS AND ANSWERS.</b>	
VETERINARY: WARBLES IN CATTLE AND GRUBS IN SHEEP'S HEADS; INJURY TO CORNEA; WOUNDS ON MARE'S HOCK; COW WITH A COUGH; SPRAINED TENDONS .....	292
MISCELLANEOUS: FARMERS' SOCIETY LIBRARY; RECLAIMING SWAMP LAND—SETTING AN ORCHARD; HENS NOT LAYING WELL .....	292-293
<b>MARKETS.</b>	
FARM GOSSIP .....	293
HURON CO., ONT. .....	293
BRUCE COUNTY .....	293
LINCOLN COUNTY .....	293
ELGIN CO., ONT. .....	293
WENTWORTH CO., ONT. .....	293
BRUCE CO., ONT. .....	293
PEEL CO., ONT. .....	293
CHATTY STOCK LETTER FROM CHICAGO .....	293
TORONTO MARKETS .....	293
CANADIAN BEEF IN SCOTLAND .....	293
LIVE STOCK EXPORTS .....	293
<b>HOME MAGAZINE.</b>	
FAMILY CIRCLE .....	294
MINNIE MAY'S DEPARTMENT .....	295
"LITTLE PEPTA" (ILLUSTRATION) .....	295
THE QUIET HOUR .....	295
THE CHILDREN'S CORNER .....	296
"WHAT'S THE MATTER WITH US?" (ILLUSTRATION) .....	296
PUZZLES .....	296
GOSSIP. ....	302, 303, 306, 307
NOTICES. ....	302
ADVERTISEMENTS. ....	281 and 282, 297 to 308

## LANDS FOR EVERYBODY.

FREE GRANTS OF GOVERNMENT LANDS.  
CHEAP RAILWAY LANDS FOR SALE ON EASY TERMS.

GOOD SOIL. PURE WATER. AMPLE FUEL.

Most desirable lands suitable for mixed farming can be obtained in the OLDS DISTRICT along the line of the Calgary and Edmonton railway, about fifty miles north of Calgary.

Most desirable lands can be obtained in SOUTHERN ALBERTA in close proximity to the Calgary and Edmonton railway, and the Crow's Nest Pass railway; suitable for mixed farming and ranching on both a large and small scale.

### North Saskatchewan

also affords a splendid opening for intending settlers in the Prince Albert, Duck Lake and Rosedale districts, on the line of the Qu'Appelle, Long Lake and Saskatchewan railway. For full information concerning these districts, maps, pamphlets, etc., apply to

### OSLER, HAMMOND & NANTON,

281 Main street, WINNIPEG, MANITOBA.

## BARGAINS

IN

## FARM LANDS.

IMPROVED and unimproved, in choicest districts, at lowest prices. Close to best markets, many adjacent to Winnipeg. Some at less than cost of improvements. Buy now before the advance in prices takes place.

See me or write for List.

### WILLIAM HARVEY,

COR. MAIN ST. 210 PORTAGE AVE.,  
WINNIPEG, MANITOBA.

### BOYS FOR FARM HELP.

The managers of Dr. Barnardo's Homes will be glad to receive applications from farmers or others for the boys who are arriving periodically from England to be placed in this country. All the young immigrants will have passed through a period of training in English Homes, and will be carefully selected with a view to their moral and physical suitability for Canadian life. Full particulars as to the terms and conditions upon which the boys are placed may be obtained on application to Mr. ALFRED B. OWEN, Agent, Dr. Barnardo's Homes, 214 Farley Ave., Toronto. 4-y-o

### FOR SALE—SHADE TREES,

All kinds and sizes; ornamental trees; evergreens from 5c. each up, according to size and quality; flowering shrubs, all kinds; clematis, all colors; and other vines, shrubs, etc. No agent or any other dealer can supply better or cheaper, and give instructions or do the work that I can do. Grafting and pruning done.

**C. A. BAKER,**

Nursery, Ridout and Brick Sts., London.

PUBLISHED TWICE A MONTH, AT LONDON AND WINNIPEG, CAN.

**"McLaughlin Carriages Are Good Carriages."**

**SPECIAL FEATURES:**

Strictly A Standard Wheels (not B. C. or D. Standard).  
 Finest Grade English Cast Steel Springs (not American open hearth).  
 Patented Noiseless Rubber and Brass Washers.  
 Patented One-Lever Top.  
 Patented Steel Safety Fifth Wheel (not unsafe malleable iron).  
 Forged Steel Reach Irons, Brace Ends, etc., etc. (not malleable iron).  
 Patented Noiseless Whiffletree Plates.  
 Combined Dash Rail and Reel Holder.



**"One Grade Only and that the Best"**  
 Our motto for thirty years.

Eighty-three Varieties to choose from, and they're all right, up-to-date.

McLaughlin Carriages of necessity cost more than others, but they're cheaper in the end. Consider this carefully! Ninety-six page catalogue free, or of agents.

**The McLaughlin Carriage Company,**  
 OSHAWA, CANADA.

Shipping Points—Oshawa and London, Ont.; Montreal, Que.; St. John, N. B.; Winnipeg, Man., -on

**WALTHAM SILVER WATCH**  
 FOR ONLY \$6.00.



It only takes \$6.00 to buy a Genuine Waltham Hardened Silver Watch. The Waltham is the best watch manufactured. These \$6.00 watches are stem-winders, stem-setters, and are so made that they are absolutely dust proof. They have the latest patent regulator attachments, and are just the watches for farmers and mechanics. They are worth \$10. Our price is \$6, sent postpaid per registered mail to any address in Canada upon receipt of price, \$6.

**Stanley Mills & Co., Hamilton, Ont.**

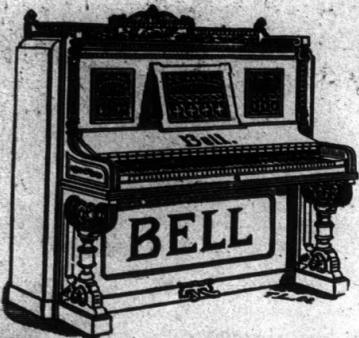
**FAMILY KNITTER!**



Will do all knitting required in a family, homespun or factory yarn. **SIMPLEST KNITTER ON THE MARKET.**  
 We guarantee every machine to do good work. Agents wanted. Write for particulars.  
**PRICE, \$8.00.**

**DUNDAS KNITTING MACHINE CO.,**  
 DUNDAS, ONTARIO.

*If you want to find out which is really the best tea in Canada, buy a package of Blue Ribbon Ceylon and it won't take you long to decide.*



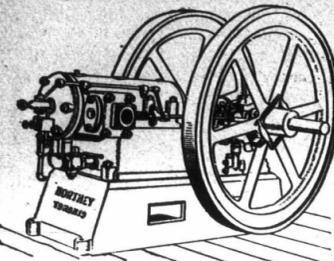
**BELL**  
 Pianos  
 and Organs

Superior in TONE, QUALITY, CONSTRUCTION and FINISH. Full description to be found in our Catalogues. Mailed free on application to

**The BELL ORGAN AND PIANO COMPANY, Limited,**  
 OVER 75,000 OF OUR INSTRUMENTS NOW IN USE. **GUELPH, ONT.**



**RANEY, SELBY & COMPANY, BOX 820, KINGSTON, ONTARIO.**



**NORTHEY GASOLINE ENGINE**

NO EXPERIENCE NEEDED TO RUN IT. SAVES A Hired MAN'S TIME ON THE FARM. PAYS FOR ITSELF IN TWO YEARS.

Send for illustrated booklet.

**NORTHEY MFG. CO., Limited,**  
 1012 King Street Subway, **TORONTO.**

**EVERY SUCCESSFUL** farmer who raises fruits, vegetables, berries or grain, knows by experience the importance of having a large percentage of

**Potash**

in his fertilizers. If the fertilizer is too low in Potash the harvest is sure to be small, and of inferior quality.

Our books tell about the proper fertilizers for all crops, and we will gladly send them free to any farmer.

**GERMAN KALI WORKS,**  
 93 Nassau St., New York.

**ROGERS' "PEERLESS" MACHINE**

Is a genuine good article. Ontario-farmers have used it 20 years, and it has won 12 gold medals, and it bears a reputation gained by patient care in having it right. It lightens the engine's load. Hardware all sell it. Made only by the

**QUEEN CITY OIL CO., Limited, TORONTO.**  
 -O SAMUEL ROGERS, PRESIDENT.

**CONTAGIOUS ABORTION AND HOG CHOLERA**

can positively be cured or prevented by the use of

**WEST'S FLUID, DISINFECTANT.**

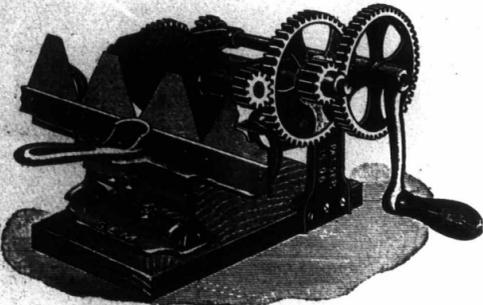
which is also a cheap Circulars (specially prepared by a veterinary surgeon) on these diseases, on application.

**THE WEST CHEMICAL CO.,**  
 48 and 50 Long St., CLEVELAND, O.  
 15 Queen St. East, TORONTO, ONT.  
 Agents wanted in all counties. -om

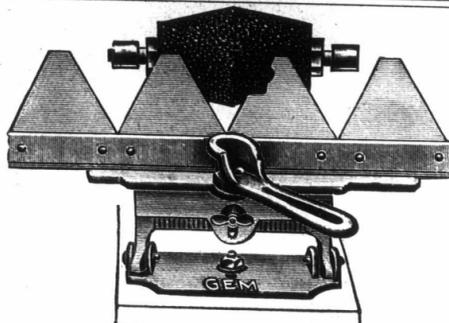
**ILLUSTRATED STOCK SALE BILLS**

If you contemplate a sale of live stock, place your orders with us. We can supply illustrations for almost any breed. They cost no more than cheap printing, and draw intending-buyers to the sale.

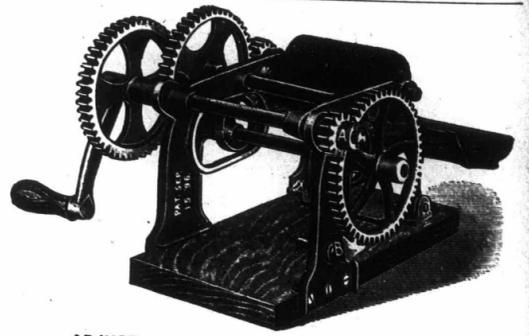
**THE LONDON LITHO. CO. (LIMITED)**  
 Lithographers and Printers, London, Ont.



**ADJUSTED FOR SICKLE KNIVES.**  
 \$6.00 WITH SICKLE WHEEL.



**ADJUSTED FOR BROKEN KNIVES.**



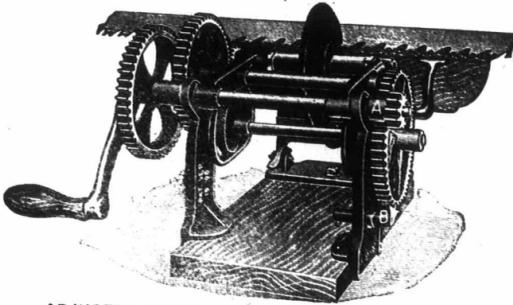
**ADJUSTED WITH FLAT WHEEL, 5X2 INCHES.**  
 \$6.75 WITH SICKLE WHEEL AND TOOL ADJUSTMENT.

**TEN MINUTES**

with a Gem Sickle and Tool Grinder grinds any six-foot sickle of any make to a most perfect bevel and keenest edge. Grinds heel and point and opposite side of a section at once; is adjustable for all work. Stone oscillates up and down, sickle remains stationary. Speed 2,000 revolutions per minute. You cannot burn your knives, as the wheel is constantly shifting. Endorsed by all the leading harvester manufacturers, and is represented in all foreign countries by the Altman & Miller Harvesting Co. as the champion who sold last year in Europe over 4,500 machines, which is a guarantee as to its merits. This machine is guaranteed in every particular. We ask you to send \$7.50 for sample order, the first of which we will refund to the agency for your section if you can give us satisfactory references. Write to the National Bank of the Republic, Chicago, or to the commercial agency.

**We have 2,500 Grinders** (at London, Ont.) Branch

and in order for us to make prompt shipments we ask you to order at once and save delay.



**ADJUSTED FOR SAWS AND GROOVED CHISELS.**  
 \$7.50 COMPLETE, INCLUDING SICKLE TOOL, SAW GUARD, WHEELS AND ATTACHMENTS.

**THE GEM GRINDER**

will save its cost in your blacksmith bill in three months. Will grind plowpoints, cultivators, shovels, disks, axes, and all kinds of tools, quicker and better than any machine made. Send us \$7.50 for complete sample outfit consisting of 3 corundum wheels and all adjustments. These corundum wheels we manufacture, and we guarantee them to last five years with proper usage. **Quick Sales and Good Profits.** Send at once and secure our agency, as you will be able to sell all your neighbors from your sample outfit, as we will take their notes from you, providing they are good.

Address **CHICAGO WHEEL MFG. CO.,**  
 225 to 259 York St. **LONDON, ONT.**

**FACTORY:**  
 39 to 45 West Randolph St., Chicago, Ill.

**BRANCHES:**  
 Albany, N. Y. St. Louis, Mo. Omaha, Neb.  
 Kansas City, Kan. San Francisco, Cal. London, Ont.

# FARMER'S ADVOCATE

AND HOME MAGAZINE

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

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

VOL. XXXIV.

LONDON, ONT., AND WINNIPEG, MAN., MAY 15, 1899.

No. 478

## EDITORIAL.

### Care of Milk in Summer.

Elsewhere in this issue we publish a number of pointed letters from practical dairymen dealing with the care of milk on the farm in hot weather. The subject is at once seasonable and important, and we would be glad to hear from others describing in detail plans of airing and cooling milk which they have found successful. If our dairy industry is to grow, with improvement, as it must to keep pace with the times and foreign demand, the work must begin upon the farm. It is absolutely imperative that the cheesemaker and buttermaker be furnished with milk that is pure and sweet, otherwise their most skillful efforts will be frustrated. A few careless dairymen in any locality must not be permitted to damage the whole product of the factory or creamery and inflict injury upon others through the agency of milk that has been improperly cared for. As a rule, the food of the cow in summer, being grass, is satisfactory, though occasionally taints arise from strong-flavored weeds or herbs. Drinking from slimy, green-covered pond holes is a fruitful source of trouble which the intelligent farmer will provide against. Cows must have an abundance of pure water if the milk flow is to be sustained in quantity and quality. Then the air must be kept free from foul odors such as arise from the decaying carcasses of animals that should have been buried, or burned, instead of being left exposed to the air, as is sometimes the case. Our contributors emphasize the importance of cleanliness in the stable or milking yard, and about the milk stand. As soon as possible after the milk is drawn from the cow it should be thoroughly strained. Last season a few cases were reported where slovenly dairy farmers dumped unstrained milk, including hairs, straw and particles of manure, into the cans. After being strained the milk should be thoroughly aired and then cooled—the former part of the process always coming first. The necessity for cleanliness also applies with equal force to the supply for cities and towns, where many infantile disorders in hot weather are traceable to unwholesome milk.

Last season in some sections dairy farmers were flooded with circulars telling them that a few teaspoonfuls of certain preserving preparations put into milk would keep it perfectly sweet for days in the hottest and muggiest weather. The tendency of such teaching is to encourage laziness and the neglect of the various wholesome precautions which have been outlined above. One of these "cure-alls" we turned over to the Dominion Department of Inland Revenue, and under date of Jan. 24th last we received the following communication from the Secretary:

To the FARMER'S ADVOCATE:

GENTLEMEN,—Referring to your communication of the 18th August, ulto., on the subject of the use of preservatives in milk and other dairy products, I am directed by the Honorable the Minister of Inland Revenue to inform you that a sample of "preservative" has been analyzed by Mr. F. T. Harrison, Public Analyst at London, and his report showing that it consists of a mixture of boracic acid and borax was received at the Department on or about the 14th instant.

I am to add that if the Honorable the Minister was called upon to give advice to the general public he would feel inclined to offer that which you gave in the article clipped from the FARMER'S ADVOCATE and enclosed in your letter, which is as follows:

"We again advise dairymen, as we have scores of times before, to let such substances alone and stick to thorough cleanliness in every step of the dairy process, and the use of abundance of pure water, pure air, and pure food."

I remain, sir, Your obedient servant,  
WM. HIMSWORTH,  
Secretary.

Ottawa.

### Wheat versus Stock Raising.

The unsatisfactory appearance of fall wheat in most parts of Ontario, which we regret to learn has suffered more from the winter than we had thought, is another reminder of the uncertainty of that crop, and of the delusion of depending on it to any great extent as a source of revenue from the farm. We would not willingly discourage its cultivation to a moderate extent, as we know that under favorable conditions it can in the average of years be successfully grown in the greater part of the Province. It is a favorite crop with a large proportion of the farmers in these sections on account of its seeding and harvesting coming in at times when other work is not, as a rule, rushing, and its being a nice clean crop to work with, besides being a favorite crop with which to seed to clover and grasses; but its partial and in many cases complete failure this year should serve to teach the lesson that it is not wise to risk many eggs in that basket, and especially unwise to sow wheat on land not suitable for it on account of insufficient drainage, lack of fertility, or an inadequate preparation of the seed-bed. If the conditions are not such that the crop gets a vigorous start and its roots a good hold of the ground before winter, the outlook is doubtful even in the best of years. Its fate depends not altogether upon the character of the winter, for not infrequently, having come safely through that season when steadily covered by snow, it is heavily discounted by alternate freezing and thawing, or by cold, dry winds, during the spring months; but when it fortunately escapes these adversities and realizes the hopes of the farmer in a full crop, its golden heads waving in the wind are a joy to him and to all who feel interested in his welfare, and they are legion.

The present condition of the wheat crop, which none regret more than we do, serves to emphasize the soundness of the doctrine we have advocated—that, in all of Eastern Canada at least, the raising of grain for sale should be regarded as but a secondary consideration; that the raising and feeding of live stock, and the sale of stock and its products, must continue to be, as it is, the principal source of revenue from the farm, and that the raising of grain should mainly be prosecuted for the purpose of feeding stock and the production of meat and milk; and that to the cow and the sow the majority must look for the means of acquiring a living or a competency; while horses, sheep, and poultry may well work in as profitable seconds to the general farmer, and as the leading source of revenue to those whose tastes and qualifications justify them in making a specialty of any one of these lines.

The fact may as well be faced now as later, that the older Provinces cannot compete with the virgin soil of the West in producing wheat, and even if it were practicable to ensure a good crop of this cereal every year, we doubt if, at the average price of the last decade, it can truly be called a paying crop; and even if a steady price of a dollar a bushel were assured, there would be no sense in making it the main product of the farm, since it would necessarily involve selling the fertility of the farm from year to year and the temptation to attempt its production on land totally unfit, from over-cropping and lack of fertility, to produce a paying crop. As a crop to be grown in moderate area in a well-ordered rotation, it is all right, and that is, in our opinion, as far as it can be satisfactorily adopted.

The markets for all classes of live stock are now such as to encourage the raising of as many young animals as can be well kept, and it will be found more profitable, taking one year with another, to devote special attention to that branch of the work of the farm. To that end, one of the first considerations should be the growing of such crops as will furnish the necessary food to secure the early maturity and promote the development of the farm stock to a high degree of quality. To get the best returns good feeding must go hand in hand with good breeding. Blood will tell with the feed, but feed will not tell without the blood.

### What Shall the Teaching of Agriculture Be?

The synopsis of the address by Prof. James on the teaching of agriculture in the rural public schools of the Province of Ontario, given elsewhere in this issue, recalls attention to the fact that after September next it is to be an obligatory subject on the course. Manitoba grappled in earnest with the question some time ago, Nova Scotia is doing so now, and several of the neighboring States have taken it up in some form of nature study, whereby, for example, plant and insect life are observed and studied. In the past Ontario has had a couple of unsuccessful experiences with the subject, so that it is still passing through a transition stage. While this is the case, we trust it will be so handled that valuable time and effort will not be needlessly lost in the process of reaching right methods. A mistake made at this juncture would be a most serious matter. The pre-eminent importance of agriculture to Canada from a material point of view, no one in his senses can question. Hence, our Provincial educational systems should have some bearing upon a pursuit in which so many are engaged, and upon which so many depend directly or indirectly. To too great an extent our school processes have focussed on passing examinations, and by reason of the nature of the course of studies have accelerated the tendency of the youth to gravitate away from rural life and pursuits. We sincerely desire to see this subject now presented in such a way as to promote a love and respect for nature and agriculture as a calling, and to develop the observation and other faculties of the pupils so as to make them better men and women, and more intelligent and successful in the work of life.

It strikes us at the outset that the great weakness of the Ontario public school course exists in the lack of natural science teaching. Hence it will not be sufficient simply to put "Agriculture" on the rural school list of studies with an examination goad at the end of the year. Its success or failure will largely depend on how it is handled by the teachers. We are not in the counsels of the Minister of Education, but so far as the new regulations to be issued shortly go, a start might be made, say, with the study of insects, plants, soils, and the phenomena of the weather—or, in other words, some simple form of entomology, botany, geology, and meteorology, whereby objects themselves are handled and compared, and their characteristics studied. "Agriculture," or farming, is but the practical application of these and other sciences. It will be a big mistake to attempt too much at the start.

We are convinced, as we pointed out when the matter was before the Provincial Legislature, that the qualifying of the teachers is a prime requisite to complete success, hence, as the old Scotch body puts it, we must get back to "the fundamentals." The high school or collegiate institute course, as it relates to public school teachers, requires a substitution of natural science for the French and Latin occupying so much time at present, and the science should be taught intending teachers with a view to what is to follow. The next step will be the training of the teachers in the model or normal schools, or schools of pedagogy, in order that they may teach these sciences according to the most approved educational methods.

Without professing any expert knowledge of pedagogy, it strikes us that the natural sciences can be used with the very greatest advantage to train the faculties of the youth, to develop their observation, comparison, judgment, reason, discernment and discrimination; in other words, to cultivate their mental powers, so that they will be made acquainted with nature and get on better terms with her by understanding her laws through the inductive process. This will the better enable

## THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN  
THE DOMINION.

PUBLISHED BY  
THE WILLIAM WELD COMPANY (LIMITED),  
LONDON, ONTARIO AND WINNIPEG, MANITOBA.

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

JOHN WELD, MANAGER.

1. THE FARMER'S ADVOCATE is published on the first and fifteenth 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; \$1.25 if in arrears; sample copy free. European subscriptions, 6s., or \$1.50. New subscriptions can commence with any month.
3. ADVERTISING RATES—Single insertion, 30 cents per line. Contract rates furnished on application.
4. DISCONTINUANCES—Remember that the publisher must be notified by letter or post-card when a subscriber wishes his paper stopped. All arrears must be paid. Returning your paper will not enable us to discontinue it, as we cannot find your name on our books unless your Post Office address is given.
5. THE ADVOCATE is sent to subscribers until an explicit order is received for its discontinuance. All payments of arrears must be made as required by law.
6. THE LAW IS, that all subscribers to newspapers are held responsible until all arrears are paid and their paper ordered to be discontinued.
7. REMITTANCES should be made direct to this office, either by Registered Letter or Money Order, which will be at our risk. When made otherwise we cannot be responsible.
8. ALWAYS GIVE THE NAME of the Post Office to which your paper is sent. Your name cannot be found on our books unless this is done.
9. THE DATE ON YOUR LABEL shows to what time your subscription is paid.
10. SUBSCRIBERS failing to receive their paper promptly and regularly will confer a favor by reporting the fact at once.
11. NO ANONYMOUS communications or enquiries will receive attention.
12. LETTERS intended for publication should be written on one side of the paper only.
13. 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.
14. 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 CO.,  
LONDON, CANADA.

boys and girls as they engage in life's duties to do the right thing at the right time and in the right way. It will further enhance the appreciation of youth for natural objects and processes, and give them an intelligent love for outdoor life; and while it will qualify them especially for the avocation of the farmer, it will really prepare them better for any useful sphere or calling than any course heavily loaded with classics and modern languages to the exclusion of the natural sciences. Unless, possibly, it be a little history, we are not aware that it will involve eliminating any subjects from the present Ontario rural school course, but some of them, such as composition, may be modified or utilized indirectly to turn attention to subjects that have a direct bearing upon agriculture. The rural school teachers now in service will do well to make preparation for the coming change. It will be a great reform in educational methods, and cannot wisely be hurried, but if effectually carried out it will redound lasting credit to the administration of Hon. G. W. Ross, the Provincial Minister of Education, and invest the pursuit of agriculture with added respect, interest, hope and confidence.

### The Secretary of the Western Fair.

Mr. Thos. A. Browne, the efficient Secretary of the Western Fair Association, at London, Ontario, having received the appointment to the office of Postmaster for the City of London, will, it is understood, retire from the former position about the 1st of July, at which time he will assume the duties of his new office. Mr. Browne has displayed good judgment, energy and fidelity in the performance of the arduous duties which have devolved upon him in the management of the Western Fair, which, during the years of his incumbency, has steadily grown and improved from year to year until it now ranks as one of the most successful institutions of the kind in the Dominion. While congratulating Mr. Browne on his preferment, we cannot but feel that it will be difficult to find a successor equally qualified for the important duties which he has so faithfully and efficiently performed in the position he vacates, but we trust that his successor and the Board of Directors will still have the benefit of his judgment and counsel, as we feel sure his interest in the success of the fair will not end with his retirement from the secretaryship.

### Agriculture in the Public Schools.

At a convention of the East Middlesex Teachers' Association, held in London, Ont., on May 5th, Mr. C. C. James, M. A., Deputy Minister of Agriculture for Ontario, and author of "Agriculture," a textbook for public and high schools, delivered a stirring address, designed to arouse the interest of rural teachers in the importance of agriculture and the teaching of its first principles to the children entrusted to them. At the outset Mr. James remarked that it was not the *how* but the *why* of agriculture that should be taught in public schools. In order to do this, teachers require to qualify themselves that they may be able to start the pupils and get them interested, when the work would become one of directing.

In order to emphasize the importance of teaching agriculture, it was pointed out that a change was rapidly overtaking the calling of agriculture. While the farmer has too often been pictured as the horny-handed white slave, whose whole energy was exhausted in manual labor, and again as the personification of ignorance and hard work, he is rapidly acquiring a more desirable reputation, his avocation has become one based upon science and filled with intelligent interest. That agriculture should hold a prominent place in any country, but especially in Ontario, there is no question, since from the four chief sources of revenue of the Province, viz., fisheries, mines, forests, and agriculture, the returns last year ranked, per head of population, as follows: Fisheries, \$4; mines, \$6; forests, \$16; and agriculture, \$120. Agriculture is, therefore, the great source of wealth to the people of Ontario. While last year the entire output of gold for the world was \$280,000,000, the returns from agricultural products to the Province of Ontario alone was a similar amount. Should we not, then, prepare the rising generation to grapple with this growing and important industry? It is an old truism that good times, good crops and good prices go hand in hand. It is on these that prosperity to the whole people depends. We find that the difference between the grain crop of 1898 and that of a poor year of recent date was 12,000,000 bushels, which shows the difference between favorable and adverse conditions. When agriculture is understood and conducted in the light of scientific knowledge, many adverse conditions can be avoided, so that there is no more profitable expenditure of money and effort than that which will enlighten the tillers of the soil.

Mr. James dealt with the romance of a piece of bread and butter. Dealing with the bread, which came from flour, and flour from wheat, he showed how far short of the possible Ontario comes in producing a full yield of this cereal. A grain of good wheat, planted in suitable soil and allowed to mature without adversity, should, at a moderate calculation, produce four stalks, bearing at least sixty grains of wheat. By the same moderate estimate, a bushel sown should produce sixty bushels, or one and one half bushels sown per acre should yield ninety bushels of good wheat. This is a reasonable deduction to draw where all conditions for growth are favorable and insect and fungus enemies are prevented doing injury. Now, the actual yield of wheat on the Ontario farm is from twenty to twenty-five bushels per acre, while in many other countries it is little more than seven, eight or nine bushels per acre. The difference between the possible and actual yield of wheat is a mighty gulf, that can be bridged only by a knowledge of the various sciences which touch agriculture. We grow 1,000,000 acres of wheat, so that an increase of a bushel per acre would mean a million bushels of wheat. Referring to the reasons for the low yields of grain grown, the speaker mentioned defective soil, defective preparation, insects, and adverse weather conditions, most of which could be met, in a degree at least, by an application of a knowledge of agricultural science. A knowledge of the science of entomology alone on the part of farmers would prevent a tremendous annual loss. It is estimated that in North America alone, \$300,000,000 worth of crops are destroyed annually by insects, and Mr. James expressed the wonder that almost all vegetation is not devoured, when the rapidity of increase that characterizes insect life is taken into consideration, but, he said, we have the birds on our side, which annually destroy myriads of insect life. The birds are great wealth-savers, and just here is suggested a field for nature study in the schools. The speaker expressed a wish for a law that would forbid the destruction of all bird life. While some birds may do damage to grain crops and also to other birds, etc., even these do good in the destruction of vermin of one sort or another. The multiplication of insects is also held in check by other insects and diseases, and it is when through study we become familiar with these natural enemies that we can turn them to good account. It was cited that injurious insects have on several occasions been introduced into countries where they threatened serious destruction to vegetation until their natural insect enemies or diseases were brought from their original countries and spread among them. It is only through study of these things and the application of knowledge that we can hope to increase the returns of our farms. A great field for interesting and profitable investigation is just opening out in these lines.

Returning again to the wheat plant, it was remarked that it may be struggling for an existence in a soil where it may not be able to acquire its

proper food. The wheat plant needs nitrogen, which it can appropriate only in the form of nitrates, the formation of which requires suitable conditions for nitrification, such as proper temperature, drainage, a supply of humus, etc. The value of growing legumes was also emphasized and explained, showing the teachers the vastness, interest and importance of the subject they are asked to teach.

The value of new and improved varieties, selection of seed from best and earliest portions of fields, etc., were dwelt upon. These can all be taken advantage of by those who have been taught to see the importance of them. Some of the most valuable acquisitions, especially in the field of fruit-growing, have been secured by the discoveries of men whose powers of observation and discrimination have been trained. For instance, the Baldwin apple and the Concord grape were chance discoveries, and these have been of incalculable value to the world.

Turning to the subject of butter, Prof. James for a short time dwelt upon the importance of the dairy industry, showing the wisdom of turning all buttermaking into the co-operative creamery system. The separation of cream from milk was explained, and the science of bacteriology was dwelt upon sufficiently to show the importance of study in this direction. As has been announced in the FARMER'S ADVOCATE, Mr. James stated that the subject would be placed in the curriculum about September next. At the conclusion of his address, in replying to a vote of thanks, he mentioned that discouragements might be expected, even from those whom the teaching was designed to help.

In a discussion that followed, it was brought out that the Public School curriculum required some adjusting before the important subject of agriculture could receive its due attention. The conversion of some of our High Schools into elementary agricultural colleges was recommended by one teacher, Mr. J. C. Robson, who, having taught agricultural science in his school from Mills' and Shaw's text-book to a few larger boys, was encouraged in seeing two or three of them take courses at the Ontario Agricultural College at Guelph. He also mentioned having last winter used Prof. James' new book on agriculture with quite a large class, with very satisfactory results. Inspector John Dearness, who has for years been an enthusiastic exponent of agricultural teaching in the schools, urged upon the members of the profession to make a special effort in one or more of the lines of natural science subordinate to agriculture—agricultural science, botany, entomology or chemistry, etc., according to the qualification or opportunity of the teacher. He pointed out that if, through greater enlightenment, the average yield of wheat could be increased two bushels per acre, the returns would be sufficient to pay the salaries of all the public school teachers of the country.

## STOCK.

### The Honor Roll of the Royal Show.

(Continued from page 206.)

The following is a continuation of Mr. Richard Gibson's article commenced in our issue of April 15th, giving names and exhibitors of mature Short-horns winning first prizes at the Royal Show from its inception to the present time:

MANCHESTER, 1869.

Earl of Derby (21638); bred and exhibited by Mr. Wiley, Brandsley.

Lady Fragrant, Vol. XVII., p. 568; bred and exhibited by Mr. T. C. Booth, Warlaby.

1869 is remarkable for being the last show at which Warlaby contended for honors. Lady Fragrant again won, and it has generally been conceded that she was the best cow shown for many years. She was so "ladylike" that she looked small, but she would be a monster in the present day. We never expect to see her like again. Mr. Booth's Patricia was 1st in two-year-old class, and afterwards was purchased by Messrs. Walcott & Campbell, New York Mills, but died on shipboard in New York harbor—overcome by heat. Queen of Diamonds, that beautiful heifer that Col. King showed so successfully in the West (imported by Mr. Cochrane), was 2nd, and those who remember the Queen will readily recognize how good Patricia must have been to win over her. In the yearling class Baron Oxford's Beauty won, and again the next year as a two-year-old at Oxford for Col. Towneley. She was also purchased for America (New York Mills) at a cost of \$2,500. Her breeding, Booth & Bates; her dam being of Mr. Bates' Foggathorpe family.

OXFORD, 1870.

Bolivar (25649); bred by Mr. J. Meadows; exhibited by Mr. C. W. Brierly.

Lady Lavinia, Vol. XXI., p. 597; bred and exhibited by Mr. Garne.

Bolivar, the Irishman, wins his third Royal, and a Gärne was winner in cow class. She was a commoner.

WOLVERHAMPTON, 1871.

Edgar (19680); bred by Mr. Saunders, Nunwick Hall; exhibited by Mr. H. Thompson, Penrith.

Warrior's Plume, Vol. XIX., p. 774; bred by W. Torr; exhibited by Mr. J. Beattie, Newbie House, Annan.

1871 produced Edgar. We may be wrong, but have always considered him the best bull, after Commander-in-Chief, we ever saw, and in many ways he was Commander's superior—bulky, thick-fleshed, evenly distributed. He walked with such strength and resolution, one would expect the earth to tremble at his approach. His breeding was mixed—sound old North Country sorts. The sires in his pedigree were prizewinners, in order as follows: Prince Patrick, McTurk, Heir-at-Law, Baron of Ravensworth. Had he not a right to be good? The "dairy cow" won for Simon Beattie's uncle. She was a Booth-topped Bates Waterloo, swinging an under such as a Holstein breeder would covet.

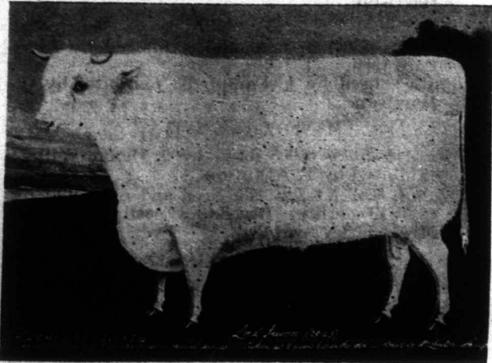


### The Relation of-Disinfection to the Health of Live Stock.

#### ITS MODE OF APPLICATION AND ADVANTAGES.

The word disinfection to some means little, while to others it is of vast importance. By the term is meant the application of agents which prevent or destroy those living micro-organisms from which contagious and infectious diseases arise.

Disinfectants are placed under various classes, as those which kill the germ when brought in contact, those which change the material upon which its existence depends, those which absorb or encase the disease germs, rendering their existence harmless, etc.; but by the every-day busy man these distinctions may be left to the investigator to dictate to the world which is most suited to each and



LORD IRWIN (29123).  
BRED BY MR. LINTON. FIRST AT THE ROYAL SHOW, 1874.

every particular necessity. There are, however, in common certain conditions necessary to each and every individual who has the responsibility of avoiding or combating diseases to which animals subjected to his care are or may be exposed; and perhaps the greatest of all responsibility rests with this class, for no place can be free from germs where there is absence of good sanitary arrangement, cleanliness, pure air, sunlight, perfect drainage, etc., in the presence of which artificial agents need be called very little into use. There are, however, conditions surrounding the live stock breeder to-day for which he is not entirely responsible, as, for instance, the outbreaks of hog cholera at different points, and the generally distributed outbreaks of contagious abortion among our Canadian herds of cattle, which in certain sections are becoming alarmingly prevalent and doing inestimable damage. Either of these may be brought entirely within control by the exercise of proper disinfecting treatment. No definite rule can be laid down to meet the requirements of each case; yet in the main, cleanliness and the absence of decomposition must be first considered under all circumstances, as the heaping of disinfectants on dirt cannot bring sweetness and purity. It must therefore be remembered that disinfectants should never be allowed to be made an excuse for habits of carelessness or uncleanness, but all refuse and dirt should be removed regularly, and no accumulation of such permitted. Sweetness is health; stench is disease. This being accomplished, we have many highly useful agents within our reach, and our object now must be to select those agents possessing the greatest antiseptic with the least objectionable properties. All disinfectants are more or less poisonous, and the more powerful in antiseptic properties the more destructive to all life. Therefore for our purpose much caution must be exercised in their selection and mode of application. Corrosive sublimate is perhaps the most powerful of all antiseptics, yet from its extremely poisonous action its application is attended with too great risk to the subjects we wish to protect. Carbolic acid ranks high, if not among the highest in this class, but its corrosive and death-dealing effects are so positive that its application demands the greatest of caution, and is therefore not safe in the hands of careless operators, and therefore should not be employed in concentrated form. It is, however, highly useful when protected in dry substances, which render their liability to be taken in overdoses impossible. Chloride of lime, although yielding germ-destroying gases, while reasonably safe, is highly undesirable on account of its unpleasant odor. The coal-tar series yield, perhaps, as safe, and desirable agents as have yet been produced, being positive in their action, attended with very little danger to human or animal life when reasonable care is exercised in their application, and give off little or no objectionable odors. These are highly destructive to the lower forms of germ life when brought in contact with it. Of this class, creolin is perhaps the basis of many of the best and most desirable products now on the market under different names and offered for disinfecting purposes. Many of the advertised sheep dips and cattle washes owe their virtues largely to this class of products, and are perhaps the most valuable yet known, as they contain many desirable and few objectionable and dangerous properties.

Having selected our germicide, the next step is to consider the mode of application and conditions necessary to obtain the best results when applied. First remove all dust and filth, sweep down all cobwebs—and right here let us add that it is deplorable to walk into an expensively constructed stable and

find the ceilings hanging thick with cobwebs, when so little exertion is required to remove and destroy them. What owners neglect, herdsmen should see the necessity of doing, and the attendant who has to have his attention drawn to such details is lacking in the qualities which should bring him to the front. After all dirt is removed and due regard is placed upon cleanliness, light, drainage, ventilation, etc., the thorough application of the agent to floors, walls, ceilings and drains should follow. It should be evenly distributed if in powder, or if in liquid form the modern spray pump is a splendid and economical medium, some of which have special provision for this work. Among the more prevalent diseases to be combated by the use of disinfectants, we look upon contagious abortion as worthy of our first consideration, and to our mind this is one condition the eradication of which wholly depends upon proper, thorough and persistent effort; in fact, the disease could not gain access in the presence of proper disinfecting agents. Hog cholera, so prevalent and destructive in certain sections, can at least be held in check, if not altogether prevented or eradicated, by its thorough application. The germs of lump jaw, so prevalent in cattle in certain sections, are given off in abundance in the saliva in feeding-trough, there to remain to attack the first victim accepting it, and may be destroyed by proper application of disinfecting substances. Ringworm may easily be eradicated from the premises, as its presence depends upon a vegetable parasite. Lice and other vermin on horses, cattle, sheep, pigs and poultry require direct applications to the skin of the animal, yet much valuable assistance would be added by thoroughly disinfecting their places of abode. Even worms in sheep, pigs and calves would find far greater difficulty of existence during their transitory stage in disinfected quarters. Much may also be done to reduce the risk and danger of exposure to many of the deadly diseases which have worked destruction in many parts of the earth during the past, which might at least have been held in check had they not been regarded as mysterious. The advance made can scarcely be referred to better than in the following extract from the pen of an English pharmacist in a London journal:

"The useful science of bacteriology is indeed full of surprises, and every year bears witness to the astounding strides with which it grows, whilst day by day it is being more widely recognized of what stupendous importance to man is the message which it has to deliver. During the earlier childhood and adolescence of this new science, it was generally believed that this message was of a gloomy character, and one which it would be better to leave untold, for to the public it seemed as though it had nothing but death and destruction to reveal as lurking where danger was hitherto unsuspected. For many years bacteriologists had apparently nothing to announce but the discovery of new and subtle enemies to mankind, and to produce poisons possessing such a degree of malignity that beside them the venom of snakes and the most potent drugs of the apothecary appeared as comparatively harmless and even friendly. In reality, however, these deadly foes and poisons have always existed before, and have wrought their lethal work in the dark until exposed and branded by men of science, who after years of patient labor are now teaching the world how these foes may be vanquished and how these old but until recently undiscovered poisons may be counteracted and rendered innocuous by the administration of new antidotes."

### The Old Messenger Stock.

Many of the older generation of Canadian horse breeders and farmers generally have pleasant recollections of the excellence and endurance of the good old Messenger stock of horses which were popular some fifty years ago, and will be interested in the following account of the celebrated stallion, Messenger, and his importation to the United States, given by Mr. George Blodgett in the *Rider and Driver* (New York): "Unquestionably, from a fashionable standpoint, the earlier of the superior families of driving horses in this country, and which for a long time commanded attention, was the Messenger stock. A high impression of the superiority of the head of that family grew out of a well-known and impressive incident connected with his importation. The story grew, as all good stories do, and travelled all over the country. Messenger came to this continent in a sailing vessel. It was a long and perilous voyage, lasting many weeks. Several of the horses died on the way over from the terrible strain and exposure. The few that lasted had to be helped and steadied down the gang plank on their arrival by three or four men bracing them on each side. The one exception was the horse called Messenger, a resolute gray. He was a marvel to all beholders. At sight of the shore he became furious and his attendant, with the help of the groom, could not suppress him. Another groom came to their aid, but it was no use, he carried them off their feet in spite of all their strength, nor did he stop until an eighth of a mile away from the landing. Such was the volume of forcefulness said to be at the foundation of the great Messenger family. But as his offspring became mixed and intermixed with the common stock of the country the family features were more or less lost, although an occasional characteristic would, through certain dams, crop out in unmistakable expression. One of his descendants, in a fairly direct line of excellence, was crossed with an unusually good Bel-founder mare, known as the Charles Kent mare, and

from this combination came impressive results in a large degree of sturdiness and speed. Scientific breeders claim most of the credit for the dam. But there were certain tributaries which have added strength, brilliancy, and quickness, and which have contributed to the more extreme speed and staying qualities of a few of the descendants of this union, and which were unattainable without these contributions. They were exceptions from the families of Morgans, Clays and certain high and rapid running thoroughbreds. In these, the better results were confined to certain types and tendencies. For not all of the Morgans were sturdy and quick. Not all of the Clays were forceful and brilliant. Not all of the thoroughbreds are rapid and enduring."

### Breeding from Immature Sires.

#### SOME OF ITS ATTENDANT EVILS.

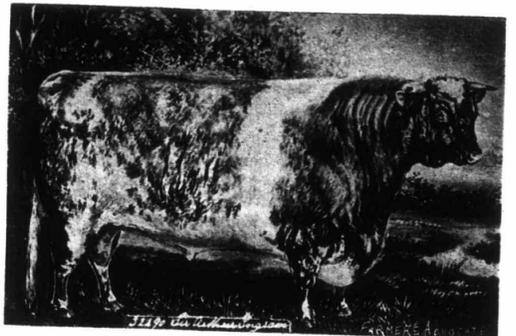
The extent to which breeding from immature sires has been practiced is not a little remarkable when we reflect that it has been done as a matter of choice, and not as a matter of necessity. It would not be incorrect to say that more than half the entire number of our domesticated animals are the offspring of immature sires, and this will hold true in every line, unless it be in the breeding of horses.

The plan most commonly adopted in breeding cattle is to purchase a sire when a calf, or at least when under one year old. He is put to service, to some extent at least, as soon as the procreative powers are sufficiently developed to admit of his becoming a sire. He is used too freely during the whole period of immaturity, and is more generally sent to the shambles when not more than four or five years old. Ram lambs are more frequently purchased than shearlings, and rams are usually not kept beyond the age of four years; and a similar course is pursued in the use of males in the breeding of swine.

The necessity for the disposal of sires at an age when they should still be able to render the best of service, to some extent at least, grows out of the practice of purchasing and using them at so early an age. They cannot be longer retained in the herd or flock, as the case may be, to be used as sires, without mating them in many instances with their own progeny. But why good males should have to be sent so frequently to the shambles while yet in the zenith of their usefulness, and because no one will purchase them for breeding uses, is, to put it mildly, unfortunate. To so great an extent does the desire prevail to get young sires that the door of further service is closed to those veterans that have done their work in one herd or flock; hence they must be sacrificed in the midst of their usefulness.

But there is not the same necessity for the purchase and use of immature sires. It is simply a matter of choice. There may be a necessity for purchasing sires when young, as matters stand at present, in order to obtain those possessed of good individual merit, but there is no imperative necessity for using them to anything like so great an extent as they are used while they are so far from being matured. It is one of those practices which seem to rest upon convenience and ease of management rather than upon intelligent consideration.

The great fundamental law of breeding tells us that, as a general principle, "like begets like." Apply this law to breeding from immature parents in the one case, and from those in the meridian of vigor in the other, and what does it tell us? It tells in the former instance that immature parents are incapable of producing progeny possessed of the highest excellence in every particular, and it tells us in the other that parents in the meridian of their vigor



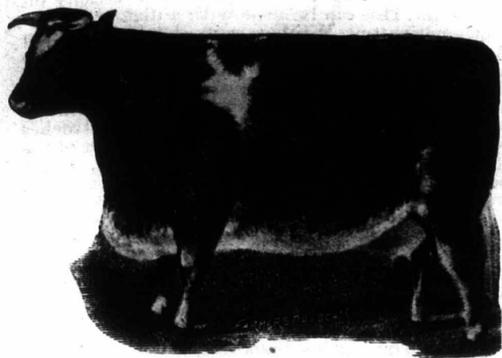
SIR ARTHUR INGRAM (32490).  
BRED BY WM. LINTON. FIRST AT THE ROYAL SHOW, 1877.

are capable of producing progeny in no sense inferior to themselves. When, therefore, we use immature sires, we choose to violate a law the observance of which would enable us to preserve the maximum of development if secured, and it would also be a potent factor in enabling us to secure it.

The extent of the injury from using immature sires could not be easily defined. It is only one of a number of factors, each of which, under one system of artificial management, is antagonistic to the highest degree of development, and more particularly antagonistic to the retention of robustness of constitution and bodily vigor. It would be impossible to say how much influence each of those factors exerts in the direction of deterioration, but there is

no reasonable doubt that the extent to which immature sires are used gives this unfortunate practice a long lead in not only barring the way to higher attainment, but also in lowering the standard of achievement.

Loss of stamina is one of the most common forms in which deterioration shows itself in animals under domestication, and the more artificial the conditions the more difficult is it to prevent deterioration. It should be a constant study with the breeder how this stamina can be maintained. But his efforts in this direction will not be completely successful so long as he uses immature sires, for it is impossible that immaturity should possess stamina otherwise than in the unfoldings of partial development; as compared with stamina in the matured animal. What is not possessed cannot be imparted;



MOLLY MILLICENT.  
FIRST AT THE ROYAL, 1888, 1889 AND 1890.

hence the use of immature sires is antagonistic to robustness of constitution.

The evils arising from this source would have been much greater but for the fact that in a majority of instances the immaturity in the parents has been only on the side of the male. It is a fact that dairymen are not desirous of rearing the calves of young and immature heifers for future use in the dairy. Experience has taught them that it is unwise to do so, and yet they seem quite content to rear females for the dairy, the get of immature sires.

Tuberculosis is very prevalent among domesticated animals. Artificial conditions are largely responsible, but none of these has, it is thought, been so potent in paving the way for tuberculosis as the use of immature sires. An impaired stamina, a weakened vigor, and degeneracy in robustness, all pave the way for the grasp of this insidious destroyer.

It would be taking extreme ground to claim that immature sires should never be used. There may be a necessity for using them sometimes, and when far on the way to maturity they may doubtless be freely used, and with perfect safety; but this is altogether a different thing from using immature sires as the rule rather than the exception. It would be impossible to say how much higher the attainment would have been in the improvement of the various breeds of live stock had this question received that attention which its importance demands from the first dawn of live stock improvement in modern days.—*Rural World, England.*

**The Bull Conveys Abortion.**

SO SAYS PROFESSOR BANG.

During the year just closed Professor Bang has collected a considerable mass of evidence from his colleagues in Denmark all pointing to the importance of the part played by the male in the spread of abortion. This has been assimilated for the *N. B. Agriculturist* by a foreign correspondent, who gives the following samples, which must serve to illustrate the nature of the whole:

1. A farmer, who for eleven years had no case of abortion in his herd, lent the use of his bull to a neighbor in whose herd the disease was prevalent. Every cow subsequently served by that bull aborted, including several on a third farm which had been put to him. The bull was sold, the cows were disinfected with lysolum or "ereolin" solutions, and the disease disappeared. Two years have since elapsed without a further case occurring.

2. In this case, fifteen cows belonging to a farmer, whom we may distinguish as A, aborted during 1897. In the spring of that year A sold his own bull, and from that time up to February, 1878, obtained the services of a neighbor's whenever the aborted cows came in season. In the meantime this neighbor, whom we call B, was also lending his bull's services to a third farmer, C. Neither B nor C had ever had a case of abortion hitherto, but in 1898 their cows began to calve prematurely. Up to July, 1898, nine of B's and twelve of C's had aborted. A few others belonging to B, which had also been served by the bull after he had become infected, went their full time; but in C's case every one of the twelve served after the bull had been among A's cows aborted, and none of the others.

3. Two neighboring farmers, each with about twenty-five cows, for many years kept each his own bull. One of them, Mr. S., had never had a case of abortion; the other had been troubled with it for three or four years. One day Mr. S. sold his bull, and for thirteen of his cows hired his friend's. The following year every one of those thirteen aborted, the rest of the herd, which had been served by Mr. S.'s own bull before it was sold, calving at the proper

time. Abortion took place when the "fetus was as large as a cat or a dog." This happened two years ago. On his veterinary surgeon's advice Mr. S. decided not to use his neighbor's bull any more, and subjected his cows to Brauer's treatment. Since then only two cases of abortion have occurred in his herd.

Those and many similar instances reported afford strong presumptive evidence in support of Professor Bang's views regarding the bull's part in this plague. At the same time we are warned not to forget the possibility of other modes of infection, especially that where the bacillus is conveyed by the discharge of an aborted cow coming in contact with the vulva of another. In fact, Professor Bang has already shown that abortion may be produced by contaminating the vaginal passage of a pregnant cow with matter containing the bacilli of abortion. It is, however, more likely for infection to occur when the bacillus is conveyed well into that passage by the bull at the very time when it is open for the reception of the seminal fluid.

**Advantages of Early Maturity.**

In an article in the *Journal* of the Board of Agriculture, summarizing the results in early maturity experiments, conducted at Iowa Experiment Station by Mr. C. F. Curtiss, the following remark occurs: "The law of diminishing returns for food consumed as animals advance in age toward maturity is conclusively established, and should be kept in mind by the meat producer, since economy of production is one of the important factors in the determination of profit, and the advantages are all with the young and growing animal as compared with one that has practically attained its growth." There is an important lesson for stock feeders and graziers in this pregnant observation.

**FARM.**

**Fall Wheat and Clover Saved from Heaving.**

A NEW AND EFFECTIVE SYSTEM OF SURFACE DRAINAGE.

The matter of securing a good stand of clover or fall wheat, especially in clay land, has resolved itself into a question of considerable moment. Especially is this true since the value of clover as a feeding and fertilizing crop has become recognized, and also because the fall wheat crop, where it is grown, holds a most important place in the rotation, and also aids in establishing clover meadows, as no grain crop is so favorable to the securing of a catch of clover seed. While the extraordinary severity of the past winter had much to do with the destruction of these crops, by far the greatest destruction has taken place on lands that hold surplus water near the surface. This is easily accounted for, since we are aware that the action of frost on water or wet substances is to expand them, and in so doing severs the fibres of the roots. The remedy in such a case is to remove as much as possible of the surplus water, which is especially difficult in clay, owing to the lack of porosity of the soil. While underdraining is the great power, the expense of doing it thoroughly on clay soil prevents very many from undertaking it. The result is the crop is very uncertain, and too often a failure.

On any soil, but especially clay, that has not been underdrained, as much as possible should be done to allow the surface water to escape, especially from land where fall wheat or clover are expected to be taken the following season. Our forefathers recognized the value of thorough surface cultivation, and to that end plowed the soil in narrow lands, well raised in the center, leaving a good deep furrow between them. Since the advent of reaping and mowing machinery the tendency has been to plow wider lands and leave shallower open furrows, until we find on many even clay farms that no provision is left for the escape of superfluous water. This we believe is responsible for much of the destructive winter-killing of clover and wheat, as we invariably see the greatest destruction has taken place in the wettest parts of fields, except perhaps on knolls that presented a poor appearance before winter set in, and which, being bare of snow, were exposed to the severe frost. It should, then, be our effort not only to underdrain as far as practical, but also to leave the surface in the best possible condition to allow the water to run off as quickly as possible. Since learning by correspondence and observation of the extraordinary destruction to wheat and clover that has taken place during the last winter, we, like many others, have felt particularly anxious to learn of any system whereby this tremendous loss and disappointment may be averted in future, and it was this anxiety that led us to visit the clay farm of Mr. John Edmonds, on Hamilton Mountain, whom we had learned has adopted a system of surface drainage whereby his fall wheat and clover have come out this spring in almost perfect condition. Our visit was made on May 2nd, just when all the live plants had commenced to exhibit vitality, so that we had good opportunity of comparing fields treated by the ordinary level culture and those managed under Mr. Edmonds' new system.

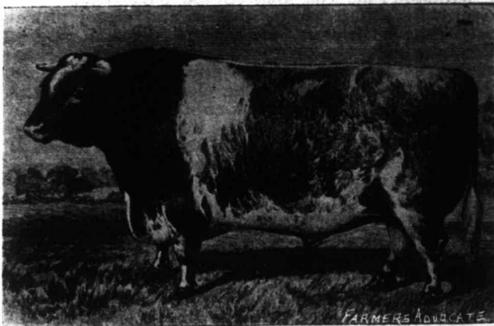
To describe the system in brief, it is to put up the soil in narrow lands, without leaving objectionable, deep, wide furrows between them. The work might possibly be done about as well by a prize plowman, but even then there would be found difficulty in securing the regular smooth slope from

ridge to furrow that characterizes Mr. Edmonds' fields at the present time. The work is done by plowing the field into fourteen-foot lands, and after working it down almost ready for the seed he shapes the lands into beautifully smooth, rounded form by means of a machine of his own invention, which he calls a "land shaper." It consists of a V-shaped scraper, fitted with a point similar to that of a double mouldboard plow, and having wings which slope out until they are fourteen feet apart at the tips. On these wings, which are about four inches deep, is riveted a sheet iron top dipped in the center to the shape the land is to be. The "shaper" is on two wheels, and also has a sharp-edged wheel running near the back, much like a rolling coulter, to prevent the machine from swaying from side to side. It is drawn by two horses, or three may be needed if much earth has to be moved from the furrow to the ridge. The sheet iron covering or table is to shape the land, and also to prevent the soil falling over the wings or scrapers. The machine is used the last thing before sowing the wheat, and after the sowing is done a much smaller similar machine is used to clean out the furrow and spread the soil that it moves evenly over the surface, so as not to prevent surface water running immediately into the furrow. The wheat field put up in this way is quite heavy clay, and not underdrained, presents a hopeful appearance for a good crop. The clover field also, not of '98, but of '97 seeding, is a thick mat of nearly all clover over the entire field, with the exception of a few small parts of lands that were left a little too level. We noticed clover in adjoining fields, especially in the lower portions, that was lifted out almost entirely, and in a hopeless condition. Mr. Edmonds goes over all his clover fields in the fall with the small shaper, cutting a V-shaped groove between the lands, which leaves the ground bearing the plants high and dry, and, therefore, safe from heaving out. Since, by common consent, a man who causes two blades of grass to grow where one grew before is a benefactor to the human race, we feel that Mr. Edmonds is entitled to some meed of gratitude by having demonstrated so clearly a method of overcoming the expensive uncertainty of securing regular crops of fall wheat and clover.

**Spraying Wild Mustard.**

The following is a brief account of an experiment conducted last year by Mr. Ovens, of Torr, on behalf of the Lancashire County Council, in a field badly infested with charlock. Professor Campbell, under whose direction the experiment was conducted, could not find a field badly enough infested in the County Palatine, but Mr. Ovens was, unfortunately, able to supply the deficiency in a very marked degree.

The field selected was under oats after lea. A portion containing 110 square yards was reserved for spraying, and another, portion of equal extent, was left unsprayed for comparison with it, and the remainder of the field was gone over with a "charlock" weeding machine. The spraying took place on 14th June, when the oats were fully twelve inches in length, and the material used was a solution of sulphate of iron, diluted to 13 per cent. A remarkable result was obtained. The "charlock" was totally destroyed, and in a few days the contrast between the two plots was striking to a degree. Where the spraying had been performed the field bore a dark green hue, while the unsprayed plot was quite yellow, with charlock in full flower. This is conclusive enough as regards the destruction of the charlock, but the important question remains, What effect had the spraying upon the oats and the clover? It is satisfactory to find that the answer here is equally conclusive. The oats were practically uninjured, and the result in the harvest was



FIELD MARSHAL (47870).  
BRED BY AMOS CRUICKSHANK.

equally good, for the binder got round the sprayed plot without a hitch, while in the other it was being choked at every round on account of the luxuriant growth of the charlock.

Another experiment was carried out in an oat field sown down with clovers and rye grass, and the effect upon these plants is the question raised by our correspondent. Naturally one fears that what destroys charlock may destroy clover, but, so far as the Torr experiment is concerned, this does not appear to be the case. The spraying in this second trial took place when the oats were about 14 inches in length, and two plots were selected—the one getting a 15 per cent. and the other a 20 per cent. solution of sulphate of iron. In both cases

the charlock was exterminated, and the clovers at harvest were found to be as luxuriant on the sprayed as on the unsprayed plots. Another satisfactory feature of the spraying was its effect on thistles. These in every case were blasted, and, in the case of the plot subjected to the 30 per cent. solution, effectually made harmless. As the result of what he saw in these experiments Professor Campbell has every confidence in recommending farmers to adopt spraying with sulphate of iron in doses of a 10 per cent. solution for the general extermination of this most troublesome weed.—*Scottish Farmer.*

**Rape for Pasture.**

For sheep and young cattle there is probably no green crop that will furnish as much good feeding pasturage or promote growth and put on flesh as rapidly as will rape. It has the property of springing up again after being eaten off, and can thus be fed over several times in a season. It is not, as a rule, considered advisable to sow it early, as it is more suitable for the late fall months, and early-sown rape is liable to turn yellow and to become infested with plant lice during the hot months in summer unless it is pastured off before it reaches that condition, and allowed to grow up again for later pasturage. Rape may be sown any time from May to August, but as a rule the best time to sow is about the end of June, or any time after the 15th of that month. This is a time when farm work is generally not pressing, and there is ample time to prepare the land well for the crop. A rich soil is not absolutely necessary for a fair crop of rape, though, of course, a stronger crop may reasonably be expected on rich than on poor or fairly fertile land. The principal thing is to get the land into good condition, so that a fine seed-bed is secured. A clover sod, or even a timothy sod, inverted and well worked on the surface until fine and friable answers the purpose very well. Failing these, a stubble field which has been manured, if not previously in a good state of fertility, may, by a good preparation of the seed-bed, serve the purpose fairly well. If the land has been plowed in the fall, it may not be necessary to re-plow in the spring, if the surface has been kept cultivated by the use of a broad-toothed cultivator to cut and destroy thistles and other weeds. This system has the merit of retaining the moisture in the soil, and if showers of rain do not come will be found to favor the early germination of the seed and growth of the plants. If the land must be plowed the roller should follow the plow the same day, and the harrow should follow the roller, if not the same day, then the next day, as the land will by this means crumble and be reduced to a fine tilth more readily and satisfactorily than if these last processes are delayed till all the field is plowed. If it is considered too early to sow, or if there is not sufficient moisture in the soil to insure germination of the seed, it may be well to wait till a shower comes, when the land should be well harrowed and cultivated, if necessary, so that any weeds which have started may be killed and the seed-bed be left in fine condition.

It is generally considered preferable to ridge the land in low ridges from 26 to 30 inches apart—the same as for turnips—when the seed may be sown with a turnip drill, sowing about two pounds of seed per acre. By commencing to horse-hoe between the drills early weeds may be kept under and the growth of the rape hastened, and it should be horse-hoed at least three times, if possible, in order to insure a good crop. If a drill that will sow in rows on the level the proper distance apart is available, it will answer the purpose, though after-cultivation can be earlier and easier prosecuted where the plants are grown on raised ridges. We have seen the ordinary grain drill with grass-seeding attachment used to sow rape, by placing the seed in the grass seeder, closing up part of the openings and slanting the rubber tubes into the shields of two or three of the hoes. The difficulty in this case is that the rows will be only about 21 inches apart, which leaves rather too narrow spaces between to work a horse-hoe advantageously. On land that is clean, rich and mellow, a very good crop may be grown by sowing the seed broadcast at the rate of four or five pounds per acre. It is well to sow a small proportion of Greystone turnip seed with the rape seed, as the stock will enjoy scooping these.

The value of rape as fall food for sheep and young cattle is only fully appreciated by those who have had experience with it. There is no other pasture crop which will put on flesh so rapidly and keep the animals in better health. There are occasionally losses of animals fed upon it from bloating, but if care is exercised to put them on it at first only when it is dry and the animals are not very hungry they will gradually become accustomed to it, and may safely be left to graze on it till the snows of winter come. It is well to sow a piece early to be ready for the lambs when they are weaned, and to have other pieces in different fields for later feeding, so that the ram lambs may be separated from the ewe lambs; and there is nothing equal to rape for freshening the ewe flock for the breeding season, and fattening such as are to go to the butcher; while calves and other young cattle thrive on it, and are brought into excellent condition for going into winter quarters.

**Continue Root Growing.**

**CORN AND THE SILO NOT ENOUGH—CULTIVATION FOR MANGELS.**

It is long since farmers generally learned the value of turnips for winter feeding stock, and how to grow them, but with the march of progress roots are, perhaps, too rapidly being dropped for crops that are less expensive to grow and produce a much greater bulk of dry matter per acre. The introduction of the silo, together with the rapid expansion of the dairy industry, is, perhaps, more responsible for this change than any other cause. It is quite true that a given acreage of good corn, well cured in a silo, is more profitable than an equal area of turnips where either one or the other is grown alone, and not only that, but if dairy farming is the line followed, turnips have to be almost or nearly excluded from the ration on account of their effect on the flavor of milk and butter. Now, it is just possible, and indeed there is great danger of running to an extreme in the direction of corn-growing, to the neglect of roots altogether. This, we believe, is a serious mistake, especially where young stock is reared, and, if persisted in, will tend in many cases to bring unjust condemnation on the silo, which, when properly used, is a great benefit to the farming business. What may be feared is that the satisfactory results obtained from the feeding of ensilage will tend to drive out other succulent foods. The result of such a course is to cause overheating of the system of the corn-fed animals, causing them ultimately to thrive poorly, lose their hair and become scurfy and dry in the skin—an external indication of the internal condition—as the outer skin and mucous membrane of the alimentary canal are a continuation of the same and in sympathy one with the other. This condition in exclusively corn-fed animals has frequently been noticed to exist for the reason that the diet was of too heating or carbonaceous character. It acts like an internal furnace, burning and parching, which condition would have been met and averted by a greater proportion of succulence in the form of



MARENCO (69069).

BRED BY MR. DUTHIE, FIRST AND CHAMPION AT THE ROYAL, 1898.

roots, or a balancing of the ration by a protein supplement, such as oil cake, bran, peas, etc. To get a condition of this sort from feeding ensilage could only result from an abuse of a blessing through a lack of knowledge of the properties of corn, and of the importance of feeding a balanced ration.

In order to get the most economic returns from ensilage, other foods should be fed with it, and among the most important are roots of one or other of the stock-feeding classes. Heavy feeding of roots is not at all necessary or advantageous, but a limited quantity of one or two pecks per day to a mature cattle beast will yield vastly greater returns than the cost of growing the roots, or of supplying the supplemental food in the form of grain. True, clover hay fed as a supplement to silage will promote rapid gain or milk production, but even with these the addition of a few roots daily will tend to greater profit in feeding, fattening, milking or growing cattle or sheep. Except for the milking stock, turnips are still preferred to mangels, because they are believed to yield about similar results in feeding, and are on most land more easily grown. For cows that are giving milk for human consumption, and also for winter feeding swine, mangels are much more suitable food, for the reasons that turnips impart an objectionable flavor to milk and milk products, and swine relish the mangels much more than turnips, and therefore thrive much better upon them. For these reasons we believe that every farmer who has suitable soil for roots, whether he grows corn and fills a silo annually or not, should grow a quantity of both turnips and mangels, and where young horses are raised, a patch of carrots as well.

The growing of mangels does not differ materially from the raising of turnips. Land that will produce one will usually yield about equally well of the other, although it is, especially in a dry season, more difficult to get a stand of mangels on a clay soil. The most suitable soil for either crop is undoubtedly a free-working loam. It is becoming generally recognized that all crops do well when following a clover sod, but general practice is not in favor of this with roots, as we all like to put our hoed crops on the poorest and weediest land, as it gives a good opportunity to enrich it with a dress-

ing of manure, and clean it by the cultivation that the crop requires. While it may be considered preferable to manure land during the autumn for mangels, we have found it very satisfactory to apply a dressing of well-rotted barnyard manure the first job after seeding is finished in spring. In fact, we usually manure the mangel and potato ground at this time, and sow the mangel seed as soon after this as the ground can be got ready. The preparation consists in plowing in the manure to a fairly good depth, and rolling and harrowing well closely after the plow, so as to keep it mellow and moist. This is very important, as mangel seed is a slow germinator in any other than a fine, moist seed-bed. If the land has been well plowed in the fall, and manured with short manure in fall or winter, best results are usually obtained by working the land in spring without plowing, especially on clay soil. This can be done with a disk or spring-tooth cultivator. While carrots should be sown in April, if possible, mangels should be gotten in not later than May 20th, and as much earlier as the condition of the ground and grain-seeding work will allow. Having got the manure well mixed with the soil, it should be ridged up in drills 28 to 30 inches wide, but not high. Now sow into the center of the top of the drills four pounds of seed per acre. It will hasten germination to soak the seed over night in warm water. It should then be dried by spreading it on paper in the sun until external moisture has disappeared. It is also well to roll down the drills well after sowing to hasten germination. As soon as the plants are seen along the row, start the scuffler at once. This will kill all weeds that have started to grow, and will loosen the soil around the plants, and thus promote their growth. When the plants are about 3 or 4 inches high, they should be thinned with hand hoes to from 14 to 18 inches apart. Care should be taken not to wound the plants that are to be left, nor to remove sufficient earth from their sides to allow them to fall over, as the plants will suffer materially from either of these sorts of rough usage. The best varieties are Mammoth Long Red, Mammoth Saw Log, and Yellow Globe. The last named is the best keeper, but yields somewhat lighter. The other sorts should be left further apart in the rows. Cultivation should be continued frequently as long as the scuffler does not break the leaves.

Some have found it advantageous to plant mangels on the checkered-row system. The land, instead of being ridged up, is marked both ways about 28 inches apart each way. The seed is then planted with a corn planter, and singled to a plant in each place. By this system horse cultivation may be done both ways, which is a great advantage in labor and efficiency. A full crop grown by either system on well-cared-for rich land should yield from twenty-five to thirty-five tons per acre.

**Clovers as Green Manure.**

The following table shows the results of Prof. Shutt's experiments in determining the manurial value of clovers. It will be noted that the clover in this test was in each case little over one year old from date of sowing:

No.	Kind.	Sown.	Collected.	Weight of Material (fresh) per acre.			Weight of Nitrogen per acre.		
				Stems and Leaves.	Roots.	Total.	Stems and Leaves.	Roots.	Total.
1	Mammoth Red.	April, 1894	May, 1895	Tons	Lbs.	Tons	Lbs.	Lbs.	Lbs.
2	"	"	"	10	70	5	1,476	101	150
3	Mammoth Red.	July, 1896	Oct., 1896	5	1,235	9	535	50	111
4	Common Red.	"	"	6	1,310	3	1,990	82	130
5	Mammoth Red.	May, 1897	May, 1897	4	1,779	2	1,445	70	117
6	Common Red.	"	"	4	1,779	2	1,445	70	117
7	Mammoth Red.	May, 1897	Oct., 1897	4	508	2	1,785	62	81
8	Common Red.	"	"	5	209	3	296	76	62
									130

Nos. 1 and 2.—Roots taken to a depth of four feet. Good spring growth when sample collected.  
Nos. 3 and 4.—Sown in orchard as "cover" crops. Roots taken to depth of two feet.  
Nos. 5 and 6.—Winter-killed. Sample collected consisted of dead stems, leaves, and roots.  
Nos. 7 and 8.—Nitrogen estimated, not determined.

**The Great Possibilities of Larger Crops.**

NEW EXPLANATIONS OF THE TWO GREAT PRINCIPLES—AN INCREASE OF FROM 20 TO 30 PER CENT. OBTAINABLE IN A FEW YEARS—THAT MEANS \$50,000,000 TO \$80,000,000 TO CANADIAN PRODUCERS.

On two days of last week, Professor Robertson, Commissioner of Agriculture, appeared before the Dominion House of Commons Committee on Agriculture and Colonization. The subject chosen was the fundamental principles governing the successful crops of Canada.

Professor Robertson said:

National prosperity primarily depends on the production of wealth out of the natural resources of the country. The value of the products of the fisheries last year was \$23,000,000; of the mines of Canada, \$37,000,000; of the forests, including firewood, was estimated at \$80,000,000. The value of farm crops was estimated at between \$270,000,000 and \$280,000,000; and the value of all agricultural products, including crops, at not less than \$600,000,000.

**The Difficulties of Farming.**—The difficulties of successful farming become greater every year, from the partial exhaustion of the soil, from the increasing prevalence of weeds and the greater injury done by insects and fungous diseases. While the Government may not have power to remove difficulties, it may and does assist the farmers to overcome them. As these difficulties increase, they should not be left to the weakness of even the strongest individual.

The Professor pointed out that the obtaining of large crops of good quality is governed chiefly by the climatic conditions of the season; and by the intelligence and ability of the farmers as applied to the growing of crops. Farmers have made much more progress in understanding the principles of cattle-breeding, cattle-feeding, dairying and fruit-growing, than in those which underlie the successful growing of field crops. What the farmers need is a clear understanding of principles, and not a dose of prescriptions to guide their practice.

**To Warm the Seed-bed.**—He pointed out that cultivation was an effective means of controlling the moisture in the soil and the temperature of the soil at a depth at which ordinary farm crop seeds are planted. Examination made of eight farms in the spring, on lands sown to grain, showed that in clear weather the temperature was three degrees higher to a depth of three inches when the land was rolled than when the land was left unrolled.

**Two Great Principles Explained.**—After explaining the uses and functions of various fertilizing elements and substances, such as nitrogen, potash, phosphoric acid, gypsum, lime and salt, he gave a statement of two great underlying principles which govern the increase of plants during their growing period. The conditions which make for the increase in the size of the roots, stems and leaves, do not make for an increase in the grains, fruits or seeds. An excess of easily available plant food promotes a great growth and enlargement of the vegetative parts of the plants, namely, the roots, stems and leaves. A bareness of available plant food when the plant is near the ripening period makes for an increase in the quantities of seeds. He instanced the growth of a bunch of oats on a dung hill. The roots, stems and leaves are enormously and unusually large, while the heads contain very few seeds and these of light weight. The seeds in that case constitute a very small proportion of the total weight of the plants. On the other hand, when a plant produces seeds under the most unfavorable of circumstances—for instance, a grass plant by the roadside—a small, short plant will carry a great number of seeds, and the seeds will constitute a very large proportion of the total weight of the plant.

**The Rotation of Crops.**—A knowledge by the farmers of the underlying principles which govern the increase in the size of these two different parts of the plant, namely, the vegetative parts and the reproductive parts, would guide them into a sensible and profitable rotation of crops. Barnyard manure should be applied to crops in which the roots, stems and leaves are the sought for and valuable portion, such as turnips, carrots, mangels, Indian corn fodder, hay, grasses. Manure should not be applied directly to land for the growth of cereals. The manure should be applied to the crop which precedes the cereal crop. It is a good plan to apply manure as a top dressing of a hay field or pasture field. That gives its immediate benefit in a larger crop and increases the quantity of roots, which are left to enrich the soil by their decay.

**The Question of Seeds.**—He then discussed the question of seeds. He said: Those seeds which germinate most quickly are the best; and it has been proved over and over again that heavy seeds give more vigorous and heavier crops than smaller seeds of the same sort and variety. All plants have a tendency towards variation. When they are changed from one place to another, they make an

effort to adapt themselves to the new conditions. Those which succeed most fully in adapting themselves are the best for the locality. The degree of successful adaptation is always the measure of success. He said that variation in plants was brought about and intensified by a change of seed, by the method of tillage, by crossing varieties and the like.

**The Useful Qualities in Varieties.**—Whenever a seed is sown in a locality new to it, if it be suitable, some forms will vary in the direction of adapting themselves to the conditions there; and selection of the seeds from these forms is practically the only means of continuing any improvement of the productiveness of the seed. That is actually a grading up of the seed by continued selection from year to year on the farm where it is to be grown. There are variations within all named varieties of seeds. Some of the most distinguishing characteristics of varieties are shape and size, color, habit of growth, hardness, length of growing period and productiveness. The latter, which is the valuable quality to farmers in all good seeds, varies greatly by a change of locality or a change in the method of culture.

**Comparison Without Subsequent Selection is of No Value.**—He analyzed the reports of the growing of cereals at the Dominion Experimental Farms for four years, and said that in his opinion the comparison of varieties without a continued selection of the best seeds from year to year was of no service to the farmers, and was apt to mislead them into expecting service from named varieties as such, instead of obtaining the seeds by continued selection from year to year on their own or similar farms. He instanced a case in the growing of peas where the sowing of large peas by themselves, and the large peas out of that crop again for three years, resulted in a crop of peas in which the individual peas were twice as heavy as the peas of a crop grown from small seeds of the same variety, under the same conditions, for an equal length of time. He said that variation in the productiveness of all varieties appeared to be brought about by growing them under different conditions of soil and climate.

**No Inherent Superiority in the Variety Without Selection.**—Out of 47 varieties of peas compared on the five experimental farms during the season of 1898, no less than 32 of the varieties appeared on the lists of the 12 largest yielders. Out of 18 varieties of two-rowed barley compared at the five experimental farms in 1898, no less than 14 varieties appeared in the lists of 6 of the largest yielders at each of the five experimental farms. Out of 23 varieties of six-rowed barley compared at the five experimental farms in 1898, no less than 18 appeared in the lists of the 6 largest yielders at the five experimental farms. Of the 65 varieties of oats compared at the five experimental farms during 1898, no less than 41 appeared in the five lists of the 12 varieties which yielded most largely at each of the experimental farms. Of the 42 varieties of spring wheat compared at the five experimental farms in 1898, no less than 33 varieties appeared on the five lists of the 12 largest yielders at the five experimental farms. Of the 195 varieties of oats, barley, spring wheat and peas compared at the various experimental farms in 1898, 138 appeared in the selected lists of the 12 or 6 of the largest yielders at the five experimental farms. The selected lists included over 70 per cent. of the total number compared.

**Heredity and Selection.**—Professor Robertson stated that the only valuable or useful selection of farm seeds was a selection of the seeds from the individual plants which give evidence of power by succeeding and yielding largely under soil and climatic conditions where the crop is to be grown the following year. In every field of grain some plants are more vigorous, larger, earlier and more productive than the others. That is evidence that these plants have varied in the right direction for profit-making to the farmer. The difference in the same field is due to some form of inherited vigor. The only quality of inheritance in plants for farm crops which is worth naming is the power to overcome obstacles, power to take materials from the soil and the air, and power to hold these and organize them into valuable forms. That is the only quality of inheritance or heredity which is worth naming in any field, the field of the farm or the field of the nation.

**The Plan for the Farmers.**—He recommended every farmer to select enough heads from the largest, most vigorous and early plants in his field to give him two bushels of seed grain, then to select the large seeds from that by the vigorous use of the fanning mill and sieves. Such seed grain would doubtless prove better adapted to the soil and climate of his place than any outside seed he could obtain. Selection in that way from year to year would develop seeds with the greatest vigor for productiveness and also with the quality of the grain improved. He instanced that such a course had resulted in an increase of crop varying from 20 per cent. to over 30 per cent. Such an increase applied to farm crops of Canada would mean an increase in the production of wealth from 20 to 30 per cent. on the \$280,000,000, the present annual value of farm crops. Dissemination of a knowledge of those fundamental principles which the farmers could readily understand and apply for themselves would bring about that desirable end. If the farmers once got a good hold of those principles, the principles would take hold of their farm practice and lift them into the most prosperous condition of agriculture.

**Stone and Wood Silo.**

To the Editor FARMER'S ADVOCATE:

SIR,—In reply to W. G. Thompson, I would say I have used a part stone and wood silo for two years, and find it quite satisfactory. My silo is a square one, ten feet inside. The studding is put up, boarded outside up and down with inch lumber, double boarded inside, paper between, lumber planed, but not matched. The inside sheeting laps down on the wall four inches, a groove being left in the wall (see Fig. 1), which breaks the

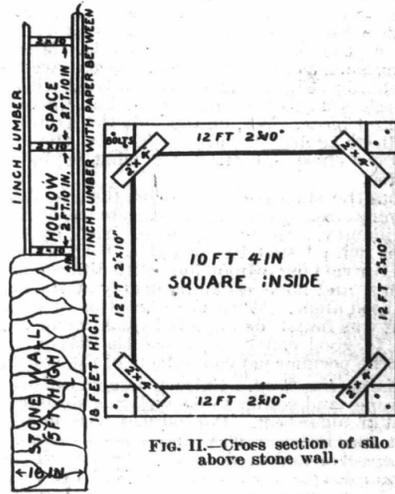


FIG. I.—Cross section of wall.

FIG. II.—Cross section of silo above stone wall.

joint; the studding are three feet apart. I made the frames (see Fig. 2) first; place first one on wall, cut some short poles the distance you want your frames (mine are 2 ft. 10 in.), stand one at each corner, nail; place second frame on top of them, stay lath, and so on as high as you want it. The wall is built the same shape as the frames, with corners cut off. (Note.—This is just a rough sketch, but if it is any good to anyone they are welcome.)

ROBT. CURTIS.

Ontario Co., Ont.

**A Very Useful Implement.**

No farmer or gardener can afford to be without a hand wheel-hoe or a combined drill and cultivator. As a labor-saver it is equal to at least three men, and when used at the proper time will most certainly greatly increase the yield of any area sown to roots. Any person who has an acre or upwards of roots or garden will find an implement of this character a most profitable investment.

As soon as carrots, mangels, turnips or any small garden plants appear above the ground sufficiently to show in rows, the hand wheel-hoe should be put on, whether there are weeds or not. Both sides of the row are cut with the one trip, leaving a very narrow strip to thin out. The soil will be loosened up on both sides of the rows, and a mulch formed to retain the moisture. The breaking of the surface crust seems to stimulate the growth of the young plants very much, and frequently it is advisable to give a second application before the roots are large enough to permit of using the horse hoe or cultivator. The second time it is well to go much closer to the plants than the first, as there is not much danger of covering them with the loose soil, and then the row will be left so narrow that even carrots can be thinned with a narrow hoe. Many farmers have given up raising carrots and mangels on account of the trouble of thinning. They were in the habit of sowing their roots and leaving them stand until high enough to cultivate with the horse hoe, thus permitting a rank growth of weeds to secure a foothold, which frequently concealed the rows of valuable plants and made the task of cleaning the rows a most arduous and a very expensive one. If the prospective investor is not already the owner of a turnip seeder, his best plan will be to secure a combined drill and cultivator.

JOHN FIXTER.

Experimental Farm, Ottawa.

While we would not advise milking every cow before calving, we would certainly do so in cases where the cows showed any sign of suffering from too much milk.

Showers have recently fallen which will do much good in giving the late sown crops a start, and in freshening the fall wheat and the young clover.

### Chicory Growing.

[Compiled from Bulletin No. 19, by Morris G. Kains, U. S. Department of Agriculture, Division of Botany.]

Although chicory is in many sections a troublesome weed, we hear most of it as an adulterant for coffee. Its tender roots, when boiled and served with butter, are considered a great delicacy by many Europeans, and the young green leaves when cooked in the same manner as spinach or dandelions, except that two waters are used, are much appreciated as greens. As a commercial crop, however, it is the dried ground root that commands the greatest attention. Its use in Holland as an adulterant of coffee was kept secret until the early years of the present century, when the adulteration became known to the public. Its use as a beverage upon the European continent is now as well established as that of tea, coffee or cocoa. Many substances, such as roasted cereals, acorns, sweet potatoes, etc., have been suggested and tried with varying success as coffee substitutes, but chicory still holds first place. We, on this side the Atlantic, are prejudiced against its use largely on the ground that it is a cheap substitute for what we believe to be coffee.

From the standpoint of health the case does not seem very clear against the moderate use of chicory. Experiments with chicory were tried by several persons who tested its qualities, both alone and mixed, in varying proportions with different grades of coffee, and none spoke favorably of the chicory when used alone. With the exception of only one case, it was found that a small quantity of chicory added to good coffee improved the flavor and reduced the peculiar nervous effects of the coffee.

**Raising the Crop.**—Chicory is generally grown in Europe, and seems to do well in a similar range to that of sugar beet. It produces well on all land, except the heaviest clay and lightest sand. The surface soil should be deep and the subsoil open to allow ample span for the extension of the long tap root. In the sandy loams, the roots, being slightly smaller, may stand closer together in the rows; in the clayey soil they should be farther apart. That the soil should be well drained is as necessary in this as in any other root crop. The autumn preparation of the land for the crop should resemble autumn cultivation preceding sugar beets, carrots, or mangels. In the spring, a gang plow or heavy cultivator should be used as early as the ground can be properly worked. A harrow should be used every ten days, and after each rain that is hard enough to form a crust, until the weather and the ground become sufficiently warm to insure good germination of the seed.

The ground being in a high state of tilth, sowing should be commenced as soon as the weather is favorable, or as soon as it would be considered wise to plant corn. Sowing may be done by means of a garden drill, from 1 to 1½ pounds of good tested seed per acre. After setting the drill it should be tested until it is found to drop 20 to 30 seeds to the foot. The seed may be planted one-third of an inch deep if the soil is in favorable condition, or deeper if the soil is dry. If the cultivation is to be done by hand the rows may be from a foot to 15 inches apart, but if a horse is employed 18 inches apart is narrow enough.

While there are many varieties of chicory, Brunswick, Magdeburg, and Schlesiensche are the best known kinds used in America for roasting. These grow from 10 to 14 inches long and from 2 to 2½ inches thick below the crown.

Two or three days after the seed has been sown the weeder should be run over the entire field in the direction of the rows. Hand labor in weeding is thus greatly reduced. Thinning should be done as soon as the leaves of the plantlets have spread an inch or not more than two inches. An interval of at least four inches should be left between the plants. This may be increased to about six inches if desired. After the thinning, and when the plants have obtained a good foothold, the regular cultivation should commence. At first the ground should be scratched to the depth of only an inch or so, but later, as the season advances, the depth may be increased to two or three inches, the object being to conserve moisture in the soil. The hand wheel hoe or cultivator should be run between the rows once in ten days or two weeks, and after rain, until the crop has obtained full possession of the ground. If horse power is preferred, one of the power cultivators or hoes may be used.

**Harvesting and Storage.**—Chicory, like other field roots, increases in weight more rapidly in September than during any previous month. The harvesting should upon this account not commence until October. Frost should be guarded against, since a root frozen is a root spoiled, at least if allowed to thaw out in the field. If it is sliced when still frozen, however, and put in the kiln to dry, but little damage is done. The plow is useful as a means of loosening the roots to be taken up, but where chicory is grown extensively the chicory-root loosener, similar to the sugar-beet loosener, answers a better purpose. When the roots are taken up the top is cut off at the crown, and the root is then ready for the factory. When it is impracticable to deliver the roots to the manufacturer at once, they should be thrown in piles 4 or 5 feet wide, 2 or 3 feet high, and 7 or 8 feet long, and covered with clean straw and earth, leaving holes at the top for ventilation. They may be safely pitted in this way, if protected from the frost, with small loss for six months.

**Yield and Profit.**—While from six to ten tons is the common range of production per acre, with

good culture in a favorable season as much as 15 tons may be raised, and it has been found by one grower that five tons per acre will usually in his case pay all the expenses incident to growing the crop. While it is reasonably safe to count in ordinarily favorable circumstances upon a net profit of from \$15 to \$30 per acre, if proper attention is given and the distance from factory is not too great, it must not be forgotten that chicory is a special crop, and that it cannot be raised with the certainty that there will be a demand for it such as there always is for staple crops, such as corn, wheat, and potatoes. In 1897 American manufacturers contracted for the product of some 2,000 acres more than previously, and one manufacturer who in 1897 paid \$6.50 per ton announced that he would pay \$7.50 per ton in 1898.

**Process of Manufacture.**—For the sake of cleanliness the roots should receive washing by emptying them into a long, narrow vat or tub which is kept half full of water, and in which there rotates a worm screw constructed of diagonally placed paddles. When the roots are clean they are then thrown out by a set of parallel prongs arranged like rake teeth. The roots now pass into the cutting machinery, in which the knives are set parallel in a cylinder which revolves. The roots after being cut are elevated by chain or strap buckets to the kiln floor. The kiln is built of brick and iron, and, preferably, has an iron roof, since there is often great danger of fire. The furnaces are placed upon the ground floor, upon either side of a passage extending from one side of the kiln to the other. They are built so that the whole of the heat is carried up through the mass of drying root upon the kiln floor, which is usually about eight feet above the fire grates, and built of steel or sheet iron, with numerous perforations large enough to insure a good draft, but too small to allow the particles of dry roots (cosettes) to pass through. They are frequently turned by hand shovels specially constructed for the purpose. The temperature



Chicory roots and leaves:  
(a) schlesiensche variety,  
root with leaves; (b)  
Brunswick and Magde-  
burgh varieties, root.  
(Both 1-12th natural size.)

Chicory plant in bloom  
for seed.  
(1-20th natural size.)

of the freshly filled kiln is usually not less than 100° Fahr., and this is generally increased towards the completion of the process. When sufficiently dried they are cooled and stored. In the process of drying the root loses a great part of its weight, as much as from three to five tons of green roots being required to make one ton of dried product. In some seasons the roots are more watery than in others.

The dried root is now ready for the roasters. The roasting is done in large coffee roasters. About a pound of butter, lard, cocoa butter, cottolene, or an equivalent volume of mustard seed, sunflower seed or rape-seed oil is added to the above quantity of cosettes, partly to keep them from burning, partly to make them less hygroscopic, and to give them a "coffee gloss," but primarily to carry the color in, and thus give the product an even tint when ground. After an hour's roasting the cosettes are emptied into a perforated tray, attached to which is an air-tight box, whence a tube leads to a suction air shaft. A current of air is thus drawn through the smoking mass, which cools the material in a few minutes. When cooled it is ready for grinding. The grinding or breaking is done with iron rollers, and to separate the grades the ground mass is bolted and put in packages or sold in bulk. In mixing chicory with coffee, about one part of the former to four of the latter is a fair proportion in which to mix the two, although some tastes prefer either more or less of the chicory.

### Finger-and-Toe in Turnips.

The disease known as finger-and-toe, which frequently attacks the turnip crop in Great Britain, and is not unknown in Canada, having in some instances proved exceedingly troublesome, has received special attention by Mr. J. R. Campbell for the Lancashire County Council. At one station, on a badly infested field, 10 cwt. of crude potash per acre did no good; nor did a mixture of manures containing superphosphate, dissolved bones, bone-flour, bone meal, kainit, and sulphate of ammonia. Twenty-four loads of lime compost, applied in December, gave a vastly improved result, while the same dressing, put on in the spring, did comparatively little good; and, strangely enough, twenty-

four loads of sea sand, applied in December, was as beneficial as the lime compost used at the same time, though it contained only about 4½ per cent. of lime. Four tons of quicklime, used in December, was much less effective than the lime compost or sand, which, again, is remarkable. At the other station the land was inoculated with diseased roots, excepting one plot on which a fair crop was grown. That the land was badly infested was clear, and this shows the importance of keeping diseased roots out of the manure heap. Where 8 cwt. of superphosphate was used the crop was completely destroyed; and the application of the same quantity of basic slag gave a result hardly any better. Three tons of lime compost, applied in December, did a considerable amount of good, while the same dressing, put on in the spring, was much less beneficial; but the quantity was far too small, and much better results were obtained from the use of three tons of quicklime, the early application again proving much more effective than the late one.

## DAIRY.

### How Milk Absorbs Impurities.

The statement made by Professor Russel, of the Wisconsin Experiment Station, that he had put warm milk in the vicinity of several substances having strong odors, and that at blood heat it absorbed any odors more rapidly than did cold milk, is of itself a sufficient reason for removing the milk from the stable as soon as the milking is completed for each cow, and putting it where it will be in pure air, or taking it at once to the dairy room.

But it also shows quite as strongly the need of having pure air free from bad odors in the stables while the milking is being done. The stream, as it passes from the teat, exposes much of its surface to the air, and it is ready, even in that short passage from teat to pail, to pick up all the odors, bacterial germs, and dust with which it comes in contact.

While it would be inconvenient to follow the suggestion of one writer, who would have every cow removed from the stalls where they have been kept during the night, into a clean room where they should be milked, we can approach very near that condition by cleaning the stables, and using an absorbent like gypsum or land plaster on the floor behind them, if we have pure air entering to take the place of that which is foul.

But the necessity for pure air in the stables is by no means limited to the hour of milking; if we want milk pure and free from odors, and if we followed the plan of allowing the cows to remain in a filthy stable, filled not only with the odor of their fresh excrements, but with that from a decomposing heap below them, and removing them to pure air when we were ready to milk them, we should find bad odors and disagreeable flavors in the milk.

The air they breathe goes to the lungs, there to act upon the blood, which in its turn is distributed through the system, and has its effect upon the lacteal organs, and foul air in the lungs will affect the milk as surely as would onions taken into the stomach and passed through the digestive organs. See that the stables are ventilated at night, and cleaned well before beginning milking, and the bad odors will not be very troublesome.

### Discourages Preservatives.

A very interesting discussion has been carried on in the London *Dairy* regarding the use of preservative in butter. In one issue a correspondent concludes with this absurd statement: "Always use preservative in curing your butter—it prevents injurious, disease-producing microbes from attacking it, and makes it wholesome and easily digested." Replying to this, Prof. C. W. Sorenson, formerly chief dairy expert to the New Zealand Government, says: "Whether from a standpoint of good business, commercial morality, or public health, a more misleading statement could not well be made. In the first place, preservatives are not essential to the curing of good butter, especially Irish butter, which is produced almost on the spot where it is consumed. Not a pound of Danish butter contains preservative, and no one will accuse Danish butter of not keeping well. I myself have exported hundreds of tons of butter from New Zealand to the London market, made in my own and other factories, without an ounce of preservative of any kind except common salt, and have received no complaints as to keeping qualities. In fact, two-thirds of the butter sent from New Zealand to-day is, to the writer's certain knowledge, free from preservatives, and the market price affords the most convincing proof that butter can be successfully sent from the Antipodes without preservative. Yet we are told that English and Irish butter, made to-day and eaten to-morrow, must be 'preserved' with the aid of doubtful drugs! Then, as to preservatives 'preventing the attacks of injurious, disease-producing microbes,' any one with the most elementary knowledge of bacteriology must be aware that boric acid, which is the basis of most preservatives, has no such property, even if used in much greater proportions than is possible in buttermaking. The same may be said of any and every other ingredient that may be employed without markedly affecting the taste of the article treated. And finally, as to preservatives rendering food 'wholesome and easily digested,' I think that in the face of all the medical evidence to the contrary, the bald assertion on the part of the writer of the article in question can scarcely be accepted as the most satisfactory form of proof."

**Aeration and Cooling of Milk.**

ITS IMPORTANCE IN CO-OPERATIVE WORK—METHODS OF THOROUGH DAIRYMEN DISCLOSED.

Whenever advanced dairymen meet to discuss ways and means of improving their industry, at no point in their discussion is more enthusiasm displayed than when the airing and cooling of milk is receiving attention. The apparent reason for this anxiety is that much tainted and badly-kept milk is received at the factories, and is the greatest of all sources of trouble to the cheese and butter maker. If nothing could be done to prevent such troubles as we speak of it would indeed be a serious matter, as we find that even healthy cows in good pasture occasionally get food and drink that give trouble in the milk when no means are taken to correct the faulty condition. It is to be deplored, however, that the milk received at the factories from farm dairies is not all from vigorous, well-kept cows, that feed only from the finest pastures and drink only from the purest springs. Whether it be the provender the cow eats, the water with which she quenches her thirst, or the incorporation of odors in the milk after it is drawn, it is a fact that gaseous odors do get into the can, and when not eliminated give serious trouble to the makers of cheese and butter. The treatment for milk that may have become contaminated from whatever source is undoubtedly aerating and cooling, which will not only enable the farmer to keep it sweet and fresh during the hottest summer nights, but it will largely do away with the troublesome condition of gassy curds. It has been estimated by no less an authority than Prof. J. H. Monrad, of Illinois, that if all milk brought to factories were aerated and cooled it would improve the quality of the butter one-fourth cent a pound and the cheese one-half cent a pound.

That milk should be aerated before cooling we have no hesitation in claiming, for the reason that any taints, whether dormant or evident to the nasal organ, that exist in milk when cooled are by the cooling process incorporated to give trouble after the heat is applied or the ripening stage is advanced. We therefore feel strongly convinced

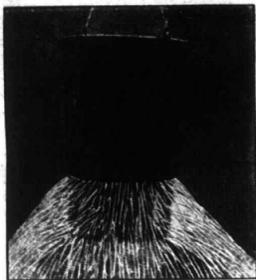


FIG. I.—AERATING MILK WITH PERFORATED PAIL.

of the necessity of advocating, first and foremost, and would advise, that it be adopted whether the milk is cooled or not. There are several methods of aerating milk, which consists in subjecting it as much as possible to the purifying action of fresh air. This may be done by allowing the milk to escape through an aerator in small streams in the presence of pure air, as is shown in Fig. I., or by forcing fresh air into and through the milk, as is done by the improvised aerator shown at Fig. II. Fig. I. represents an ordinary tin pail thickly perforated, into which the newly-drawn milk is poured and allowed to escape as shown. Fig. II. consists of an inverted milk pan, thickly perforated, and with a handle attached. This is forced down through the milk in the can several times, the forced air escaping through the milk as it descends, carrying away any gases that may be contained in it, and oxidizing the milk at the same time. Another popular method of aerating milk is to pour it from pail to pail several times, at intervals of brief periods, or to bail it with a large dipper, so as to allow the access of air as far as possible. The following letters are from thorough dairymen, who are anxious to see our exportable dairy products command and maintain the highest place in the markets of Great Britain.

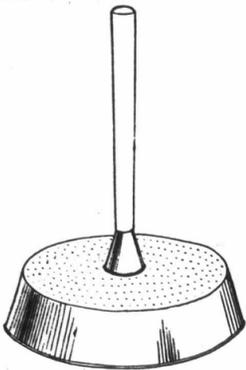


FIG. II.—AERATOR TO FORCE AIR INTO CAN OF MILK.

Having sent milk to cheese factory for 24 years, and tried different ways to keep it, the only method I found to suit me is to use a tank 2x3 feet, 18 inches high. Set your can in, pump full of cold water, dip the milk for about five or ten minutes with a dipper, then let stand for about thirty minutes and stir up several times. When cooled, take can out and set in a cold place. I put mine in the cellar. In this way I can keep my milk for two or three days pure and sweet.

Oxford Co., Ont. JOHN J. WETTLAUFR.

I consider this method a good one for keeping milk during the warm weather: Aerate and cool the milk until the temperature falls down into the sixties, then exclude all the air possible.

Norfolk Co., Ont. E. AGUR.

Regarding the care of milk for cheese or butter, would prefer it cooled by stirring or aerating in some way without using water or ice. It main-

tains a better flavor in this way. Perth Co., Ont. GEO. E. GOODHAND.

In order to keep milk sweet in hot weather, I would advise chilling as soon as possible after milking, and keep as low temperature as possible, and remove from all foul odors.

Perth Co., Ont. T. O. ROBSON. Re keeping milk pure and sweet, I have had best results by cooling milk in pails before putting into large cans, as it will more easily get rid of any objectionable flavor before having too large a quantity together. First rinse pails with cold water and then strain milk back into them, setting them into cold water, dipping up the milk occasionally to prevent cream from rising, and aerating it at same time. Have no trouble keeping it from Saturday night till Monday morning. Peel Co., Ont. R. GROAT.

Get the animal heat out of the milk as soon as possible after milking by placing can in cold water, with ice in the water if convenient; if not, change water as soon as it begins to get warm, thoroughly stirring milk from bottom of can until all animal heat and gas has escaped. The milk handled in that manner will keep pure and sweet for a number of days in the hottest weather. Dishes in which milk is handled must be kept perfectly clean—cleanliness is the great secret. Middlesex Co., Ont. JOS. MCLEOD.

To have milk pure and sweet, all the feed and water that the cow gets should be pure and sweet. Her thighs, udder and teats should be clean on commencing to milk. The teats should be dampened—not wet—with clean water before beginning to milk. The first few streams of milk should be rejected. Every vessel that the milk is to come in contact with should be as nearly germ-free as elbow grease, scalding water and bright sunshine can make it. The milk should be strained as each cow is milked. Immediate and thorough aeration is necessary to cause the pure air of heaven to exchange places with the anything but heavenly-smelling gases generated within the cow's body. Cooling after aeration depends upon the season and the use that is to be made of the milk. Kingston Dairy School. J. W. HART, Supt.

In order to keep milk pure and sweet during the summer season we take care to cool and aerate the milk as soon as possible after it comes from the cow. The sooner the animal heat is removed the better. We set the milk can in a tub of cold water and strain the milk through a large strainer raised above the can, which allows the milk to pass through in small jets. In a short time we change the water in the tub, and take a pail with holes in the bottom and a stiff bail and push this down in the milk and then lift up quick and hold it above the can until the milk runs through; repeating the operation a few times until the milk is cooled and thoroughly aired. It is a good plan to have long coolers to fill with cold water to insert in the can. Keep the can out of the sun and away from bad odors. The cream should be kept from rising. Oxford Co., Ont. D. LAWRENCE.

Re keeping milk in summer, airing as soon as taken from the cow, by a dipper or some other means similar, is our plan. Airing is better than cooling. After well aired could put in water. Middlesex Co., Ont. J. A. JAMES.

Have cows kept in thrifty condition, clean, and barn well ventilated. Cleanliness is next to godliness, hence milkers must strongly adhere to this rule. Take milk right from cow to cooler and pass immediately through same. If separated, run cream to cooling vat and cool down to 50 if possible. Care must be taken to have all utensils properly scalded or steamed—we use steam—and then placed in the sun. Dairy must be sweet and clean, and absolutely free from offensive bacteria. Have no trouble with sour milk on Mr. Tillson's farm. JOHN D. MACLEAY, Manager. Annandale Farm, Oxford Co., Ont.

To keep milk pure and sweet during the summer season have everything perfectly clean, and in hot weather cool evening's milk below 70 degrees. Protect the cans containing milk from the sun when on the milk stand and on the milk wagon. O. A. C., Guelph. H. H. DEAN.

To make fine cheese or butter it is absolutely necessary to have clean, sweet milk. See that the cows, milk pails and cans are perfectly clean, also that the milker is clean. Immediately after milking the milk should be removed to some clean place away from the barn or milking yard or anything that is likely to give off a bad odor. Strain the milk carefully, and as soon as possible after milking. Air well by dipping or pouring or by the use of an aerator; this should be attended to at all times, but especially during hot weather. Running the milk through an aerator once is not sufficient, but should be repeated two or three times. Never cool milk until it has been thoroughly aerated, because aerating tends to liberate taints, which, if not removed, become incorporated in the cooling and give trouble in the cheese or butter. For cheese-making especially, it is very essential that all milk made be aerated. It improves the flavor and quality of the cheese, and requires less milk to make a pound of cheese. Milk keeps better in small quantities, and where the herd is not too large I would recommend the following: Have a pole supported at each end about four feet from the ground,

and hang the milk pails along this on hooks, always having one empty pail; then commence pouring from one pail to another; continue this for some time, and you will have little or no difficulty in keeping the milk in fine condition. Good results are also obtained by using an aerator, through which the milk runs in very fine streams or thin sheets, allowing gases and animal odors to escape, and if milk is free from these, with ordinary care it will keep sweet and be in fine condition when delivered at the factory. In very hot weather it may be necessary to cool the milk by the use of water, but never do so until it has been thoroughly aired. When cooling with water, always leave the cover off the can and keep the milk stirred continuously. It has also been found that milk will keep sweet longer when cows have free access to salt. Middlesex Co., Ont. T. B. MILLAR, Manager Thames Dairy Co.

The care of milk should commence before the milk is taken from the cows, by seeing that they are in a healthy condition, that they have access only to pure, wholesome food, clean, pure water, and salt at all times. See that pails and cans are properly tinned and free from rust, and have been scalded and aired before using. Udders and flanks of cows should be wiped clean with a damp cloth before milking. Milking should be done in a clean place, by a clean person, with clean, dry hands. As soon as milk is drawn it should be removed to a clean place, free from barnyard, hog pen and other bad odors, and immediately strained and thoroughly aired by dipping or pouring. I would recommend the following method of airing milk: Provide pails enough to hold one milking; erect a pole about four feet from ground, covered with an A-shaped roof, made of inch boards, to protect from rain; fasten hooks in pole to hang pails on. As soon as milk is strained in pails, hang on the pole. Have one extra pail. Commence at one end of pole and pour milk from pail. No. 1 into empty pail; No. 2 into No. 1, and so on across the row several times, back and forth, and leave in pails until morning. The morning's milk should be treated in same way. Elgin Co., Ont. JOHN BRODIE.

I find about the best way to keep milk pure and sweet is to air it well in small quantities for keeping over night, and for long keeping, cool as well as air well. We use tin pails to keep it. In milking, as soon as enough is in pail, hang it up in a place provided for the purpose and stir it frequently. We have no trouble in keeping it in this way. Of course, everything has to be kept clean and sweet. This is a plan Mr. Bell, our cheesemaker, recommended us to follow. We used to put it right into water and cool it, but this plan seems to work better. Oxford Co., Ont. W. M. BELL.

Taking for granted that the milk is in good condition when drawn from the cow, it then should be cooled down to about 50 or 55 degrees and well aerated while cooling. It should then be taken where the atmosphere is pure, and left without any cover during the night. Would prefer keeping it in tin pails that are sweet and clean to having it in a larger quantity together. Wellington Co., Ont. M. MORRISON.

In summer or winter strain through cloth, not tin, immediately after milking. Air thoroughly by pouring or patent aerator. Keep as cool as possible by use of water or ice, or both. Keep the can and all utensils clean by the liberal use of a brush and hot water, and scour tinware at least weekly. Cleanliness and airing are the main points. F. J. SLEIGHTHOLM.

The plan which we have found most satisfactory for keeping milk pure and sweet during the summer season is: First strain the milk into pails, set in the open air and bail thoroughly until it is cooled. Saturday night's and Sunday's milk we put into large cans (40 gallons), which we set in a large box of water in the cellar; then we fill the spaces between the cans with ice. In an experience of twenty-five years with the milk of 25 to 35 cows, in all kinds of weather, we have lost only one can of milk. CHARLES BAIRD, SR. Perth Co., Ont.

The best plan to keep milk sweet is thoroughly aerate as soon as drawn from cow, then place can in water, the water to be as high around can as the milk is in the can. Change the water as often as it becomes warm. Do not disturb the cream after the milk is cold. Have the milk delivered as early as possible to the factory and not allowed to stand in sun. I think there are worse things than sour milk, namely, tainted milk, which can be got by not taking good care of milk. THOS. DICKSON. Perth Co., Ont.

To keep milk sweet in warm weather, the first essential is perfect cleanliness. Strain milk as soon as milked. Have can standing on an airy place away from stable odor. Set milk can in a tub of cold water, and if possible put in a piece of ice. Cool down to 60°. Stir and aerate thoroughly. Take the can out of the water before going to bed. Stir well last thing. Keep down the cream and prevent sealing on top of milk.

To keep from Saturday till Monday morning, after cooling, set the milk in pans in a good, clean and airy cellar. If left in the cans, change the water or add more ice, and aerate thoroughly. One can't be too particular. ROBERT CLELAND. Perth Co., Ont.

## GARDEN AND ORCHARD.

## Mistakes of the Tree Planter.

We will mention only in a general way the many mistakes made by the tree-planters in choosing wrong varieties or a bad location or buying trees from irresponsible parties, or a number of other things which might properly come under the head of tree-planting, but will confine our remarks to the common errors committed by the usual tree-planter in the actual work of planting the tree.

**First.**—It is a mistake to dig a hole so small that you have to crowd the roots all up together, and set the tree the same as you would a fence post.

**Second.**—It is a mistake to dig a hole, either large or small, and throw out the top soil down to the subsoil and leave it unbroken, then set the tree with roots on a surface nearly as solid as a board, and then expect the young tender roots to penetrate and grow and the tree to thrive.

**Third.**—It is a mistake to set a tree very much deeper than it stood in the nursery row, except it be dwarf pear trees.

**Fourth.**—It is a mistake to plant a tree and not prune off all broken and bruised ends of roots with a sharp knife, cut from the under side. The roots smoothly cut off will callous more quickly than if left as they come from the spade or digger.

**Fifth.**—It is a mistake when pruning the roots not to examine and take out all borers, and cut off all roots affected by woolly aphids.

**Sixth.**—It is a mistake not to spread out all the roots in a natural position, slightly inclining them downward.

**Seventh.**—It is a mistake not to put the best soil around the roots.

**Eighth.**—It is a mistake to put any manure around the roots. If soil is thin put fertilizer on top of the ground and let the rain wash the fertilizer down to roots.

**Ninth.**—It is a mistake not to firm the soil down solid so as to exclude all the air from the roots as well as to pulverize all clods.

**Tenth.**—It is a mistake after shortening the roots, which cannot be prevented in transplanting, and thereby lessening the tree's capacity for absorbing moisture from the soil, not to cut back the top to correspond with the roots, to make less leaf surface, which exhausts the tree by evaporation.

**Eleventh.**—It is a mistake to plant a tree in sod and then replace the sod close around the tree to keep from disfiguring the lawn, as we often see done in town lots. Turn the sod over and let rot. Allow no grass closer than three feet of a tree planted on a lawn.

**Twelfth.**—It is a mistake to plant a tree in the mud or put much water around the roots. Have the soil dry enough, if possible, to crumble or else it will bake.

**Thirteenth.**—It is a mistake to lean a tree in any direction. Plant as near perpendicular as possible. All trees that are growing at an angle will be found with the new growth nearly all on the top side—nature trying to straighten the defects. Proof of this, go into the forest and observe the leaning trees.

**Fourteenth.**—It is a mistake to plant a tree with the idea that you are going to die before it bears fruit, and that you will not get any benefit personally. *What if you do die*, can you erect a better monument to the labor of your hands? One of my salesmen told me once that he fully believes one-half the people whom he approached on the subject of buying trees never thought of dying until they were asked to buy a tree, then they invariably replied: "Oh, no, I am too old; I will die before they bear."

**Fifteenth.**—It is a mistake to plant a tree and forget you are dealing with and handling a thing of life, and while it is inanimate, yet it has a living organism that will respond to kind and generous treatment as quickly and surely as your live stock show the effects of good feed and grooming.

Whenever the writer plants a tree he fully expects it to grow, and is surprised only when it fails to do so. Many planters seem to be surprised when their trees live. Have faith in your work and use the same good sense and judgment in your tree-planting as you do in your other lines of work, and mistakes will be the exception, not the rule, and success will crown your efforts. Thanking you, I close.—*H. W. Jenkins, in Report of Mo. Horticultural Society.*

## How to Grow Large Strawberries.

Select plants of large varieties and choose large plants. Allow no other plant to grow within twelve inches of them. All within that distance destroy by hoeing up shallow, so as not to disturb the roots of the plant referred to, or these plants may be killed by putting enough mulching on them to smother to death. Water with liquid manure. This liquid can be made by putting manure (poultry manure) in a barrel or trough; then pour on water to reach through the manure; place two tin cans, one on each side of the plant, filled with this liquid, the cans having little holes punched through the bottom to allow this liquid to run slowly through. Fill the cans about every third day. Thin or cut off fruit stems, leaving two of the strongest. When berries are about one-fourth grown, pinch off all berries, leaving only three or four of the largest to mature. I assure you that you will have berries that you will be proud to place on exhibition. JACOB FAITH, Missouri.

## QUESTIONS AND ANSWERS.

In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

## Veterinary.

## WARBLES IN CATTLE AND GRUBS IN SHEEP'S HEADS.

In the FARMER'S ADVOCATE of 1st April last enquiries appeared under above heading asking for a cure, and as we have had difficulty from both these sources on the farms of the F. W. Stone Estate, Guelph, the writer's attention was attracted. An effective cure for warbles and for grubs in the head of sheep was found in McDougall's Sheep Dip, which is absolutely non-poisonous to cattle, sheep, or live stock of any kind, while it destroys all insects that live on animals by its action on the pores of the skin of such insects, all of which breathe through their skin.

The solution of McDougall's Dip to apply when the cattle are on pasture to prevent the attack of the warble fly is in the proportion of one part of dip to twenty parts of water, applied as a wash on the backs of the cattle and allowed to dry on. This should be repeated occasionally while flies are prevalent. If the lumps have appeared, showing that the warble grub is developing, a couple of applications of this solution will destroy them.

The same solution of dip will prevent the attack of the bot fly, which lays its eggs in the nostrils of sheep and causes the grubs described by your subscriber, and if the grubs have developed it will kill them, and save the sheep without injuring them in any way. This year two of the sheep on the F. W. Stone Estate farms died from these grubs before the foreman discovered the cause by dissecting the heads of the dead sheep, when he found the grubs. A number of the other sheep showed the same symptoms of sickness, but were promptly cured by dipping their muzzles in the above solution of dip for twenty seconds, two or three times. The whole flock were treated in this way, and all sickness stopped at once. F. W. STONE ESTATE, Wellington Co., Ont.

## INJURY TO CORNEA.

S. COURTNEY, Muskoka District, Ont.:—"I have a horse with a bad cut near the corner of the eye. The eyeball is injured also, but he can see. Now a thick white scum is forming over. What can I do for it?"

[Wounds of the eyelids are to be treated in a very conservative manner. Nothing must be destroyed. The edges are to be secured by silk or silver wire. The film, or, as you term it, the scum, which forms over the front of the cornea consists of an exudate which continues so long as the irritation lasts, but gradually disappears by absorption. Many think that it is necessary to destroy it by caustics, as if it were an outer skin which had grown over the eye. This is a popular error. The deposit is within the structures of the cornea, and until the inflammation has subsided all irritating substances are calculated to do harm. We recommend warm fomentation, and afterwards the application of the following lotion, which is slightly caustic and stimulating: Nitrate of silver, 20 grains; distilled water, 2 ounces. Apply a few drops night and morning to the outer corner of the eye. DR. W. MOLE.]

## WOUNDS ON MARE'S HOCK.

W. F., Jr., Grey Co.:—"I have a mare seven years old that was kicked on the hock last August. The cut was about four inches long and looked as if the skin was off. It healed all right, leaving the joint a little enlarged and swollen, but to my surprise, when I went to the stable I found the wound had opened the full length of the whole scar without apparent reason. She is with foal, and her time is up in about two weeks. Please let me know the cause and what to do?"

[It seems difficult at first to account for the scar being reopened after nearly eight months, but our opinion is that it must have been bruised when lying down and is probably not so severe as you describe. By the time this reaches you it will be a good deal better looking. A simple form of cooling ointment would be suitable for such a case: Lard, 2 ounces; boracic acid, 1 ounce; oxide of zinc, 1 ounce. Apply night and morning. DR. W. MOLE, M. R. C. V. S., Toronto.]

## COW WITH A COUGH.

C. C., Simcoe Co., Ont.:—"I have a Holstein cow, that I bought about a year ago, with a bad cough. She coughed a little last summer, but through winter and this spring coughs very hard, but otherwise is quite healthy. We notice that some of the other cattle are beginning to cough a little. Please can you tell us what is wrong and give remedy, and oblige?"

[While the cough may be the result of some throat irritation, the symptoms described lead us to fear that tuberculosis may be the trouble. In order to be sure we would suggest that a competent veterinary surgeon who has had experience in administering the tuberculin test be called in to test all the animals that are coughing, and if they respond have the case of long standing destroyed and given a post-mortem examination. The result will help to decide as to the condition of the rest of the animals. It might be well to apply to the Agricultural Department at Ottawa and learn on what conditions they will test the herd.]

## SPRAINED TENDONS.

JOS. WILLIS, York Co., Ont.:—"What is best to do with a horse that was lamed with drawing a load over a manure pile, straining the cords on the inside of hind leg above hock. The soreness has left, but there is a callous lump seemingly on the cord?"

[If you have not already had your horse fired and blistered we would certainly recommend the operation at once. Although we cannot always defend the practice, as it is cruel and very painful, still at times it is absolutely necessary. Firing or the application of the actual cautery is beneficial, and often removes pain very rapidly when blisters fail, and in all cases of chronic or severe lameness is to be recommended. Obtain the services of a veterinary surgeon, and have the firing done in lines superficially, being the least calculated to blemish. DR. MOLE.]

## Miscellaneous.

## FARMERS' SOCIETY LIBRARY.

SUBSCRIBER, New Brunswick:—"Our Farmers and Dairymen's Society desires to start a small library of books covering all branches of agriculture, and has some \$20 to devote to that purpose. We would be glad if you would recommend us a list and put us in the way of securing same."

[We have a very large library in our office on all branches of agriculture, and we secure the best books published from time to time by publishers in Canada, United States, and Great Britain, but we have no one complete catalogue that would be satisfactory to you. We have gone carefully over our works and have made up a select list, which would make you a very complete little library to start with. They are as follows, with author's name and publisher's selling price:

Agriculture (James)	\$0 25
Feeds and Feeding (Henry)	2 00
Principles of Agriculture (Bailey)	1 25
Fertility of the Land (Roberts)	1 25
Silos and Ensilage (Woll)	75
Farmyard Manure (Aikman)	45
Vegetable Gardening (Green)	1 25
Horticulturist's Rule Book (Bailey)	75
The Honeybee (Langstroth)	1 25
Spraying of Plants (Lodeman)	1 00
Principles of Fruit Growing (Bailey)	1 25
Artificial Incubation (by various poultry specialists)	50
Dairying for Profit (Mrs. E. M. Jones)	25
Milk and Its Products (Wing)	1 00
Principles of Modern Dairy Practice (Grotenfeldt and Woll)	1 50
Farm Live Stock of Great Britain (Wallace)	3 25
Domestic Sheep (Stewart)	1 50
Heavy Horses—Breeds, and Management (British authorities)	1 25
Light Horses—Breeds, and Management (British authorities)	1 25
Pigs—Breeds, and Management (British authorities)	1 25

We have made favorable arrangements with the publishers and can supply the above works. Particulars as to terms on large orders may be obtained by writing this office.]

## RECLAIMING SWAMP LAND—SETTING AN ORCHARD.

SUBSCRIBER, Lanark Co., Ont.:—"There is on our farm a swamp containing about twelve acres, the bottom of which is a very stiff blue clay which when dry becomes very hard. This swamp is partly drained, there being a four-inch tile drain running through the middle, the wettest part. The depth of muck varies from one to three feet, and is considered wet land, although it becomes very dry and loose when exposed to the hot sun. It has been pastured for years, and although never having been seeded to grass, a sort of red-top grows. We intend plowing it, and I ask your advice: (1) As to the best method of tillage? (2) What will be gained by plowing to the clay where it can be done? (3) Is there any kind of grain that will grow successfully on it, and if so, what kind? (4) Would it be better to seed it to permanent hay, and what grasses and clovers can be grown most successfully on it? (5) What is the value of swamp soil when dried and used in a cow byre as an absorbent?"

"I intend to set out a young orchard of about seventy or eighty trees on high, dry, well-enriched sandy land. (6) What distance apart should the trees be planted. (7) Should the orchard be cultivated for first two or three years and then sown to grass; if so, what is the best orchard grass? (8) Would it be advisable when planting to first put in on roots a little well-rotted manure or well-enriched soil? (9) What will keep mice from gnawing the bark round the bottom of trees in the winter time?"

(1) We would consider it well to plow the sod not more than four or five inches deep, roll it down, and leave till the grass is dead and rotted. Now cultivate well with a disk or other cultivator, and plow again, two inches deeper than before; harrow well and leave, if it shows no live vegetation, till fall, when the land should be ridged up so as to leave as much as possible of the surface exposed to the influence of frost.

(2) From one to two inches of clay plowed up and mixed with the muck will help it by adding a greater proportion of mineral matter, thus decreasing the tendency to rank growth and improve its physical properties. A dressing of 30 to 40 bushels of lime or 500 pounds of ashes to the acre would render the muck firm and serve to neutralize much of the humic acid which is sure to exist in it.

(3) We have frequently seen black muck sown to grain, but have never seen a good crop result. Some other crop, such as potatoes or fodder corn, would be more likely to yield a fair return.

(4) Seeding to grass would probably be the best plan to follow. Six pounds of timothy and eight of

Canadian blue grass would be very suitable. Clover would not do well on this land.

(5) Swamp muck is not only valuable as an absorbent of liquid manure and gases that might escape, but its contained constituents are useful as fertilizer, although not of much value until after fermentation. It would be well to use it as an absorbent in piggens, cow houses, etc., and allow it to become mixed along with the yard manure some time before putting it on the land.

(6) From 30 to 40 feet each way is considered the proper distance apart to plant apple trees.

(7) Corn, root crop, or even small fruits, may be grown between the rows for a number of years, but in no case should grain be grown in an orchard. It is not well to seed down an orchard to grass at any time, except the trees are making too rapid growth and are not bearing after they have reached a bearing age. It may then be seeded for a few years with clover and timothy, which will tend to check wood growth.

(8) It is not well to place manure in the hole along with the roots, but the roots should be packed in firmly with mellow surface loam. All branches within 4 1/2 feet of the ground should be pruned off, the top pruned into shape, and a good mulch of half-rotted manure placed around each tree to keep in the moisture and to feed the rootlets. A dressing of hardwood ashes is also good for an orchard.

(9) When mice or rabbits have given trouble it has been found a good plan to protect the trunks with stovepipe split down and fastened around. Wire screening may be used in the same manner. It is also a protection against mice to remove all grass, straw material, etc., from around the trunks before winter sets in, and then to occasionally tramp the snow firmly around the trees.]

**HENS NOT LAYING WELL.**

A. R., Essex Co., Ont.:—"I have been a subscriber to the FARMER'S ADVOCATE AND HOME MAGAZINE for three years, and cannot recommend it too highly. I wish to get an explanation of the following: I have about sixty hens, have kept them in a warm place all winter, have fed them with corn, and they have had sufficient water. There are about five males in the flock, and all the hens lay about a dozen of eggs daily. My neighbor has twenty hens and one male. He kept them in a very cold place all winter, and has fed them with corn. He gave them no water; they were eating snow, or drinking water when it rained, and his hens lay about a dozen of eggs daily. Both flocks are of mixed breed. What is the cause of this? 2. What would be the best feed for hens and chicks during summer?"

[1. Hens do not lay well when confined in flocks larger than about thirty birds. This number should have a house about 10x18 feet, and be fed on mixed grains, a morning mash containing chopped clover, bran, etc., and they should get green ground bones or meat twice a week. Exercise is very important; it is, therefore, well to make the hens scratch for their grain among straw. They should have grit to eat and a dust bath to bask in. It was a disadvantage to have so many males in the flock. Hens lay better without them, and they should not be kept with hens except the eggs are needed to set. See answers to other poultry questions in this issue. 2. If the fowls are allowed their liberty so that they can get grass, insects, etc., such foods as wheat screenings, cracked corn, buckwheat, fed mixed or changed, fed once or twice a day, is all right for hens and chicks over a month old, but young chicks should have bread crumbs soaked in milk and squeezed out, mixed with hard boiled egg. This question will be fully dealt with in early issues of the FARMER'S ADVOCATE.]

**MARKETS.**

**FARM GOSSIP.**

**Huron Co., Ont.**

Seeding is the order of the day here; a few farmers have finished, more are still at it; while others, on very heavy clay, have not been able to start yet. Seldom has the land worked harder; the frost comes out very slowly.

As the pea weevil has been troublesome the past few years, several are not sowing until after the middle of May, in order, if possible, to escape it. More spring wheat is being sown; the Wild Goose has yielded very well for several seasons past. Apparently fall wheat will be under the average. All exposed fields have been frozen. Many farmers have plowed and resown to spring grains, while fields that have been sheltered are looking fairly well. The bulk, however, that has not been plowed is patchy. Clover, both red and lucerne, is killed in exposed places. The fruit outlook is good. Small fruits have an abundance of bloom. Berries of all kinds, cherries, plums, apricots, and even peaches, have not been hurt by the frost and bid fair for a crop. Some careless farmers are letting the black knot destroy their cherry and plum trees. Among the fall and most of the winter varieties of apples there is a good showing of bloom. The tent caterpillar is also showing itself in great numbers. The orchard is not looked after as well as it might be. Too many allow the orchard to take pot luck, and still expect the top price for their wormy, scabby and green little apples. They are not only losing themselves, but their miserable fruit is hurting the market. Spraying is practiced, but not generally.

Cheese factories, though few in number, have done a fair business for several years, but owing to the high price of stockers, farmers have gone more into stock-raising. The factories will start the 15th of May. There are no combined cheese and butter factories, though some are agitating it. First-class dairy cows are scarce; fair cows have been selling from \$35 to \$45. Young cattle for stockers very high; extra

good yearling steers bringing as high as \$50 a pair. Hogs are on the raise, \$4.10 being paid for the last shipment. The price of horses is also going up; common plugs from \$35 to \$65, with a good demand among farmers; heavy and good drivers from \$125 to \$150. Though wheat keeps down to 67c., bran and shorts sell at \$14 and \$16 per ton; hay from \$6 to \$7 for prime timothy; by local market, for pressed hay, from \$1.50 to \$5.00. Owing to the low price of clover hay, little has been sold, and stock is looking very well. Though it was about the middle of April when the snow went off, the cattle were out the first week in May, so rapid has been the growth. We have had no spring this year, it was just winter and summer. F. C. E. May 9th, 1899.

**Bruce County.**

The rather unusual has come about, the weather all at once changed from winter to summer, and as a consequence vegetation is further advanced than usual. At date the forest and fruit trees are about half out in full leaf, grass sufficient for stock to pick a living outside. Plowing commenced April 14th; was general by the 17th. First seeding the 20th. The first sown grain is now green in the fields. The prices of grain are about stationary—wheat, 65c. to 68c.; peas, 60c. to 65c.; barley, 45c. to 50c.; oats, 30c.; hay, \$6 per ton; potatoes, \$1 per bag, and scarce. A car has been brought into Walkerton to supply the demand. Export cattle mostly sold (but not nearly all shipped) at prices ranging from \$4.75 to \$5.25. Stockers and grazers hardly to be got, and of course prices depend upon what sellers feel like asking. At present fall wheat is fairly good, perhaps about 25 to 30 per cent. damage from snow laying heavily along fences and sheltered parts of the field. Although we had a heavy snow-fall during the winter, the prevailing high winds blew it mostly off the fields, except around the fences. The ground was frozen much deeper than usual with the consequence, I think, that the land was much longer drying off than usual, which has hindered seeding operations with farmers having wet or low-lying farms. And what may seem surprising, some farmers were through seeding before others had commenced. Fruit trees appear to have come through the winter all right, and judging from the bloom we should have an abundant crop of cherries, plums and pears. Apples, not so many fruit buds, but enough to make about an average crop of fruit. Do not grow peaches as a crop, so the severe freeze we had in the winter did us no damage along that line, but I have two peach trees in my garden, and at present they indicate we may look for some peaches at the proper season. There is every prospect that we are to have another fight with the caterpillar this season. They are now hatching out and are quite numerous, and this has brought about another monopoly—this time in coppers. J. T. Walkerton, May 4th 1899.

**Lincoln County.**

Now that blossoming time has come, a little better idea can be formed of the season's fruit prospects. Some of the gloomier of the prophets will have to recant in the face of the fairly large show of bloom. I see no reason to alter the opinion given in last month's letter as to the peach crop, and if everything is favorable from now on there will be money yet in thinning out some varieties. No doubt the severe winter has injured the trees to some extent. On the low-lying grounds many of the younger trees are killed, and some growers report a poor condition of the inner bark of many apparently healthy looking older trees. Plums are showing indications of a large crop, the Japanese varieties especially being a perfect mass of bloom. Cherries and pears also promise well. I notice a large number of black aphids on the sweet cherry. These lice have already started to breed, and it will pay cherry-growers to watch their trees closely. I spray with the tobacco or oil mixture directly after the blossom has fallen. As far as I can find, we are likely to have a shortage in the apple crop. Early varieties, such as Duchess and Astrachan, will probably yield well; but though a little early to speak definitely, I am inclined to think the winter varieties will show comparatively little bloom.

The long dry spell has been severely felt on the clay lands, and unless heavy rains come soon the '99 hay crop is going to suffer. Hay touched \$10 a ton about the end of last month. It is now \$7.50 to \$8, and the price this month will be largely determined by the character of the weather. Wheat is patchy on the harder grounds, but looks excellent on the sand. Butter keeps fairly firm, at from 15c. to 16c. Eggs, 12c. Pork has shown little, if any, improvement, \$4.15 per cwt. for hogs from 150 to 200 lbs. live weight being the ruling figure. Potatoes advanced steadily to 35c. and 30c. a bag. A good many are being brought in, so the price is not likely to touch a much higher point. M. B.

**Elgin Co., Ont.**

The prospects for winter wheat are very poor, some fields being entirely killed. On the whole, I do not think wheat will average 10 bush. to the acre. New clover has wintered terribly poor. I should say it will be a very small crop. Timothy will be the hay crop principally. CHAS. C. FORD.

**Wentworth Co., Ont.**

The prospects for the crop of winter wheat are very poor—not half a crop—never saw it so poor. Clover is not so bad; not much heaved, except on very low ground. Some was killed last summer with dry weather, and is too thin. WM. COWIE.

**Bruce Co., Ont.**

In this section winter wheat is looking well—prospects of a good crop. Clover has not been winter-killed, but is scarcely as good a catch as last year. THOS. A. CHISHOLM.

**Peel Co., Ont.**

At this writing (May 4th) would say that winter wheat and new clover in this district will not be more than half a crop. R. P. SNELL.

**Toronto Markets.**

The receipts of cattle were unexpectedly large for the opening day of the week. Navigation at Montreal is not fully opened. Space is limited, and the demand for export cattle was not brisk. Many pens remained unsold at the close of the market. The common grades of cattle felt the dullness of the trade and were left over. The receipts for last week were: Cattle, 2,906; sheep and lambs, 160; hogs, 3,367. Weigh fees amounted to \$135.

**Export Cattle.**—The export cattle did not maintain the advance of last week, as many loads sold up to \$5 per cwt. Choice heavy lots of export cattle sold at \$1.80 to \$1.90 per cwt. for top price to-day. Several loads of cattle lost money, being bought at \$4.75 in the country, and did not pay expenses. Mr. G. Cameron sold one load of exporters, 1,225 lbs. average, at \$4.62 per cwt. Mr. T. L. Colwell sold one load of exporters, 1,200 lbs. average, at \$4.75.

**Butchers' Cattle.**—In the early morning the market was brisk for choice butchers' cattle, but slackened off towards noon; best choice selection at \$4.40 to \$4.50. Medium to poor came in on the noon train; met very slow sale, at from \$3 to \$4.25 per cwt. Choice picked lots of butchers' cattle, 1,000 to 1,150 lbs., sold for \$4.50 per cwt.; in some few cases \$4.60 was paid; this in an advance of from 10c. to 12c. per cwt. on my last quotations. Mr. A. M. Buck bought one load of exporters and butchers' cattle, 1,020 lbs. each, at \$4.40 to \$4.60 per cwt. **Feeders.**—Heavy feeders in demand. Price firm, at \$4.25 to \$4.50 per cwt.; well-bred, half-fat steers, 1,000 to 1,150 lbs., are in demand for feeding on grass.

**Stockers.**—Buffalo stockers in good demand; the supply scarce, and many diverse views are expressed. Some good, level-headed drovers say that they are all out of the country, and that we shall see a great shortage of all kinds. Our reason for this opinion is that if there were any quantity on hand, why don't they come when wanted at the increased price

offered! Price, \$3.30 to \$3.60 for rough; \$3.75 to \$4.15, medium to good, and \$4.25 for choice.

**Bulls.**—Heavy export bulls of good quality at \$3.25 to \$4.25 per cwt. Light export bulls at from \$3.25 to \$3.65 per cwt. Inferior stock bulls sold at \$2.50 per cwt.

**Sheep.**—Deliveries light. Prices range from \$3.50 to \$4 for ewes. Bucks, \$3 to \$3.50 per cwt.

**Yearling Lambs.**—Scarce and wanted. Good grain-fed ewes and wethers sold at \$5.50 to \$5.75 per cwt., while common sold at \$5.

**Cats.**—Still few in numbers. Choice veals wanted. Prices range from \$3 to \$8 per head, bulk going at \$6.50 per head.

**Milk Cows.**—City farmers report the market no good for milk cows. About 30 cows and springers at from \$30 to \$45 per head. Extra choice cows in good demand and wanted.

**Hogs.**—Deliveries not equal to the demand. Price advanced to \$4.62 per cwt. The price for hogs same market day last year, 1898, \$5.10 per cwt. Thick fat and light at \$4.25 per cwt. Sows steady at \$3 per cwt., and a small number of stags fetched \$2 per cwt. A consignment of stags and rough sows went to Manitoba from this market.

**Grain Market.**—On the St. Lawrence market only two loads of white wheat delivered, and sold at 71c. per bushel. The same day last year, 1898, the price was \$1.10 per bushel. One load of red at 71c. per bushel.

**Oats.**—Very steady; 300 bushels sold at 35c. per bushel. **Peas.**—Scarce. One load sold at 63c. per bushel.

**Barley.**—None on offer; quoted at 43c. per bushel. **Hay.**—Last Saturday was the quietest day in the annals of the market. On the hay market from eight to ten loads each market day sold at from \$10 to \$12.50 for choice, \$7 to \$8 for mixed hay.

**Dressed Hogs.**—Provisions steady in all lines. Business good and making fair headway. Dressed hog trade about over for the season. Farmers loads on the street sell at about \$5.40 per cwt.

**Butter.**—Market unchanged. Deliveries heavy. Demand limited. Values low on any but choice stock. Small dairy prints are quoted at 13c. Creamery at from 17c. to 18c. per lb.

**Cheese.**—There is a good steady tone to this market. Prices are very steady, at 11c. to 11 1/2c. for old, and about 10c. for new. No quotations for future delivery.

**Eggs.**—The average price of eggs in Great Britain is 16c. per dozen all the year round. Deliveries on this market very free. Demand limited. Dealers quote at 11 1/2c. per dozen.

**Chatty Stock Letter from Chicago.**

FROM OUR OWN CORRESPONDENT.

Following table shows current and comparative live stock prices:

	Extreme prices now.	Top Prices	
		Two weeks ago.	1898 1897
<b>Beef cattle.</b>			
1500 lbs. up.....	\$4 50 to \$5 35	\$5 70	\$5 25 \$5 40
1350 to 1500 lbs.....	4 30 " 5 50	5 85	5 25 5 35
1200 to 1350 lbs.....	4 10 " 5 35	5 50	5 20 5 30
1050 to 1200 lbs.....	4 00 " 5 25	5 25	5 00 4 90
900 to 1050 lbs.....	4 00 " 5 00	5 10	4 85 4 75
<b>Hogs.</b>			
Mixed.....	3 65 " 3 97 1/2	4 02 1/2	4 17 4 05
Heavy.....	3 50 " 4 05	4 05	4 20 4 02
Light.....	3 60 " 3 85	3 85	4 10 4 05
Pigs.....	3 20 " 3 80	3 85	4 00 4 00
<b>Sheep.</b>			
Natives.....	3 50 " 5 55	5 00	4 00 5 00
Western.....	4 00 " 5 20	4 85	4 25 5 10
Yearlings.....	5 00 " 5 25	5 00	4 60 5 30
Lambs.....	4 40 " 6 20	5 90	5 50 5 50
Spring Lambs.....	6 00 " 12 00	10 00	8 00

Receipts at Chicago stock yards for 1899 to May 6th, with comparisons:

	Cattle.	Hogs.	Sheep.
1899 to date.....	797,624	2,855,500	1,289,824
Same period 1898.....	851,579	2,935,047	1,315,729
Same period 1897.....	810,494	2,741,357	1,165,590

Combined receipts of cattle and calves here last week, 57,759 head, the largest since last October. Receipts of calves for the week, 6,245, the largest in about four years.

The close of the unsavory army beef inquiry is hailed with delight by the stockmen, whose interests have been severely injured by the needless and sensational talk about the army beef.

The widespread advance in wages throughout the manufacturing regions of the United States has the effect of materially increasing the demand for meat.

The new Territory of Oklahoma is making rapid development in the live stock line. J. D. Parsons, of Deer Creek, Oklahoma, had in two cars of 1358 and 1389-lb. Oklahoma cattle, which sold at \$3.10 to \$3.30. These cattle were within 15c. of the extreme top of the market on the day they were marketed.

The hog market is in fairly satisfactory condition. Prices are rather low, but the supplies of hogs are large. The demand for choice light and medium weight hogs is strong, but the very best heavy weights still continue to command a premium, which shows that the hogs must have been sent to market as fast as farmers could get them ready.

A Western authority says a good many new men are going into the sheep business, and are buying ranches all over the country. They figure that sheep will pay 20 per cent. annually, while cattle can not assure more than 10 per cent. at best for a period of years. Besides, the sheep industry returns quicker money, and there is not so much loss by rustling. In Wyoming, sheep-raisers are holding sheep at \$4.50 to \$5 a head. Many sheep-buyers are on the ground offering \$4.50. Sales of wool are being made at from 11c. to 12c. a pound. About fifteen wool-buyers are in the country, representing houses in Boston, Philadelphia, and Chicago, but they are not getting much fleece.

At the recent horse sale here, a road team sold at \$1,475 to R. M. Weir, of Chicago. The star of the collection, Marique, a chestnut gelding foaled in 1893, by Expedition, out of Wavelet, by Belmont, was purchased by H. Schmulbough, Wheeling, W. Va., for \$1,050. The best of the educated saddlers sold at \$200 to \$325 each. Mr. Kinzie, Baxter, Ia., reported with a choice lot of heavy Shire draft horses, which were sold at retail at satisfactory prices. One bay team, six years old, weighing 3,530 lbs., was purchased by the English dealer, Harry Richardson, for export to London, for \$475. The animals possessed heavy bone, were short-legged, with blocky conformation, and in prime condition for the trade.

The horse market is firm. Plugs and scrubs, \$150 to \$35; farm mares and chunks, \$50 to \$90; small mares and Southern chunks, \$35 to \$55; plain light drivers, \$50 to \$75; fair to choice drivers, \$115 to \$300; Boston and export chunks, \$75 to \$115; bleached heavy drafters, \$60 to \$110; drafters, good to choice, \$115 to \$250; carriage teams, \$250 to \$650; saddlers, \$75 to \$400, according to individuality and performance.

**Canadian Beef in Scotland.**

John Swan & Sons, the well-known live stock dealers, of Edinburgh and Glasgow, Scotland, write us as follows:

"Your letter was duly received, but illness prevented it being answered sooner. As the Canadian cattle come to Glasgow during the summer months, we think that on that account they will sell at more money alive than as dressed beef. Had they come during the winter months it would have made a great difference, and the reverse might have been the case."

**Live Stock Exports.**

The following are the live stock exports for the week ending Wednesday, May 10th, as prepared by R. Bickerdike, of the Live Stock Exchange, Montreal: Cattle, 3,136; sheep, 727.



### AN AFRICAN MILLIONAIRE:

EPISODES IN THE LIFE OF THE ILLUSTRIOUS COLONEL CLAY.

BY GRANT ALLEN.

I.

#### THE EPISODE OF THE MEXICAN SEER.

My name is Seymour Wilbraham Wentworth. I am brother-in-law and secretary to Sir Charles Vandrift, the South African millionaire and famous financier. Many years ago, when Charlie Vandrift was a small lawyer in Cape Town, I had the (qualified) good fortune to marry his sister. Much later, when the Vandrift estate and farm near Kimberley developed by degrees into the Clocodorp Golcondas, Limited, my brother-in-law offered me the not unremunerative post of secretary; in which capacity I have ever since been his constant and attached companion.

We had run across to the Riviera for a few weeks in the season. Sir Charles has a sentimental attachment for the place. He finds it restores and freshens him, after the turmoil of London, to win a few hundreds at roulette in the course of an afternoon among the palms and cactuses and pure breezes of Monte Carlo. The country, say I, for a jaded intellect! However, we never on any account stop in the Principality itself. Sir Charles thinks Monte Carlo is not a sound address for a financier's letters. He prefers a comfortable hotel on the Promenade des Anglais at Nice, where he recovers health and renews his nervous system by taking daily excursions along the coast to the Casino.

All Nice, just then, was ringing with talk about a curious impostor, known to his followers as the Great Mexican Seer, and supposed to be gifted with second sight, as well as with endless other supernatural powers. Now, it is a peculiarity of my able brother-in-law's that when he meets with a quack he burns to expose him; he is so keen a man of business himself that it gives him, so to speak, a disinterested pleasure to unmask and detect imposture in others. Many ladies at the hotel, some of whom had met and conversed with the Mexican Seer, were constantly telling us strange stories of his doings. He had disclosed to one the present whereabouts of a runaway husband; he had pointed out to another the numbers that would win at roulette next evening. Of course, Sir Charles didn't believe a word of it, but his curiosity was roused: he wished to see and judge for himself of the wonderful thought-reader.

"What would be his terms, do you think, for a private seance?" he asked of Madame Picardet, the lady to whom the Seer had successfully predicted the winning numbers.

"He does not work for money," Madame Picardet answered, "but for the good of humanity. I'm sure he would gladly come and exhibit for nothing his marvellous faculties."

"Nonsense!" Sir Charles answered. "The man must live. I'd pay him five guineas, though, to see him alone. What hotel is he stopping at?"

"The Cosmopolitan, I think," the lady answered. "Oh no; I remember now, the Westminster."

Sir Charles turned to me quietly. "Look here, Seymour," he whispered. "Go round to this fellow's place immediately after dinner and offer him five pounds to give a private seance at once in my rooms, without mentioning who I am to him; keep the name quite quiet. Bring him back with you, too, and come straight upstairs with him, so that there may be no collusion. We'll see just how much the fellow can tell us."

I went as directed. I found the Seer a very remarkable and interesting person, with an aquiline nose, strangely piercing eyes, very large black pupils, and a finely-chiselled, close-shaven face, like the bust of Antinous in our hall in Mayfair. What gave him his most characteristic touch, however, was his odd head of hair, curly and wavy like Paderewski's, standing out in a halo round his high white forehead and his delicate profile. I could see at a glance why he succeeded so well in impressing women; he had the look of a poet, a singer, a prophet.

"I have come round," I said, "to ask whether you will consent to give a seance at once in a friend's rooms; and my principal wishes me to add that he is prepared to pay five pounds as the price of the entertainment."

Senor Antonio Herrera—that was what he called himself—bowed to me with impressive Spanish politeness. His dusky olive cheeks were wrinkled with a smile of gentle contempt as he answered gravely:

"I do not sell my gifts; I bestow them freely. If your friend—your anonymous friend—desires to behold the cosmic wonders that are wrought through my hands, I am glad to show them to him. Yes, I go," he continued, as if addressing some unknown presence that hovered about the ceiling; "I go; come with me!" Then he put on his broad sombrero, with its crimson ribbon, wrapped a cloak round his shoulders, lighted a cigarette, and strode forth by my side towards the Hotel des Anglais.

He seemed buried in deep thought; indeed, when we reached the door and I turned in he walked a step or two farther on, as if not noticing to what place I had brought him. Then he drew himself up short and gazed around him for a moment. "Ha, the Anglais! It is here, then; it is here!" He was addressing once more the unseen presence.

We went upstairs to our rooms. Charles had gathered together a few friends to watch the performance. The Seer entered, wrapt in thought. He was in evening dress, but a red sash round his waist gave a touch of picturesqueness and a dash of color. He paused for a moment in the middle of the salon, without letting his eyes rest on anybody or anything. Then he walked straight up to Charles, and held out his dark hand.

"Good evening," he said. "You are the host. My soul's sight tells me so."

"Good shot," Sir Charles answered. "These fellows have to be quick-witted, you know, Mrs. Mackenzie, or they'd never get on at it."

The Seer gazed about him, and smiled blankly at a person or two whose faces he seemed to recognize from a previous existence. Then Charles began to ask him a few simple questions, not about himself, but about me, just to test him. He answered most of them with surprising correctness. "His name?" His name begins with an S, I think: You call him Seymour."

"Where was I born?" Sir Charles interrupted, coming suddenly to his own case.

The Seer clapped his two hands to his forehead and held it between them, as if to prevent it from bursting. "Africa," he said slowly, as the facts narrowed down, so to speak. "South Africa; Cape of Good Hope; Jansenville; De Wilt Street, 1840."

"By Jove, he's correct," Sir Charles muttered. "He seems really to do it. Still, he may have found me out. He may have known where he was coming."

"I never gave a hint," I answered; "till he reached the door he didn't even know to what hotel I was piloting him."

The Seer stroked his chin softly. His eye appeared to me

to have a furtive gleam in it. "Would you like me to tell you the number of a bank note inclosed in an envelope?" he asked casually.

"Go out of the room," Sir Charles said, "while I pass it round the company."

Senor Herrera disappeared. Sir Charles passed it round cautiously, holding it all the time in his own hand, but letting his guests see the number. Then he placed it in an envelope and rummaged it down firmly.

The Seer returned. His keen eyes swept the company with a comprehensive glance. He shook his shaggy mane. Then he took the envelope in his hands and gazed at it fixedly. "AF, 7559," he answered, in a slow tone. "A Bank of England note for fifty pounds—exchanged at the Casino for gold won yesterday at Monte Carlo."

"I see how he did that," Sir Charles said triumphantly. "He must have changed it there himself; and then I changed it back again. In point of fact, I remember seeing a fellow with long hair loafing about. Still, it's capital conjuring."

"He can see through matter," one of the ladies interposed. "He can see through a box." She drew a little gold vinaigrette, such as our grandmothers used, from her dress pocket. "What is in this?" she inquired, holding it up to him.

Senor Herrera gazed through it. "Three gold coins," he replied, knitting his brows with the effort of seeing into the box. "One, an American five dollars; one, a French ten-franc piece; one, twenty marks, German, of the old Emperor William."

She opened the box and passed it round. Sir Charles smiled a quiet smile.

"Confederacy!" he muttered, half to himself. "Confederacy!"

The Seer turned to him with a sullen air. "You want a better sign?" he said, in a very impressive voice. "A sign that will convince you! Very well: You have a letter in your left waistcoat pocket—a crumpled-up letter. Do you wish me to read it out? I will, if you desire it."

It may seem to those who know Sir Charles incredibly, but I am bound to admit my brother-in-law colored. What that letter contained I cannot say; he only answered, very testily and evasively, "No, thank you; I won't trouble you. The exhibition you have already given us of your skill in this kind of thing amply suffices." And his fingers strayed nervously to his waistcoat pocket, as if he was half afraid, even then, Senor Herrera would read it.

I fancied, too, he glanced somewhat anxiously towards Madame Picardet.

The Seer bowed courteously. "Your will, senor, is law," he said. "I make it a principle, though I can see through all things, invariably to respect the secrets and sanctities. If it were not so, I might dissolve society."

"Your feeling does you honor," Sir Charles answered, with some acerbity. Then he whispered in my ear, "Confounded clever scoundrel, Sey; rather wish we hadn't brought him here."

Senor Herrera seemed intuitively to divine this wish, for he interposed, in a lighter and gayer tone:

"I will now show you a different and more interesting embodiment of occult power, for which we shall need a somewhat subdued arrangement of surrounding lights. Would you mind, senor host—for I have purposely abstained from reading your name on the brain of anyone present—would you mind my turning down this lamp just a little? . . . So! That will do. Now this one; and this one. Exactly! That's right." He poured a few grains of powder out of a packet into a saucer. "Next, a match, if you please. Thank you! It burnt with a strange green light. He drew from his pocket a card, and produced a little ink bottle. "Have you a pen?" he asked.

I instantly brought one. He handed it to Sir Charles. "Oblige me," he said, "by writing your name there." And he indicated a place in the center of the card, which had an embossed edge, with a small middle square of a different color.

Sir Charles has a natural disinclination to signing his name without knowing why. "What do you want with it?" he asked. (A millionaire's signature has so many uses.) The Seer replied, "and then to burn it. After that I shall show you your own name written in letters of blood on my arm, in your own handwriting."

Sir Charles took the pen. If the signature was to be burned as soon as finished, he didn't mind giving it. He wrote his name in his usual firm clear style—the writing of a man who knows his worth and is not afraid of drawing a cheque for five thousand.

"Look at it long," the Seer said, from the other side of the room. He had not watched him write it.

Sir Charles stared at it fixedly. The Seer was really beginning to produce an impression.

"Now, put it in that envelope," the Seer exclaimed.

Sir Charles, like a lamb, placed it as directed.

The Seer strode forward. "Give me the envelope," he said. He took it in his hand, walked over towards the fireplace, and solemnly burnt it. "See—it crumbles into ashes," he cried. Then he came back to the middle of the room, close to the green light, rolled up his sleeve, and held his arm before Sir Charles. There, in blood-red letters, my brother-in-law read the name, "Charles Vandrift," in his own handwriting.

"I see how that's done," Sir Charles murmured, drawing back. "It's a clever delusion, but still I see through it. It's like that ghost book. Your ink was deep green; your light was green; you made me look at it long; and then I saw the same thing written on the skin of your arm in complementary colors."

"You think so?" the Seer replied, with a curious curl of the lip.

"I'm sure of it," Sir Charles answered.

Quick as lightning the Seer again rolled up his sleeve.

"That's your name," he cried, in a very clear voice, "but not your whole name. What do you say, then, to my right? Is this one also a complementary color? There, in sea-green letters, I read the name 'Charles O'Sullivan Vandrift.' It is my brother-in-law's full baptismal designation, but he has dropped the O'Sullivan for many years past, and to say the truth, doesn't like it. He is a little bit ashamed of his mother's family."

Charles glanced at it hurriedly. "Quite right," he said, "quite right!" But his voice was hollow. I could guess he didn't care to continue the seance. He could see through the man, of course; but it was clear the fellow knew too much about us to be entirely pleasant.

"Turn up the lights," I said, and a servant turned them.

"Shall I say coffee and benedictine?" I whispered to Vandrift.

"By all means," he answered. "Anything to keep this fellow from further impertinences! And, I say, don't you think you'd better suggest at the same time that the men should smoke? Even these ladies are not above a cigarette—some of them."

There was a sigh of relief. The lights burned brightly. The Seer for the moment retired from business, so to speak.

Next morning, in the hall of the hotel, I saw Madame Picardet again, in a neat tailor-made traveling dress, evidently bound for the railway station.

"What, off, Madame Picardet?" I cried.

She smiled, and held out her prettily-gloved hand. "Yes, I'm off," she answered archly. "Florence, or Rome, or somewhere. I've drained Nice dry—like a sucked orange. Got all the fun I can out of it. Now I'm away again to my beloved Italy."

But it struck me as odd that, if Italy was her game, she went by the omnibus which takes down to the *train de luxe* for Paris. However, a man of the world accepts what a lady tells him, no matter how improbable; and I confess, for ten days or so, I thought no more about her, or the Seer either.

At the end of that time our fortnightly pass-book came in from the bank in London. It is part of my duty, as the millionaire's secretary, to make up this book once a fortnight, and to compare the cancelled cheques with Sir Charles' counterfoils. On this particular occasion I happened to observe what I can

only describe as a very grave discrepancy—in fact, a discrepancy of £5,000.

I examined the book with care. The source of the error was obvious. It lay in a cheque to Self or Bearer for £5,000, signed by Sir Charles, and evidently paid across the counter in London, as it bore on its face no stamp or indication of any other office.

I called in my brother-in-law from the salon to the study. "Look here, Charles," I said, "there's a cheque in the book which you haven't entered."

He looked at it and stared hard. Then he pursed up his mouth and gave a long low "Whew!" At last he turned it over and remarked, "I say, Sey, my boy, we've just been done jolly well brown, haven't we?"

I glanced at the cheque. "How do you mean?" I inquired.

"Why, the Seer," he replied, still staring at it ruefully. "I don't mind the five thou, but to think the fellow should have gammoned the pair of us like that—ignominious! I call it!"

"How do you know it's the Seer?" I asked.

"Look at the green ink," he answered. "Besides, I recollect the very shape of the last flourish. I flourished a bit like that in the excitement of the moment, which I don't always do with my regular signature."

"He's done us, I answered, recognizing it. "But how the dickens did he manage to transfer it to the cheque. This looks like your own handwriting, Charles, not a clever forgery."

"It is," he said. "I admit it—I can't deny it. Only fancy his bamboozling me when I was most on my guard! I wasn't to be taken in by any of his silly occult tricks and catch-words, but it never occurred to me he was going to victimize me financially in this way. I expected attempts at a loan or an extortion, but to collar my signature to a blank cheque—atrocity!"

"How did he manage it?" I asked.

"I haven't the faintest conception. I only know those are the words I wrote. I could swear to them anywhere."

"Then you can't protest the cheque?"

"Unfortunately, no; it's my own true signature."

We went that afternoon without delay to see the Chief Commissary of Police at the office. He was a gentlemanly Frenchman, much less formal and red-tape than usual, and he spoke excellent English, with an American accent, having acted, in fact, as a detective in New York for about ten years in his early manhood.

"I guess," he said slowly, after hearing our story, "you've been victimized right here by Colonel Clay, gentlemen."

"Who is Colonel Clay?" Sir Charles asked.

"That's just what I want to know," the Commissary answered, in his curious American-French-English. "He is a Colonel, because he occasionally gives himself a commission; he is called Colonel Clay because he appears to possess an india-rubber face, and he can mould it like clay in the hands of the potter. Real name, unknown. Nationality, equally French and English. Address, usually Europe. Profession, former maker of wax figures to the Musee Grevin. Age, what he chooses. Employs his knowledge to mould his own nose and cheeks, with wax additions, to the character he desires to personate. Aquiline this time, you say. *Hein!* Anything like these photographs?"

He rummaged in his desk and handed us two.

"Not in the least," Sir Charles answered. "Except, perhaps, as to the neck, everything here is quite unlike him."

"Then that's the Colonel!" the Commissary answered, with decision, rubbing his hands in glee. "Look here," and he took out a pencil and rapidly sketched the outline of one of the two faces—that of a bland-looking young man, with no expression worth mentioning. "There's the Colonel in his simple disguise. Very good. Now watch me. Figure to yourself that he adds here a tiny patch of wax to his nose—an aquiline bridge—just so; well, you have him right there; and the chin, ah, one touch; now, for hair, a wig; for complexion, nothing easier. That's the profile of your rascal, isn't it?"

"Exactly," we both murmured. By two curves of the pencil, and a shock of false hair, the face was transmuted.

"He had very large eyes, with very big pupils, though," I objected, looking close; "and the man in the photograph here has them small and beady-fishy."

"That's so," the Commissary answered. "A drop of belladonna expands, and produces the Seer; five grains of opium contract, and give a dead-alive, stupidly-innocent appearance. Well, you leave this affair to me, gentlemen. I'll see the fun out. I don't say I'll catch him for you; nobody ever yet has caught Colonel Clay; but I'll explain how he did the trick; and that ought to be consolation enough to a man of your means for a trifle of five thousand!"

"You are not the conventional French officeholder, M. le Commissaire," I ventured to interpose.

"You bet!" the Commissary replied, and drew himself up like a captain of infantry. "Messieurs," he continued, in French, with the utmost dignity, "I shall devote the resources of this office to tracing out the crime, and, if possible, to effectuating the arrest of the culpable."

We telegraphed to London, of course; and we wrote to the bank, with a full description of the suspected person. But I need hardly add that nothing came of it.

Three days later the Commissary called at our hotel.

"Well, gentleman," he said, "I am glad to say I have discovered everything!"

"What? Arrested the Seer?" Sir Charles cried.

The Commissary drew back, almost horrified at the suggestion.

"Arrested Colonel Clay!" he exclaimed. "Mais, monsieur, we are only human! Arrested him? No, not quite. But tracked out how he did it. That is already much—to unravel Colonel Clay, gentlemen!"

"Well, what do you make of it?" Sir Charles asked, crest-fallen.

"In the first place, monsieur," he said, "disabuse your mind of the idea that when monsieur your secretary went out to fetch Senor Herrera that night, Senor Herrera didn't know to whose rooms he was coming. Quite otherwise, in point of fact. I do not doubt myself that Senor Herrera, or Colonel Clay (call him which you like), came to Nice this winter for no other purpose than just to rob you."

"But I sent for him," my brother-in-law interposed.

"Yes; he meant you to send for him. He forced a card, so to speak. If he couldn't do that I guess he would be a pretty poor conjurer. He had a lady of his own—his wife, let us say, or his sister—stopping here at this hotel; a certain Madame Picardet. Through her he induced several ladies of your circle to attend his seances. She and they spoke to you about him, and aroused your curiosity. You may bet your bottom dollar that when he came to this room he came ready primed and prepared with endless facts about both of you."

"What fools we have been, Sey," my brother-in-law exclaimed. "I see it all now. That designing woman sent round before dinner to say I wanted to meet him, and by the time you got there he was ready for bamboozling me."

"That's so," the Commissary answered. "He had your name ready painted on both his arms, and he had made other preparations of still greater importance."

"You mean the cheque. Well, how did he get it?"

The Commissary opened the door. "Come in," he said. And a young man entered whom we recognized at once as the chief clerk in the Foreign Department of the Credit Marseillais, the principal bank all along the Riviera.

"State what you know of this cheque," the Commissary said, showing it to him, for we had handed it over to the police as a piece of evidence.

"About four weeks since—" the clerk began.

"Say ten days before your seance," the Commissary interposed.

"A gentleman, with very long hair and an aquiline nose, dark, strange, and handsome, called in at my department and asked if I could tell him the name of Sir Charles Vandrift's London banker. He said he had a sum to pay in to your credit, and asked if we would forward it for him. I told him it was irregular for us to receive the money, as you had no account with us, but that your London bankers were Darby, Drummond, and Rothenberg, Limited."

[TO BE CONTINUED.]

MINNIE MAY'S DEPARTMENT.

MY DEAR NIECES.—

Under the old style of things the first requisite of true propriety was "repose of manner." The lives of women in the days of our great-grandmothers were hemmed in by all sorts of restrictions. The moulding and fashioning influences of that time were all negative. It was "Don't" at every turn. "No well-bred lady would fidget in company, put her hands to her face, toss her head, or finger her buttons." In conversation her voice was soft and gentle, and though she might have the whitest of lily-white hands, she must not use them to gesticulate with. Her features, too, must be controlled. Squinting and winking the eyes and twitching the mouth were not tolerated in society. If she yearned for a liberal education, again "Don't" was hurled at her; and the warning voice said: "To be learned is unfeminine. What does a woman want with learning? Let her know how to keep house, and look after her husband's and children's physical comfort. If she never marries, let her take a back-seat and play the rôle of the maiden aunt and be thankful." These rules were all reversed later on. Instead of "Don't," the inspiring word is "Do." These stately ladies of long ago were voted prim and stiff and slow. As "naturalness" became the rage, "repose of manner" disappeared, and the deportment of young women was marked by excitement and restlessness. If the old-fashioned girl longed for active exercise, the voice again said: "Don't; violent exercise is unladylike. Your complexion will suffer from the sun and the air."

Now, this taking of a back-seat is just what the modern girl will not do. Why should she? Married or unmarried, she will come to the front. She is full of energy and activity, and feels capable of pushing out for herself and being independent. She wants to be stirring; she is a creature of the open air. She does not care so much to see her brothers play football as to have a kick at it herself. She enjoys every form of physical culture—her bicycle, golf, tennis, cricket, the gymnasium, and so on. She believes in "Do," with the result that her activity shows in her deportment. She is not the dependent, clinging woman of long ago, but one who can hold her own anywhere. As to education, she contends that she has as good a right to be educated as her brothers. If she is to be a house-keeper, she will be all the better for having a cultivated taste and judgment. She will be a better mother because she has studied the laws of health.

It used to be that the only profession open to women was teaching—anything else was a disgrace. Nowadays our girls are in every line of business, and in every profession—doctors, lawyers, gardeners, telegraphists, journalists, everything! And the girl who goes out to fight her way in her chosen work is no longer harshly criticised, but the public look on approvingly and wish her success.

But has this modern school of manners, with its activity and unrest, nothing to do with the numerous nervous diseases of the present day? The outward manner largely influences the inward state, and perhaps the old-fashioned habit of self-control was a means of establishing a control of the emotions and thoughts. Would it not be well to have the old style partially resumed? To have "repose of manner" cultivated to bring back again some of the dignity and stateliness of long ago? After all, there is more power in the reposeful manner than in the loud and self-assertive style one so often meets with. Now, as of old, in sitting, neither the knees nor the feet are to be crossed, yawning is a great offence, and the hands should be kept still and not used for gesticulation.

It is said that when sleep is impossible, lying in bed with the hands folded and the eyes shut is half as good as sleep itself. Everyone knows that restlessness and tossing about increase the loss of strength from sleeplessness, as well as the fact that sleep which is interrupted by constant turning and tossing is not nearly so strength-giving as a calm, quiet slumber. Just in the same way a reposeful manner saves the expense of much nervous movement, and of course a corresponding amount of power is saved too.

"But," someone may urge, "if a girl is to be anything at all nowadays she must be energetic and go-ahead." True, my dear nieces, equally as true to-day as at any time in the past. But, then, we do not wish to lose sight of the fact that as ladies we should conduct ourselves always in a ladylike, quiet manner. By abandoning gentleness of disposition and graciousness of word and deed we throw away a means of growth and an effective weapon. Many, many a girl who has to face the world daily to earn a living will agree with me in saying that a reposeful, dignified manner is a safeguard to her, and hinders, perhaps, many a rude remark or action which might be offered if she were of a free and easy, familiar style. By all means let us be courteous both in speech and bearing, thereby not only compelling respect, but increasing our power for good in the world.

Your loving old Auntie,  
MINNIE MAY.

Recipe.

SALAD DRESSING.

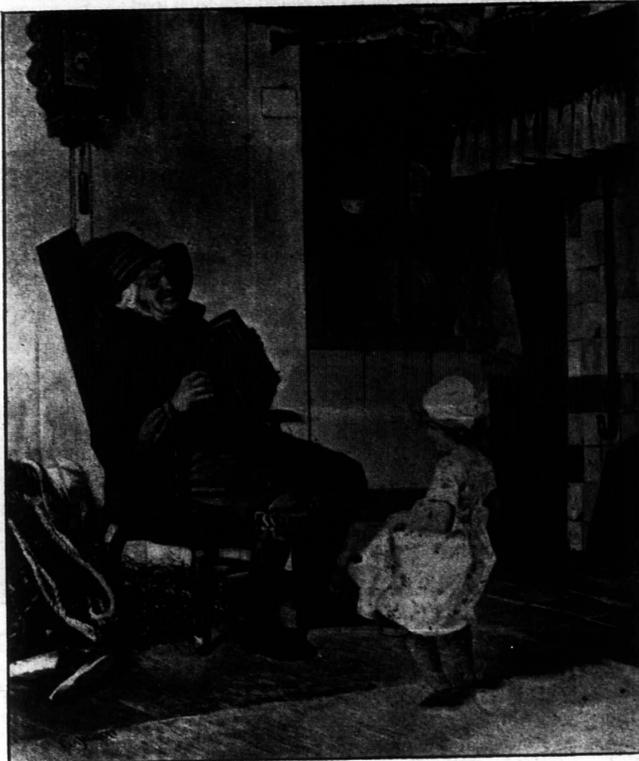
Three tablespoonfuls water, two tablespoonfuls vinegar, one teaspoonful made mustard, one teaspoonful sugar, one saltspoonful salt, one egg beaten well, one piece butter size pigeon egg. Heat over the fire, on top of the kettle, in a bowl, and stir often. It will keep a long time, so you can make a large quantity at once, and it is always ready for use. It ought to be like a good boiled custard when made.—Mrs. C. Cavendish Cooke's recipe.

Mr. Thomas Hardy's "Wessex Poems and Other Verses" are meeting with a very varied reception from the critics. There is no doubt about it that their tone is pessimistic, but Mr. Hardy has never given us a very cheerful interpretation of life. There is one poem in his book, however, of eight lines only, singularly dramatic in expression and so lyrically pure that it is likely to find its way into future anthologies of English poetry, though the author may be rejected as a poet. It is a forcible presentation of one of "life's little ironies":—

"They bear him to his resting-place—  
In slow procession sweeping by:  
I follow at a stranger's pace,  
His kindred they, his sweetheart I.  
Unchanged my gown of garish dye,  
Though sable-suited their attire;  
But they stand round with griefless eye  
While my regret consumes like fire."

"Little Pepita."

What a charming picture! This dear old man must be Grandpa—and isn't he enjoying the merry dance of his grandchild! This room is delightfully quaint and foreign, and carries you far, far away



"LITTLE PEPITA."

into another country. Observe the curious Dutch tiled fireplace, with its plaited drapery—of a style now widely copied in our modern drawingrooms; the rows of crockery—doubtless of that old Dutch blue which now fetches large sums. Then the familiar Dutch clock we all know so well, and the substantial, cosy armchair! Grandpa must be a fisherman—for we see net and creel beside him. The hat lying on the top is quite fashionable-looking in shape. How often, too, do we see these thick-soled, heel-less, serviceable-looking footwear imitated as lounging slippers handsomely embroidered! Little Pepita is evidently having a real good time—as she would probably say were she of our country—and where her shoes are we know not. I have no doubt that Grandfather may play away until his fingers drop off before she will tire of her pretty capers.

One does not often see one of these old-fashioned accordians such as he is playing—the more modern concertina having, long years ago, taken their place. I dare say our old man here can play some pretty good tunes. As for little Pepita, what can be more simple and sweet? The flowered frock, the plump little striped legs and feet, the close cap from under which the curling locks will escape, the pretty attitude, all go to complete a picture of simple enjoyment which is good to look upon. The very contrast of these two figures makes a perfect match.

Dance on, little maid, in happy measure—  
Grandfather plays for his heart's best treasure—  
With tireless hands and smiling face  
Well holding his own in the loving race.

Strange Memory often skips long years,  
And brings back scenes through mist of tears—  
Time spares none and—these two must part—  
Yet surely he'll live in that little heart!

THE QUIET HOUR.

"To All Their Due."

"Who is the honest man!  
He that doth still and strongly good pursue,  
To God, his neighbor, and himself most true;  
Whom neither force nor fawning can  
Unpin, or wrench from giving to all their due . . .  
Who rides his sure and even trot,  
While the world now rides by, now lags behind . . .  
All being brought into a sum,  
What place or person calls for,—he doth pay . . ."

We cannot live in this world without incurring debts of some kind, and if we would be honest, it is necessary to obey the Apostle's command, "Render to all their due."

In dealing with others this should always be kept in sight. Let people be always prompt in paying their debts, fair and just to those who work for them, never grinding them down to the lowest possible level of wages, never trying to get the better of them—giving them their due, in fact.

Why is it that so many men and women are generous and kind to the poor who are not working for them, and yet never seem to dream of treating with equal kindness and consideration those who are employed by them? How few ever think of giving five cents extra to the poor woman who has been washing and cleaning all day, and has, perhaps, five or six little children to feed and clothe! Do you not rather employ the one who will work for starvation wages—because, perhaps, she has only herself to keep?

When people are forced by circumstances to accept less than their work is really worth, is that any reason why we should steal their valuable time and strength? For it is certainly dishonest to defraud them of their due. It is not only the laborer in *spiritual* things who is "worthy of his hire."

Then let us consider another kind of debt which is often left unpaid. How often do we see a loving, unselfish woman toiling along day after day to make everything nice for husband and children. Has she not justly earned the word of appreciation, of loving gratitude, which would, in her opinion, so amply repay her for all her self-sacrifice? Young people are often very selfish, accepting mother's sacrifices as a matter of course. They get the new clothes, she manages to make the old ones do. They go off on jolly summer outings, she stays at home in the heat and does the work. Oh, wake up! before it is too late; before the habits of selfishness become too strong to be broken; before you get too hardened and careless to care whether you are selfish or not. Render to those at home their due, be courteous and thoughtful in the matter of small obligations.

Begin early with the children, train them to say "Thank you" even to brothers and sisters; tolerate no rudeness in words or manner, and it will soon become second nature to them to be refined and polite.

Then think of our neglected correspondence. Do we always render to all their due in the matter of letters? How many which ought to be written at once are put off from day to day, until perhaps we end in not writing them at all. The letter to a friend in trouble, or the one, not less valued by the receiver, of congratulation in time of joy; the letter to the dear home friends, or to brother or sister, friend or neighbor, who has left home and is longing for a few words of cheer and kindness in his loneliness.

Surely it is very true that "none of us liveth to himself." We are linked together in hundreds of ways, and are dependent on one another perhaps far more than we know. Our lives are mostly made up of small and seemingly trivial things, but let us look to it that we do not despise and neglect the small everyday obligations.

"We need not bid, for cloistered cell,  
Our neighbor and our work farewell,  
Nor strive to wind ourselves too high  
For sinful man beneath the sky:  
The trivial round, the common task,  
Would furnish all we ought to ask;  
Room to deny ourselves; a road  
To bring us daily nearer God."

And don't forget that in rendering to all their due, your own claims must not be forgotten.

Unless it is absolutely necessary, do not work hard, without any holiday, from year's end to year's end. If not for your own sake, at least for the sake of your relations and friends, do not use up all your energy and become nervous and irritable, as nearly all overworked people do. Remember that our Lord took His disciples apart that they might "rest awhile." If you would do really good work for Him, then keep yourself as healthy and happy as you can. If you live in a constant rush of work and worry, how can you cultivate the three great graces of "love, joy, and peace"? Martha was very busy and complained that her sister Mary was idle, yet Mary was pleasing the Master best. No life should be too busy for a daily quiet time at His feet. D. F.

The inheritance of a distinguished and noble name is a proud inheritance to him who lives worthily of it.—Colton.

Never shrink from doing anything your business calls you to do. The man who is above his business may one day find his business above him.—Drewe.



**Keeping a Secret.**

It was when Molly was getting over the measles that mamma told her about Tom's birthday party. It was to be a bicycle party, and the boys were all to bring their bicycles, and Tom's father was going to give him one for a birthday present.

"O goody!" cried Molly, jumping up and down. "Won't Tom be just too happy for anything?" "Now, Molly," said mamma, "you must be very careful not to tell Tom anything about it." "Can't I tell anybody? Not even Arabella Maria?" asked Molly. "Cause I shall surely burst if I don't."

"Yes," said mamma, laughing, "you can tell Arabella Maria, but no one else." This was hard. That very afternoon Tom came rushing in from school and told Molly about Billy's new improved safety.

"I'd give something if I just knew I'd get a wheel for my birthday," said he.

"Bye low, bye low," sang Molly to Arabella, who, because she was made of rags, Molly loved, as she said she was so nice and "huggy." Molly kept her eyes shut, for fear Tom would see a nickel-plated bicycle in them.

"Why don't you talk and be a comfort?" demanded Tom. "I suppose if it was your birthday coming you wouldn't mind—you'd rather have an old mushy doll like that!"

Molly's eyes flashed. "It isn't so at all!" she said. "I wouldn't want another doll at all, and I do want a wheel. Every girl in the block but me has one. And Arabella Maria is not mushy, and she knows a great deal that you would like to know."

And then Molly, feeling that she was getting on dangerous ground, flew upstairs, holding Arabella close up against her mouth.

Uncle Tom and mamma were sitting on the porch, quite near the open window, and heard all this conversation. Uncle Tom was much amused, and mamma was very proud.

"I can make her tell me," said Uncle Tom.

"Try," said mamma, as she went in to make hot cakes for tea.

Molly presently found herself seated on Uncle Tom's knee, and after she had told him all about the measles, and how it was a great surprise to everybody that Arabella Maria didn't take them, "But she's the best thing!" said Molly. "I told her not to, 'cause I couldn't nurse her, and she didn't."

"What's this about Tom's birthday?" said Uncle Tom. "I want to know about it."

But Molly immediately shut her mouth up tight and looked at the sky. "It's a secret," she said, finally.

"But not from me, is it? You know he's my namesake, and how do you know I won't get him the same thing?"

Molly looked troubled. "There is a danger," she said; "but if I should tell you you might let it out—not on purpose, but because it's so hard not to. I don't want to ever have the 'sponsibility of another secret, never."

"Well, well, and so you can't trust me," said Uncle Tom.

"I wouldn't mind trusting you at all if I hadn't promised I wouldn't tell," said Molly. "And me and Arabella Maria must keep our word, you see. Now if it was about my birthday I could tell you just as well as not, 'cause I wouldn't know—"

But Uncle Tom was laughing so that Molly stopped.

"Good for you, Molly," he said, "you're a trump!"

Molly didn't know at all what he meant, but she was much relieved that he was not offended.

When Tom's birthday, with the party, the safety and all, really came, it was hard to tell which was the happier, Tom or Molly.

Every time that Tom felt things boiling within him to such an extent that he couldn't possibly stand it another minute he would rush out on the lawn and look at his new wheel and say, "Hurrah! she's a daisy!" and turn somersaults until he felt better. At the same time Molly would rush after Arabella Maria, and with a rapturous squeeze would say, "Aren't we glad we didn't tell, though, 'cause he's so happy over the s'prise!"

By and by they all went out for a spin around the block, and there among the shining wheels was a dear little one which no one claimed. Tom picked up a card on the handle-bar and read:

"For Molly and Arabella Maria, two young women who know how to keep a secret from even Uncle Tom."

"Oh, oh!" said Molly, dancing up and down. "Arabella Maria, we're the happiest girls in this world, I know."—L. E. Kittenden.

**"What's the Matter with Us?"**

Here is our old friend Molly—the dear little girl who knows how to keep a secret. She is visiting her Uncle Jim in the country. While Cousin Mabel is having a lovely spin on Molly's beloved wheel, the dear little city maiden is driving happily along with Baby Jimmy in his splendid dogcart. As they cross the bridge Molly shouts merrily to Tom, who is fishing in the river, "What's the matter with us?"

Arabella Maria is with them, of course. She is perched up on the other side of Jimmy, who is almost as fond of her as Molly herself.

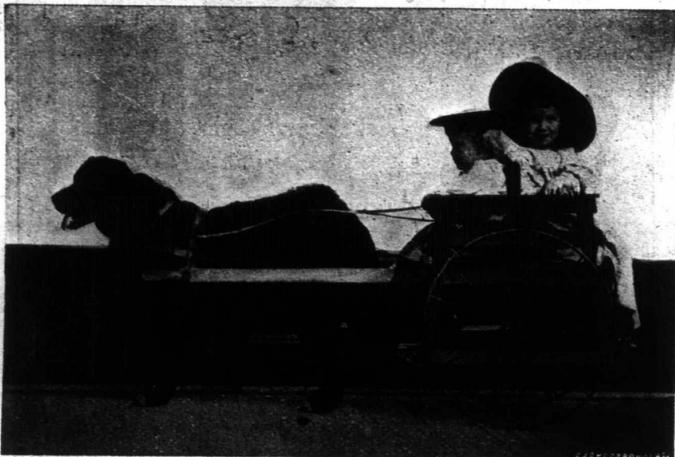
**Doing Right.**

Being approved by good men is no sure sign of being right, neither is being disapproved by good men. The right is the right, whether good men approve or disapprove. Good men are not all agreed as to particular acts or measures or opinions. He who looks for the approval of his course by the good will often be mistaken, but he who does just right will so far be right, however others may think of him.

**The Sweet Girl Graduate.**

All hail the sweet girl graduate, who's now in fullest bloom; Who knows her Greek and Latin and the use of who and whom; Who knows her physics like a book, the list of British kings, And several thousand other highly interesting things. Long may she wave and prosper in this country of the free, And may she ever get her rights wherever she may be; And may she know but happiness in all her span of life; And when perchance it comes about that she's somebody's wife, Oh, may she get the kind of man that's suited to her kind— A sort of man that's difficult, we must confess, to find— A really sweet domestic man, who at his mother's knee Hath learned to sew on buttons and to brew a cup of tea; Who's learned to go to market and to pick out the best to eat; To whom a shopping tour is fun, an eighteen-karat treat; Who loves to tend the baby, and who doesn't want to vote; And who can spend a morning putting trimmings on his coat.

Oh, may this sweet girl graduate, whose head is stuffed with lore, Find some such mate as this to share her happy cellar door! So that there may be in her home, when she returns at night, From all the care—the business care—that will be hers to fight, One who shall greet her at the door with smiles, to make her feel



"WHAT'S THE MATTER WITH US?"

There's one that shares within his soul her every woe and weal; There's one at least in all this world of ours who's sure to see She does not miss the perfect joys of domesticity.

—Harper's Bazaar.

For want of space in this number the "Joke Contest" will not appear till June 1st.

**Puzzles.**

[The following prizes are offered every quarter, beginning with months of April, July and October: For answers to puzzles during each quarter—1st prize, \$1.50; 2nd, \$1.00; 3rd, 75c. For original puzzles—1st, \$1.00; 2nd, 75c.; 3rd, 50c.]

This column is open to all who comply with the following rules: Puzzles must be original—that is, must not be copied from other papers; they must be written on one side only of paper, and sender's name signed to each puzzle; answers must accompany all original puzzles (preferably on separate paper). It is not necessary to write out puzzles to which you send answers—the number of puzzle and date of issue is sufficient. Partial answers will receive credit. Work intended for first issue of any month should reach Pakenham not later than the 15th of the month previous; that for second issue not later than the 5th of that month. Leave envelope open, mark "Printer's Copy" in one corner, and letter will come for one cent. Address all work to Miss Ada Armand, Pakenham, Ont.]

**1—CHARADE.**

My first, a little word,  
Is often heard in speech;  
It presents either side,  
But does not decision reach.

My second you say off  
In speaking about you;  
My third the darkey used  
To his "massa" aged, 'tis true.

My whole in the sunny air  
Is now seen every day;  
Is heard in the tall elm tree,  
Whistling his sweet clear lay.

M. N.

**2—ENIGMA.**

First in pond, not in cool;  
Second in are and in art;  
Third in rake, not in tool;  
Fourth in hear and in heart;  
Fifth in none, not in some;  
Sixth in hart and in hare;  
Seventh in start, not in come;  
Eighth in mate and in mare;  
At my whole an accident slight,  
Many puzzles lost from sight.

M. N.

**3—TRIPLE ACROSTIC.**

In "paymasters" that pry,  
In "hawkers" who cry,  
In "travellers" so spry,  
In "biters" we try,  
In "haying" with faces wry  
and throats so dry.

Come now, and read this right,  
And three women, noted and bright,  
That have charmed thousands many a night,  
Will quickly come to light. "ARRY 'AWKINS."

**4—TRANSPOSITION.**

Name of a puzzler Dick,  
Hope he is not very sick  
From the "taffy" supplied so pat  
By Coz Ada in her first chat.

Oh! wasn't "you awful fellow" rich,  
When given with just the proper pitch?  
But "my dear boy" is the second of it all,  
And the last that keeps it from spring till fall. "ARRY 'AWKINS."

**5—RIDDLES.**

- (1) What distance (travelling) most resembles an Angora cat?
- (2) The last letter of an Oriental salutation read backwards seems to be sad. What is the salutation?
- (3) Contract the time when holy men did live— Old-fashioned mode of travel will it give?
- (4) I am a little light, and I get smaller. Change one of my letters and I become an animal. SIMPLE SIMON.

**6—TRANSPOSITION.**

Amy het nohtim fo gons dan otyrs  
Nginisg rbsid dan istreauf welorsf  
Yma het hontim fo struena yirog  
Hunsneis gthribi dan neglet trowoosh.  
CRIEFF FERGUSON.

**7—REBUS.**



The Rebus names another animal. OOMA.

**8—SQUARE DIAMOND.**

- 1, A fetter; 2, produce; 3, thin slices of wood; 4, mournful; 5, to grant; 6, past tense of a verb meaning to flow; 7, a letter. "DICK."

**9—OBLIQUE.**

- 1, A vowel; 2, a tree; 3, a tree; 4, a large bird; 5, a small bird; 6, a medicine; 7, a drink; 8, an East Indian silver coin; 9, a diocese; 10, a vowel. "DICK."

**10—RIDDLE.**

Arrange four fives so as to make fifty-six.  
"PIONEER."

**11—ANAGRAM.**

"Shouts count more."  
They bought all the funny magazines,  
And read Bill Nye, Bengough, and Benzine;  
The result of all this labor we will see  
In the ADVOCATE of May the fifteen.

**12—WORD-SQUARE.**

To establish by law, nitrate of potash, a collection of maps, a small vessel, to be fretful.  
BUTTERCUP.

**13—A BEVY OF BIRDS.**

- What bird is an island near Africa?  
"a carpenter?"  
"a hill?"  
"a piece of money?"  
"a fish?"  
"a fruit?"  
"a ruler?"  
"a cheater?"  
"a swimmer?"  
"foolish?"  
"goes like a wheel?"  
"lively?"  
"cold?"  
"in a cheese factory?"  
"an island in the St. Lawrence River?"  
"lives in a rooster's throat?"  
"DICKENS."

**Answers to April 15th Puzzles.**

- 1—Orleans.
- 2—Rusk, Ubi, Dip, yell, Anti, Ruin, Drag—Rudyard Kipling.
- 3—Championship, ladyship, lordship, partnership, scholarship, hardship, friendship, statesmanship, citizenship, seaman-ship.
- 4—Tactician.
- 5—Algor, Grotto, Ultimo, Iris, Naivette, Akner (knave), Ladle, Dell, Obit—Aguinaldo, Roosevelt.
- 6—(1) Honor before riches; (2) you are only to see me once in a week.
- 7—K e s t r e l      8—Conundrum.  
e s t e e m      9—Confederations.  
s t e e d      10—La grippe.  
t e e m      11—Equal, wants, sins, contrition.  
r e d      12—Salmagundi.  
e m      13—Simple Simon's decapitation.  
l

**ANSWER TO NO. 9, LAST ISSUE.**

Reichstadt, Obeah, Beatrice, Epoch, Rottolo, Tael, Bey, Unbelief, Rutha, Neroli, Sudder—Robert Burns, The Holy Fair.

**SOLVERS TO APRIL 15TH PUZZLES.**

"Ena," "Red Lion," Lizzie Conner, "Arry 'Awkins," M. R. G., M. N., Jessie Hyde, Peter Hyde.

**ADDITIONAL SOLVERS TO APRIL 1ST PUZZLES.**

Jessie Hyde, Peter Hyde, "Arry 'Awkins," Lizzie Conner.

**COUSINLY CHAT.**

I've only room for a line or two, but send you May-day greetings. I have received complaints of inaccuracies in puzzles, which I feel sure arise from not being sufficiently careful in writing them, thus causing the printer to make mistakes. Puzzle No. 8 last issue is also said to have been copied, but as the sender is a new cousin it has likely been a mistake and will not occur again.

"Arry," I received both letters, and really will write to J. when I can find time—a scarce commodity, by the way, in these housecleaning days.

"Red Lion"—Is it your name I see in the *Mail and Empire* as having sent wild flowers to the hospital? I think I recognized another cousin's name in that paper—eh, "Pioneer"?

"Simple Simon."—Send some of your other puzzles, and if not too difficult we shall use them.  
ADA A.

# WESTERN CANADA'S GREAT INDUSTRIAL FAIR

JULY 10th TO 15th, 1899.

## Fifteen Thousand Dollars in Prizes.

### FEATURES, ATTRACTIONS, ACCOMMODATION

MORE EXTENSIVE AND GRANDER THAN EVER. COMPETITION OPEN TO THE WORLD.

Prize Lists and Splendid Illustrated Programme of Attractions and of Horse-racing Events Mailed Free on Application to

**WM. BRYDON, President.**

**WINNIPEG, MAN.**

**F. W. HEUBACH, General Manager.**

**FOR SALE...  
IMPORTED AND  
CANADIAN-BRED**

## Clydesdale Stallions

From One to Four Years Old. Also



**SEVERAL THREE YEAR OLD FILLIES,**

All registered and warranted sound. Inspection invited.

**ROBT. DAVIES,**

Thorncliffe Stock Farm, TORONTO.

## CLYDESDALES



We have several imported Clyde mares 8 and 10 years old for sale at moderate prices. Some of them in foal to Grandeur An imported Hackney mare in foal to Square Shot. Also Ayrshire bull and heifer calves. Write for prices or come and see

**D. & O. SORBY,  
GUELPH, ONT.**

## Linden Grove Herd of JERSEY CATTLE at Auction

Tuesday, May 30th, 1899, at 10 o'clock, at the home of the owner, MR. T. S. COOPER, "Linden Grove," Coopersburgh, Penn. The home of Pedro for 14 years. Peter C. Kellogg, Auctioneer, 107 John St., New York.

This essentially home-bred herd has been built up from the very best American and imported stock, with an undeviating regard for rugged health and constitution. Its bulls, past and present, have been chosen from dams of remarkable vitality, productive power and longevity. All will be sold excepting a few cows which, on account of advanced age and physical defects, have been left out of the Catalogue. The method of rearing and keeping has been the regular practice, with only occasional deviation in respect to grooming and little graining has been resorted to. The consequence is that the general health of the herd is as nearly perfect as possible. It has recently been subjected to the tuberculin test by Dr. Francis Bridge, Veterinarian of the State Board of Agriculture for eighteen years, and found exempt from any symptoms of tuberculosis. A certificate on this point will be issued with each animal.

As no intention of selling the whole existed until recently, many of the cows are not timed to be fresh at the sale, but will be in August and September. Buyers for the showing who understand their business will find it "bargain day" in this line, and "the picking good." Any attempt to do justice to the achievements of this noted herd in the showings of the World's Fair, the State fairs, and the great dairy shows of the past twenty years, and to point out its blood alliances with the great butter families, WOULD REQUIRE A BOOK, therefore no attempt will be made to do so in this advertisement. That required book is the CATALOGUE, which will be sent to all who are sufficiently interested to apply for it. For Catalogues address the owner, or

**PETER C. KELLOGG, Auctioneer, 107 John Street, New York.**

## ATTRACTIVE AUCTION SALE OF High-Class Jersey Cattle

PROPERTY OF HOWARD FRALEIGH. To be sold by public auction, without reserve, at the Forest Flax Mill Farm, at FOREST, ONTARIO, on WEDNESDAY, MAY 24th, 1899

30 head of pure-bred Jerseys, registered in A.J.C.G.R., comprising cows and heifers in milk and in calf, heifer calves and young bulls. These cattle are principally Tennessee-bred, and are related to Oonan 1485, test 22 lbs. 24 oss. in 7 days; Oonan of Riverside, 34 lbs. 3 oss., and Bisson's Belle, 1,028 lbs. 15 oz. in a year. On the sire's side the best of St. Lambert blood is represented. Terms: Six months time on approved joint notes; discount at rate of 6 per cent. per annum for cash. Sale to commence at 2.30 p. m. Tabulated catalogues ready May 10th, sent on application to

**H. FRALEIGH, Forest, Ont.**

## VALUABLE WELL-KNOWN FARM FOR SALE!

The owner having decided to enter into other business, offers for sale his farm, containing about 180 acres. The soil varies from a light loam to a clay loam, in a first-class state of cultivation, beautifully situated on the River Thames, about thirteen miles from London. There are on the premises a good large brick house, and three large barns, stables, implement shed, granary, poultry house, drive-shed, hog pen, and other outbuildings in good condition. Also one of the best orchards in the Province, of about 10 acres first-class fruit. The farm was formerly the property of the late William Weld, publisher of the FARMER'S ADVOCATE, being his family homestead and the FARMER'S ADVOCATE Test Farm. Terms will be made to suit purchaser. The larger portion of the purchase money may remain upon mortgage, at 4 1/2 per cent. Full particulars given on application. Address—

**JOSEPH WELD, FARMER'S ADVOCATE OFFICE, LONDON, ONT.**



## THESE PILLS

Cure Stomach Trouble, Nervous Diseases and all Blood disorders. They restore health and strength to the weakened system.

Dr. Ward's Blood and Nerve Pills are sold at 50c. per box. 5 boxes for \$2.00 at druggists, or mailed on receipt of price by The Dr. Ward Co., Limited, 71 Victoria St., Toronto. Book of Information free. Dept. F.

Mr. Isaac Holden, Omemeo, Ont., a well known Cattle Buyer, says:—They cured me of constipation, and the rheumatism pains have entirely disappeared from my loins and stomach. They are a marvel in the medicine line. It is the only medicine of the many I have taken that gave me immediate and permanent relief. I am satisfied that if I had not taken them I would to-day be helpless in bed, suffering from torture such as only those who have acute muscular and nervous rheumatism can imagine. Yours truly, ISAAC HOLDEN, Omemeo, Ont.



## YORKSHIRES! YORKSHIRES!

My foundation was Oak Lodge bred females, and headed by a grandson of Oak Lodge Cinderella, which farrowed the sweepstakes family at Brantford in 1898, as well as the bacon class. Winners over all breeds and grades. Young stock of both sexes ready for shipment. **WILLIAM HOWE, NORTH BRUCE, ONT.** Port Elgin Station, G. T. R.

EVERY FARMHOUSE SHOULD HAVE IT.

## SPOONER'S POWDER PHENYLE GERMICIDE and ANTISEPTIC.

Took 2 gold medals at the Columbian Exhibition. Holds Prof. Ellis' certificate. Used by the Seagram stables exclusively. Insures animals against contagious diseases. Prevents and cures hog cholera. Kills sheep ticks, lice on horses and cattle, and chicken lice, fleas on dogs. Prevents cholera, small-pox, scarlet, typhoid and malarial fevers, diphtheria. Send for full particulars.

**ALONZO W. SPOONER, Manufacturer, PORT HOPE, ONT.**



## CLYDESDALES FOR SALE.

We have on hand a few choice animals, of both sexes. **I. Devitt & Sons, FREEMAN P. O.,** Farm 1/2 mile from Burlington Station G. T. R.

## Springhurst Shorthorns. 4 Young Bulls

GOOD ONES. BRED RIGHT. READY FOR SERVICE. Also, Young Cows and Heifers FOR SALE. **H. SMITH, HAY, ONT.** Exeter Station, G. T. R., half mile from farm.

## SHORTHORNS 9 BULLS, 4 HEIFERS,

Mostly Scotch-bred, and got by such bulls as Kinellar Sort (imp.), Northern Light (imp.), Prince and Prince Bismarck. Prices right. Correspondence Solicited, and Visitors Welcome.

**G. A. BRODIE, Stoneville Stn., G. T. R. BETHESDA, ONT.**

**FITZGERALD BROS., Mt. St. Louis, F. O.** Offer for sale six Short-horn Bulls from 9 to 14 months old; also 2-year-old roan bull, St. Louis =24418-, a Morton-bred bull with exceptionally grand pedigree. Also a few females of all ages, bred to imp. bull, British Statesman (63728) =20835-, now at head of our herd. Hillsdale Telegraph Office; Elmvale Station, G. T. R.

## SHORTHORNS FOR SALE: 4 YOUNG BULLS

From 6 to 18 months old, sired by Ronald =25325- and Zacco =23597-. Good quality. Moderate prices. Estate of late JOHN VANNOSTRAND, Aurora Stn., G. T. R. -on Vanzorf, Ont.

This space for A. J. C. Shaw & Sons, Thamesville, Ont. Durham Cattle and Berkshire Pigs, both sexes, for sale. Write or come and see us. Breeding particulars next issue of ADVOCATE. -o

## ASHTON FRONTVIEW FARM

A. J. Watson, Castlederg, Ont. SHORTHORN BULLS, by Statesman, brother to Topman. Also, one BARON LEE BOAR, 15 months old, and one bear 8 months old. -o

SHORTHORN BULLS From 10 to 14 months old, also 4-year-old bull, Elvira's Saxon 21064. Breeding and quality first-class. **R. MITCHELL & SON, Burlington Station. -o Nelson, Ont.**

## FOR SALE!

Four Shorthorn bulls, three Berkshire boars, seven Southdown and Leicester rams; females all ages; and B. & W. Leghorns. Write or come and see. -o **E. JEFFS & SONS, Bondhead, Ont.**

## LARGE ENGLISH BERKSHIRES

The hog that the farmer and the packers want. Stock of all ages, both sexes. Write us. **MAC. CAMPBELL, NORTHWOOD, ONT.**

## CEDAR DALE FARM.

**Ayrshire Cattle & Shropshire Sheep.** One registered Ayrshire bull, "The Premier," fourteen months old; beautiful color and choice quality; sire, Burns 1819; dam, Briery Banks Morag 3466. Also two-shear Rams and six shearings, registered; sired by Hammers 632.

**J. HARRIS WOOLLEY, NORFOLK CO. SIMCOE, ONT.**

Patent Roller and Ball Bearing Galvanized Steel WINDMILLS, TOWERS, and FLAGSTAFFS "MAPLE LEAF" GRAIN GRINDERS. IRON AND SPRAY PUMPS. FANNING MILLS. Send for new Illustrated Catalogue.

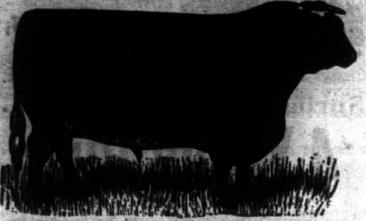
**SHAPLEY & MUIR CO. LIMITED**  
BRANTFORD CAN.

W. D. FLATT, HAMILTON P. O. and TELEGRAPH OFFICE.



OFFERS FOR SALE Twenty-two Shorthorn Bulls CHOICE from three to fifteen months old. Persons requiring show bulls can be supplied from this bunch. TWENTY COWS AND HEIFERS served by imported bull, Golden Fains -29356- Farm 6 miles from Hamilton. Catalogue sent on application. Visitors met at G. T. R. or C. P. R. if notified. Prices consistent with quality. Inspection invited.

ARTHUR JOHNSTON Greenwood P. O. and Telegraph Office,



OFFERS FOR SALE 15 SHORTHORN BULLS FIT FOR SERVICE; 3 IMPORTED. 25 COWS AND HEIFERS Including 9 recently imported heifers. Prices right. Catalogues on application. Claremont Station, C. P. R. Pickering Station, G. T. R. "NO BUSINESS, NO HARM."

SPRING GROVE STOCK FARM

Shorthorn Cattle and Lincoln Sheep. Herd prize and sweepstake at Toronto Industrial Exhibition, 1897 and 1898. Herd headed by Imported Blue Ribbon -17095- and the famous Money-tuff Laid -20521-. High-class Shorthorns of all ages for sale. Also prize-winning Lincolns. Apply on

T. E. ROBSON, Iderton, Ont. ROBERT MILLER, STOUFFVILLE, ONT., Importer and Breeder of

Shorthorns and Shropshires Offers young bulls and heifers, rams and ewes of the most approved breeding and finest quality, at moderate prices. Station, Telegraph, Telephone, Post Office, three minutes' walk.

Scotch Shorthorns For Sale: 90 HEAD TO SELECT FROM. We are offering four young bulls by Valkyrie, and a number of cows and heifers (including some show heifers) from such sires as Valkyrie -21806-, Young Abbottsburn's Heir -15947-, and imp. Mariner -2720-, served by imp. Diamond Jubilee (Vol. 15) now at the head of herd. Farm 1 mile north of town. T. DOUGLAS & SONS, Strathroy Station and P. O.

SCOTCH SHORTHORN BULLS AND HEIFERS HERD ESTABLISHED IN 1872. Such sires as imported Royal George and imported Warfare have put us where we are. A. & D. BROWN, ELGIN COUNTY, IONA, ONTARIO.

SPRINGBANK FARM. Shorthorn Cattle, Oxford Sheep, and Bronze Turkeys. Young bulls for sale. JAS. TOLTON, WALKERTON, ONT.

HAWTHORN HERD OF DEEP-MILKING SHORTHORNS. 3 heifers bred to Beau Ideal =22554-, of first-class quality and A 1 breeding. Wm. Grainger & Son, - Londesboro, Ont.

4 SHORTHORN BULLS FOR SALE FROM TEN TO FIFTEEN MONTHS OLD. J. & W. RUSSELL, Richmond Hill.



Old Houses Made New

A house is as good as it looks—to the buyer. Need of paint or poor painting will cheapen any house. Keep your buildings properly painted and you'll keep them new. Paint an old building properly and you'll make it years newer both in your eyes and those of a prospective buyer. Painting properly includes much. First of all—proper paint.

THE SHERWIN-WILLIAMS PAINTS

are composed of the materials that best withstand the action of all weathers—that best preserve the surface they cover. Ready to use, but not patent paints. Ground and mixed by special machinery with a nicety not possible by any other means. If you're going to paint or hire a painter, write for Paint Points and it will be mailed to you free. THE SHERWIN-WILLIAMS CO. PAINT AND COLOR MAKERS. Canadian Dept., 21 St. Antoine St., Montreal.



Save Money

And save time and waste and worry too, by using that permanent wall coating for the ceiling and walls of your rooms—Church's Cold Water Alabastine. Wall papers and kalsomines serve but a temporary purpose, while Alabastine (never sold in bulk) improves with age. It cannot decay. It will not rub off or scale and it is absolutely sanitary. There are 16 beautiful tints (and white). Painters everywhere are using it, but you can use it yourself with a little care, if you can't get at your own painter. Cold water and an ordinary brush is all you need with

Church's Alabastine for Walls

Free, to anyone who will mention this paper, a 45-page book, "The Decorator's Aid. It gives valuable information about wall and ceiling decorating. The Alabastine Co. (Limited), Paris, Ont.

W. G. PETTIT & SON, FREEMAN P. O., Burlington Junction Ont. Telegraph Office.

10 SHORTHORN BULLS 10 By Indian Statesman -23004-, from 10 to 20 months. Twelve young cows or heifers with calves by side or in calf. Twelve ram and 20 Shropshire ewe lambs, sired by (Imp.) Flashlight. Also, Berkshire boars and sows, all of which will be sold at moderate prices. Farm half mile from Burlington Junction, G. T. R.

4 - SHORTHORN BULLS - 4 SCOTCH BREEDING. Good growthy ones from 5 to 15 months. Also one coming 3 years. Would spare a few heifers. Prices very moderate. Write— SHORE BROS., White Oak, Ont.

SHORTHORN CATTLE AND LINCOLN SHEEP. Imp. Baron Blanc 11th at head of herd. Seven young bulls for sale—good ones. Also a few females. Stud rams all imported from H. Dudding, Esq.; the same blood as the 1000-guinea ram. J. T. GIBSON, DENFIELD, ONT

Maple Lodge Stock Farm SHORTHORNS.—Imported Knuckle Duster, and the great sire and show bull, Abbottsford, in service. Several choice heifers for sale, and a grand lot of young bulls by Calthness, from good milking dams. Some splendid Leicester ewes and rams for sale also. A. W. SMITH, MAPLE LODGE P. O., ONT.

Deschenes Jersey Herd. HEADED BY IDA'S RIOTER OF ST. LAMBERT 47570. 4 young bulls fit for service—registered. Also Tamworth swine from diploma herd, Canada Central Fair, Ottawa, 1898. R. & W. CONROY, DESCHENES MILLS, QUEBEC.

HIGH-CLASS JERSEY BULLS

Owing to his being related to most of my herd, I will sell the perfect show bull, Prince Frank's Son 48758; solid color; dropped Oct. 25th, 1896; winner of 1st prize at Western Fair, London, 1897 and 1898. Sire Prince Frank, three times winner of sweepstakes at London; dam Zola of Glen Rouge, a pure St. Lambert. Also Stoke Pogis of Ettrick 52307; solid color; dropped Feb. 8th, 1896; sire Pride of Alton, winner of 2nd prize at London, 1897; dam St. Lambert Jane's Rose, by Prince Frank—a capital young bull bred from rich-producing strains. I have also a promising bull calf 11 months old. Come and see or address W. G. LAIDLAW, Wilton Grove, Ont.

S. WICKS & SONS MOUNT DENNIS, ONT., Offer two Registered A. J. C. C. Jersey Yearling Bulls. These are grand youngsters; cheap if sold at once. We have also some fine Registered C. K. C. Collie Pups; also some fine young Registered Bitches. Manufacturers of the Skee Hot Water Incubator. Hatches 100 per cent. The best and most scientific incubator in the market. H. E. WILLIAMS, Sunnylea Farm, Knowlton, P. Q.

DON JERSEY HERD. Offering choiced young Bulls and Heifers by Costa Rica's Son. DAVID DUNCAN, DON, ONTARIO. Nine miles from Toronto Market.

ST. LAMBERT OF ARCFOST 36943 whose sire was 100 Per Cent.; dam, St. Lambert's Diana 69451. Official test, 18 lbs. 6 ozs. in seven days. A few choice young bulls and heifers rich in his blood, from deep and rich milking dams, for sale at moderate prices. Tuberculin tested. H. E. WILLIAMS, Sunnylea Farm, Knowlton, P. Q.

GLEN ROUGE JERSEYS. WILLIAM ROLPH, Markham, Ont., offers twelve Jersey Bulls and Heifers (pure St. Lamberts), out of tested cows. Grand individuals. Prices right. 22-y-om

Jersey Cattle

THAT WILL PUT MONEY IN YOUR POCKET. Mrs. E. M. Jones, Box 324. BROCKVILLE, ONT., CAN.

BRAMPTON JERSEY HERD. Offering high-class A. J. C. C. cows and heifers in calf, and heifer calves; 9 choice young bulls; High-grade cows in calf; and Berkshires. B. H. Bull & Son, om BRAMPTON.

INGLESIDE HEREFORDS. UP-TO-DATE HERD OF CANADA!

TAMWORTHS CHOICE PIGS SIX TO SEVEN WEEKS OLD. Send for Illustrated Catalogue. Address, H. D. SMITH, COMPTON, QUE.

F. W. STONE ESTATE, GUELPH, ONTARIO. The first Hereford herd established in Canada by importations in 1850 of the best prizewinners of England, followed by repeated further importations, including winners of first prize at Royal Agricultural Show. Choice young Hereford Bulls for sale. Also McDougall's Sheep Dip and Cattle Wash, fresh imported, non-poisonous and reliable; thoroughly tested by over forty years' use on farms of above estate.

MAPLE HILL HOLSTEIN-FRIESIANS I offer for sale MADGE MERTON 5th, sire Colanthus Abekerk 2nd, dam Madge Merton (nine months old); INKA 5th's MERCEDES, sire my champion show bull Count Mink Mercedes, dam the Advanced Registry cow Inka 5th, record 18 1/2 lbs. butter in a week (one month old). Remember my herd won championship gold medals in 1897 and 1898. G. W. CLEMONS, ST. GEORGE, ONT.

HOLSTEIN BULLS that we think you will want when you know their breeding, and the large OFFICIAL milk and butter records of their nearest ancestors. Six of them are sired by a son of our great cow, Korndyke Queen, others by sons of De Kol 2nd, and some by Manor De Kol. Heifers and young cows of equal breeding. It's better to buy the best. We furnish papers to pass them through without duty or detention. There is no quarantine. Write for just what you want. Henry Stevens & Sons, Lacona, N. Y.

FOR IMMEDIATE SALE. 6 CHOICE HOLSTEIN BULLS 9 to 14 months old. Just imported. Personally selected. Bred by Chapman & Horr Bros., Ohio; sired by the richly-bred bull, Pauline Paul's Grandson Clothide. Dams are great producers in this fine herd. Write for particulars at once. A. & G. RICE, Currie's Crossing, Ont.

HOLSTEIN-FRIESIAN BULLS of the very richest milk and butter breeding, from 3 to 11 months old, for sale. Also, Eggs for hatching from a grand pen of B. P. Rocks at \$1.00 per 15; from Rouen Ducks at \$1 per 11. Satisfaction guaranteed. H. HOLLERT, CASSEL, ONT.

4 HOLSTEIN-FRIESIAN BULLS from 9 to 12 months old, of choice breeding. Apply to William Suhrin, Sebringville, Ont. MAPLE CLIFF Dairy and Stock Farm.

AYRSHIRES Three young bulls fit for service, and bull calves. BERKSHIRES, TAMWORTHS, Booking orders for spring litters. R. REID & CO., HINTONBURG, ONT. Five minutes' walk from Cen. Expl. Farm, Ottawa.

AYRSHIRES FOR SALE. The kind that can speak for themselves. Size, constitution, dairy and show combined. Six young bulls for sale, by Glencairn 3rd (imp.), dam Primrose (imp.). Five from Napoleon of Auchenbrain (imp.). Their dams are all Glencairn heifers. Five of their dams were shown last fall at Toronto, London, and Ottawa. Also a few good cows. No culls sold. JAMES BODEN, TREDINNOCK FARM, om STE. ANNE DE BELLEVUE, QUE.

Six-Young Ayrshire Bulls-Six FOR SALE! From eight to ten months old; all imported in dam, and all from good herds. Will sell them right. Address ROBT. HUNTER, Manager to W. W. Ogilvie. LACHINE RAPIDS, QUE.

FOR SALE: A NUMBER OF Choice Ayrshire Bulls

Fit for service; also a few heifers. And eggs for hatching from choice matings in Barred Rocks, Black Spanish, and Black Minorcas at \$2.00 per 13. Cayuga and Rouen Ducks at \$1.50 per 11. Have still a few fine Rock cockerels left.

JAS. McCORMACK & SONS, ROCKTON, ONTARIO.

CHOICE AYRSHIRE BULLS

Four calves dropped in August, October, December and March, and sired by Craigieles of Anchenbrain (imp.), first prize bull at Toronto in 1897 (the only time ever shown).

W. W. BALLANTYNE, Formerly Thos. Ballantyne & Son, Stratford, Ont. "NEIDPATH FARM," adjoins city, main line G.T.R.

MEADOWSIDE FARM, J. YULL & SONS, Props., Carleton Place.

Breeders of high-class, deep-milking Ayrshires, Sweepstakes young herd at Ottawa. Shropshire sheep from prizewinning stock. Berkshire pigs and Barred Plymouth Rocks. Young stock for sale. Visitors met at Queen's Hotel. Give us a call.

AYRSHIRE BULL FOR SALE. PIGS

Bull 10 mos. old; sire Neidpath Chief—2142—; dam Conney—2683—, by Castle Douglas (imp.)—1126—. Pigs, pure-bred, 6 mos. old, either sex.

2 - Choice Young Ayrshire Bulls - 2

Descended from the noted heavy-milking Orange Blossom family, so successful with my late father.

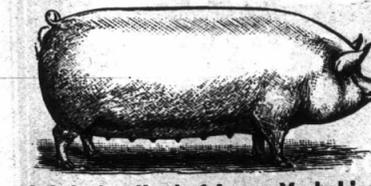
AYRSHIRES!

Three bull calves for sale, three to six months old; sired by Royal Monarch 1941, and from AI cows. Prices right.

AYRSHIRE CATTLE.

KAINS BROS., Byron, Ont. (R. R. London), are offering a number of grand young bulls, prizewinners; also a few choice females. Prices right.

HIGHEST TYPE OF BACON HOGS.



Oak Lodge Herd of Large Yorkshires

The largest herd of pure-bred Yorkshires in America. This herd has won the best prizes offered for the breed during the last ten years.

SPRING OFFERING Yorkshires and Berkshires

A fine lot of boars and sows eight weeks old. Pairs and trios supplied, not akin, of the best breeding and individual merit.

PINE GROVE FARM HERD OF LARGE YORKSHIRES.

Imported and Canadian-bred, from the Hackett family, which has taken more prizes at the leading fairs in Canada and the World's Fair at Chicago than any other family of Yorkshires in America.

AT SUMMER HILL IS THE LARGEST HERD OF... Imported Yorkshires IN THE DOMINION.



Large, Lengthy, English Type. Among them being the first choice of the most important prize-winning English herds. My Canadian-bred herd comprises the choicest individuals, selected from the best herds in the country, and is headed by the undefeated prize-winning boar, Look-Me-Over 2612.

WE ARE OFFERING FOR SALE 8 HIGH-CLASS YOUNG IMPORTED SHORTHORN BULLS

OF THE BEST SCOTCH BREEDING, TOGETHER WITH A FEW Home-bred Bulls AND A NUMBER OF Cows and Heifers



H. CARGILL & SON, CARGILL, ONTARIO.

Cargill Station and Post Office on G. T. R., within half mile of barns.

W. C. Edwards AND COMPANY. IMPORTERS AND BREEDERS

Ayrshires, Jerseys, Shropshires, Berkshires.

Our excellent aged herd of Ayrshires is headed by our noted imported bull Cyclone. Tam Glen heads the young herd, and Liggar Pogos of St. Anne's heads the Jerseys.

Pure-bred Ayrshire Imported Cattle.

LARGEST AND MOST EXPENSIVE IMPORTATION IN AMERICA. Bred for the dairy, with grand constitution, and champion prize records awarded them in Scotland and England.



GUERNSEYS. CHESTER WHITES. DUROC-JERSEYS, TAMWORTHS.

The ideal bacon hog; two boars fit for service; 10 sows (bred); some prizewinners included. Write WM. BUTLER & SONS, DEREHAM CENTRE, ONT.

MARYSVILLE HERD OF IMPROVED YORKSHIRES AND BERKSHIRES

Have no more for sale at present. Will book orders for spring pigs from the same stock as I breed my winners from.

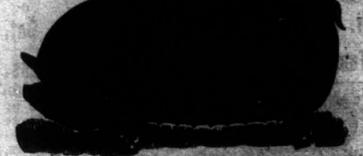
Thorncroft Herd of Improved Yorkshires

Choice pigs, February and March litters. One extra good boar eleven months old. All bred from Featherston and Brethourstock.

SNELGROVE BERKSHIRES AND COTSWOLDS

High-class Berkshires of the large English bacon type, bred from the best specimens of the best importations. Young Boars and Sows of breeding age for sale.

LARGE ENGLISH BERKSHIRES.



Herd headed by four first prize stock boars of large size, strong bone and fine quality. Young Boars and Sows, all ages, for sale.

LARGE ENGLISH BERKSHIRES

For a choice pig of any age, bred from imported stock, right in quality, right in price, and guaranteed to be as represented, write W. J. SHIBLEY, Harrowsmith, Ont.

JAS. DORRANCE, SEAFORTH, ONTARIO.

Shorthorn Cattle and Berkshire Pigs

All ages, from prizewinners of the very best quality. Royal King 5215 at the head of the herd. Write for prices.

OXFORD HERD OF POLAND-CHINAS

The home winners of the Healed by the imported boars, Conrad's Model and Klondike, assisted by Bacon Boy and Lennox. Has won 64 out of a possible 69 first prizes.

POLAND-CHINA BOARS

A few choice sows three months and under. Black Wilkes (imp.) and Jack Sanders head of herd. A few choice Black Minorca cockerels cheap.

E. D. GEORGE, PUTNAM, ONT.

Ohio Improved Chester White Swine.

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

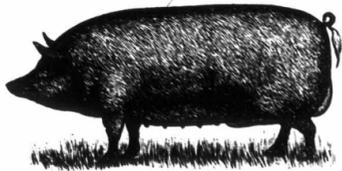
IF YOU WANT Chester Whites Write me for particulars.

BORNHOLM HERD IMP. CHESTER WHITES.

CHESTER WHITE SWINE.

TAMWORTHS

My stock was founded on Hallman & George bred females, with Spruce Grove Model 405 at the head. Young boars and sows now ready for shipment, and other sows to farrow.



**Tamworth and Imp. Chester White Boars.**  
Fit for spring service. Also, a choice lot of fall sows and sows due to farrow in March and April. Am booking orders for spring pigs from the sweepstake herd of the leading exhibitions of Ontario and Quebec in 1897. We pay express charges to your station, and guarantee safe arrival of all stock shipped. Pairs furnished not akin. Drop a card before buying elsewhere.

H. GEORGE & SONS, Crampton P.O., Ont.

**Tamworths, Holsteins, and Barred Rocks.**



Tamworth (January, 1896) farrow (choice), sired by (Royal winner) Whitacre Crystal (Imp.). Also, booking orders for spring litters, sired by imported boars. One ten months' sow, in farrow. Breeding and quality of stock unequalled. Barred Rock settings.

A. C. HALLMAN, NEW DUNDEE, ONT.

**TAMWORTH, YORKSHIRES, BERKSHIRES.**



For Sale—Three Tamworth Boars, one Sow, ten weeks old, \$7.00 each; Tamworth Pigs from six to eight weeks old, \$5.00 each; Yorkshires, same age and price; two Berkshire Boars and four Sows, four months old, at \$8.00 each. All Pigs registered and crated. COLWILL BROS., Newcastle, Ont.

HELLO!! HELLO THERE!!!

What would you like to get in Victoria Hogs at present. Let me know at once; also write for my new catalogue.

CHRIS. FAHNER, CREDITON, ONT., CANADA.

**Chatham HERD OF Tamworths**



One 12-mos.-old boar, 8 sows 5 mos., 6 sows 4 mos., 2 boars 4 mos. 30 boars and sows, 10 weeks—registered—express prepaid in Ontario—for \$7 each; also 30, six weeks, \$6 each, prepaid and registered in Ontario.

J. H. SIMONTON, Box 304, Chatham.

**18-Tamworth Brood Sows-18 FOR SALE.**

From George and Laurie stock, and in pig to a George-bred boar. Also a few beautiful St. Lambert Jersey heifers.

W. D. REESOR,

MARKHAM, ONT.

**CHOICE SPRING PIGS**



In pairs, not akin; also young sows bred and ready to breed. Prices right and freight paid.

JOHN FULTON, Jr. Brownsville, Ontario.

**TAMWORTH AND POULTRY FOR SALE**

Pigs of all ages; also eggs from Barred Rocks, White Rocks, Silver Wyandottes, Black Minorcas, Black Spanish, Partridge Cochins, Red Caps, Leghorns, Hamburgs, Pekin and Rouen Ducks, at \$1.00 per setting.

R. J. & A. LAURIE, WOLVERTON, ONT.

**STRATFORD BROS., BRANTFORD.**

Tamworth boars, Dorset rams, Shetland ponies, Light Brahmas, Houdans, Cornish Indian Game, Black Langshans, White Langshans, White Plymouth Rock, Buff Plymouth Rock, Barred Plymouth Rock. Prices right.

**DUROC - JERSEY SWINE**

We have an excellent lot of long, strong, hardy young Duroc-Jersey pigs now on hand. Also a few choice young boars ready for service. We have also a choice flock of White Minorca Chickens. Eggs, \$1 per dozen. Address,

TAPE BROS., Ridgetown, Ont.

Importation of **SHROPSHIRE** .. NEXT JULY. ..

ORDERS TAKEN TO IMPORT OTHER BREEDS.

Barred Plymouth Rock Eggs, \$1.00 for 13, or \$1.75 for 26. Only cock second at Guelph Show. Selected hens.

JOHN CAMPBELL, on "Fairview Farm," Woodville, Ont.

**SMITH EVANS, GOUROCK, ONT.**

Breeder and importer of registered Oxford Down Sheep. Selections from some of the best flocks in England. Stock for sale at reasonable prices. Inspection invited.



# TESTED SEED CORNS.

**FARMERS!** Is there any fun in plowing, harrowing, rolling and planting your land to corn that won't grow? Or, if it does grow, and you spend a hard summer's work on it, have it killed by an early frost? No, there is no fun about either one, but, on the contrary, it is humiliation and financial disaster. You should avoid being caught either way. Remember this: When you buy seed corn of us you get seed that has been THOROUGHLY TESTED as to germination, and you take no chance whatever on it not growing. When you can get tested seed at a cost of 25c. per acre, what more do you want? Farmers, don't fool yourselves out of a crop by planting seed that has lain out in the field after the snow came, as it will be damaged and not fit for seed at all. Take no chances, but send to us direct and get seed THAT WILL GROW.

**Iowa Silver Mine, Dent.** The only early white dent corn grown. First-class fodder, 7 to 8 feet high; ears 10 to 12 inches in length, 18 to 20 rowed. Will ripen in from 95 to 100 days. A first-class variety. Peck, 50c.; bush., \$1.50.

**Clark's Early Mastodon, Yellow Dent.** One of the best varieties for ensilage. A strong grower. Immense straw and ear, but unless in the best corn sections of Ontario it will not ripen. Peck, 25c.; bush., 90c.

**White Cap, Yellow Dent.** A strong, rank grower, and for shallow clay or sandy land one of the best varieties to grow. Stalks 7 to 8 feet high and a good yielder. Ripens in from 100 to 110 days. Peck, 25c.; bush., 90c.

**Genuine Mammoth Southern Sweet.** For fodder and silo purposes only. Grows immense fodder, which is sweet and rich, syrup having been made from it; of the best germinating quality. Will grow more tons of fodder to the acre than any other known variety. Bush., 70c. sacks, 2 1/2 bush., \$1.65. Sacks free.

**Longfellow, Flint.** Stalks 8 to 10 feet; ears 10 to 12 inches; 8-rowed, broad kernel; will ripen in about 100 days. Peck, 25c.; bush., 90c.

**Star Leaming, Yellow Dent.** A great improvement on the old Leaming, and one of the best for ensilage purposes. Peck, 30c.; bush., \$1.00.

**Evergreen Sugar Corn.** (For green fodder.) Very leafy, succulent and sweet, and said to be better for fodder than any other variety grown. Peck, 40c.; bush., \$1.50.

**Early Butler, Yellow Dent.** Early, immense yielder; 70 lbs. of ears will shell over 64 lbs. shelled corn. One of the best. Peck, 25c.; bush., 90c.

**Iowa Gold Mine.** Grain very deep; cob small; an immense yielder, 70 pounds of ears make 60 to 62 pounds of shelled corn. Peck, 25c.; bush., 90c.

**Cuban White Giant, Dent.** For ensilage purposes. It yields fodder in great quantity and of finest flavor. Peck, 25c.; bush., 90c.

**Mammoth 8-Rowed Yellow, Flint.** As a corn for shelling there is none to beat this. Long ears, 12 to 15 inches, with very small cob, and stalks 8 to 10 feet high. We recommend this variety as the best flint corn grown. Peck, 40c.; bush., \$1.25.

**100-Day, or Angel of Midnight.** The earliest yellow flint corn in cultivation; broad kernel, long cob, 8-rowed; a sure cropper. Peck, 25c.; bush., 90c.

**Cloud's Early Yellow, Dent.** Grows a good height; taller and better than the Rural Thoroughbred. Peck, 25c.; bush., 90c.

CASH WITH ORDERS. DON'T FORGET TO REMIT FOR BAGS: JUTE, 8c.; COTTON, 15c.

**JOHN S. PEARCE & Co., LONDON, ONTARIO.**  
"SEEDSMEN TO THE CANADIAN PEOPLE."

EUROPEAN ADVERTISEMENTS.

**J. E. CASSWELL,** Laughton, Folkingham, Lincolnshire.  
breeder of Lincoln Long-wooled Sheep, Flock No. 46. The flock was in the possession of the present owner's great-grandfather in 1785, and has descended direct from father to son without a single dispersion sale. J. E. Casswell made the highest average for 20 rams, at the "Annual Lincoln Ram Sale," 1895 and 1897. The 1896 rams were all sold for exportation. Ram and ewe hoggs and shearlings for sale, also Shire horses, Shorthorns, and Dark Dorking fowls. Telegrams: "Casswell, Folkingham, Eng." Station: Billingham, G. N. R.

**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.

**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., Secretaries of the Shropshire Sheep-Breeders' Association, Shrewsbury, England.

**BARRED PLYMOUTH ROCKS (EXCLUSIVELY) BRED FOR UTILITY.**

Eggs for hatching from large, vigorous, well-bred stock of good laying qualities, \$1 per 15; incubator lots, \$4 per 100. From choice breeding pen, mated and scored by I. K. Felch—cockerel 921, and females 90 to 93—\$3 per 15, or \$5 per 39. Mated to produce prizewinners. All birds have free range, and fertile eggs guaranteed. Customers liberally dealt with, and eggs carefully packed. After 1st June two fine yearling cocks for sale. Also some good breeding hens. (MISS) P. J. COLDWELL, Constance, Huron Co., Ont.

**DO YOU WANT EGGS From the Best Strains Procurable?**

If so, try us for B. and W. Cochins, L. Brahmas, Black Spanish, Langshans, Minorcas, and Javas. Buff Leghorns, S. L. Wyandottes, Red Caps, \$1.50 per 13. Barred Rocks (try our Rocks, they will please you), W. & B. Leghorns, and Pekin Ducks, \$1 per setting. Won 300 prizes last season. Satisfaction guaranteed. J. C. LYONS, Lucknow, Ont.

**BARRED PLYMOUTH ROCK EGGS \$1.00 per 15, from fine exhibition matings—Shoemaker-Leffel strains H. GEE & SONS, Haldimand Co., FISHERVILLE, ONT.**

**\$1.00 per Setting.** Eggs from the "Ontario" prizewinning Golden and Silver Wyandottes, Barred and White P. Rocks, and Pekin Ducks. A few Bronze Turkey Eggs at 25c. each. JAMES LENTON, Park Farm, Oshawa.

**EGGS FOR HATCHING** From Bronze Turkey Ducks, B. P. Rocks, Andalusians, Black Javas, Houdans, B. Leghorns, and Black Spanish. Turkey eggs, 25c. each; others, \$1.50 per setting. W. R. KNIGHT, Bowmanville, Ont.

...THE...  
**MACHINES**  
...THAT MADE...  
**AMERICA FAMOUS.**

**DEERING BINDER TWINE.**  
"New Twine from New Mills."

DEERING BINDER TWINE is the best. It is made in the largest and finest mills in the world. The machinery is of the newest pattern, and the operatives are the most skilled. Deering twine is "smooth and strong, even and long."

SEND FOR TWINE BOOKLET, IT'S FREE.

**Deering Harvester Co.,**

Main Office and Factory:

Permanent Branch House:

CHICAGO, U. S. A.

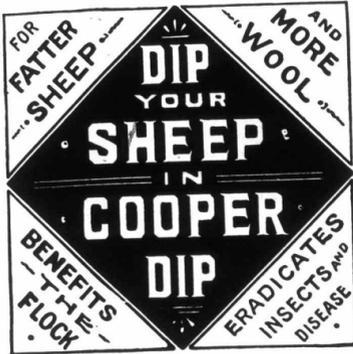
LONDON, ONT.

**THE GLOBE FURNITURE COMPANY, LIMITED.** WALKERVILLE, ONTARIO.  
CHURCH DESKS, PULPITS, ANVARS, BANS, SCHOOL DESKS, ETC.  
WRITE FOR PRICES

**BIG MONEY FOR AGENTS THE RIVETER**  
For MENDING HARNESS, BELTING, etc. Indispensable to Farmers, Livery men and Threshermen. **STAR RIVETER** complete, with 50 (number) rivets \$1.00 Best selling article ever introduced. Agents write for special prices and territory.  
ENTERPRISE MAN'G CO., TORONTO, ONT.



To Farmers, Stock Dealers and Wool Growers:  
**For Sheep, Cattle and Horses.**  
**Leicestershire Tick and Vermin Destroyer**  
 It effectually destroys Ticks, Lice, Worms or Grub, to which sheep, horses and cattle are subject, and enables the animals to thrive. It will be found far superior to other preparations used for the similar purpose. The proprietors will guarantee perfect success when used according to directions, as will be found on each box. It prevents scurf and scab, and renders the wool bright and clear. It is put up in tin boxes, price 30 cents each. One box is sufficient for twenty ordinary-sized sheep. It only requires to be tried to prove itself all that is claimed for it. Sold by druggists and grocers. Manufactured by G. C. BRIGGS & SON, 31 King Street West, Hamilton, Ont.



Used and endorsed by Hon. John Dryden, Minister of Agriculture, Toronto, Ont., and leading breeders everywhere.  
**SUPERIOR TO ALL LIQUID DIPS.**  
 Twenty-five gallon packet, 50c.; one hundred gallon packet, \$2.00. If druggist cannot supply, send \$1.75 for one hundred gallon packet to

**EVANS & SONS,**  
**MONTREAL OR TORONTO.**  
 Book premiums on application to COOPER DIP, Galveston, Texas.



**THE ORIGINAL**  
**Non-Poisonous Fluid Dip**

Still the favorite dip, as proved by the testimony of our Minister of Agriculture and other large stockmen.  
**FOR SHEEP:**  
 Kills ticks, maggots; cures scab, heals old sores, wounds, etc.; and greatly increases and improves growth of wool.  
**CATTLE, HORSES, PIGS, ETC.:**  
 Cleanses the skin from all insects, and makes the coat beautifully soft and glossy. Prevents the attack of warble fly. Heals saddle galls, sore shoulders, ulcers, etc. Keeps animals free from infection.  
**NO DANGER!**  
**SAFE, CHEAP, EFFECTIVE.**  
**BEWARE OF IMITATIONS.**  
 Sold in large tins from 25 to 40 gallons of strength required. Special terms to breeders, ranchmen, and others requiring large quantities. Sold by all druggists. Send for pamphlet.

**ROBERT WIGHTMAN,**  
**DRUGGIST, OWEN SOUND, ONT.**  
 Sole agent for the Dominion.

**Splendid Prizes!**

The most interesting prize system ever offered. Every reader should learn about it. Write for full particulars to the most valuable and entertaining paper of its class in America. Address,  
**TURF, FIELD AND FARM,**  
 41 PARK ROW, NEW YORK.

**Persiatric**  
**Plant**  
**Spray**

The most effective and highly-concentrated spray in the market. Has successfully coped with the dreaded San José Scale, and readily destroys all orchard and garden pests, such as grubs, worms, brown-rot, curled-leaf, pear blight, apple scab, and all forms of animal life or fungi. Persiatric Plant Spray has been tried and proved by leading nurserymen and farmers all over Canada. It does its work thoroughly and effectively, and gives unqualified satisfaction. If your dealer cannot supply you, write us direct. We invite correspondence.

**Kills**  
**San Jose**  
**Scale.**

**THE PICKHARDT-RENFREW CO., LIMITED, STOUFFVILLE, ONT.**

**TEST OF**  
**Alpha De Laval and Reid's Improved Danish Cream Separators**  
 Made at Nilestown Factory of Thames Dairy Co

Date, 1899.	Machine	Amount skimmed per hour	Speed revolutions per minute.	Butter-fat left in skim milk at following temperatures.				Lbs. Milk per Lb. Butter.
				80	85	90	95	
January 25	Alpha	2800	6000	.05	.02	.01	.01	21.10
January 27	Reid's	2800	6200	.15	.14	.12	.10	22.45
January 30	Alpha	2600	6000	.05	.03	.02		
January 30	Reid's	2600	6200	.15	.10	.08		

On January 25 Buttermilk from Cream of Alpha churned at 50 tested .05 (no water added).  
 January 26th Buttermilk from Cream of Reid's Improved Danish churned at 48 tested .10 (no water added).  
 Mr. Richardson, St. Mary's, and Mr. John Brodie, Mapleton, were present when testing Reid's Improved Danish, January 27th.

On January 30th both Separators were running at the same time, and the skim milk from the Reid's was put through the Alpha. There were 3,700 lbs. of milk received, and after it had been skimmed by Reid's Improved at a temperature of 90 degrees the Alpha skimmed 303 lbs. of Cream from the skim milk which tested 8/10 of 1 per cent. The Cream from each Separator was ripened by the use of a pasteurized starter, and contained .65% of acid at the time of churning when tested by Farrington's Alkaline Tablets.  
 (Signed) **T. B. MILLER,**  
 Manager Thames Dairy Co.

**SCABBY SHEEP.**  
**\$5000 REWARD**

To any party who can produce a scabby sheep which the Lincoln Dip will not cure. Write for particulars.  
 Lincoln Sheep Dip Co.,  
 855 Elliott St. Bldg. Buffalo, N. Y.  
 Canadian Office: WEST CHEMICAL COMPANY,  
 15 Queen Street East, Toronto

**GOITRE CAN POSITIVELY BE CURED**  
 By applying **SICCANTA** externally.  
 This is beyond the experimental stage. We can furnish unsolicited testimonials from our patients, and guarantee satisfaction. \$1.00 a bottle by mail, with full directions.  
**RUSSEL C. TEFFT, MARKHAM, ONT.**

**SHEEP, CATTLE, CALF, HOG,**  
**LABELS AND EAR PUNCHES.**

Patent Grain Truck and Bagger. Send for circular and prices to  
**R. W. JAMES, Bowmanville, Ont.**

**American Standard Corn and Bean Planter.**  
**PRICE, \$2.00 WITH ORDER.**

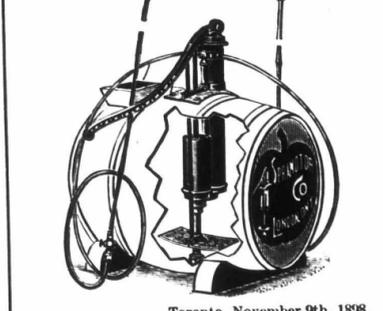
It is the only Planter containing an Adjustable Dropping Disc.  
 Upon examination you will find it accurate, light, easy to handle, and the best made Planter ever offered for sale.

**B. D. STEACY, Importer, BROCKVILLE, ONT.**  
 SOLE AGENT FOR CANADA.

**SHEEP MEN**  
 Don't You Know that ticks are hard to kill. Then why use dips and washes which only do for the time being?  
**Miller's Tick Destroyer**  
 IS A PREPARATION WITH NEARLY 30 YEARS' REPUTATION.  
**KILLS TICKS, EGGS AND ALL**  
 Also cures SCAB and improves the wool.  
**HUGH MILLER & CO.,**  
**Manufacturing Chemists,**  
 167 KING ST., EAST,  
 TORONTO, ONT.

**ALL SPRAYING, DISINFECTING AND WHITEWASHING CAN BE DONE WITH THE**  
**SPRAMOTOR**

It is the result of most careful and exhaustive experiment. Each feature was thoroughly tested before being placed on the market.



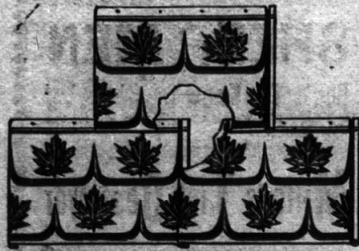
Toronto, November 9th, 1898.  
 Spramotor Co., London, Ont.:  
 Gentlemen,—The machines for spraying and whitewashing you have supplied to Dentonia Park Farm have done their work well, and are quite satisfactory. I could not have believed there was so much value in spraying fruit trees. We had a good crop of apples, whereas our neighbors who used no spraying machine had practically none.  
 Yours truly,  
**W. E. H. MASSEY.**

**CERTIFICATE OF OFFICIAL AWARD.**  
 This is to certify that at the Contest of Spraying Apparatus, held at Grimby on April 2nd and 3rd, 1896, under the auspices of the Board of Control of the Fruit Experimental Stations of Ontario, in which there were eleven contestants, the SPRAMOTOR, made by the Spramotor Co. of London, Ont., was AWARDED FIRST PLACE.  
**H. L. HUTT, } Judges.**  
**M. PETTIT, }**

If you desire any further information, let us know and we will send you a 72-page copyrighted catalogue and treatise on the diseases affecting fruit trees, vegetables, etc., and their remedies.  
**SPRAMOTOR CO.,**  
 357 RICHMOND ST., LONDON, ONT.  
 Mention this paper. AGENTS WANTED.



**The Wall Paper King**  
 OF CANADA.  
**C. B. SCANTLEBURY,**  
 Belleville, Kingston, Winnipeg.  
 Sample books of Choice Wall Paper for Residences, Churches, Offices, Lodge Rooms, Public Halls, Hotels, Stores, and our booklet, "How to Paper," sent free to any address. Write a postal. Mention what prices you expect to pay, the rooms you wish to paper, and where you saw this advertisement. We pay express charges. Mail Order Department at Belleville, Ont. Address all communications there.  
 It pays to get the best. We have them in L. and D. Brahmas, B. and W. Rocks, W. Wyandottes, Black Minorcas, and Indian Game, at \$1.25 per setting.  
**JACOB E. SNIDER, German Mills.**  
**PLEASE MENTION FARMER'S ADVOCATE.**



**IF PEOPLE ONLY KNEW**

the advantages of using metal roofing constructed on our patent "SAFE-LOCK" principles they would not accept a substitute.

**OUR "SAFE-LOCK" SHINGLES**

interlock each other on all four sides, leaving no openings for snow or rain to get in. They are easily put on by anyone, are practically fire and lightning proof, and give a building a neat, finished appearance. We can tell you more. Ask for free catalogue and samples.

**THE METAL SHINGLE AND SIDING CO., LIMITED.**  
PRESTON, ONTARIO.

**STEEL SIDING**

STONE, BRICK, CLAPBOARD, CORRUGATED, ETC.

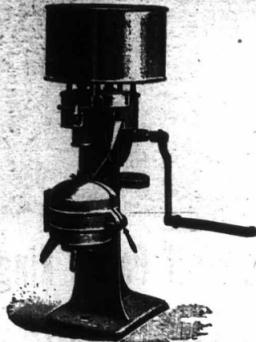


For Stores, Houses, Halls, Barns, Sheds, Churches. Entirely water, wind, storm and fire proof. Will last years and always look well. Cheaper than matched lumber. Shipped from factory all ready to apply. Sold by leading dealers, or write direct stating requirements.

**Pedlar Metal Roofing Co.**  
OSHAWA, CANADA.

**Alexandra Melotte**

TRY THEM



TRY THEM

**CREAM SEPARATORS**

FOR PARTICULARS, APPLY TO

**R. A. LISTER & CO. LIMITED.**  
579 to 581 St. Paul Street,  
MONTREAL, - QUEBEC.

IT PAYS TO ADVERTISE IN THE **FARMER'S ADVOCATE**

**GOSSIP.**

In writing to advertisers, mention the "Farmer's Advocate."

Mr. Alfred Mansell, of Shrewsbury, Eng., writes:—"I shall be glad if you will announce in your next issue that I expect to reach Canada at an early date, and that I hope to visit Hon. John Dryden, Mr. R. Gibson, Mr. R. Miller, Mr. J. Campbell, Messrs. Edwards & Son, and several other sheep and cattle breeders."

H. Gee & Sons, Fisherville, Ont., write:—"The Barred Plymouth Rock hens we offer eggs from are bred direct from Shoemaker's and are mated with cockerels direct from G. M. Leffel, Springfield, Ohio. Our stock is up-to-date in color and marking and prolific layers. Our young stock shows better this year than ever before."

R. Reid & Co., Hintonburg, Ont., breeders of Ayrshire cattle and Berkshire and Tamworth swine, write:—"Our stock has wintered well. Sales have been very good, as we are nearly sold out of young bulls, only having two calves left, one eleven months old and the other eight months. We have a fine lot of young pigs, nearly a hundred, which we are selling at reasonable prices."

Mr. H. Smith, Hay, Ont., has recently sold from his Springhurst herd the following Short-horns: To Capt. T. E. Robson, Ilderton, the 4-year-old cow Rosy Strathallan and her 6-month heifer calf by Abbotsford; to David Smith, Glanford, two yearling heifers by Abbotsford; the yearling bull, Village King, to James Glen, Lumley, and Village Prince to Wm. Forest, near Bluevale; also a few other young bulls to ranch companies in the N.-W. T. and B. C.

**LAST CALL FOR THE FOREST SALE OF JERSEYS.**

May 24th is the date of the dispersion sale of the fine herd of Jerseys owned by Mr. H. Fraleigh, at Forest, Ontario, on the main line of the G. T. R., 25 miles east of Saranac. There will be single fares on all the railways on that day, which will minimize the expense of attending the sale, and it will be a pleasant outing for those who avail themselves of it. It is very rarely that dairy cattle of such excellent breeding and individuality are offered at public sale. A look through the catalogue shows a magnificent list of high records in butter production, as one might reasonably expect from the judicious combination of the blood of the best of the St. Lambert and the best of the Tennessee families, through such eminent bulls as imp. Tormentor, Lord Harry, Landseer and Toltec, and such brilliant cows as Eurotas, 22 lbs. 7 oz.; Little Goldie, 31 lbs. 3 1/2 oz.; Alteration, 24 lbs. 4 oz.; Onan, 22 lbs. 2 1/2 oz.; Landseer's Fancy, 29 lbs. 4 oz.; Hisson's Belle, 102 lbs. 16 oz. in a year, and Sigmal's Lilly Flagg, 1,047 lbs. in a year. A better opportunity for securing animals of this high-class character has not been offered in this country, and probably will not again for years.

**NOTICES.**

**Missouri Horticultural Society.**—The 41st Annual Report of the above society has been issued by the Secretary, L. A. Goodman, Westport, Mo. It consists largely of the reports of the society's summer meeting held on June 7, 8 and 9, and winter meeting held Dec. 6, 7 and 8, 1898. The field covered is comprehensive and well worked over. The volume of 416 pages is a useful handbook to fruit-growers.

**Ayrshire Year Book.**—The 1899 Year Book of the American Ayrshire Breeders is an interesting volume to the breeders and fanciers of Ayrshire cattle in any country. It is liberally illustrated with representations of business-looking cows and bulls. The book contains Proceedings of the 24th Annual Meeting of the Association, held in New York in Feb., 1899, as well as many useful papers besides, a list of members, scale of Ayrshire points, etc. The Secretary of the Association is Chas. M. Winslow, Brandon, Vt.

**Caustic Balsam a Safe and Effective Blister.**—The Lawrence-Williams Co. write:—"We notice in your veterinary columns you advise the use of iodine and camphor for blistering. Now, while we know that it is not customary for veterinarians to recommend remedies of our kind, we do want to say to you that there is nothing that you could recommend with so much satisfaction to your readers as Caustic Balsam, wherever a counter-irritant or blister is required. It is absolutely safe for any one to use and reliable as well, and we sincerely believe you would be doing your readers a favor by recommending the use of Caustic Balsam."

**Important Notice to Manufacturers and Farmers.**—In our advertising columns appears an advertisement of a new and very effective machine for surface-draining land, the letters patent of which for Canada and the United States are offered for sale. The invention is one quite beyond the experimental stage, and its effectiveness on land to prevent winter-killing of fall wheat and clover by the united action of frost and water has been amply demonstrated on Mr. Edmonds' farm, at Woodburn, Ont., fourteen miles south-east of Hamilton. Mr. Edmonds invites farmers and manufacturers to visit his farm at an early date in order to see the beneficial results of using the "shaper" and his new system of draining. Mr. Edmonds also invites correspondence regarding his invention. In our farm department of this issue we refer to Mr. Edmonds' surface-drainage system and its benefits as indicated by the condition of his wheat and clover, as seen by us on a recent visit.



**ROCK SALT** for horses and cattle. Per 100 lbs., 70c., or 500 lbs., \$3.00, Toronto. Cash with the order. Also in car lots. **TORONTO SALT WORKS, Toronto.**

**Eastlake Shingles**

**GALVANIZED OR PAINTED.**

Fit together perfectly by means of our patent side lock, and give absolute, durable protection from all conditions of weather.

They are now, as they always have been, the most reliable and satisfactory shingle to be had. No changes are made in their construction, because no chance for improvement can be found.

**They're Quicker Laid than any other shingles; and fire, lightning and rust proof.**

Write us for further information.

**THE METALLIC ROOFING CO'Y**

1185 King St. W., TORONTO.

(LIMITED).

**"The Scientific Compounds for Stock and Poultry."**

Formulated by a Physician and Veterinary Surgeon.



**DR. HESS' STOCK FOOD**

For Horses, Cattle, Hogs, and Sheep; an appetizer, a flesh producer, a blood purifier and tonic. It expels worms.

**DR. HESS' POULTRY PAN-A-GEA**

Cures Diseases and Makes Hens Lay.

Its wonderful effects are at once shown when fed to young fowls, preventing or curing gapes, indigestion, diarrhoea or other bowel disorders; promoting a healthy, vigorous growth of muscle, bone and feathers. Use it and the ills of poultry-raising will rapidly disappear.

**INSTANT LOUSE KILLER KILLS LICE. INSTANT LOUSE-KILLER Kills Lice**

The effective and convenient article for destroying lice on horses, cattle or poultry, ticks on sheep, fleas on dogs, etc. Just the thing to dust in the nest and on the sitting hen. It destroys the large, gray-headed lice that are so fatal to chicks and turkeys.

**DR. HESS & CLARK, Ashland, O., U. S. A.**

Price: Pan-a-gea and Louse Killer, 35c. each; Stock Food, 7 lbs., 65c.; 12 lbs., \$1.00; 35c. articles by mail 5c. extra. Send for Scientific Book on Stock and Poultry, FREE.

**AN ACRE OF AVERAGE CROP.**

**CLOVER** requires 25% more PHOSPHATE than wheat or other grains.

It also requires 75% more MAGNESIA.

**TURNIPS** require over 50% more PHOSPHATE than the grains.

**WHEAT**, notwithstanding this, shows 76% PHOSPHATE in its ash.

**ALBERTS' THOMAS-PHOSPHATE POWDER (Rd.)** is the safest manure to meet these demands.

**WALLACE & FRASER,**

Masonic Temple, 58 Canada Life Building, ST. JOHN, N. B. TORONTO, ONT.

CPR - CPR - CPR - CPR - CPR - CPR - CPR

**CANADIAN PACIFIC RY.**

**QUEEN'S BIRTHDAY**

Round Trip Tickets will be issued at SINGLE FIRST-CLASS FARE Going May 23rd and 24th, returning until May 25th, 1899.

Between all stations in Canada, Port Arthur, Sault Ste. Marie, Windsor and East; TO and FROM Sault Ste. Marie, Mich., and Detroit, Mich., and TO, but not FROM, Suspension Bridge, N. Y., Niagara Falls, N. Y., Black Rock, N. Y., and Buffalo, N. Y.

C. E. McPHERSON, Asst. Gen. Pass. Agent, 1 King Street East, Toronto.

CPR - CPR - CPR - CPR - CPR - CPR - CPR

**SUPPORT HOME MANUFACTURE**

**CANADIAN-MADE HAND SEPARATORS**



Turns easy. Open bowl. Well finished. Most durable. Price reasonable. Best investment farmers can make. Catalogue free. Dairy Supplies of Every Description. Genuine Parchment Paper, for lb. prints, neatly and tastefully printed. By mail, post-paid. Prices reasonable. Write us.

No. 9.—Canadian Ideal. Cap. 30 gallons per hour. **JOHN S. PEARCE & CO., LONDON, ONT.**

### THE ELLWOOD STANDARD

**WOVEN WIRE FENCE** is only one of the 10 styles we make. We call it our standard because it is designed to meet nearly every requirement of the fence user. Made in six heights, as you see it in the illustration—for cattle, horses, hogs, pigs and general farm fencing, this is by all means the Standard Fence, outselling every other fence on the market.

**AND IT'S CHEAP TOO.**

If you can't find the Ellwood at your dealer's write us for catalogue.

**AMERICAN STEEL AND WIRE CO.**  
Chicago and New York.

### GOOD FARM FENCE

should turn all kinds of live stock and even traps; should expand and contract according to the weather so as always to be tight should stand all storms—even fire and last indefinitely.

**The Colled Spring Page**

*is just such a fence.*

Its virtue is attested by the fact that there is more of it in use than all other makes combined. Prices lower than ever this year.

**THE PAGE WIRE FENCE CO., (LTD.)**  
WALKERVILLE, ONT.

## Spray Pumps

DURING MAY WE ARE OFFERING

**SPECIAL BARGAINS.**

WILL NOT BE REPEATED AGAIN.

Save Money and Make Money.

It Pays }  
To Spray.  
To Buy Our Goods.  
To Watch a Bargain.

**FOR CASH WITH ORDER OR C. O. D.**

The "Little Giant" will be sold for \$3.00 each.

The "America" (with 5-foot hose, nozzle, 3-foot suction pipe, strainer and agitator) for \$9.

Also Windmills (Canadian Airmotor), Pumps, Tanks, Grinders, Hay Tools, Etc.

**ONTARIO WIND ENGINE AND PUMP CO., LIMITED.**  
Atlantic Ave., Toronto, Ont.

## GOOD ROADS MACHINERY CO'Y.

HAMILTON, CANADA.

Steel "CHAMPION" Road Grader.

"CHAMPION" Steel Frame Mounted Portable Rock Crusher.

Road Graders, Rock Crushers, Steam and Horse Road Rollers, Engines, Road Plows, Wheel and Drag Scrapers, Macadam Wagons for spreading Road Material, Elevators and Screens.

"CHAMPION" Horse Road Roller.

Send for Catalogues. Mailed Free to any Address on Application.

### GOSSIP.

At the dispersion sale of Jersey cattle, property of Mr. T. R. Proctor, Bagg's Hotel Farm, Utica, N. Y., April 25th, fifty-three cows averaged \$73 each. The highest price was \$190, and twelve others ranged from \$105 to \$185.

Mr. W. D. Platt, Hamilton, called for England from New York on steamer City of Paris, May 10th, with a view of importing Shorthorns to replenish his herd and Largo Yorkshire swine for his brother, Mr. D. C. Platt, Millgrove. He expects to make a large importation of choice stock. We wish him bon voyage and a successful trip.

At the sale of Shorthorn cattle held by C. C. Bigler & Son, of Hartwick, at Victor, Iowa, April 26th, the 4-year-old cow, Cherry Volumma 2nd, by imp. Spartan Hero, sold for \$910 to R. E. Owens, Williamsburg, Iowa. Three other cows brought \$500 to \$555, and two bulls \$335 and \$390. These were principally Bates-bred cattle with crosses of Scotch-bred bulls, but the two highest-priced bulls were Bates topped on Scotch females, and were said to be very fine animals. The average for 35 animals was \$241.

One of the latest published records of a tested Jersey cow is that of Oonan's Sweet Brier, owned by Geo. V. Saffarans, Palmyra, Mo. She calved March 24th and in the seven days, April 2nd to 8th, she gave 233 lbs. milk that churned 17 lbs., 12 oz. butter, salted 1 lb. to the lb. She was sired by the St. Lambert bull, Mendale Idabrier, and her dam is Signal's Oonan. Her breeding is very closely allied to that of several of Mr. Fraleigh's cows advertised to be sold by auction at Forest, Ont., on May 24th.

A small selection from Mr. H. Dudding's noted herd of Shorthorns were sent to Lincoln Spring Fair on the 27th April, and one of them, a grand deep-fleshed young bull, Riley Ingram, born Oct. 10th, 1897, by Jack Ingram 7063, realized top price in the fair, viz. \$300. This grand young bull was very cheaply sold, and when it is known that the draft of which he formed part are those left after the selection for the Annual Home Sale next July had been made, a very fair idea can be formed of the very first-class lot of bulls that will be offered at that annual fixture.

The following judges have been appointed for the various classes of cattle, sheep, and swine at the Western Fair at London, 1890:

**Cattle.**—Shorthorns—John Miller, Jr., Brougham; reserve, T. Russell, Exeter. Jerseys—R. Reid, Berlin; reserve, J. Davidson, Monroe. Ayrshires and Guernseys—D. Drummond, Myrtle; reserve, J. C. Smith, Hintonburg. Holsteins—Wm. Suhring, Sebringville; reserve, T. W. Charlton, St. George. Herefords, Polled Angus, and Galloways—A. Rawlings, Forest; C. M. Simmons, Ivan.

**Sheep.**—Leicesters—L. Parkinson, Kramosa; reserve, W. McIntosh, Burgoyne. Lincoln John Mitchell, Glencoe; reserve, E. Parkinson, Kramosa. Cotswolds—W. G. Laidlaw, Wilton Grove; reserve, Jos. Ward, Marsh Hill. Shropshires—W. G. Pettit, Freeman; reserve, J. P. Phin, Hespeler. Oxfords, Hampshires, and Suffolks—J. Tolton, Walkerton; reserve, H. Arkell, Teeswater. Dorsets—W. H. Beattie, Wilton Grove; reserve, H. N. Gibson, Delaware. Southdowns—H. B. Jeffs, Bond Head; reserve, W. H. Beattie.

**Swine.**—Yorkshires—G. B. Hood, Guelph. Chester Whites—Wm. Jones, Zenda. Poland-Chinas and Berkshires—T. Teasdale, Concord. Tamworths—Wm. Elliot, Hamilton.

ANOTHER GREAT SALE OF JERSEYS.

The announcement in our advertising columns of the dispersion of the great Linden Grove herd of Mr. T. S. Cooper, Coopersburgh, Pa., will be full of interest to Jersey breeders throughout the United States and Canada. Mr. Cooper has been a prince among Jersey breeders, sparing no expense in securing the best to breed from, and breeding the best, as has been amply demonstrated by the winnings of his herd in the great competitions at the World's Fair at Chicago, and at Madison Square Gardens, New York. At Chicago he won 1st prize and the championship for best bull any age with Pedro, of imperishable fame, great son of his great mother, Eurotas, whose record of 22 lbs. 7 oz. in 7 days, and 175 lbs. butter in 11 months, placed her in the front rank of the best of the breed. The first herd prize also went to the Linden Grove herd, headed by Pedro and including Marjoram 2nd, an own sister of the great trio of bulls, Stoke Pogis 3rd, 4th and 5th, and a worthy sister, for she was a tested cow that produced five tested daughters whose blood has bred on. Stoke Pogis of Linden (full brother to Matilda 4th, 21 lbs. 8 oz. butter, 161.53 lbs. milk in one year); Lorne (one of the greatest of the Victor Hugo tribe); Prospect's Rioter, by Stoke Pogis 5th, out of Matilda 4th, and Pedro Royal Marjoram, by Pedro, and out of Marjoram 2nd, are bulls that have stamped their influence on the herd, while the outcrosses to the pedigrees bring in, through the magnificent Wardalia 2nd, the blood of the queenly Jersey Belle of Scituate and that of the regal Phyllis, sired by Fanchion, Coomassie, and others of island fame.

That the cattle are individually good, as well as famously bred, is evinced by their winnings in the great showings. With two or three exceptions, all the prizewinners at the World's Columbian Exposition and at the Madison Square Gardens Show are still in the herd, and of course a large number of their progeny, as the owner has rarely consented to part with females even for tempting offers—only occasionally selling one. Few will deny that Mr. Cooper is a keen judge of dairy cattle, or that he is a breeder who discriminates between the blood values of different animals. He owned years ago the brother and sister, Stoke Pogis 5th and Marjoram 2nd, and sold them at auction because he was closing out Cooper, Maddux & Co.'s herd. They brought small prices, for it was just before the boom. He knew, or at least he believed, in their value, and straightway went about recovering them. Marjoram 2nd cost him more than five times what he sold her for, and he offered \$10,000 for Stoke Pogis 5th, only to learn that the owners could sell him for \$15,000. He paid \$10,000 and other valuable considerations for Pedro, and never has he stinted cost to add what he considered his intrinsic improvement to his stock. For this reason his herd has a blood value far above its superior dairy value. Such an opportunity of securing high-class animals is seldom offered, and Canadian herds may well be strengthened by an infusion of such rich blood through animals of such size and robustness as is known to characterize the Linden Grove herd.

### Horse Owners! Use COMBAULT'S Caustic Balsam

A Safe Speedy and Reliable Cure

The Safest, Best SLEETER ever used. Takes the place of all treatments for mild or severe colic. Removes all Bunches or Elements from Horses and Cattle. SUPERSEDES ALL GASTERY OR FIRING. Impossible to produce colic or flatulency. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists or sent by express charges paid, with full directions for its use. Send for descriptive circular.

THE LAWRENCE-WILLIAMS CO. TORONTO, CAN.

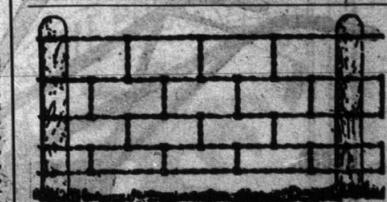
### BUTTER AND CHEESE.

If you expect to secure the highest price for your butter and cheese, Salt is the one thing that you cannot economize on. Nothing but the best is good enough, and the best is

### WINDSOR SALT

For sale by every leading grocer.

THE WINDSOR SALT CO., LIMITED,  
WINDSOR, ONT.



We can cut your 1890 fence account just in half. We claim we have the most practical fence on earth. Four miles of it in use at the Experimental Farm, Guelph. Send for prices.

### TORONTO PICKET WIRE FENCE CO.

TORONTO, - ONTARIO.

Our patrons have been asking for a fence with cross-sections running through fence. Our Eclipse Fence Machine makes the fence cheaper, stronger than any other. We sell you the material and fence machine for a complete fence (not guessing what it's going to cost you), or fence machine alone, \$5.00. Write us for just what you want.

### TORONTO PICKET WIRE FENCE CO.

221 River Street,  
TORONTO, - ONTARIO.

### WRITE FOR SAMPLE STAY and full particulars Machine \$10

Wholesale Price where we have no Agents. AGENCY FREE. NO DUTY TO PAY

THE BOWEN CABLE STAY FENCE CO.  
Box No. 58 NORWALK, OHIO, U.S.A.

### CYCLONE FENCE CO.

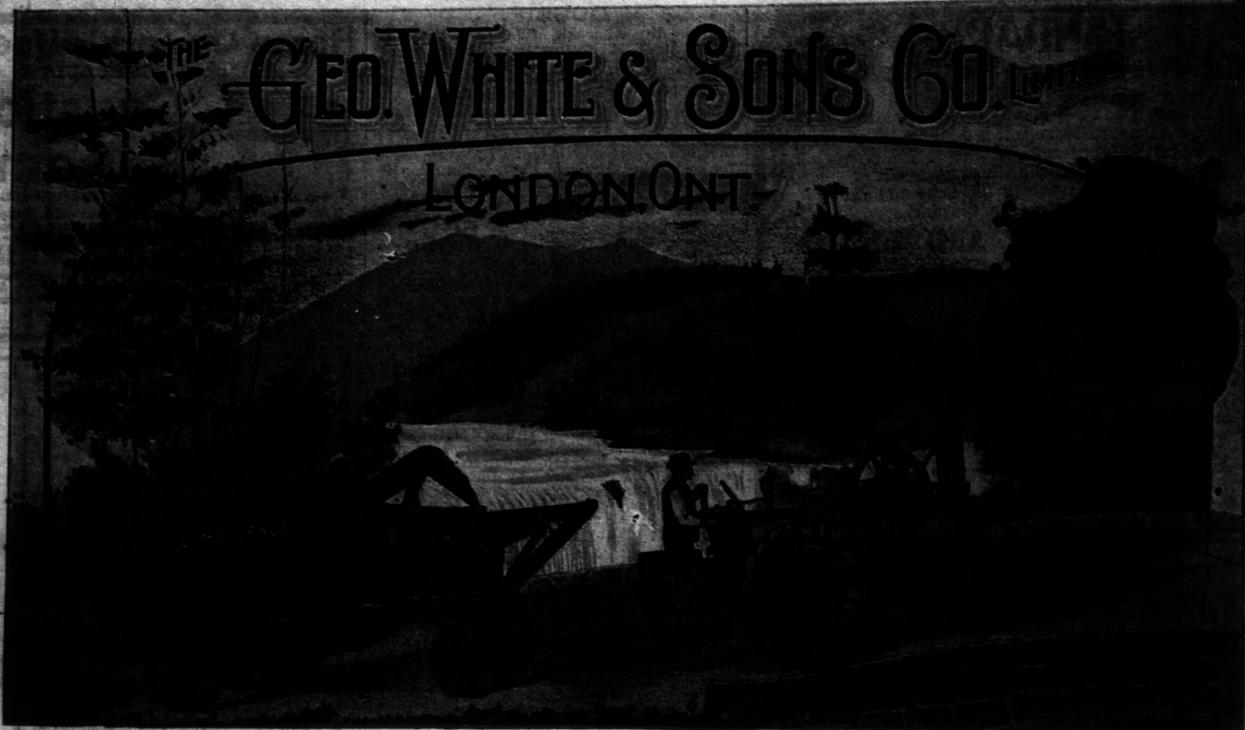
From 27 to 60 inches. From 7 to 11 cables.

Build Your Fence Cheap—100 Rods Per Day.

TORONTO, ONT.

**LIVE STOCK AUCTIONEER.**

The undersigned is prepared to conduct pure-bred auction sales. 20 years' experience. References: John I. Hobson and Alfred Stone, Guelph; Jas. Hunter, Alma, and Mosson Boyd, Bobcaygeon. Thos. Ingram, Care Mercury Office, Guelph, Ont.



Five Different Styles of Engines:  
**Locomotive**  
 and  
**Return Tube,**  
**Portable** and  
**Traction ..**  
 Two Styles of Threshers:  
**Challenge**  
 and  
**Advance ..**  
 WRITE FOR ILLUSTRATED CIRCULAR.

IF YOU WANT A "GANG" TRY OURS.

**COCKSHUTT'S "New Twin" Gang Plow.**  
 LIGHT DRAFT. BUILT ENTIRELY OF STEEL.

**A Taker,  
 A Seller,  
 A Worker.**

**COCKSHUTT PLOW CO., Ltd.,**  
 BRANTFORD, CANADA.

Cheap,  
 Strong,  
 Durable.

Will Plow from Two to Eight Inches Deep.

**BUCHANAN'S**  
 (Malleable Improved)  
**PITCHING MACHINE**  
 For unloading hay and all kinds of loose grain.

Unloads on either side of barn floor without changing car. No climbing necessary. Malleable Iron Cars. Steel Forks. Knot Passing Pulleys. Will work on stacks as well as in barns. Satisfaction guaranteed.

**Woodstock Steel Windmills**

FOR POWER AND PUMPING

GET A DANDY WITH GRAPHITE BEARINGS. THEY RUN WITHOUT OIL.

STEEL TOWER PUMPS, TANKS, SAW TABLES, GRINDERS, AND WATERING TROUGHS.

**Woodstock Wind-Motor Co., Limited.**  
 WOODSTOCK, ONT. -om Write for catalogue

**HAMILTON Engine and Thresher Works.**  
 ESTABLISHED 1836.

FIRST IN THE FIELD! STILL IN THE LEAD!

WE MAKE AND SELL MANY MORE ENGINES AND THRESHERS THAN ANY OTHER FACTORY IN CANADA.

OUR COMPOUND AND SIMPLE TRACTION AND PLAIN ENGINES

Are models of SIMPLICITY, and pictures of NEATNESS and FINISH. They are unequalled for high-class working qualities.

OUR PEERLESS DAISY AND ECLIPSE SEPARATORS AND CLOVER HULLERS

Are unsurpassed for fast and clean threshing. Forty-page Descriptive Catalogue sent on application to

**SAWYER & MASSEY COMPANY, Ltd., HAMILTON, ONTARIO.**

**The Common-Sense Sheaf-Lifter**  
 Works in connection with Pitching Machine, and is the most complete apparatus ever offered to the public for pitching sheaves. Sheaves left in the mow just as they come from the load.

RESPONSIBLE AGENTS WANTED  
 Circulars, Prices and Terms on application to  
**M. T. BUCHANAN & CO., Ingersoll, Can.**  
 EVERY MERCHANT AND FARMER SHOULD OWN A  
**PARSELL TRUCK SCALE**

Combining a first-class warehouse truck with a fine 300 Canadian Standard Scale.  
 It has "caught on" splendidly and is going like "hot cakes."

WILL SAVE ITS COST IN NO TIME.

For descriptive circular and full information, Address—  
**THE ST. MARY'S TRUCK SCALE CO., ST. MARY'S ONT.**

**FARMERS!**  
 IF YOU WANT THE VERY BEST

Cream Separator, and are willing to pay a few dollars more than the price of a cheap one for it, enquire into the merits of

**THE DAVIS CREAM SEPARATOR.**  
 Sole Manufacturers for Canada,  
**The John Abell Eng. & Mach. Works Co. Limited,**  
 TORONTO, CANADA.  
 Write for Catalogue B 2. -om  
 PLEASE MENTION FARMER'S ADVOCATE.

This cut represents our 240-eggs capacity improved

**SAFETY INCUBATOR**

Like all our machines, it is absolutely self-regulating and supplies its own moisture. It is manufactured in Canada—hence there are no customs duties to pay on it. It is guaranteed in every particular and your money will be refunded if you are not satisfied at the end of the first hatch. No matter what INCUBATOR you place beside it, there is none that can out-hatch it. Thoroughly well built and perfectly automatic. It will hatch chickens, ducks, turkeys, and geese. Just send in your address and get one of our free circulars. There is money in it for you. Address—

**J. E. MEYER, KOSSUTH, ONT.**

Combining a first-class warehouse truck with a fine 300 Canadian Standard Scale.  
 It has "caught on" splendidly and is going like "hot cakes."

WILL SAVE ITS COST IN NO TIME.

For descriptive circular and full information, Address—  
**THE ST. MARY'S TRUCK SCALE CO., ST. MARY'S ONT.**

# Canada's Greatest Seed House



A GOOD  
**TURNIP CROP**  
Means Well-Fed Stock

GROWERS' FAVORITES:

STEELE, BRIGGS' "JUMBO" Swede

Grows handsome, tankard-shaped roots, of a purplish-crimson color above ground, yellow beneath; stands well out of ground, grows roots of giant size. Price (post-paid) 1/2 lb., 10c.; 1 lb., 15c.; 2 lb., 24c.; for 5-lb. lots and over, 21c. lb.

STEELE, BRIGGS' "SELECTED" Swede

For over ten years the favorite with best growers; even, handsome shape and a great cropper. Many tons of seed are required annually to supply the demand for this fine variety. Price (post-paid) 1/2 lb., 10c.; 1 lb., 15c.; 2 lb., 24c.; for 5 lb. lots and over, 21c. lb.

SPECIAL NOTICE.—Steele, Briggs' "Jumbo" and "Selected" Swedes are sold in sealed packages only (1/2 lb. and 1 lb.) as shown in accompanying illustrations always bearing their name.

STEELE, BRIGGS' EXTRA SELECT TURNIP SEEDS  
ASK FOR THEM



**FORCIBLE POINTERS**

Whatever crop you grow, success or failure is largely governed by the seed used. Successful growers always use the best seeds obtainable. All seeds have a value, which varies according to the care and selection of stock in producing them; indifferently grown seeds cost less to produce and permit of being sold at like low, "cheap" prices—like produces like. The labor necessary to grow a crop with "cheap" seed is the same as when using the best seed—then why incur unnecessary risk by using "cheap" seeds?

THE BEST CROPS ARE GROWN FROM  
... **Steele, Briggs' Seeds** ...  
BE SURE THAT YOU GET THEM WHEN BUYING

## ENSILAGE CORN

LARGEST STOCKS OF BEST KNOWN VARIETIES

**Mammoth Cuban Yellow Dent Corn**

The heaviest ear producing variety, with a favorable season has yielded 3 1/2 tons of ears per acre, and ripens in most parts of Ontario. Price, 1/4 bush., 45c.; bush., 85c.; 2 bush. and over, 80c. bush.; bags, 15c. each.

**EARLY HURON YELLOW DENT CORN**

One of the earliest dent varieties in cultivation, a strong grower, stalks and ears of good size, small cob with deep grain, productive. Price, 1/4 bush., 50c.; bush., 90c.; 2 bush. and over, 85c. a bush.; bags, 15c. each.

## FAMOUS Garden and Flower SEEDS

You can get Steele, Briggs' Famous Garden and Flower Seeds from your Resident Merchant, or send for them direct. THE BEST SEEDS THAT GROW.

**First Prize VEGETABLES and FLOWERS**  
GROWN FROM  
**Steele, Briggs' Seeds**

FOR A COMPLETE LIST OF  
**Newest & Best Seeds, Plants, Bulbs, Flowering Roots, Vines, Roses, Small Fruits, etc.** SEE OUR CATALOGUE.

If you have not received one, send your name and it will be MAILED FREE. Mention this paper. When ordering, please send money by Express Money Order, Postal Note or Registered Letter. All orders receive best care.



**The Steele, Briggs Seed Co., Toronto, Ont.** LIMITED

## SALT

"A WORD TO THE WISE."

"Salt may be described as a powerful chemical agent for providing and preparing soluble food for plants from the materials present in the soil. This is a most important consideration when we remember that in all soils there are about two-thirds lying dormant and only one-third in active condition."

We sell all kinds of salt in all kinds of packages, barrels, bags or bulk. Unequalled shipping facilities. Higher grades of salt for dairy uses a specialty.

**R. & J. RANSFORD**  
CLINTON, ONT.  
Established 1868.

## GOVERNMENT ANALYSIS

LABORATORY OF INLAND REVENUE,  
OFFICE OF OFFICIAL ANALYST,  
Montreal, April 8, 1895.

"I hereby certify that I have drawn, by my own hand, ten samples of the **ST. LAWRENCE SUGAR REFINING CO.'S** EXTRA STANDARD GRANULATED SUGAR, indiscriminately taken from ten lots of about 150 barrels each. I have analyzed same and find them uniformly to contain:

**99 99 TO 100** per cent. of pure Cane Sugar, with no impurities whatever."  
(Signed) **JOHN BAKER EDWARDS, Ph. D., D.C.L.,**  
Prof. of Chemistry and Public Analyst, Montreal.

## FREEMAN'S THREE-PLY READY ROOFING

... EASILY APPLIED ...  
Great Reduction in Prices. Send for Price List, etc.

Parliament Buildings, Toronto, October 20th, 1895.  
The W. A. FREEMAN Co., 57 Ferguson Ave., South, Hamilton, Ontario:  
Gentlemen,—Nine years ago I purchased from you a large quantity of material known as Freeman's Ready Roofing, with which I roofed the north half of my barn and two sheds, 65x20 each. This year we re-painted this roof and found it in excellent condition. A single roof put on part of the barn two years before was badly in need of repair. I shall hereafter use your ready roofing on all my out-buildings.  
Yours truly,  
(Signed) F. W. HOPSON.

**LIVE STOCK AUCTION SALES**  
Conducted in all parts of the country. Pedigree stock a specialty. Write for terms. References: J. C. Snel, Edmonton; John L. Hobson, Guelph; Hon. M. H. Cochrane, Compton, P. Q.; or this office.  
**JOHN SMITH, BRAMPTON.**

**BELLEVILLE BUSINESS COLLEGE**  
**DOGLE & JEFFERS, PROPRIETORS.**

Students have a **LARGER EARNING POWER** who acquire the following lines of preparation under our efficient system of training. IT HAS NO SUPERIOR.

1. Bookkeeping.
2. Shorthand.
3. Typewriting.
4. Telegraphing (Commercial and Railway Work).
5. Civil Service Options.

Students may commence telegraphing on the first of each month, and the other departments at any time.

**J. FRITH JEFFERS, M. A., Principal.**

Address: BELLEVILLE, ONT.

**What is Your Work?**  
 If you are dissatisfied with your situation, your salary, your chances of complete success, write to The International Correspondence Schools, Scranton, Pa., and learn how others so situated are getting an education by mail.

Students in the courses of Mechanical or Electrical Engineering, Architecture, or any of the Civil Engineering Courses are now qualified for superior drafting room positions. Write for pamphlets.

The International Correspondence Schools, Box 500, Scranton, Pa.

**WOODSTOCK**

**Business College**

**AND SHORTHAND SCHOOL.**

We give an all-round practical education. Every transaction and every paper is real. Special advantages in Shorthand. Connected with the Business Educators' Assoc'n of Canada. Write for particulars. **H. M. KENNEY, PRINCIPAL, WOODSTOCK.**

**BUSINESS BRIGHTNESS BRINGS SUCCESS.**

**CENTRAL Business College**  
 STRATFORD, ONTARIO.  
 Properly prepares young men and women for business life. 44 of our recent students have accepted good situations. Business men appreciate our work, and apply to us for our graduates. Enter now if you can. Prospectus free. **W. J. ELLIOTT, Principal.**

**FREEMAN'S**  
 DOUBLE STRENGTH

**FERTILIZERS**

Great Reduction In Prices.  
 CATALOGUE FREE.  
**The W. A. FREEMAN COMPANY, Limited,**  
 HAMILTON, ONTARIO.

**CANCER** CURED WITHOUT KNIFE OR PLASTER. FULL PARTICULARS FREE. -om  
**F. STOTT & JURY, Bowmanville, Ont.**

**Sheep Shearing Revolutionized.**  
**New Chicago SHEEP SHEARING MACHINE.**  
 Greatest Machine ever Invented. Price, \$15.  
 (Used and endorsed by the Editor of the American Sheep Breeder.)  
 Don't butcher your sheep. Saves 1/4 to 1 lb. more wool per head.  
 Drop us a postal and we will tell you all about it. We also make Horse Clipping Machines. Chicago Flexible Shaft Co., 158-160 Huron St., Chicago.

**GOSSIP.**

At Mr. Jas. Cooper's farm, "Oak Lodge," at Kippen, we saw a good, strong, even, well-covered bunch of twenty Shropshire shagging rams during a short call in the first week of May, and as Mr. Cooper has imported extensively from such flocks as those of Bradburn, Minton, Farmer, Batch, Williams, and Thomas, acknowledged to be leading English breeders, it is needless to add that a sire to suit any flock may be selected from this lot, particulars of which will appear in later issues of the FARMER'S ADVOCATE.

During a short call at Mr. J. T. McKay's, at Parkhill, a member of the FARMER'S ADVOCATE staff was shown a splendidly kept and in every way up-to-date lot of poultry, as well as a nice lot of Poland-Chinas. In the poultry pens set apart for special breeding purposes are two fine lots of Barred Plymouth Rocks—fine, strong, vigorous birds, in healthy condition and good shape, and well and evenly barred, while the Light Brahmas are simply immense. The farm has also up-to-date Bronze turkeys and Pekin ducks from the best and most noted prize-winning pens.

**A COSTLY HOG.**

The lawyers are having a harvest in the litigation which has grown out of the public sale of the Poland-China boar, Klever's Model, in September, 1897, to a syndicate at the "boom" price of \$5,100. After the animal had been in their possession for some time, the buyers claimed to have discovered that it was not Klever's Model they had bought, that he had died and that another hog was substituted for him. Action for damages was brought against Mr. Council, the seller, and a verdict for the plaintiff rendered. An appeal was made to a higher court, and the verdict was set aside and judgment given in favor of the seller. Now the latter has entered action for \$30,000 damages for libel and defamation of character. It is said that the litigation in the case has already cost \$10,000. A local paper tells the story in the following funny fashion:

"The story of Council, the Syndicate and the hog is a long one, but every child in Sangamon County knows it by heart. It began in 1897, at the State fair grounds in Springfield. Council decided publicly to auction off a famous hog he owned, known as Klever's Model. The hog came of an ancient and highly-respected race, and his fame was known the country through, so when he was put on the block on Sept. 26th to be sold to the highest bidder, stockmen from all over the country were there anxious to secure the prize. The bidding rose higher and higher, and finally Klever's Model was sold to Syndicate for \$5,100.

"All was serene until Council's hired man whispered about the country a horrible secret. He was a Swede named Arthur Thielander. He said his conscience troubled him so that he felt he must speak. He declared the big Poland-China hog that went under the name of Klever's Model was not Klever's Model at all. The real Klever's Model, he said, had died nearly a year before the auction sale, of one of the pestilences peculiar to the hog race. The hired man said he had been with Klever's Model when it was born, and died, had been chief mourner at the funeral, and had acted as undertaker for the deceased porker. He related how at the dead of the night, by the sickly glare of a barn lantern, he had laid Klever's Model in its grave. The next day, he said, Council built a straw-stack over the grave and put the low-born hog, Columbia Wilkes, in the place formerly occupied by Klever's Model. This degraded hog was introduced around as Klever's Model, and the hired man alleged, and finally sold as the original animal.

"When the members of the syndicate heard the hired man's tale, they were greatly exercised. They sent a man to exhume the remains under the straw-stack on the Council farm. The grave was opened, but instead of finding the skeleton of one hog, they found all that remained of two. Council had not denied the existence of hog bones under the straw-stack, but said they were those of two hogs that had died of cholera, and he had buried them to prevent the disease from spreading. Neither of these hogs, he declared, was Klever's Model, which he insisted he had sold to the syndicate.

"The syndicate men, however, were not satisfied. They took the hired man over to see the hog they had bought, and the hired man pointed his finger at it and said, like the hero in the melodrama, 'I know you now. You are not the aristocratic Klever's Model, but the base-born Columbia Wilkes.'

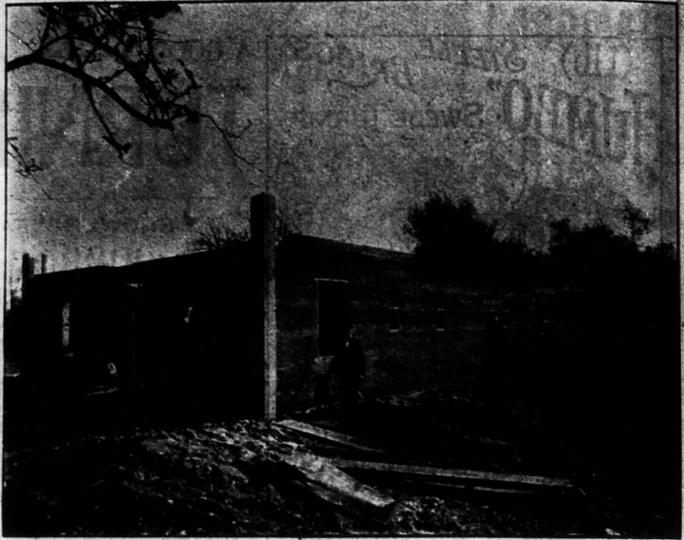
"So the syndicate men posted off to Springfield, and put the hired man in the grand jury room, and the hired man told the grand jury his story, and Council was indicted. The case came up for trial, and the State's attorney was preparing to wage a vigorous prosecution against Council and the false Klever's Model, when he received an affidavit from Thielander, stating that he had sworn falsely before the grand jury, and that the real Klever's Model was alive and not moldering in the lonesome grave under the hay-stack.

"The State's attorney thought this settled the matter, and dismissed the case; but it was not to end here. The syndicate members claimed Thielander had been bribed, a position in which they were enthusiastically sustained by the versatile Mr. Thielander himself during the trial of a suit which Council brought against the members of the syndicate to recover on the note. In the first trial the jury disagreed. In the second, both sides brought experts from every part of the country to swear for the defendants that Klever's Model was Columbia Wilkes in disguise, and for the plaintiff that Klever's Model was the only original.

"Over eighty witnesses were examined, and the jurors were as muddled as they had been at the first trial, when Council won his suit by checkmating a move of the defense. The defense had exhibited to the jury the hog which they had bought as Klever's Model, but which they said was Columbia Wilkes. Council went out to his farm, and came back with a hog that he proved to the satisfaction of the jury was the original Columbia Wilkes. With Columbia accounted for, the jury decided that Klever's Model could be none other than himself.

"So the case was decided for Council, and now he has begun suing the men who have insisted that Klever's Model was Columbia Wilkes with another ring in his nose and his tail trimmed off. Meantime the hired man is silent and mysterious, and is expected to come forward soon with a brand-new sensation."

Work Done With **THOROLD CEMENT** Speaks for Itself.



Barn of J. W. VANDYKE, Grimsby, Ont. (In Course of Erection). Size of walls 36 x 70 x 14 feet from bottom of foundation to plate. Built with Thorold Cement. Mr. VanDyke states that he effected a saving of from \$1,000 to \$1,200 by building concrete walls instead of stone or brick.

ESTATE OF JOHN BATTLE, THOROLD, ONT.: Grimsby, Ont., Dec. 12th, 1898.  
 Gentlemen.—It gives me great pleasure to testify to the good qualities of your Thorold Cement. During the past season I built an Evaporator under the supervision of your traveller, Norval B. Hagar, the size of which is 45 x 100 x 24 feet to plate from bottom of foundation, and gables 12 feet high, making in all 36 feet high to top of gables. The first story is 13 feet high and 12 inches thick, the second 8 feet high and 10 inches thick, gables 8 inches thick. I have a concrete floor in first story, and the second story is held up by trusses. There is not a post in the first story to hold the second. I also built a barn under the supervision of your Robert G. Hagar, size 36 x 70 x 14 feet from bottom of foundation to plate, and I consider I have all buildings both in strength and workmanship, for the walls are straight and plumb as any building could be, and they are far cheaper than either stone or brick.  
 Yours, etc., J. W. VANDYKE.

FOR FREE PAMPHLET WITH FULL PARTICULARS, ADDRESS  
**ESTATE OF JOHN BATTLE,**  
**THOROLD, - ONTARIO.**

**Queenston Cement Best and Cheapest for Walls and Floors.**

When building barn basements or stable walls of any kind—stone, brick, or concrete—be sure to put a six-inch tile through the walls opposite the feed alleys, at about the floor level. It will pay you to investigate our system of

**Ventilation.**

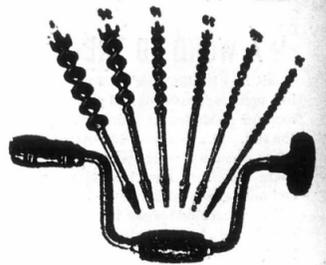
Fully covered by letters patent, but to our patrons we make no charge.

Write for pamphlet containing valuable information, prices, etc.

**Isaac Usher & Son, Queenston, Ont.**



Send for Illustrated Price List



BRACE AND SIX BEST AUGER BITS only \$1.50, mailed anywhere in the Dominion for 50c. extra for postage.  
 FARM BELLS—40-lb., \$1.65 each; 50-lb., \$2 each; 75-lb., \$3 each; 100-lb., \$4.50 each.  
 CHURCH BELLS also in great variety.

**WILKINS & CO., 166 AND 168 KING ST. EAST. TORONTO, ONT.**



2 1/2, 5 AND 6 FOOT CUT.

"O YES!" Our No. 8 Mower will start in heavy grass without backing the team, and will cut grass any other mower can cut. Will run as easy and last as long. We sell our machines on their merits, and build our reputation on the "quality," not the quantity, of goods we make.

THE FROST & WOOD CO., LTD.,

HEAD OFFICE AND WORKS: SMITH'S FALLS, ONT.

Toronto Branch: 77 Jarvis Street. Winnipeg Branch: Market Square.

PLYMOUTH BINDER TWINE



IS PUREST.  
IS STRONGEST.  
IS EVENEST.  
IS LONGEST.

IT PAYS TO BUY THE BEST

BEST AND MOST ECONOMICAL.

DOES QUALITY COUNT WITH YOU?

BINDER TWINE

PURE MANILA, 650 FT. TO LB.  
SPECIAL MANILA,  
TIGER, STANDARD.

Farmers! Don't be taken in. There is none "just as good." These twines will not bunch at the knotted, and a Binder will run all day without stoppage, thus saving time, annoyance and a "lot o' cussin'."

We pack our twine in bags of the size of ordinary grain bags, and we are not ashamed to put our name upon it. Don't take any other.

CONSUMERS' CORDAGE CO., LIMITED,

MONTREAL.

PLEASE MENTION FARMER'S ADVOCATE.

GOSSIP.

On April 27th G. W. Glick & Son, Atchison, Kan., sold 67 head of Shorthorns at Kansas City, at an average of \$110. The cattle were thin and many of the cows due to calve late, and the bulls were chiefly bought for ranching purposes. The highest price was \$225.

The prospects for the sheep-breeding industry are brighter than for many years. There has been a large demand for sheep of all breeds during the past winter, and sales have been very satisfactory. There will be more sheep imported from England this summer than for several years past. We know of nearly a dozen breeders who are contemplating a trip across the sea, and these represent the breeders of both long-wooled and middle-wooled breeds. The improved prices for sheep and lambs in the market are having an effect in stimulating the industry.

The F. W. Stone Estate, Guelph, shipped, May 3rd, fifty-six Hereford bulls to Reynolds Land and Cattle Company, Pan-handle, Texas. This ranch is 200,000 acres in extent, and is stocked with over 12,000 head of cattle, 95 per cent. of which are Herefords. The company have purchased all their bulls for the last twenty years from the late F. W. Stone, the Stone estate, and Alfred Stone, of Guelph. In addition to this shipment, the company have imported 25 bulls from England this spring. They were recently released from quarantine and will join the Guelph shipment at Chicago. W. R. Elliot, Hespeler, and Herbert Wright also shipped the same day two carloads of Shorthorns to Calgary, Alta.

The fourth annual sale of bulls under the auspices of the Lincolnshire Red Shorthorn Breeders' Association was held at Lincoln, April 27th, at which 158 bulls were sold at prices ranging from \$77.50 to \$405, and averaging \$157 each. These were offered by 49 owners who each contributed from one to ten head. This association was organized for the purpose of recording the pedigrees of this local breed of cattle, which have been bred for generations upon the Lincolnshire Wolds, and from the success attained so far they bid fair to take a prominent place in the estimation of farmers generally for feeding purposes as well as for dairy cattle, many of the cows being excellent milkers. They are practically Shorthorns in everything but pedigree, and in this nearly all of them trace in some way to animals recorded in Coates' Herd Book. The Secretary of the Association is Mr. S. Upton, St. Benedict's Square, Lincoln, of whom, or of Mr. W. W. Chapman, Fitzalan House, Arundel St., London, information concerning these cattle may be obtained.

GOSSIP.

At a recent auction sale of harness horses held in New York 45 animals were disposed of for \$43,150, an average of \$956. The three highest prices were \$3,200, \$3,000 and \$2,500.

Mr. F. S. Peer, Mt. Morris, N. Y., who is now on the islands of Jersey and Guernsey making selections to fill orders from various breeders in the United States and Canada, writes: "Of Jerseys I expect to bring out seven aged cows, ten heifers in calf (due in July, August and September), five yearlings and three heifer calves; one two-year-old bull, one yearling bull and one bull calf. This lot is not selected for show purposes, but they would give a good account of themselves in any company at home and the cows can show at the fair as well. I shall have to buy over fifty head of Guernseys, forty for the States and two small orders for English breeders. I am bringing some Lincoln and Hampshire Down sheep, and Welsh ponies."

Mr. Wm. R. Stewart, of Fort McLeod, N.-W. T., who had been in Ontario for over a month, left Guelph April 3rd with 450 head of stock purchased at Ridgetown for his ranch, and 20 head of Shorthorn bulls selected by Herbert Wright, Guelph Township; a Shorthorn from J. Aiken, Puslinch; a heifer from James Cowan, Paisley Block, and two from Mr. Birrell, Mosboro, together with Concord Boy, a two-year-old Hereford bull from the F. W. Stone estate. He also purchased and shipped the following valuable horses: Briton, heavy draft, from Freeman, Thomas, Nassaragweya; the fine bay trotting stallion "Stanton King," from O. Heffernan; Wellington Hull's (Erin) fine bay carriage horse; two-year-old Clyde stallion from N. Dymond, Barrie; four Standard-bred stallions from Dietrich & Dietrich, Galt; carriage team from W. S. Wisner, Brantford; fast pacer from John Scott, Galt; chestnut driver from Alf. Hales, Guelph; Jas. Johnson's fancy trotting mare, "Nancy J." and "Bob Kirk," which took so many prizes. The whole shipment will amount to some \$18,000. Mr. Stewart is a shrewd buyer, a good judge of stock, and enterprising. We wish him success with his shipment.

NEW BULLS FOR THE COLLYNIE HERD.

Canadian breeders of Shorthorns will be interested in the following particulars concerning four remarkable yearling bulls recently bought to be used in the famous Collynie herd of Mr. Wm. Duthie, of Aberdeenshire, Scotland: Silver Plate, white, calved December, 1897; bred by James Bruce, Inverquhomery, Aberdeenshire; sire Waverley (63072), dam Rosewood 67th, by Wellington (68076). Bapton Conqueror, roan, calved January, 1898; bred by J. Deane Willis, Bapton Manor, Wiltshire; sire Red Robin (71538), dam Cyclamen, by Adolphus (66694); second dam Cow-slip, by the champion bull Baron Bridekirk 3rd (69302); third dam Citron, by Gondolier (52756), both bred at Sittytton. Lovat Champion, red, calved March, 1898; bred by Lord Lovat, Beauford, Beaulieu, N. B.; sire Royal Star (71502), dam Victoria, by Proud Duke (59713), running back to Broadhooks 10th, by Champion of England. Lovat Champion is the best yearling bull shown at any of the spring shows last year. He took first in a large class at Inverness, the Shorthorn Society's prize, and the championship of the show. He was bought by Mr. Duthie for Collynie at 200 gs. by public sale in February last.

Scottish Champion, dark roan, calved March, 1898; bred by Mr. Marr, Uppermill; sire Wanderer (60138), dam Mary, by Lord Byron (64380), tracing to Faithful, by Champion of England. Scottish Champion was bought in October last by public sale for 350 gs.

It Pays to Care for Your Horse

The Crystal Rosette is double the size of this cut.



The Crystal Rosette is double the size of this cut.

NATIONAL GALL CURE

Is wonder-working in its effects. No other preparation in the world can equal it. It is the only speedy and sure cure for GALLS, SORE BACK AND SHOULDERS, CORNS, SCRATCHES, MUD SCALDS, ETC. National Gall Cure does its Good Work while the Horse is Working! For Sore Feet on Cows it gives immediate relief and certain cure.

OUR SPECIAL OFFER! On receipt of 25 cents we will send a full size box of National Gall Cure and a pair of handsome Crystal Rosettes, like illustration above, which are retailed at 50 cents a pair. Money refunded if not found satisfactory. National Gall Cure is for sale by all dealers. When ordering from us, please write name and address plainly, and enclose this advt.

English Embrocation Co., 337a St. Paul Street, -on MONTREAL.

SEE! Manufacturers SEE! Farmers

SURFACE DRAINAGE A NEW SYSTEM.

It prevents wheat and clover winter-killing on clay land. COME AND SEE it demonstrated on my farm at Woodburn, Ontario, seven miles from Stony Creek and fourteen miles from Hamilton. Drop a card two days ahead. Canadian and American patent of LAND SHAPER for sale—a sure money-maker. Full information given to reliable parties.

JOHN EDMONDS, WOODBURN, ONTARIO.

TORONTO ENGRAVING CO. 92 BAY ST CUTS BY ALL PROCESSES LIVE STOCK A SPECIALTY.

**IMPORTANT TRUTH**

FOR STOCK RAISERS.

**LUMP JAW** has been transformed from an incurable to an easily curable disease. The entire credit for this wonderful result is due to

**Fleming's Lump Jaw Cure.**

When this remedy was discovered no other real cure was known. Its other positive cure is yet known. FLEMING'S CURE was first introduced in Saskatchewan, and from there its reputation has spread over the entire continent. It is the only remedy endorsed by leading ranchmen, shippers, and stock journals. It is positively guaranteed; money is returned if it fails. One bottle usually cures one to five cases.

Like all other articles of exceptional merit, it is imitated in various respects, but these imitations wholly lack the distinctive quality of the genuine.

Get Fleming's Lump Jaw Cure and be certain of recovery.

**PRICE, \$2.00.**

SENT ANYWHERE BY MAIL. TERMINAL AND FREIGHT EXPENSES SENT FREE. **FLEMING BROS.,** CHEMISTS, ST. GEORGE, ONTARIO.

**CATERPILLARINE.**

A preparation for checking the ravages of all tree-climbing insects and caterpillars. Costs one cent per tree. Sold by all medicine and druggists. Prices, \$1.00, \$1.50, and \$2.50 per ten-pound tin. SEND FOR CIRCULAR.

**Dr. Wm. Mole,**

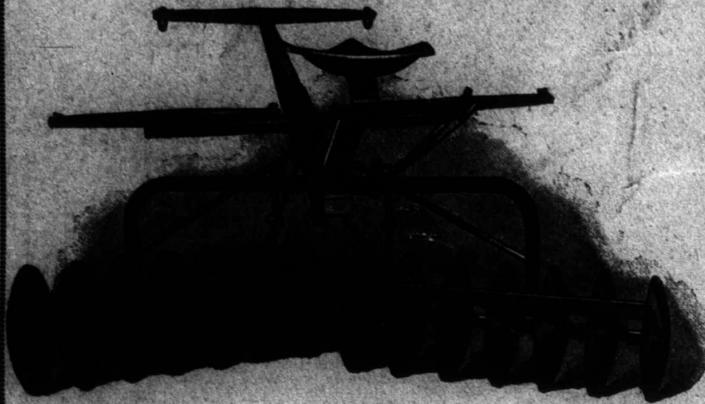
443 Bathurst Street, TORONTO.

**EDMUND WELD,**

Barrister, Solicitor, Notary Public, Etc. Money loaned on real estate at lowest rates. Instruments prepared. Collections made. Address: 57 DUNDAS ST., LONDON, ONT.

**The Massey-Harris HARROWS**

Can be Fitted with Either Oval or Slicer Disks.



They are Very Strong and Reliable.

**MASSEY - HARRIS COMPANY,**

LIMITED,

TORONTO, CANADA.

**ANTISEPTIC FIBREWARE**

ANYTHING IN THE LINE OF BUTTER, HONEY, JAM, ETC.,



PACKED IN THIS KIND OF A PACKAGE RETAINS ITS SWEETNESS FOR AN INDEFINITE LENGTH OF TIME. WRITE FOR CATALOGUE AND PRICES TO

**The E. B. EDDY CO.** (LIMITED). HULL, - CANADA.



Do you keep a **DOG?**

Send for free pamphlet on feeding, treatment, etc., and catalogue of foods, etc.

To **SPRATT'S PATENT** 259 E. 50th St., New York.

THE KING OF ALL VETERINARY REMEDIES IS ADMITTEDLY

**Gombault's Caustic Balsam**

Prepared only by J. E. Gombault, Ex-Veterinary Surgeon to the French Government Stud.

Horsemen are skeptical about veterinary remedies as a rule, but they are one and all convinced, and even enthusiastic over GOMBAULT'S CAUSTIC BALSAM.

**IT SUPERSEDES ALL CAUTERY OR FIRING.**

IMPOSSIBLE TO PRODUCE ANY SCAR OR BLEMISH.

IT IS THE SAFEST AND BEST BLISTER.

It removes all bunches and blemishes from horses and cattle. A trial will surely convince you of its merits.

For Sale by all Druggists, or sent by Prepaid Express on receipt of \$1.50.

**THE LAWRENCE-WILLIAMS CO.,**

Sole Agents for the United States and Canada.

CLEVELAND, OHIO., and TORONTO, ONT.

GOMBAULT'S CAUSTIC BALSAM is the only GENUINE.